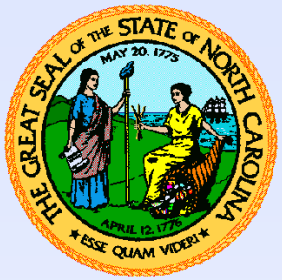


Surveyor's Professional Development Workshop
Elevation Certificate Training

John Gerber, PE, CFM

North Carolina Emergency Management

What is the purpose of the Elevation Certificate?

- Verify Regulatory compliance
- Flood Insurance Policy Rating
- Support of applications for map revisions & amendments
- Required for CRS program

NOTE:

Data collected on this form is for the construction & utility service to a single STRUCTURE only.

Not the lot or other improvements.

Who must have an Elevation Certificate?

- Anyone who has applied for insurance on a building that is located in a Special Flood Hazard Area (SFHA)
- and the construction or substantial improvement of the building started after December 31, 1974 or on or after the date of the initial Flood Insurance Rate Map (FIRM), whichever is later.

Determine Policy Premiums

Insurance agents use the elevation information provided on the certification to determine proper premiums.

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. Use the same datum as the BFE.

Benchmark Utilized _____ Vertical Datum _____

Conversion/Comments _____

		Check the measurement used.	
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)

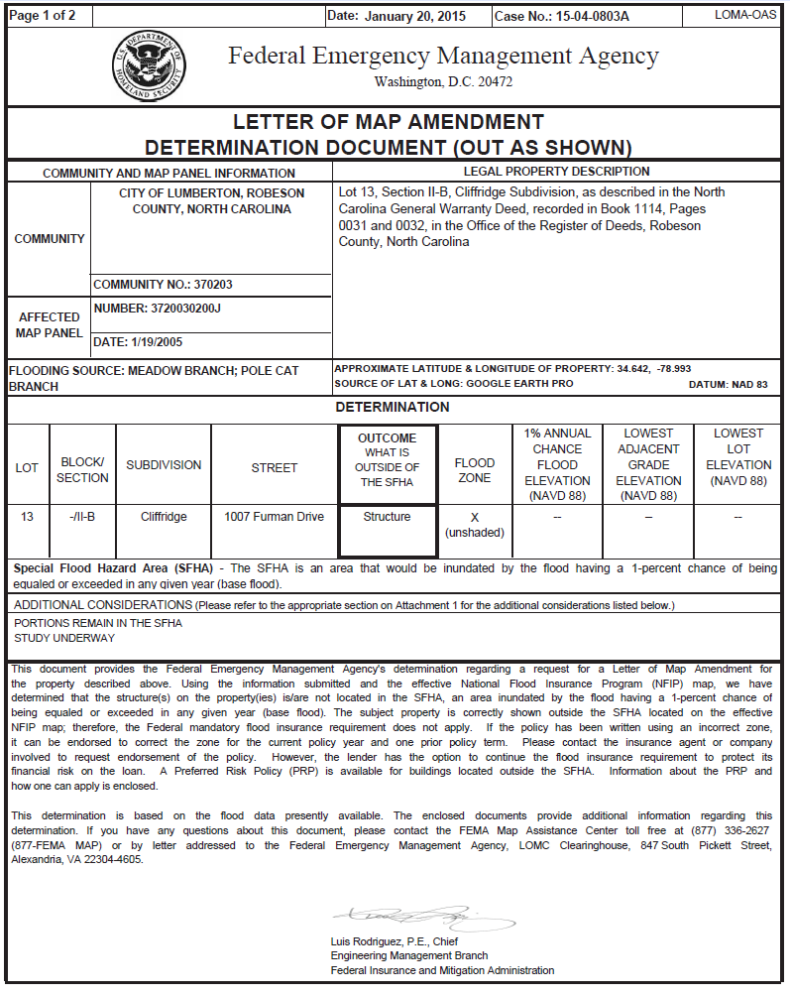
FIRM ZONES AE, A1-A30 -- BUILDING RATES

Elevation of Lowest Floor Above or Below BFE[1]	One Floor, No Basement/Encl		More than One Floor, No Basement/Encl		More than One Floor, With Basement/Encl		Manufactured (Mobile) Home[2]	
	1-4 Family	Other Residential & Non-Residential	1-4 Family	Other Residential & Non-Residential	1-4 Family	Other Residential & Non-Residential	Single Family	Non-Residential
+4	.24 / .08	.20 / .08	.24 / .08	.20 / .08	.24/ .08	.20 / .08	.24 / .08	.20 / .08
+3	.24 / .08	.20 / .08	.24 / .08	.20 / .08	.24 / .08	.20 / .08	.25 / .08	.22 / .08
+2	.32 / .08	.26 / .08	.24 / .08	.20 / .08	.24 / .08	.20 / .08	.31 / .08	.25 / .08
+1	.59 / .08	.45 / .10	.38 / .08	.28 / .08	.29 / .08	.22 / .08	.73 / .09	.72 / .08
0	1.08 / .08	.97 / .20	.77 / .08	.59 / .16	.56 / .08	.50 / .16	1.67 / .09	1.62 / .08
-1[3]	2.70 / 1.00	3.85 / 1.36	2.40 / .90	3.00 / .69	1.35 / .52	1.45 / .74	***	***
-2	***	***	***	***	***	***	***	***

N★C DPS
DEPARTMENT OF PUBLIC SAFETY

Pre-/Post-FIRM[1]	Dwelling Type & # of Floors	Amount of Coverage Build/Content (in thousands)	Deductible[2] Build/Content	Flood Zone	Elevation Difference of Lowest Floor and BFE (Feet)	Cost of Flood Insurance[3] (without HFIAA surcharge)
Pre- or Post-	Single Family/ One Floor/ No Basement	$200/$80	$1,250/$1,250	B, C or X	Not Needed	$380 ***Preferred Risk Policy (PRP)***[4] $419 ***Newly Mapped Property***
Post-	Single Family/ One Floor/ No Basement	$200/$80	$1,250/$1,250	A1-30, AE	+4	$528
					+3	$561
					+2	$649
					+1	$921
					At BFE	**$1,874**
					-1	$4,376
Post-1981	Single Family/ Without Obstruction	$200/$80[5]	$1,250/$1,250	V1-V30, VE	+4 or more	$2,752
					+3	$3,095
					+2	$4,245
					+1	$5,795
					At BFE	**$7,356**
					-1	$9,375
Post-1981	Single Family/ With Obstruction	$200/$80[5]	$1,250/$1,250	V1-V30, VE	+4 or more	$5,114
					+3	$5,407
					+2	$6,088
					+1	$7,039
					At BFE	**$8,537**
					-1	$10,714

Support map amendments & revisions



Page 1 of 2		Date: January 20, 2015	Case No.: 15-04-0803A	LOMA-OAS

Federal Emergency Management Agency
Washington, D.C. 20472

LETTER OF MAP AMENDMENT
DETERMINATION DOCUMENT (OUT AS SHOWN)

COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION
COMMUNITY	CITY OF LUMBERTON, ROBESON COUNTY, NORTH CAROLINA	Lot 13, Section II-B, Cliffridge Subdivision, as described in the North Carolina General Warranty Deed, recorded in Book 1114, Pages 0031 and 0032, in the Office of the Register of Deeds, Robeson County, North Carolina
	COMMUNITY NO.: 370203	
AFFECTED MAP PANEL	NUMBER: 3720030200J	
	DATE: 1/19/2005	

FLOODING SOURCE: MEADOW BRANCH; POLE CAT BRANCH

APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 34.642, -78.993
SOURCE OF LAT & LONG: GOOGLE EARTH PRO DATUM: NAD 83

DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS OUTSIDE OF THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
13	-/II-B	Cliffridge	1007 Furman Drive	Structure	X (unshaded)	--	--	--

Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

PORTIONS REMAIN IN THE SFHA
STUDY UNDERWAY

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the structure(s) on the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). The subject property is correctly shown outside the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. If the policy has been written using an incorrect zone, it can be endorsed to correct the zone for the current policy year and one prior policy term. Please contact the insurance agent or company involved to request endorsement of the policy. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

The Elevation Certificate is used to revise a FEMA flood map by:

- Letter of Map Amendment (LOMA)
  - Changes the flood zone of a specific property.
- Letter of Map Revision (LOMR-F)
  - Changes the flood zone of a specific property where fill has been placed on the site.

Community Rating System & Elevation Certificates

The NFIP recognizes community efforts that go beyond the minimum floodplain management requirements of the NFIP through the CRS by reducing insurance premiums for the community's property owners

- Community Rating System (CRS) communities are required to obtain and maintain Elevation Certificates
- This requirement applies to all new construction and substantial improvements to existing structures located in SFHAs

How to save money on flood insurance?

The **Community Rating System** (CRS) offers insurance premium discounts (up to 45%) for individuals in communities implementing floodplain management practices that exceed the minimum requirements of the NFIP.

By implementing CRS floodplain management best practices, flood losses are reduced, public safety is enhanced, & the cost of flood insurance is decreased

CRS Classifications

- The CRS discounts premiums by class in increments of 5% for buildings in the SFHA.
- The CRS classes are based on 18 creditable activities, organized under four categories:
  - Public Information
  - Mapping and Regulations
  - Flood Damage Reduction
  - Flood Preparedness

Top 12 NC CRS Community Savings

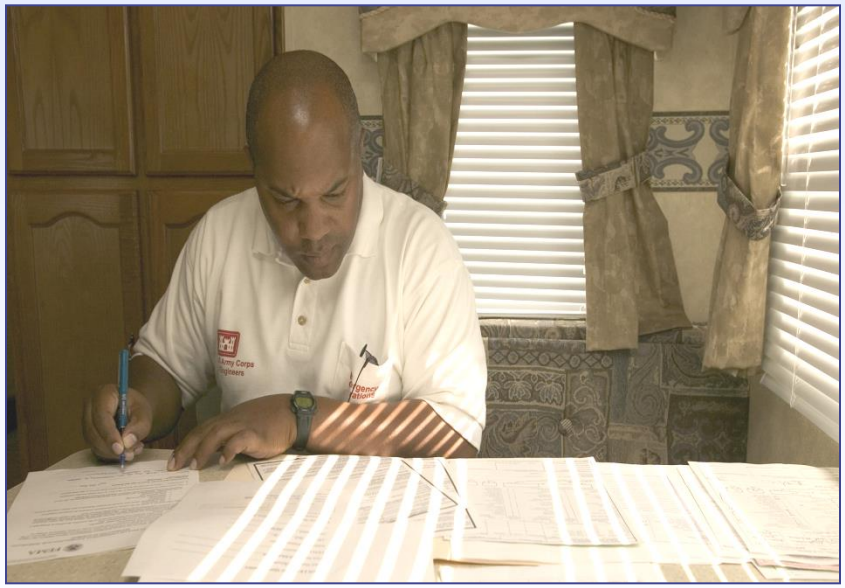
COMMUNITY	CRS CLASS	NUMBER OF POLICIES	ANNUAL SAVINGS
Nags Head	6	3,713	$704,694
Dare County	8	9,848	$650,575
Kill Devil Hills	6	4,427	$592,050
Ocean Isle Beach	8	2,986	$564,626
Carolina Beach	7	3,969	$520,101
Oak Island	8	3,607	$506,365
Topsail Beach	5	1,147	$459,743
Holden Beach	8	1,973	$450,495
City of Charlotte	5	2,907	$397,306
North Topsail	7	1,303	$304,113
Carteret County	8	4,039	$278,258
Wrightsville Beach	8	2,608	$279,319

Top 12 NC CRS Community Savings

COMMUNITY	CRS CLASS	NUMBER OF POLICIES	ANNUAL SAVINGS
Nags Head	6	3,713	$704,694
Dare County	8	9,848	$650,575
Kill Devil Hills	6	4,427	$592,050
Ocean Isle Beach	8	2,986	$564,626
Carolina Beach	7	3,969	$520,101
Oak Island	8	3,607	$506,365
Topsail Beach	5	1,147	$459,743
Surf City	7	2,186	$450,119
Holden Beach	8	1,973	$450,495
City of Charlotte	5	2,907	$397,306
North Topsail	7	1,303	$304,113
Carteret County	8	4,039	$278,258

Who certifies building elevations?

Surveyor Engineer Architect



In order to be rated properly, the insured needs a professional like you to certify the building elevation information.

EC Form Instructions

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

Instructions for Completing the Elevation Certificate

OMB No. 1660-0008
Expiration Date: July 31, 2015

The Elevation Certificate is to be completed by a land surveyor, engineer, or architect who is authorized by law to certify elevation information when elevation information is required for Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, or AR/AO. Community officials who are authorized by law or ordinance to provide floodplain management information may also complete this form. For Zones AO and A (without BFE), a community official, a property owner, or an owner's representative may provide information on this certificate, unless the elevations are intended for use in supporting a request for a LOMA or LOMR-F. Certified elevations must be included if the purpose of completing the Elevation Certificate is to obtain a LOMA or LOMR-F.

The property owner, the owner's representative, or local official who is authorized by law to administer the community floodplain ordinance can complete Section A and Section B. The partially completed form can then be given to the land surveyor, engineer, or architect to complete Section C. The land surveyor, engineer, or architect should verify the information provided by the property owner or owner's representative to ensure that this certificate is complete.

Community's EC Review

Community Officials MUST REVIEW EC's before excepting them to ensure:

- **Completeness**
- **Reasonableness/Accuracy**
- **Compliance**

If problems are found, return to professional for correction.

Structure will be in violation until proper Finished Construction Elevation Certificate is provided.

Pre-FIRM vs. Post-FIRM

On or before 12/31/74 or before the original FIRM date

After 12/31/74 and on or after the original FIRM date

Federal Emergency Management Agency
Community Status Book Report
NORTH CAROLINA
Communities Participating in the National Flood Program

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date	Tribal
370165#	ABERDEEN, TOWN OF	MOORE COUNTY	11/30/73	05/15/86	01/02/08	05/15/86	No
370131#	AHOSKIE,TOWN OF	HERTFORD COUNTY	02/22/74	05/01/87	08/03/09(M)	05/01/87	No
370001#	ALAMANCE COUNTY*	ALAMANCE COUNTY	01/03/75	12/01/81	01/02/08	12/01/81	No
370457#	ALAMANCE, VILLAGE OF	ALAMANCE COUNTY	01/03/75	08/15/90	01/02/08	12/17/87	No
370223#	ALBEMARLE, CITY OF	STANLY COUNTY	12/21/73	12/01/81	06/16/09	12/01/81	No
370398#	ALEXANDER COUNTY*	ALEXANDER COUNTY	06/09/78	02/01/91	07/07/09	02/01/91	No
370004#	ALLEGHANY COUNTY*	ALLEGHANY COUNTY	07/01/77	02/01/04	11/04/09	02/01/04	No
370404#	ALLIANCE, TOWN OF	PAMLICO COUNTY	07/14/78	08/05/85	07/02/04	08/05/85	No
370060#	ANDREWS, TOWN OF	CHEROKEE COUNTY	03/08/74	02/01/85	04/19/10	02/01/85	No
370522#	ANGIER, TOWN OF	HARNETT COUNTY		04/16/90	07/17/07	02/03/00	No
370284#	ANSON COUNTY *	ANSON COUNTY	07/15/77	06/18/90	10/16/08	06/18/90	No
370467#	APEX, TOWN OF	WAKE COUNTY		03/03/92	04/16/07	03/20/92	No
370273#	ARCHDALE, CITY OF	GUILFORD COUNTY/RANDOLPH COUNTY	03/01/74	07/16/81	03/16/09	07/16/81	No
370462#	ARCHER LODGE, TOWN OF	JOHNSTON COUNTY		12/02/05	12/02/05	05/06/14	No
370007#	ASHE COUNTY *	ASHE COUNTY	01/03/75	08/16/88	12/03/09	08/16/88	No

http://www.fema.gov/cis/NC.pdf

Federal Emergency Management Agency
Community Status Book Report
NORTH CAROLINA
Communities Participating in the National Flood Program

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date	Tribal
370261#	YANCEY COUNTY *	YANCEY COUNTY	06/23/78	04/17/84	06/02/09	04/17/84	No
370641#	YANCEYVILLE, TOWN OF	CASWELL COUNTY		09/28/07	09/28/07	09/28/07	No
370494#	YOUNGSVILLE, TOWN OF	FRANKLIN COUNTY		01/19/01	04/16/13	01/19/01	No
370246#	ZEBULON, TOWN OF	WAKE COUNTY	03/08/74	07/03/78	04/16/13	07/03/78	No

Summary:

Total In Flood Program	576
Total In Emergency Program	0
Total In the Regular Program	576
Total In Regular Program with No Special Flood Hazard	28
Total In Regular Program But Minimally Flood Prone	12

Federal Emergency Management Agency
Community Status Book Report
NORTH CAROLINA
Communities Not in the National Flood Program

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Sanction Date	Tribal

Summary:

Total Not in Flood Program	42
Total Suspended from Emergency Program	1
Total Suspended from Regular Program	4
Total Withdrawn Communities Not In Program	0
Total Not In Program With Hazard Area Identified	42
Total Not In Program With Hazard Area Identified < 1 Year	0

Communities Not in the National Flood Program

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Sanction Date	Tribal
370541#	ANSONVILLE, TOWN OF	ANSON COUNTY		09/03/08	09/03/08	05/19/05(S)	No
370029#	ASKEWVILLE, TOWN OF	BERTIE COUNTY		02/04/09	08/03/09	02/04/10	No
370548#	BISCOE, TOWN OF	MONTGOMERY COUNTY		01/02/08	06/16/09	01/02/09	No
370659#	BOARDMAN, TOWN OF	COLUMBUS COUNTY		06/02/06	02/16/07	06/02/07	No
370551#	BOONVILLE, TOWN OF	YADKIN COUNTY		05/18/09	08/18/09	05/18/10	No
370329#	BUNN, TOWN OF	FRANKLIN COUNTY		01/19/01	04/16/13	01/19/02	No
370603#	DOBSON, TOWN OF	SURRY COUNTY		08/18/09	08/18/09	08/18/10	No
370560#	EAST BEND, TOWN OF	YADKIN COUNTY		05/18/09	08/18/09	05/18/10	No
370225#	ELKIN, TOWN OF	WILKES COUNTY,SURRY COUNTY	06/28/74	08/15/78	12/03/09	08/15/78(S)	No
370563#	EUREKA, TOWN OF	WAYNE COUNTY		12/02/05	04/16/13	12/02/06	No
375350#	FRANKLIN, TOWN OF	MACON COUNTY	02/23/71	08/13/76	04/19/10	07/03/78(S)	No
370571#	GRANTSBORO, TOWN OF	PAMLICO COUNTY	06/16/78	09/04/85	07/02/04	06/16/79	No
	Sanctions will take effect on 07/02/05, the community's previous FIRM was NSFHA.						
370572#	GROVER, TOWN OF	CLEVELAND COUNTY		02/20/08	07/02/08	02/20/09	No
370415#	HALIFAX , TOWN OF	HALIFAX COUNTY		07/03/07	02/04/09	07/03/08	No
370460#	HOFFMAN, TOWN OF	RICHMOND COUNTY	07/28/78	09/06/89	09/03/08	07/28/79	No
370303#	LAWNDALE, TOWN OF	CLEVELAND COUNTY	07/11/75	02/20/08	07/02/08	07/11/76	No
370112#	LEWISTON WOODVILLE, TOWN OF	BERTIE COUNTY		02/04/09	08/03/09	02/04/10	No
370459#	LUMBER BRIDGE, TOWN OF	ROBESON COUNTY		02/17/89	01/05/07	02/17/90	No
370587#	MAXTON, TOWN OF	SCOTLAND COUNTY,ROBESON COUNTY		01/19/05	01/05/07	01/19/06	No
370670#	MCDONALD, TOWN OF	ROBESON COUNTY		01/19/05	01/05/07	01/19/06	No

Federal Emergency Management Agency
Community Status Book Report
NORTH CAROLINA
Communities Not in the National Flood Program

370500#	MICRO, TOWN OF	JOHNSTON COUNTY		10/20/00	01/05/07	10/20/01	No
370393#	MIDWAY, TOWN OF	DAVIDSON COUNTY		03/16/09	06/16/09	03/16/10	No
370025#	MILLS RIVER, TOWN OF	HENDERSON COUNTY	01/10/75	03/01/82	01/06/10	01/10/76	No
370590#	MILTON, TOWN OF	CASWELL COUNTY		09/28/07	09/28/07	09/28/08	No
370592#	MOORESBORO, TOWN OF	CLEVELAND COUNTY		02/20/08	07/02/08	02/20/09	No
370671#	MORVEN, TOWN OF	ANSON COUNTY		08/19/08	10/16/08	08/19/09	No
370672#	MOUNT GILEAD, TOWN OF	MONTGOMERY COUNTY		01/02/08	06/16/09	01/02/09	No
370594#	NORLINA, TOWN OF	WARREN COUNTY		04/16/07	02/04/09	04/16/08	No
370349#	ORRUM, TOWN OF	ROBESON COUNTY	04/25/75	02/17/89	01/05/07	02/22/05(S)	No
370689#	OSSIPEE, TOWN OF	ALAMANCE COUNTY		09/06/06	01/02/08	09/06/07	No
370454#	PARKTON, TOWN OF	ROBESON COUNTY		02/17/89	01/05/07	02/17/90	No
370598#	PILOT MOUNTAIN, TOWN OF	SURRY COUNTY		08/18/09	08/18/09	08/18/10	No
370258#	RONDA, TOWN OF	WILKES COUNTY	09/06/74	07/03/86	12/03/09	07/03/86(S)	No
370636#	ROWLAND, TOWN OF	ROBESON COUNTY		01/19/05	01/05/07	01/19/06	No
370355#	RUTH, TOWN OF	RUTHERFORD COUNTY	04/01/77	07/02/08	01/06/10	04/01/78	No
370677#	SANDY CREEK, TOWN OF	BRUNSWICK COUNTY		06/02/06	10/16/08	06/02/07	No
370644#	SANDYFIELD, TOWN OF	COLUMBUS COUNTY		06/02/06	02/16/07	06/02/07	No
370656#	SANTEETLAH, TOWN OF	GRAHAM COUNTY		02/18/09	04/19/10	02/18/10	No
370613#	SEAGROVE, TOWN OF	RANDOLPH COUNTY		01/02/08	03/16/09	01/02/09	No
370647#	TAYLORTOWN, TOWN OF	MOORE COUNTY		10/17/06	01/02/08	10/17/07	No
370646#	WACO, TOWN OF	CLEVELAND COUNTY		02/20/08	07/02/08	02/20/09	No
370262#	WILSON'S MILLS, TOWN OF	JOHNSTON COUNTY		10/20/00	01/05/07	10/20/01	No

Elevation Certificate Sections

Section A – Property Info
Section B – FIRM Info
Section C – Building Elevation (if BFE on maps)
Section D – Survey Certification
Section E – Building Elevation (no BFE)
Section F – Property Owner Certification
Section G – Community Info

Section A (for all zones)

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

ELEVATION CERTIFICATE

IMPORTANT: Follow the instructions on pages 1–9.

OMB No. 1660-0008
Expiration Date: July 31, 2015

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE

Policy Number:

Company NAIC Number:

A1. Building Owner's Name

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

City **OR** 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: ☐ NAD 1927 ☐ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number _____

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

a) Square footage of crawlspace or enclosure(s) _____ sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A8.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:

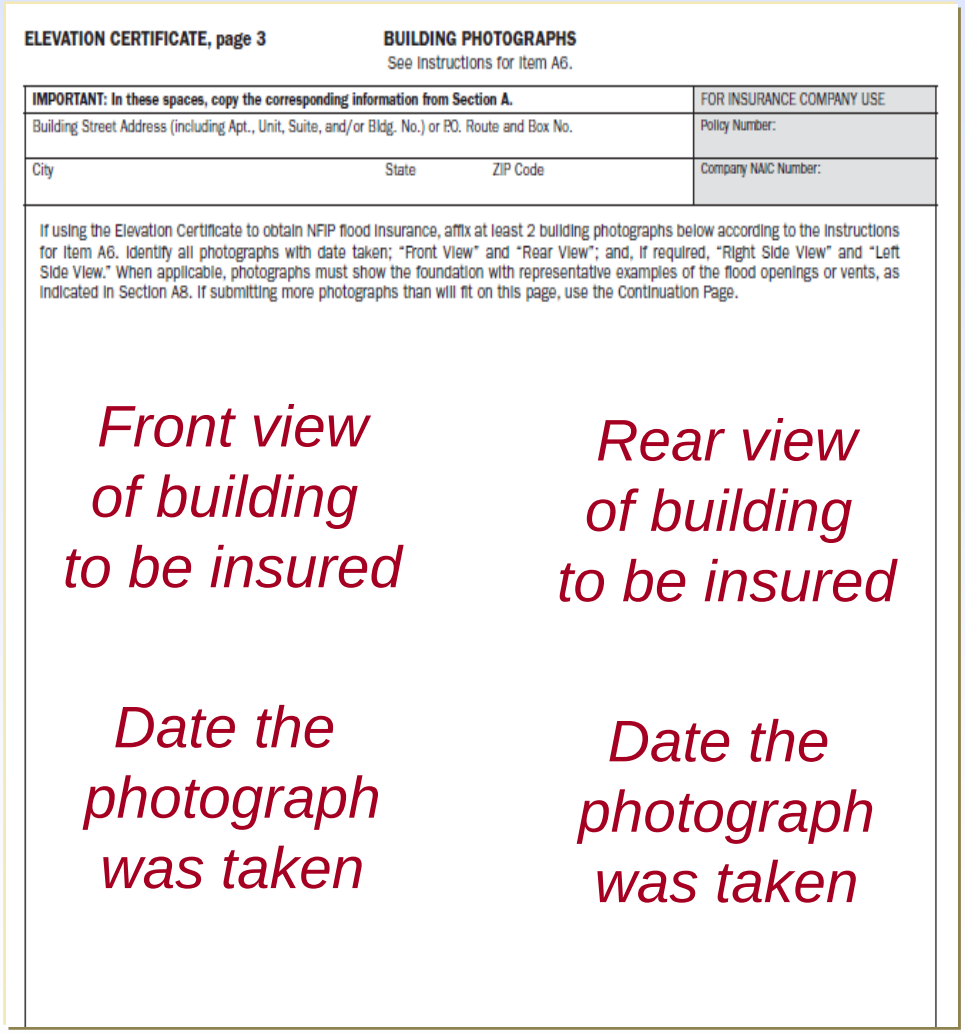
a) Square footage of attached garage _____ sq ft

b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A9.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

Building Photographs



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.	Policy Number:
City State ZIP Code	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.

Front view of building to be insured

Rear view of building to be insured

Date the photograph was taken

Date the photograph was taken

(A6) An additional form for attaching photographs is provided with the new Elevation Certificate.

- 3"x3" color photographs
- Digital is acceptable
- At least two photographs showing front and rear of building
- If building is split- or multi-level, at least 2 additional photographs are needed
- Helpful to show the lowest level of the building that is above grade.

Building Photographs

ELEVATION CERTIFICATE, page 4 **BUILDING PHOTOGRAPHS**
Continuation Page

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

If submitting more photographs than will fit on the preceding page, affix the additional photographs below. 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.

Right side view of the building to be insured

Left side view of the building to be insured

Date the photograph was taken

Date the photograph was taken

- Include the date the photograph was taken
  - Must be taken within 90 days from the date of certification
- Photographs should capture key elements such as flood openings

Sections A1-A3

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.) _____	

- Complete **all** items, except "For Insurance Company Use".
- A1. Building Owner's(s') Name(s)
- A2. **Building Address** - 911 address of building location.
- A3. The address is a rural route, enter the lot & block numbers, the tax parcel number, the legal description.

Section A4

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.) _____		

- A4. **Building Use** - residential, non-residential, an addition to an existing residential or non-residential building, an accessory building (e.g., garage), or other type of structure.
- **Use the Comments area on page 2 or attach**
- **additional comments, as needed.**

Section A5

A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number _____

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

a) Square footage of crawlspace or enclosure(s) _____ sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A8.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:

a) Square footage of attached garage _____ sq ft

b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A9.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

- Latitude/Longitude taken at the center of the front of the building.
- Decimal degrees: provide coordinates to at least 4 decimal places or better (e.g., 39.5043°, -110.7585°).
- Coordinates must be accurate within 66 feet.
- Provide the type of datum used - FEMA prefers the use of NAD 1983.

Sections A6-A7

A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number _____

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

a) Square footage of crawlspace or enclosure(s) _____ sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A8.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:

a) Square footage of attached garage _____ sq ft

b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A9.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

- A6. Attach photographs showing **at least** the front & rear of the building. **Must be in color** & measure at least 3”x3”. If split-level or multi-level, side views are also required.
- A7. Enter the **building diagram number** that best represents the building. There are now 10 building diagrams.

DIAGRAM 1A

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

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

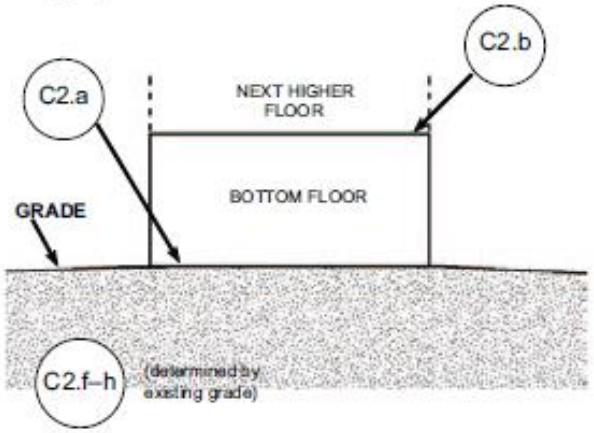


DIAGRAM 1B

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.*

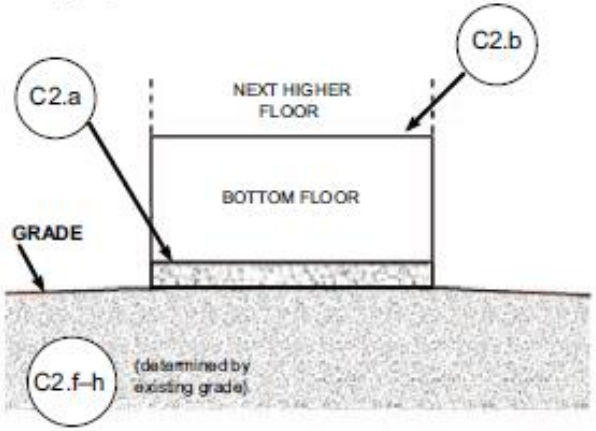
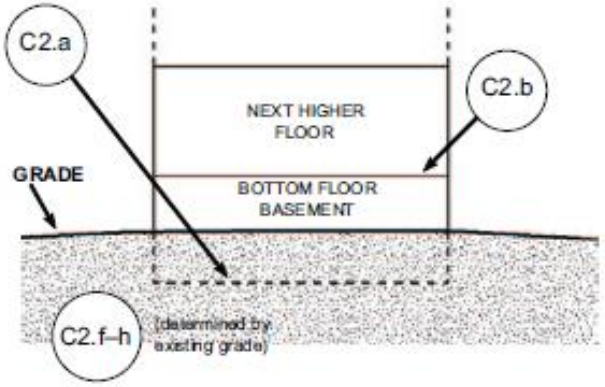


DIAGRAM 2

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.*



N★C DPS
DEPARTMENT OF PUBLIC SAFETY

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.*

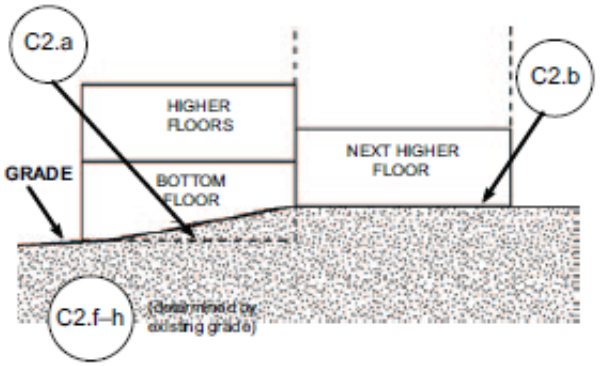


DIAGRAM 4

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.*

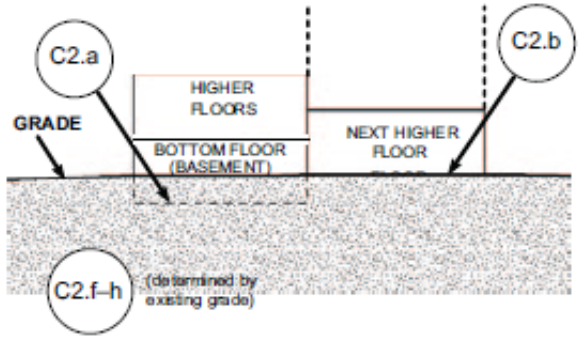


DIAGRAM 5

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).

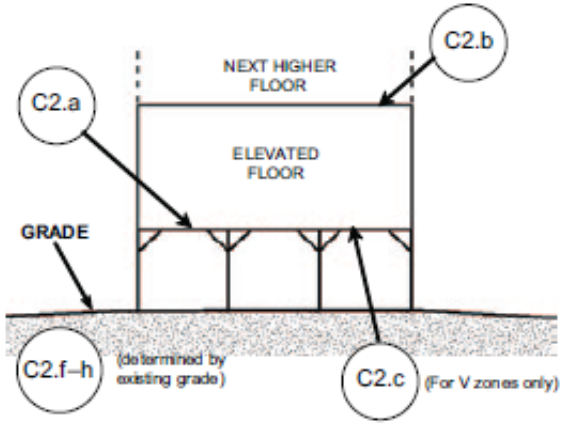
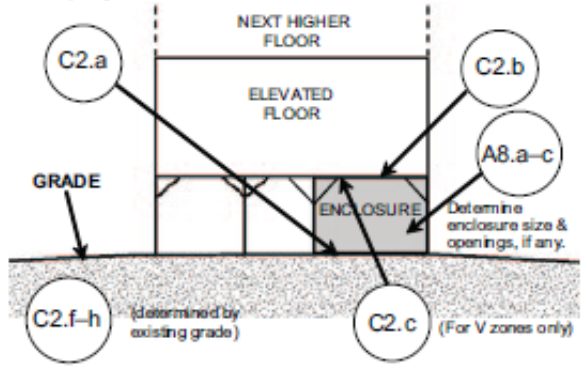


DIAGRAM 6

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.



N★C DPS
DEPARTMENT OF PUBLIC SAFETY

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 one side is at or above grade. The principal use of this building is located in the elevated floors of the building.

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

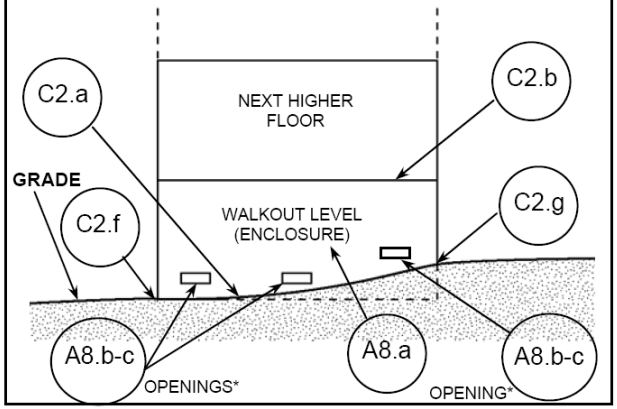


DIAGRAM 8

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

Distinguishing Feature – For all zones, the area below the first floor is enclosed by solid or partial perimeter walls. In all A zones, the 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.

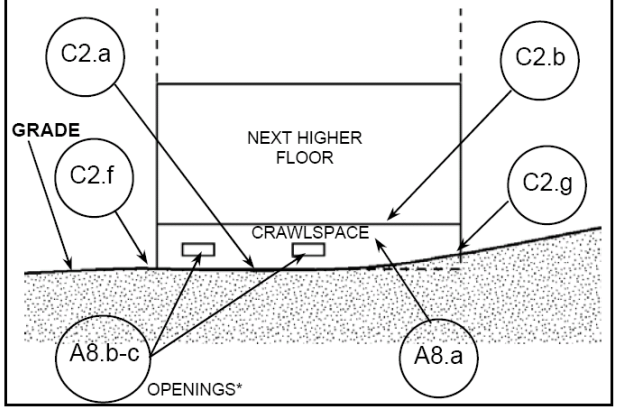
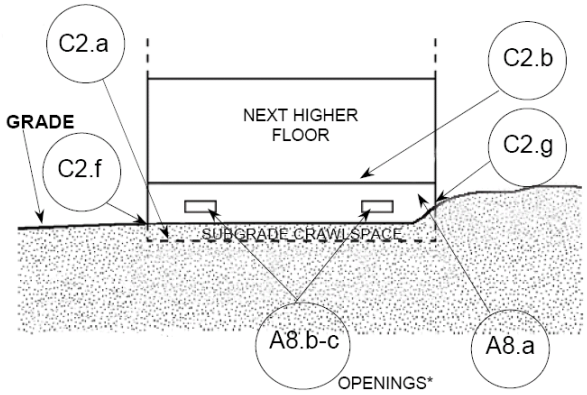


DIAGRAM 9

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

Distinguishing Feature – The bottom (crawlspace) floor is at or 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.)



N★C DPS
DEPARTMENT OF PUBLIC SAFETY

Section A8a-b

A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number _____

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

a) Square footage of crawlspace or enclosure(s) _____ sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A8.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:

a) Square footage of attached garage _____ sq ft

b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A9.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

For buildings with a crawlspace or enclosure(s).

- A8.a. Square footage of crawlspace or enclosure(s). Take measurements from the outside.
- A8.b. Number of permanent flood openings in the crawlspace or enclosure(s) that are no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening

Section A8c

A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number _____

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

a) Square footage of crawlspace or enclosure(s) _____ sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A8.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:

a) Square footage of attached garage _____ sq ft

b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A9.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

- A8.c. Calculate the total net area of all such permanent flood openings in square inches, excluding any bars, louvers, or other covers of the permanent flood openings.

If the net area cannot be calculated, provide the size of the flood openings without consideration of any covers & indicate in the Comments area the type of cover that exists in the flood openings.

Section A8d

A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number _____

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

a) Square footage of crawlspace or enclosure(s) _____ sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A8.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:

a) Square footage of attached garage _____ sq ft

b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A9.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

- A8.d. Engineered flood openings. Attach a copy of the Individual Engineered Flood Openings Certification or an Evaluation Report issued by the International Code Council Evaluation Service (ICC ES), if you have it.

If the crawlspace or enclosure(s) have no permanent flood openings, or if the openings are not within 1.0 foot above adjacent grade, enter "0" (zero) in Items A8.b-c.

FEMA Technical Bulletin 1: "Openings in Foundation Walls and Walls of Enclosures"

Standards for Elevation
on Perimeter Wall Foundations

- In Zones A & AE, fully enclosed areas below the lowest floor shall be designed to automatically equalize hydrostatic flood forces on walls by allowing for the entry & exit of floodwaters
- To meet this requirement, the openings must be:
  - certified by a registered engineer or architect, **OR**
  - meet or exceed the minimum opening requirements

Hydrostatic Openings

Permanent Opening in a Wall that Allows the Free Passage of Water in Both Directions, **AUTOMATICALLY**, without Human Intervention.

A Window, a Door, or a Garage Door is **NOT** Considered an Opening.

Minimum Requirements for Foundation Openings

- Minimum of two openings on different sides of each enclosed area.
- The total net area of all openings must be at least one (1) square inch for each square foot of enclosed area.
- The bottom of all required openings shall be no higher than one foot above the adjacent grade at each opening.
- Openings may be equipped with screens, louvers, or other "automatic" coverings or devices, provided they permit the automatic flow of floodwaters in both directions.

FEMA Elevation Certificate

Instructions:

Items A8.b–d Enter in Item A8.b the number of permanent flood openings in the crawlspace or enclosure(s) that are no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. (A permanent flood opening is a flood vent or other opening that allows the free passage of water automatically in both directions without human intervention.) If the interior grade elevation is used, note this in the Comments area of Section D. Estimate the total net area of all such permanent flood openings in square inches, excluding any bars, louvers, or other covers of the permanent flood openings, and enter the total in Item A8.c. If the net area cannot be reasonably estimated, provide the size of the flood openings without consideration of any covers and indicate in the Comments area the type of cover that exists in the flood openings. Indicate in Item A8.d whether the flood openings are engineered. If applicable, attach a copy of the Individual Engineered Flood Openings Certification or an Evaluation Report issued by the International Code Council Evaluation Service (ICC ES), if you have it. If the crawlspace or enclosure(s) have no permanent flood openings, or if the openings are not within 1.0 foot above adjacent grade, enter "0" (zero) in Items A8.b–c.

R322.2.2 Enclosed area below design flood elevation. Enclosed areas, including crawl spaces, that are below the design flood elevation shall:

1. Be used solely for parking of vehicles, building access or storage.
2. Be provided with flood openings that meet the following criteria:

   2.1. There shall be a minimum of two openings on different sides of each enclosed area; if a building has more than one enclosed area below the design flood elevation, each area shall have openings on exterior walls.

   2.2. The total net area of all openings shall be at least 1 square inch (645 mm²) for each square foot (0.093 m²) of enclosed area, or the openings shall be designed and the construction documents shall include a statement by a registered design professional that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified in Section 2.6.2.2 of ASCE 24.

   2.3. The bottom of each opening shall be 1 foot (305 mm) or less above the adjacent ground level.

   2.4. Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall.

   2.5. Any louvers, screens or other opening covers shall allow the automatic flow of floodwaters into and out of the enclosed area.

   2.6. Openings installed in doors and windows, that meet requirements 2.1 through 2.5, are acceptable; however, doors and windows without installed openings do not meet the requirements of this section.


Net area?


1 foot?


This looks like 1 foot or less.


This looks like 1 foot or less.


This is compliant


Plexiglas cover. This is a violation!!


Spray foam insulation. This is a violation!!

DEPARTMENT OF

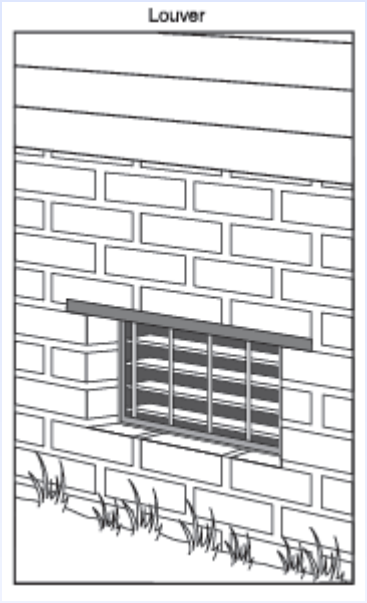
DEPARTMENT OF PUBLIC SAFETY
NORTH CAROLINA
ergency Management

Openings in Foundation Walls and Walls of Enclosures

Below Elevated Buildings in Special Flood Hazard Areas in accordance with the National Flood Insurance Program

Technical Bulletin 1 / August 2008

FEMA



Page 17: Openings that extend above the BFE

Only those portions of openings that are below the BFE can be counted towards the required net open area.

Depth of water 1 foot or less

Some FIRMs show mapped SFHAs where the depth of water will be 1-foot deep or shallower. Although the difference in water depth between the outside and inside of the enclosure under a building in these areas will not exceed 1 foot during the base flood, the NFIP regulations require openings.

There are at least two solutions to this situation. The first is to elevate the floor of the enclosure the necessary height so that it is at or above the BFE and there is no need for openings. The second solution is to install openings, taking care to ensure that all of the necessary open area is below the BFE (otherwise the openings will not function as intended). This can be accomplished by positioning the bottom of the openings at or very close to grade, rather than the maximum of 1 foot above grade. In addition to complying with the regulations, the walls will not experience excessive differential hydrostatic pressure when floodwaters rise higher than the BFE.

Engineered Openings/Vents

Plastic – No Rust or Rot Crawlspace Flood Vent for Homes (New Construction & Replacement)

Easy Access • Modular Use • Can Be Painted

Model Number	Opening Sizes (HxW)	Non Eng. (Sq. In.)	Eng. (Sq. In.)	Net-Free Air (Sq. In.)
D0816	8" X 16"	120	230	95
D1220	12" X 20"	240	425	175
D1232	12" X 32"	380	705	290
D1616	16" X 16"	255	485	200
D1624	16" X 24"	380	695	285
D1632	16" X 32"	510	935	385
D2032	20" X 32"	640	1,225	505
D2424	24" X 24"	575	1,065	435
D2436	24" X 36"	860	1,620	665

Flood Vent (No Cover)

One-piece ventplate with easy to insert vermin screen and fixed louver. Made of durable PVC/ ABS plastic (no rust or rot) with a UV retardant treatment.
FEMA compliant. No cover to allow the automatic entry and exit of floodwaters.
Quick and easy to install.

Crawl Space Door Systems
INCORPORATED

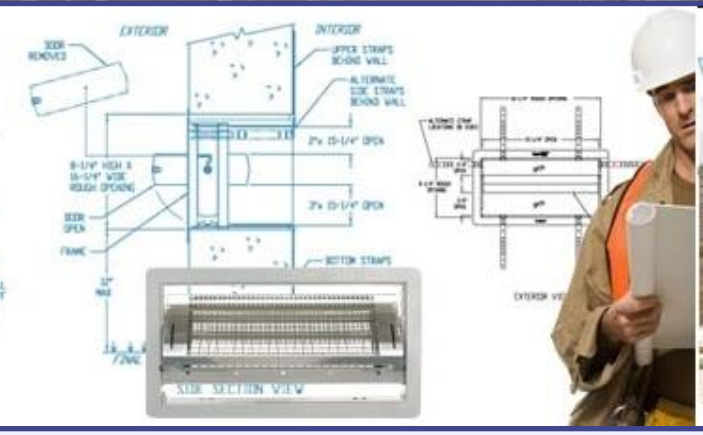
Plastic Crawlspace Doors & Vents
Plastic Crawlspace Louvers/Screens
Plastic FEMA Flood Vents

3700 Shore Drive, Virginia Beach, VA 23455
757.363.0005 • 1.800.230.9598 • www.crawlspacedoors.com

N C DPS
DEPARTMENT OF PUBLIC SAFETY

SMART VENT

ICC ES
FEMA ACCEPTED
ICC-ES EVALUATED



Flood Openings (TB 1 – August 2008)

OOD LOUVER, Patent No. US D583,042, dated December 16, 2008 and owned by
and sized in accordance with Federal Emergency Management Agency's National
lational Flood Insurance Program, Technical Bulletin (TB) 1-August 2008 will allow
es on exterior walls by allowing for entry and exit of floodwater during floods up to

ineered, Net-Free Air and Engineered Opening size for each model and size of the
corded in the table below. The Engineered size opening calculation was performed
ings in Foundation Walls for Buildings Located in Special Flood Hazard Areas in
n and ASCE/SEI 24-05, Flood Resistance Design and Construction. I measured the
ns to determine the Non-Engineered and Net-Free Air opening size for each model.
- Aug 2008 to determine the Engineered opening size for each model. I used the
required (in2); 0.033 = coefficient corresponding to a factor of safety of 5.0 (in2 -
2 "rectangular, long axis horizontal, short axis vertical unobstructed during design
tween the louvers); R = 5 ft/hr worst case rate of rise and fall; and Aê = 1 ft2

0.033 [1/0.40] 5 = .4125 in2

D0816: = 95/.4125 = 230

		Engineered (Sq. es)	Net-Free Air (Sq. Inches)	Engineered (Sq. Inches)
		120	95	230
		240	175	425
		380	290	705
D1616	16" x 16"	255	200	485
D1624	16" x 24"	380	285	695
D1632	16" x 32"	510	385	935
D2032	20" x 32"	640	505	1,225
D2424	24" x 24"	575	435	1,065
D2436	24" x 36"	860	665	1,620

Installation Limitations and Instructions

Each individual opening, and any louvers, screens, or other covers, shall be designed to allow automatic entry and exit of floodwaters during design flood or lesser flood conditions; there shall be a minimum of two different sides of each enclosed area; if a structure has more than one enclosed area below the DFE, each area shall have openings; openings shall not be less than 3 in. in any direction in the plane of the wall; the bottom of each required opening shall be no more than 1 ft above the adjacent ground level; the difference between the exterior floodwater levels shall not exceed 1 ft; in the absence of reliable data on the rates of rise and fall, assume a minimum rate of rise and fall of 5 ft/h.

Signature:
Title: PRESIDENT · HOUSE ENGINEERING, P.C.
Type of License: PROFESSIONAL ENGINEER
License Number: 24740

NORTH CAROLINA PROFESSIONAL SEAL 24740 ENGINEER FREDERICK HOUSE
Professional Seal

Smart VENT
877- 441- 8368
www.smartvent.com

DETAIL DIAGRAM
MODEL 1540-520
FLOOD VENT INSULATED

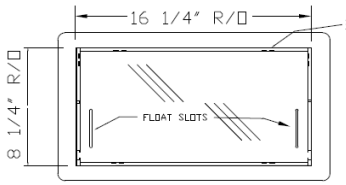


FIGURE 1
Front View

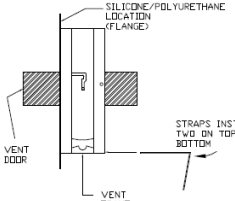


FIGURE 2
Side View

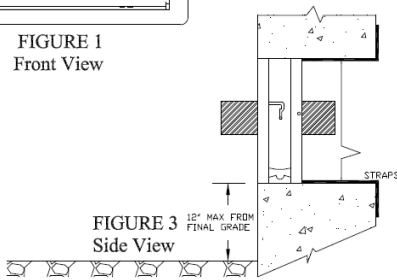
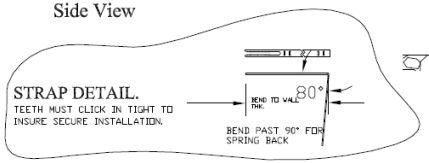


FIGURE 3
Side View



SMART VENT Foundation Flood Vents
459 Andbro Dr. Suite 2B
Pitman NJ 08071
SMART VENT® 877-441-8368 WWW.SMARTVENT.COM
FLOOD VENT INSULATED
MODEL 1540-520
SIZE A | DWG NO. 1540-520 | REV B
DATE 5-15-09 | SHEET 1 OF 2

Section A9

A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: ☐ NAD 1927 ☐ 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) No. of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A8.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:

a) Square footage of attached garage _____ sq ft

b) No. of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A9.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

- Same as Section A8, but for garage when the garage is attached to the building.
- Use the Comments area on page 2 or attach additional comments, as needed.

Sections B1-B9

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION					
B1. NFIP Community Name & Community Number			B2. County Name		B3. State
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)

- B1. Enter name of Community which has permitting jurisdiction.
- B4. Enter the 10 digit panel number.
- B5. Enter the panel suffix (letter following panel number).
- B6. Enter the date from the FIRM Index Panel.
- B7. Enter the FIRM panel effective date.
- B8. Enter the Flood Zone(s) related to the structure.
- B9. Enter the Base Flood Elevation (BFE) for the structure to the nearest tenth of a foot.

Section B1-9

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number			B2. County Name		B3. State
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9:
☐ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other/Source: _____

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

- Complete the Elevation Certificate on the basis of the **FIRM in effect at the time of the certification**.
- Additional &/or preliminary data may be provided in Comments Section.

Sections B10-B12

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) _____

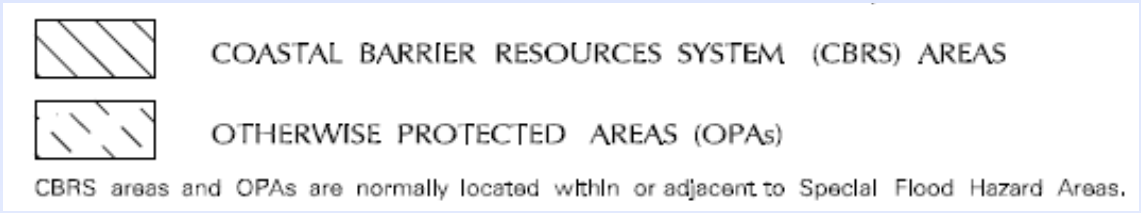
B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☐ NAVD 1988 ☐ Other (Describe) _____

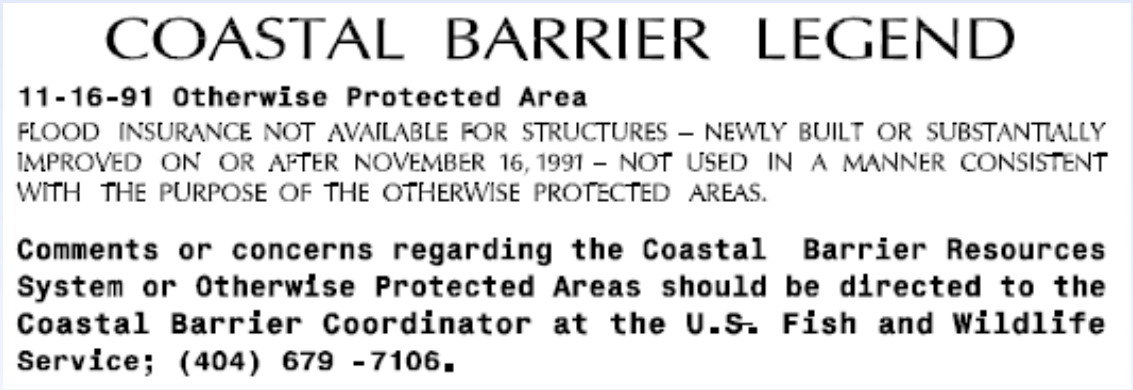
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☐ No

Designation Date_____ ☐ CBRS ☐ OPA

- B10. Check the box for source of BFE data. These are listed in the order of preference. If the flooding source is riverine, the "FIS Profile" box should be selected.
- B11. Check the box for elevation datum used in Item B9. NC maps currently use NAVD 1988.
- B12. Indicate whether or not the building is located in a Coastal Barrier Resource System (CRBS) or Otherwise Protected Area (OPA). Enter the designation date & check "CBRS" or "OPA".

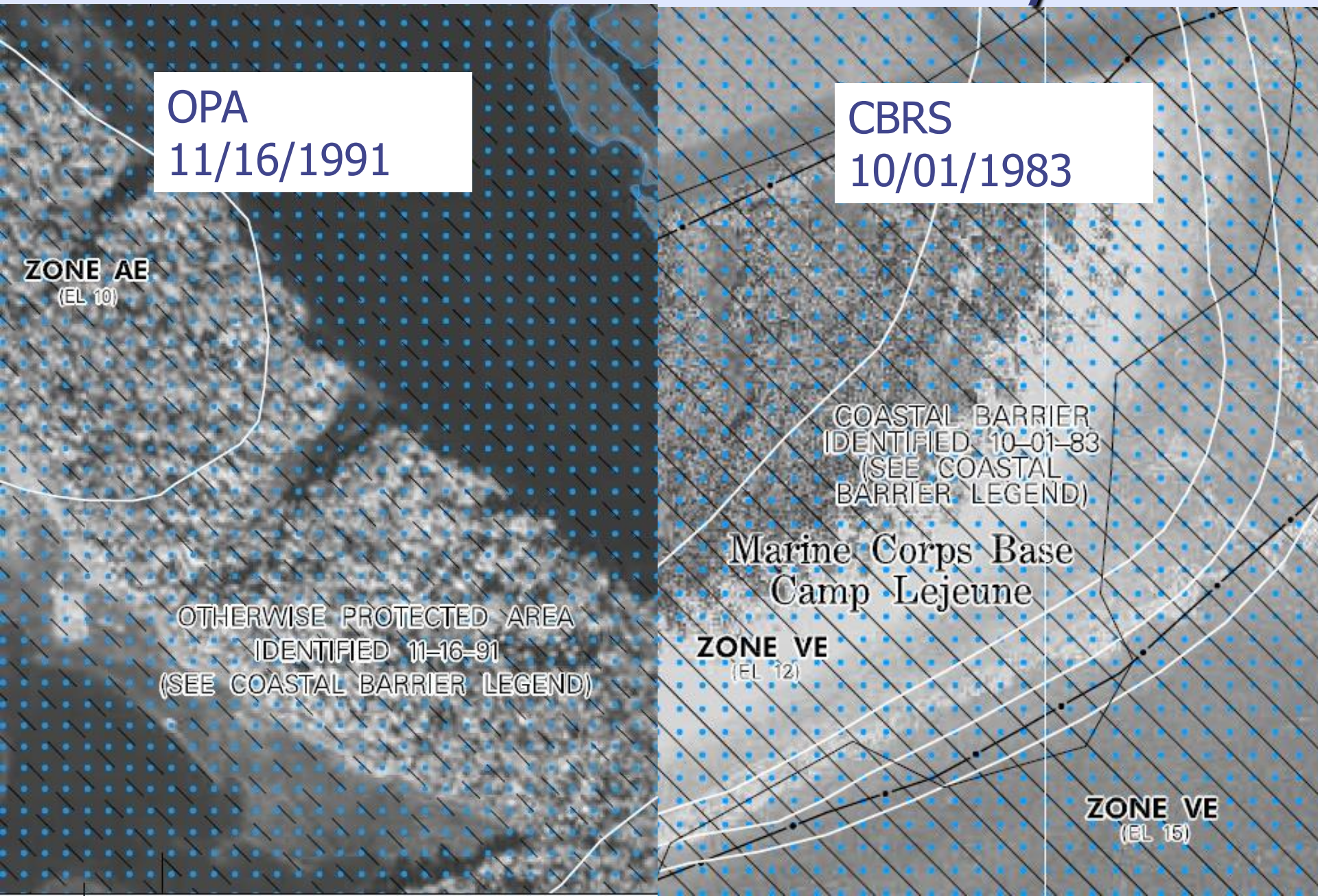
Coastal Barrier Resource System





Federal flood insurance is prohibited in designated CBRS areas or OPAs for buildings or manufactured (mobile) homes built or substantially improved after the date of the CBRS or OPA designation. Information about CBRS areas & OPAs may be obtained on the FEMA web site at: http://www.fema.gov/business/nfip/cbrs/cbrs.shtm

Coastal Barrier Resource System



Complete Two Ways

Either:

- SFHA Zone **with BFEs** Determined
  - Sections C & D

- SFHA Zone **with No BFE** Determined
  - Is rare in Eastern NC

Section C (Zone has BFE)

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

Section C now states the Datum used in this section must match the datum used for the BFE

Section C1

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.

- Item C1. The elevations to be entered in this section are based on **construction drawings**, a **building under construction**, or **finished construction**.
- Use the Comments area of Section D as needed.
- "Finished Construction" is only when all machinery &/or equipment (furnaces, hot water heaters, heat pumps, air conditioners, elevators & their associated equipment) have been installed & the grading around the building is completed.

Section C2

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: _____ Vertical Datum: _____

Indicate elevation datum used for the elevations in items a) through h) below. ☐ NGVD 1929 ☐ NAVD 1988 ☐ Other/Source: _____

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

- A field survey is required for Items C2.a-h.
- Enter the Benchmark Utilized. Provide the PID or other unique identifier assigned by the maintainer of the benchmark. For GPS survey, indicate the benchmark used for the base station, the Continuously Operating Reference Stations (CORS) sites used for an On-line Positioning User Service (OPUS) solution (attach the OPUS report), or the name of the Real Time Network used.
- Note the Vertical Datum. All elevations for the certificate **must** use the same datum on which the BFE is based.

Bench Marks

BM5510  North Carolina Geodetic Survey bench mark

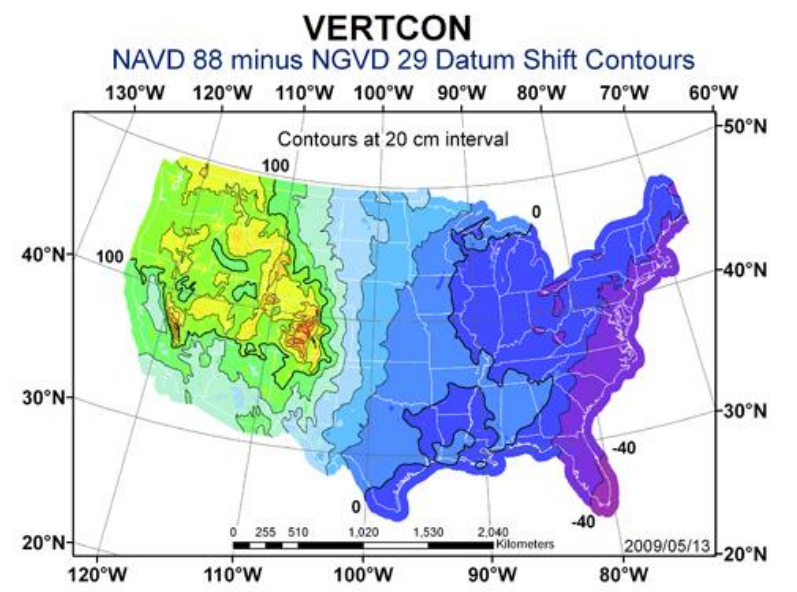
BM5510  National Geodetic Survey bench mark

BM5510  Contractor bench mark (approved by NCGS)

- Identified by their NSRS Permanent Identifier (PID)
- To access current Bench Mark elevation, description, & location information, go to:
- NC Geodetic Survey website: www.ncgs.state.nc.us

  Or
- National Geodetic Survey website: www.ngs.noaa.gov

http://www.ngs.noaa.gov/TOOLS/Vertcon/vertcon.html



Orthometric Height Conversion

Orthometric height conversion is performed by calculating the datum shift based from modeled values
The resulting datum shift is displayed.
The converted orthometric height is displayed only if the height to be converted from was not left blan
***** See input format details below *****

Latitude and Longitude within the Contiguous United States are REQUIRED:

Positions may be entered in any of the following three formats:

1. degrees, minutes and decimal seconds (including leading zeros)

Lon: (XXX XX XX.XXX)	Lat: (XX XX XX.XXX)
Lon: 098 33 23.232 good	Lat: 45 33 23.232 good
Lon: 98 33 23.232 bad	Lat: 5 33 23.232 bad
Lon: 098 03 23.342 good	Lat: 45 03 03.232 good
Lon: 098 3 23.342 bad	Lat: 45 3 3.232 bad

2. degrees and decimal minutes (including leading zeros)

Lon: (XXX XX.XXX)	Lat: (XX XX.XXX)
Lon: 098 23.232 good	Lat: 45 33.232 good
Lon: 98 23.232 bad	Lat: 5 23.232 bad
Lon: 098 03.342 good	Lat: 45 03.232 good
Lon: 098 3.342 bad	Lat: 45 3.232 bad

3. decimal degrees (including leading zeros)

Lon: (XXX.XXX)	Lat: (XX.XXX)
Lon: 098.232 good	Lat: 45.232 good
Lon: 98.232 bad	Lat: 5.232 bad

Note: There MUST be one or more blanks between entry fields
Decimals can be keyed commensurate with the field's precision, but are not req

Orthometric Height to be converted FROM is OPTIONAL:

Height may be entered in either meters or U.S. survey feet:

1. meters: xxxx.xxx
2. feet : xxxx.xx FT (MUST include FT or ft for feet !)

ENTER North Latitude :.....

ENTER West Longitude :.....

ENTER Orthometric Height : -- Entry is Optional; Default units (meters) --

SELECT Vertical Datum :... NGVD 29 NAVD 88 -- of the entered height --

N★C DPS
DEPARTMENT OF PUBLIC SAFETY

North Carolir

Section C2.a-d

		Check the measurement used.	
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)

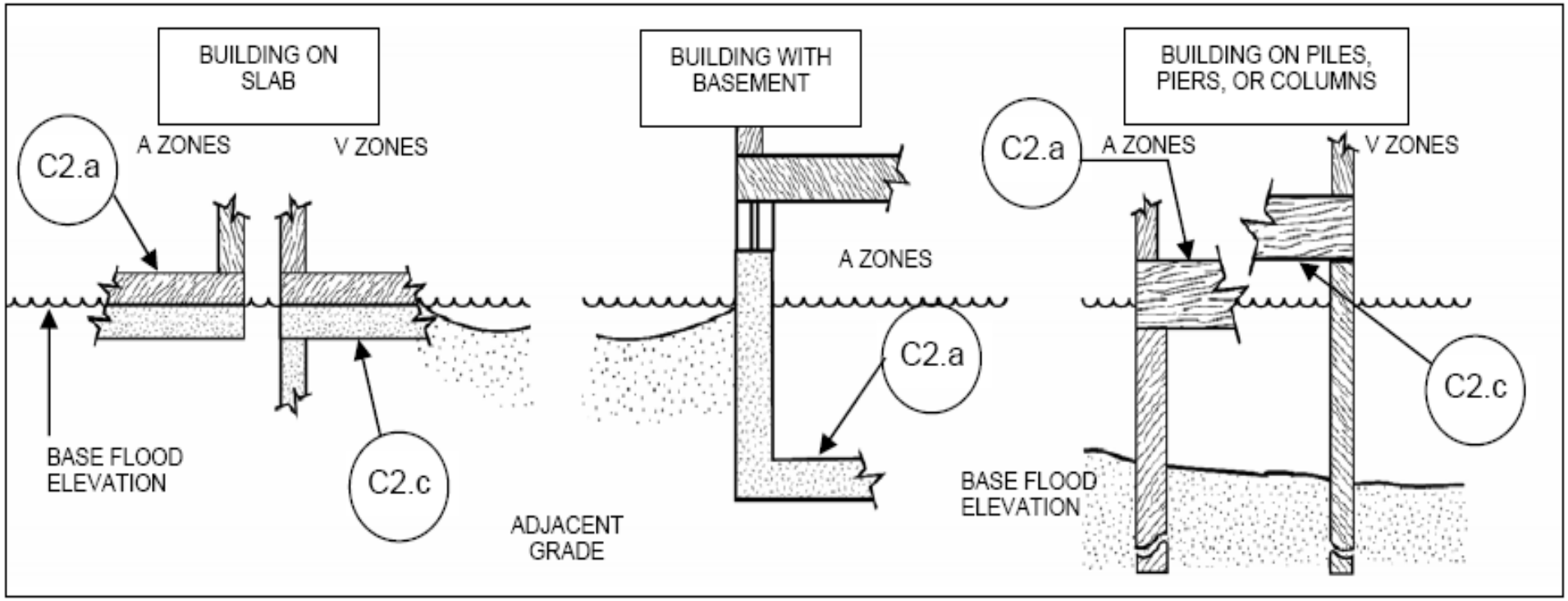
- Items C2.a-c. Enter the building elevations (excluding the attached garage) indicated by the selected building diagram (Item A7).
- If there is an attached garage, enter the elevation for top of attached garage slab in Item C2.d.
- If any item does not apply to the building, enter "N/A" for not applicable.

Section C2.a-d

		Check the measurement used.	
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)

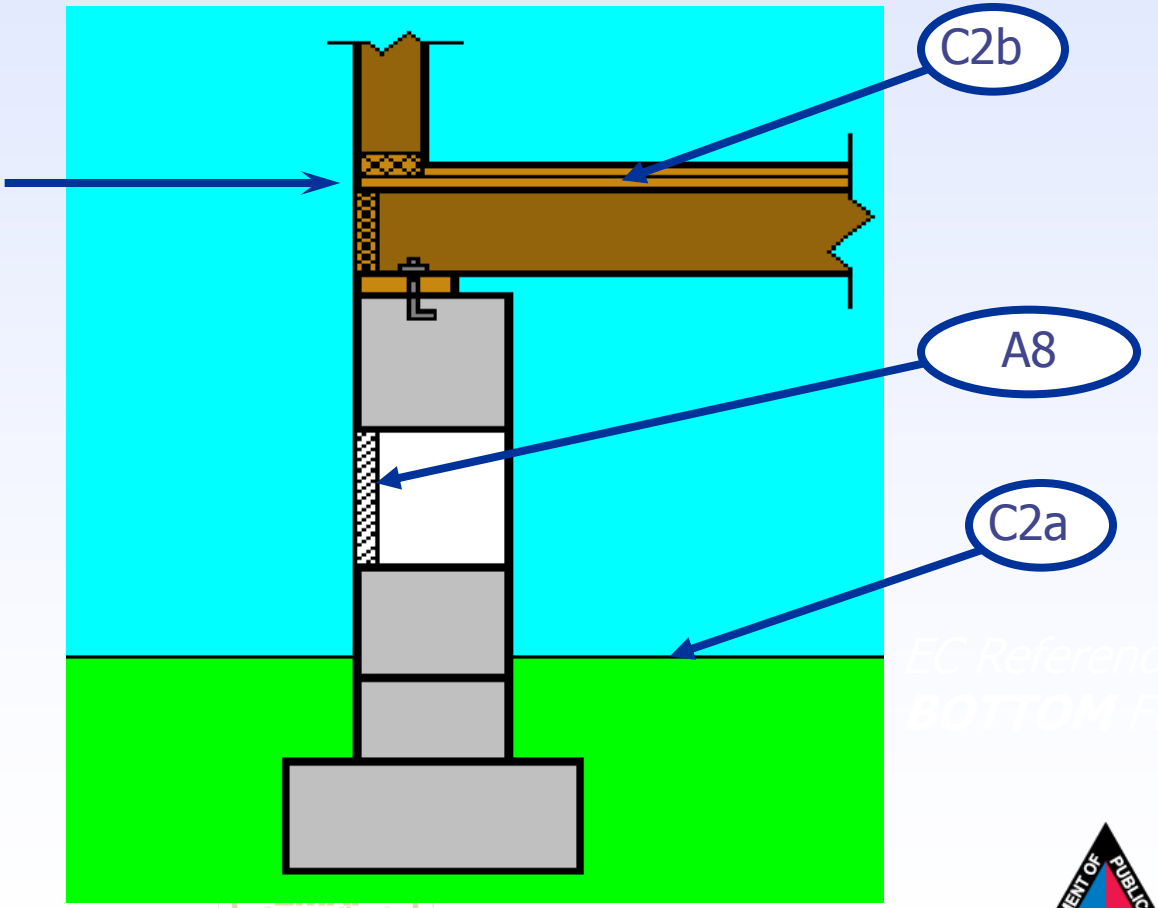
- For buildings in **A** zones: elevations should be measured at the **top of the floor**.
- For buildings in **V** zones: Item C2.c. Elevation c must be measured at **the bottom of the lowest horizontal structural member of the floor**.
- For buildings elevated on a crawlspace enter the elevation of the top of the crawlspace floor in Item C2.a, whether or not the crawlspace has permanent flood openings (flood vents).

Section C2.a and C2.c



Lowest Floor in ZONE A, AE, AH & A1-30

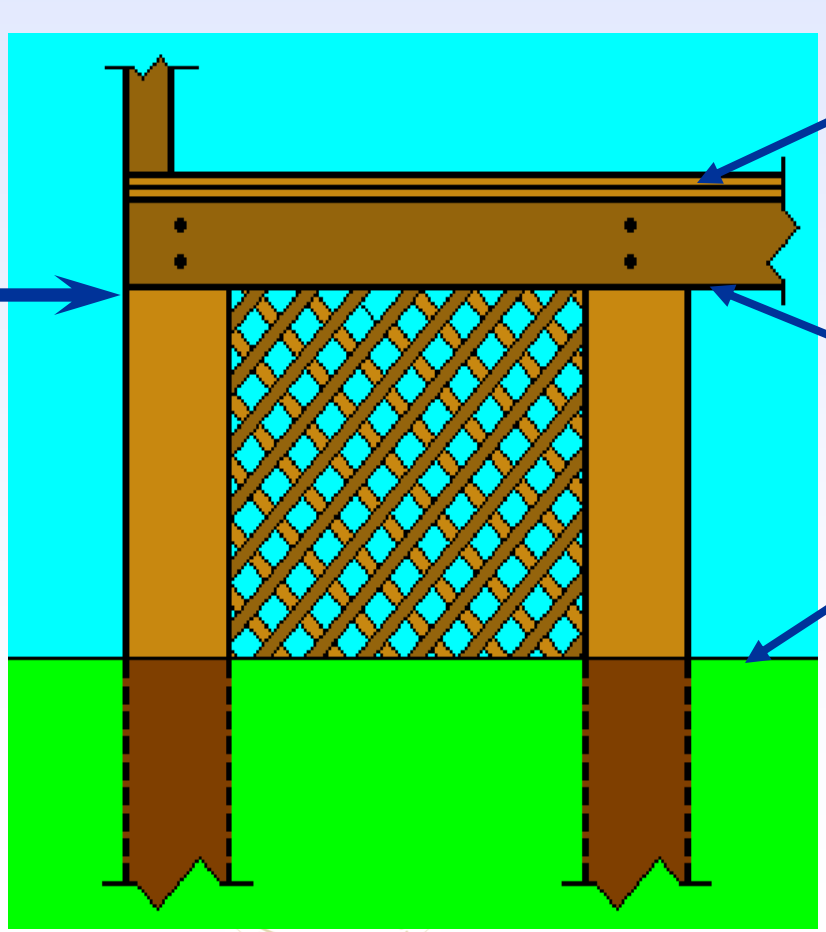
The lowest floor is measured at the top of the sub-floor, slab or grade for regulatory and flood insurance purposes



EC References to ***BOTTOM*** *Floor*

Lowest Floor in ZONE V, & VE

Bottom of the lowest horizontal structural member supporting the lowest floor



North Carolina Emergency Management

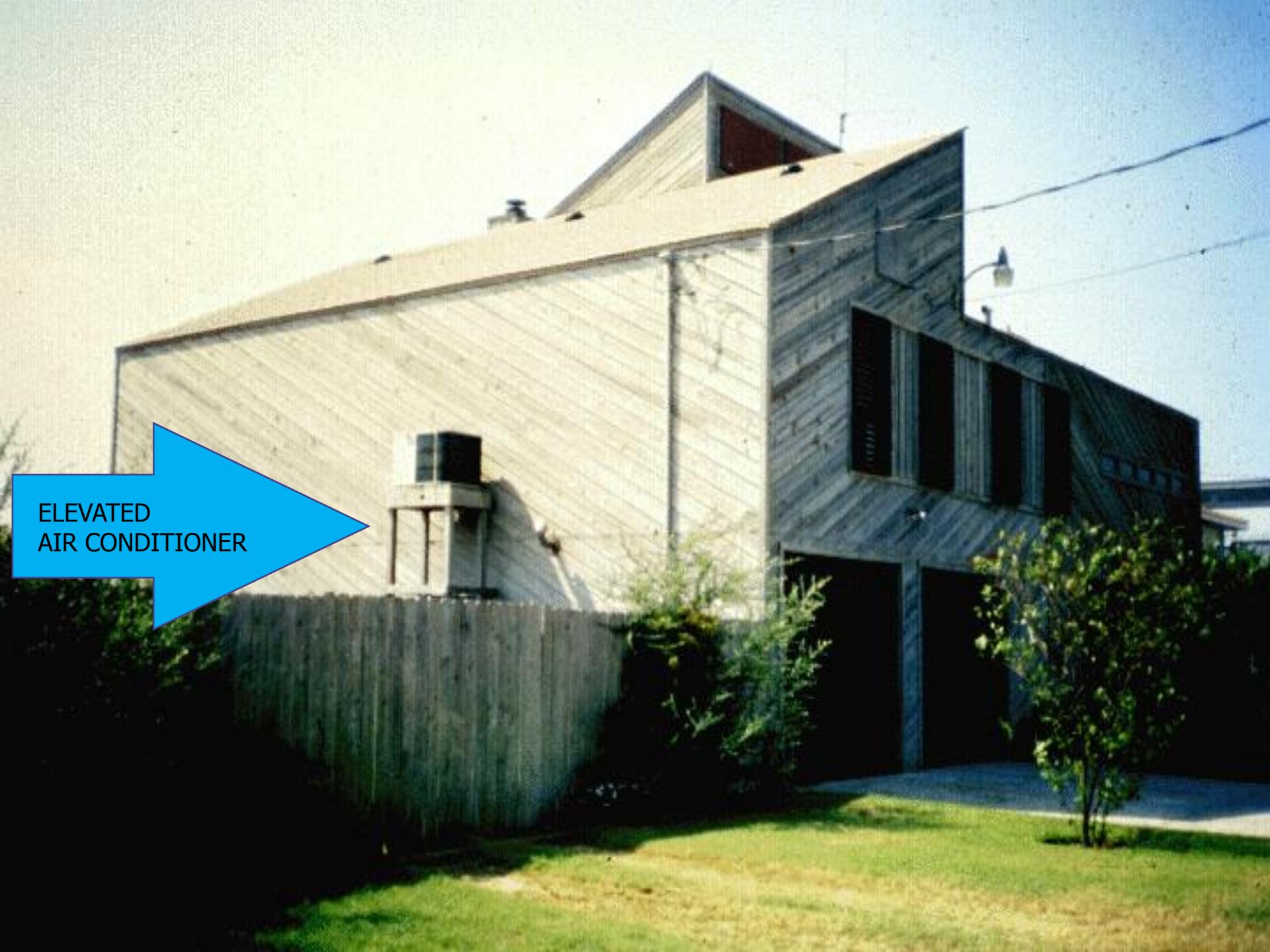
DEPARTMENT OF PUBLIC SAFETY

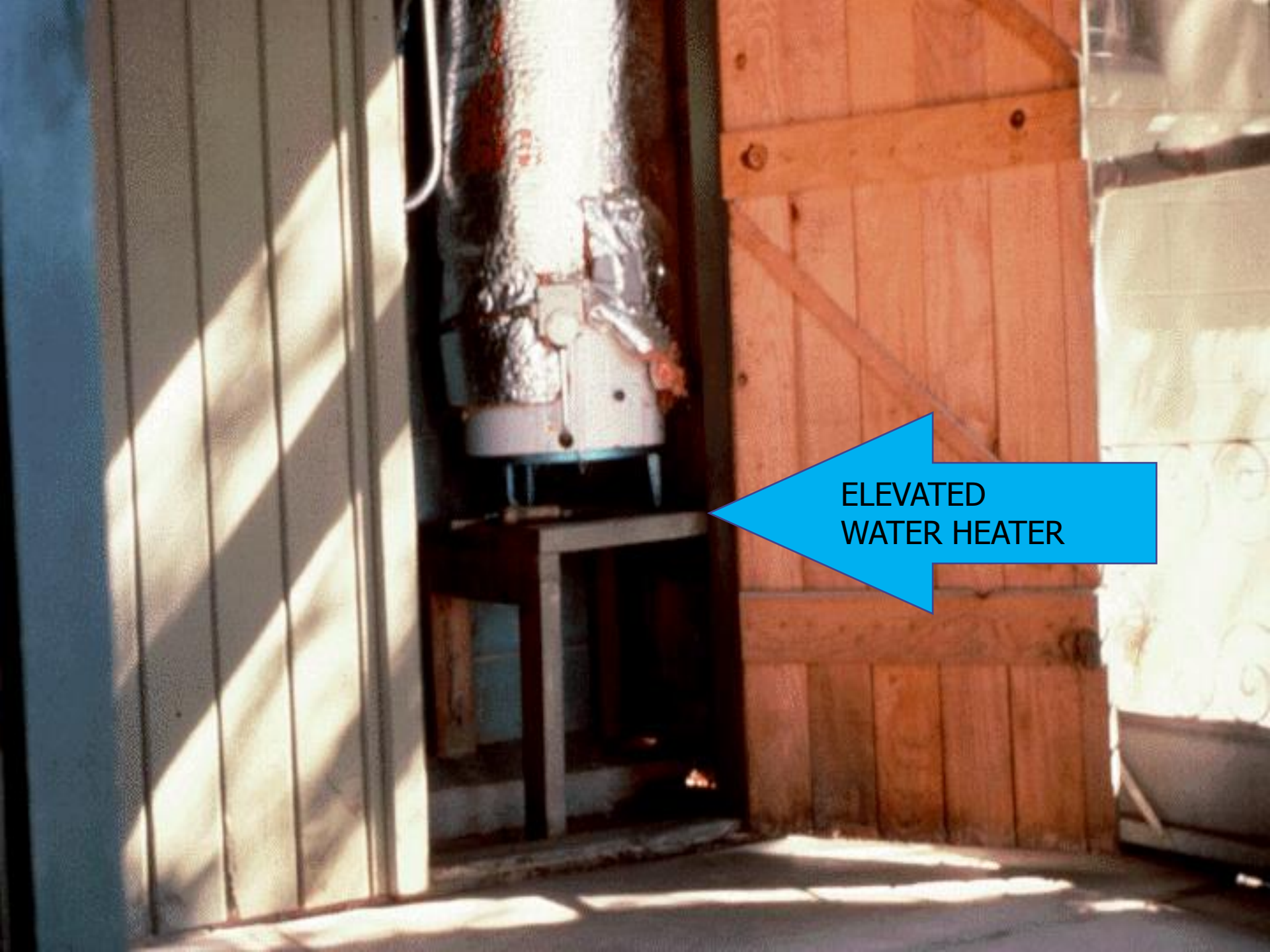
NORTH CAROLINA Emergency Management

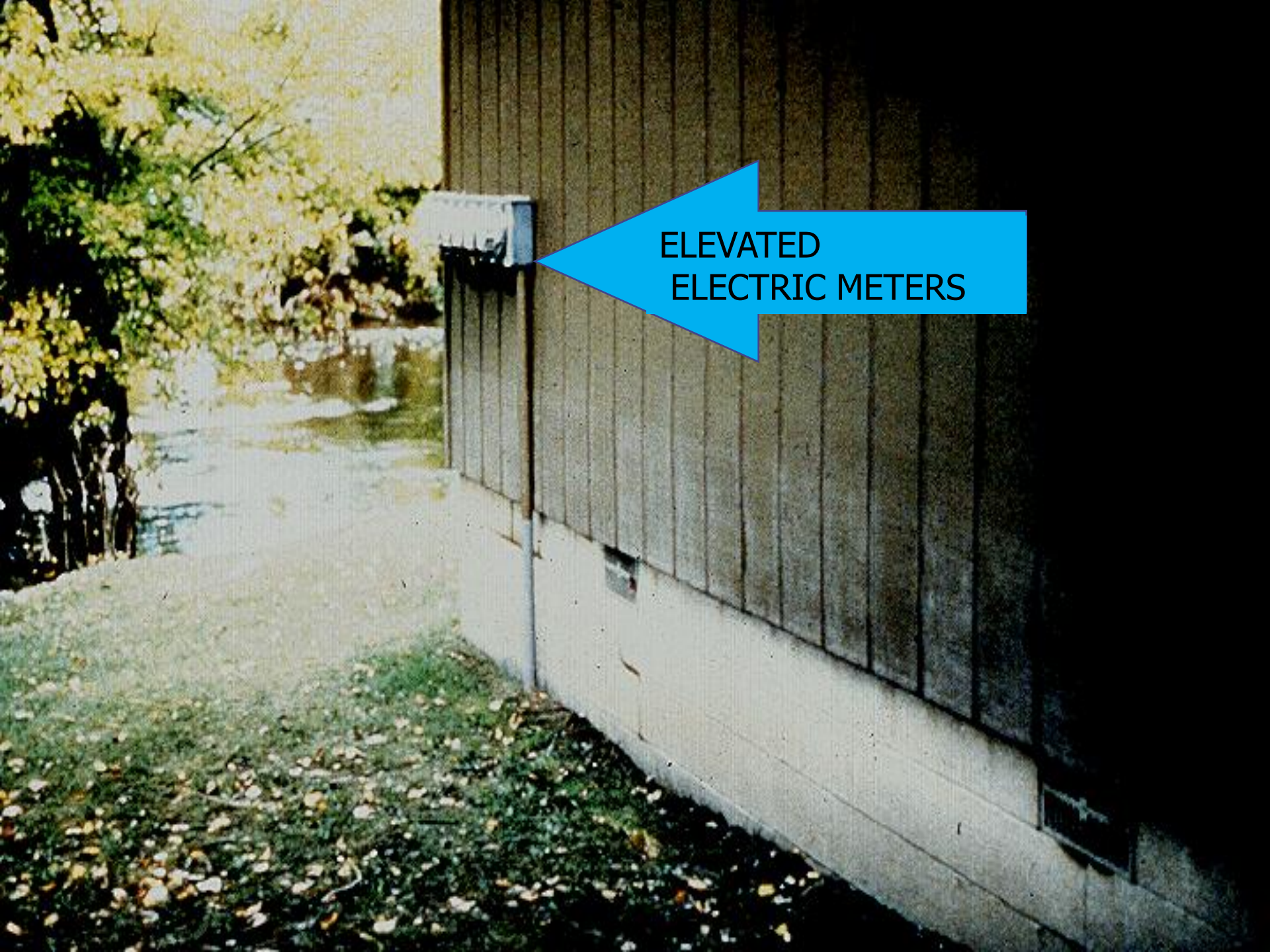
Section C2.e

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)

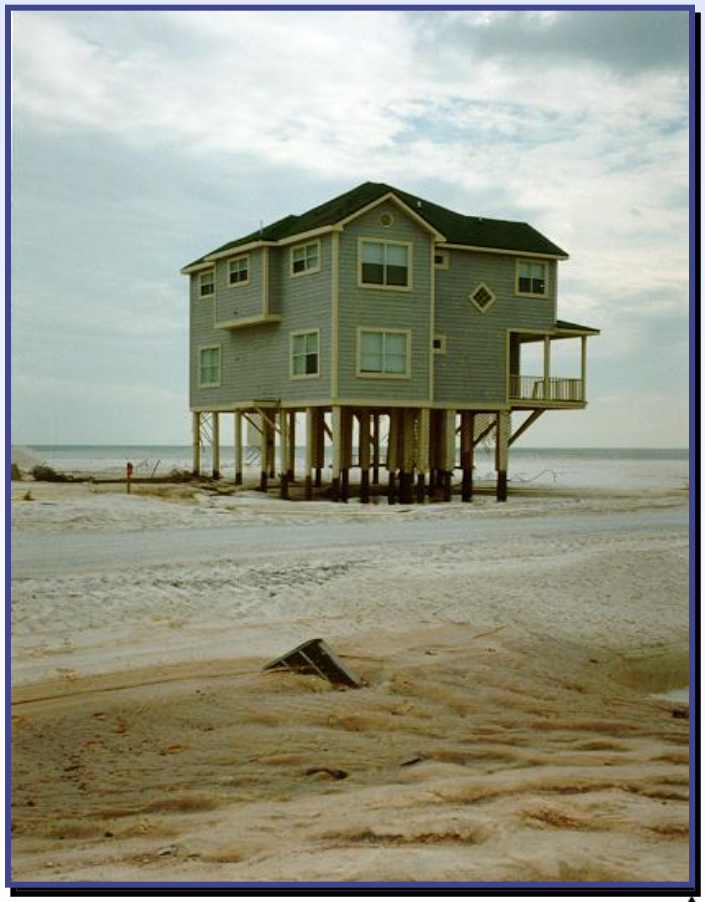
- Enter the lowest platform elevation of the machinery & equipment.
- The elevation(s) for machinery & equipment are required in order to rate the building for flood insurance.
- Local officials are required to ensure that all machinery & equipment servicing the building are protected from flooding, including ductwork, be documented on the Elevation Certificate.
- If the machinery or equipment is mounted to a wall, pile, etc., indicate machinery/equipment type & its location (on floor inside garage, on platform affixed to exterior wall, etc.) in the Comments area.


ELEVATED
AIR CONDITIONER


ELEVATED
WATER HEATER


ELEVATED
ELECTRIC METERS

- Compliant: elevated equipment and ducts; anchored tank



Section C2.f-h

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)

- Item C2.f. Enter the lowest elevation of the ground, sidewalk, or patio slab immediately next to the building.
- Item C2.g. Enter the highest elevation of the ground, sidewalk, or patio slab immediately next to the building.
- Item C2.h. Enter the lowest grade elevation at the deck support, or stairs.

These measurements must be to the nearest tenth of a foot.

Adding Fill to Raise LAG?

Section D

Official certification required

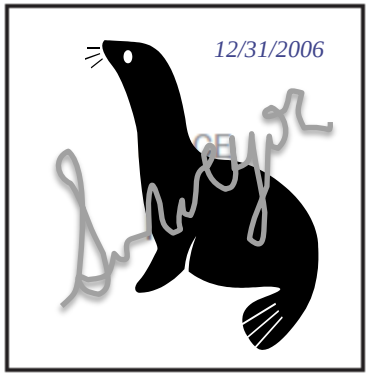
SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

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.
☐ Check here if attachments.

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	



2009 Form:
New, lat/long verification

Section D (cont.)

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

SECTION 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

- *Use this comment section to provide additional information, as appropriate.*
- *USE….USE…..USE*

Section E

Primarily for AO and A zones without BFE

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.

- *Complete this section if the building is located in Zone AO or Zone A (without BFE). Otherwise, complete Section C.*

Section F (if zone has no BFE)

(very rare in Eastern NC)

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's or Owner's Authorized Representative's Name			
Address	City	State	ZIP Code
Signature	Date	Telephone	
Comments			

☐ Check here if attachments

Complete as indicated. This section is provided for certification of measurements taken by a property owner or property owner's representative when responding to Sections A, B, & E. The address entered in this section must be the **actual mailing address** of the property owner or property owner's representative who provided the information on the certificate.

Section G (all zones)

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.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate Of Compliance/Occupancy Issued

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_____

Local Official's Name	Title
Community Name	Telephone
Signature	Date
Comments	

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

Photographs

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.			Policy Number:
City	State	ZIP Code	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.

At least 2 color photographs, 3" x 3"

EC requires foundation vent photos

Question 1

The main purpose of the Elevation Certificates is to certify a building's compliance with local floodplain regulations.

___ True
___ False

Answer 1

The main purpose of the Elevation Certificates is to certify a building's compliance with local floodplain regulations.

___ *True*
_X_ *False*

The Elevation Certificate is also used by the insurance company to rate the building for flood insurance

Question 2

The elevation data recorded in Section C must be certified by a surveyor, engineer, or architect (as allowed by state law).

___ *True*
___ *False*

Answer 2

The elevation data recorded in Section C must be certified by a surveyor, engineer, or architect (as allowed by state law).

_X_ True
___ False

*In **NC** must be a Surveyor (PE only if it is his project)*

Question 3

Before accepting an Elevation Certificate, a community official should carefully review all the data entries to ensure it was filled out correctly.

___ *True*
___ *False*

Answer 3

Before accepting an Elevation Certificate, a community official should carefully review all the data entries to ensure it was filled out correctly.

_X_ True
___ False

Question 4

If a building does not have permanent flood openings, Items A8 and A9 should be left blank.

___ *True*
___ *False*

Answer 4

If a building does not have permanent flood openings, Items A8 and A9 should be left blank.

___ *True*
_X_ *False*

The surveyor must enter N/A

Question 5

Always use the outside grade when determining the bottom of the vent is within the 1 foot

___ *True*
___ *False*

Answer 5

Always use the outside grade when determining the bottom of the vent is within the 1 foot

___ *True*
_X_ *False*

Items A8.b–d Enter in Item A8.b the number of permanent flood openings in the crawlspace or enclosure(s) that are no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. (A permanent flood

Question 6

A "0" for Item C2e indicates that there is no machinery or equipment servicing the building.

___ True
___ False

Answer 6

A "0" for Item C2e indicates that there is no machinery or equipment servicing the building.

___ *True*
_X_ *False*

The Surveyor must enter N/A

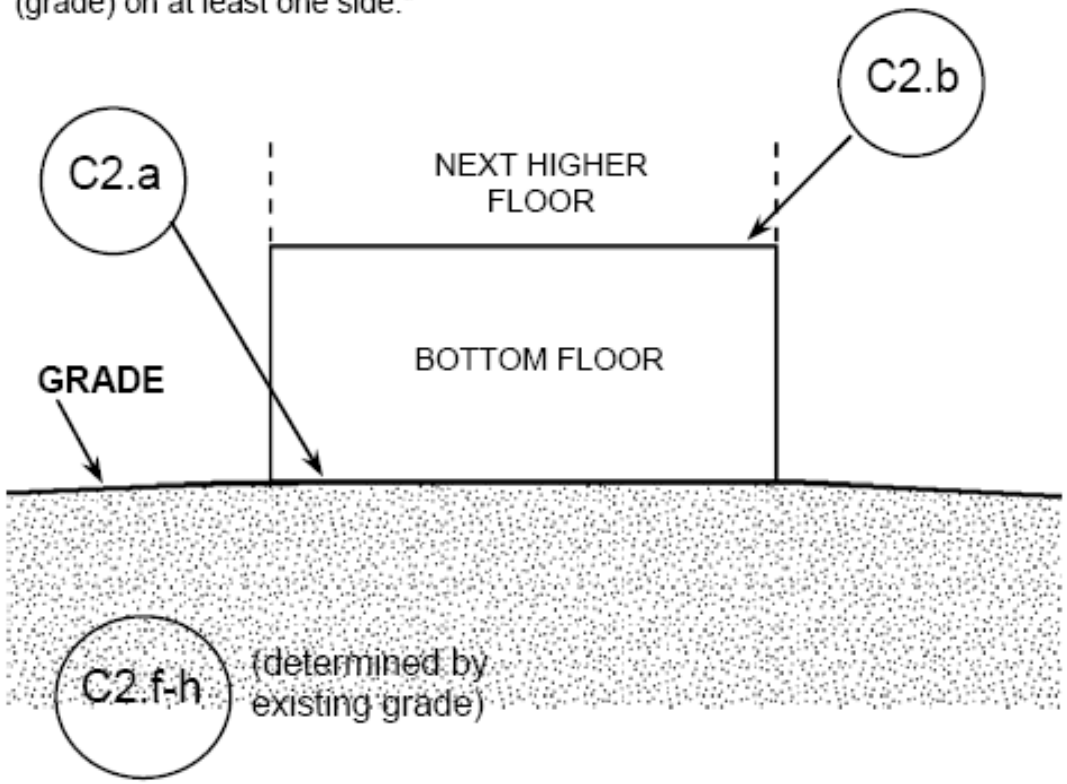
Use comments please!

Building 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 one side.*



DEPARTMENT OF PUBLIC SAFETY

NORTH CAROLINA Emergency Management


g
a
f
d

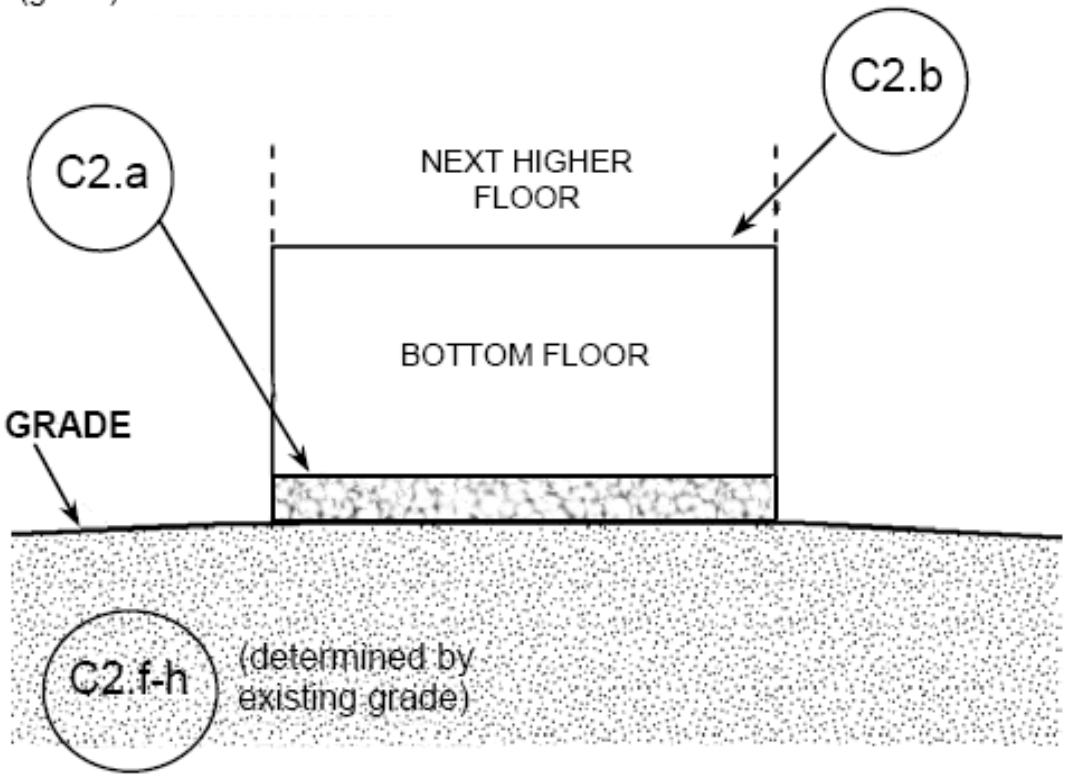
Slab-on-grade
one-story building with attached garage

Building Diagram 1B

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.*



DEPARTMENT OF PUBLIC SAFETY

NORTH CAROLINA Emergency Management

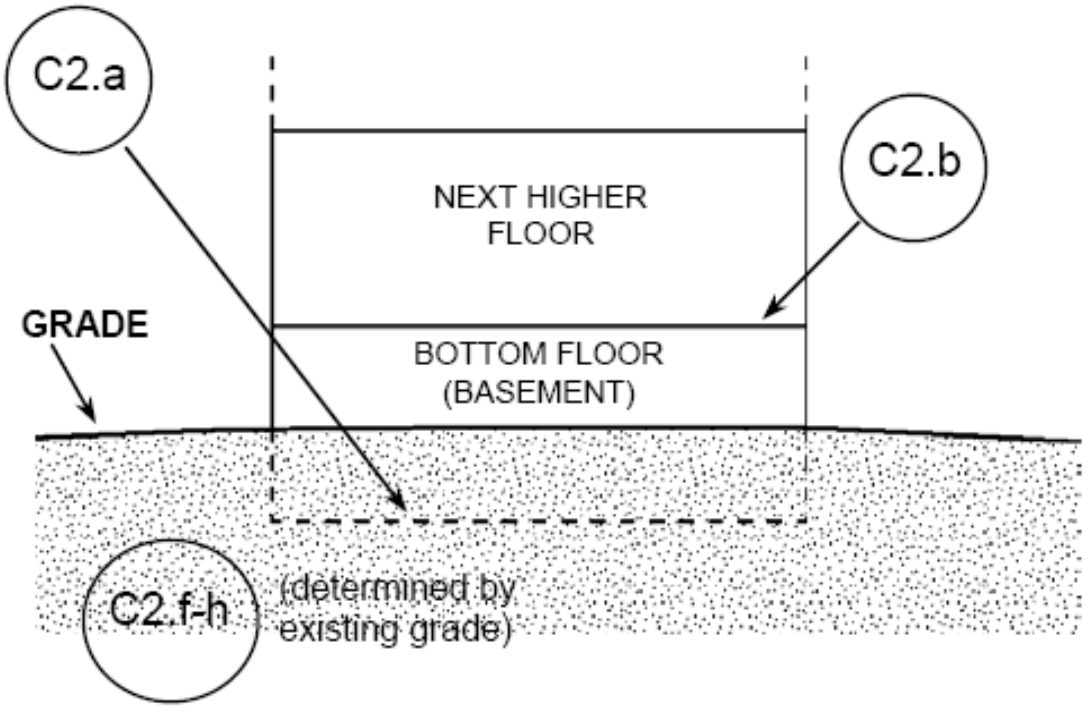
Slab on stem wall with fill

Building Diagram 2

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.*



DEPARTMENT OF PUBLIC SAFETY

NORTH CAROLINA Emergency Management

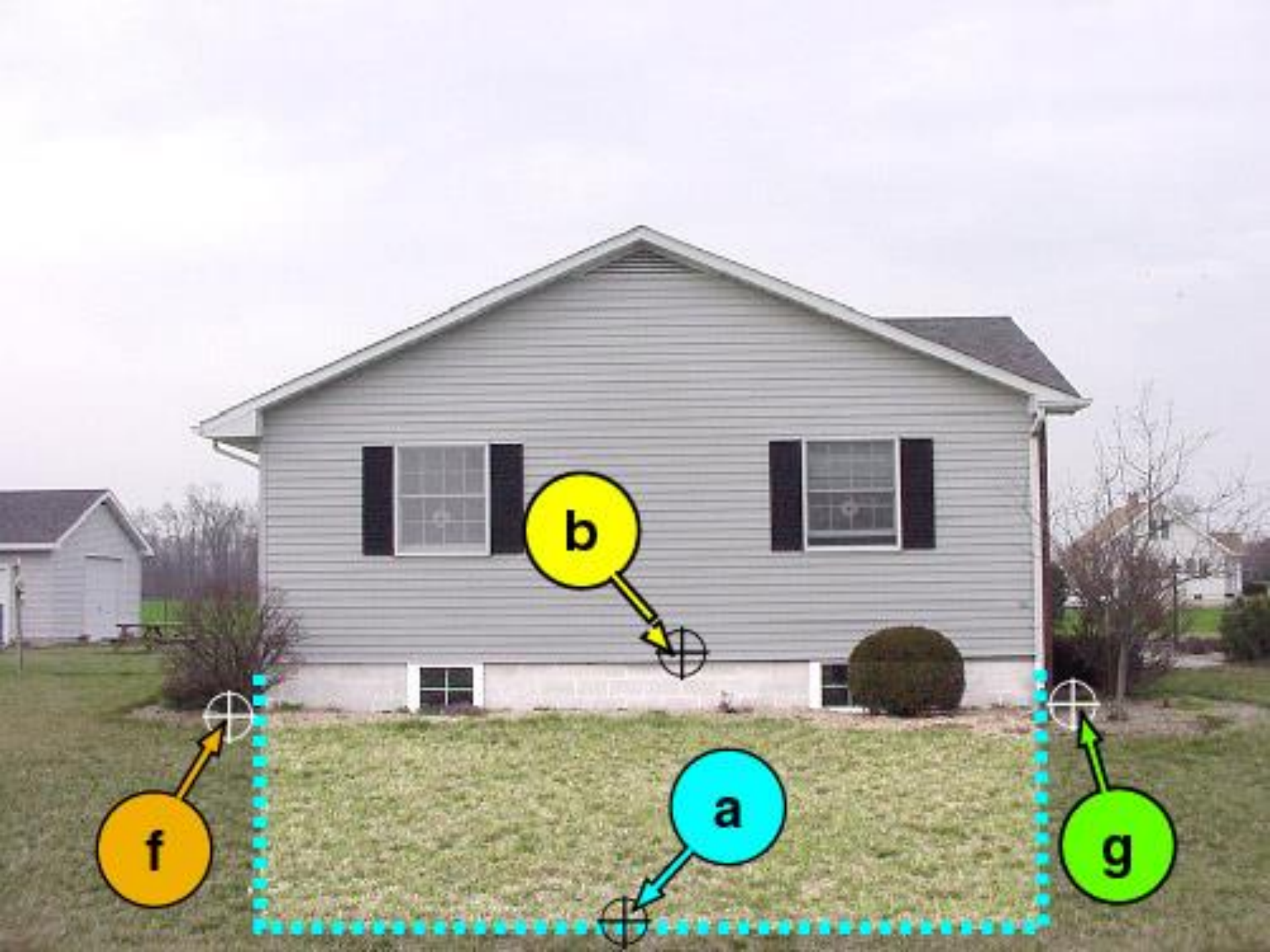
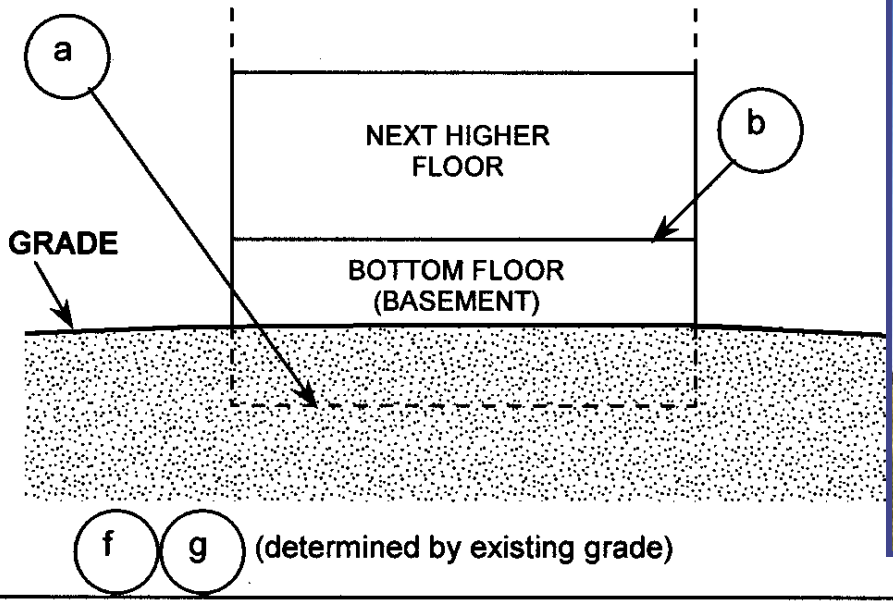

b
f
a
g

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. Buildings constructed above crawl spaces that are below grade on all sides should also use this diagram.*

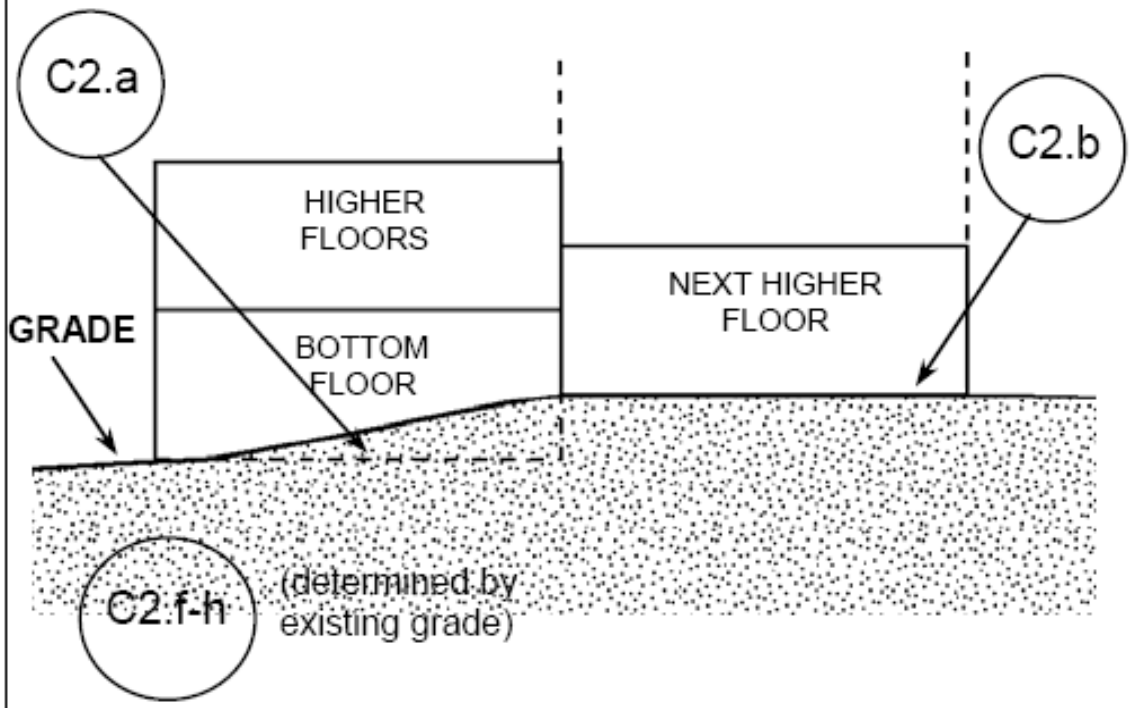


Building Diagram 3

DIAGRAM 3

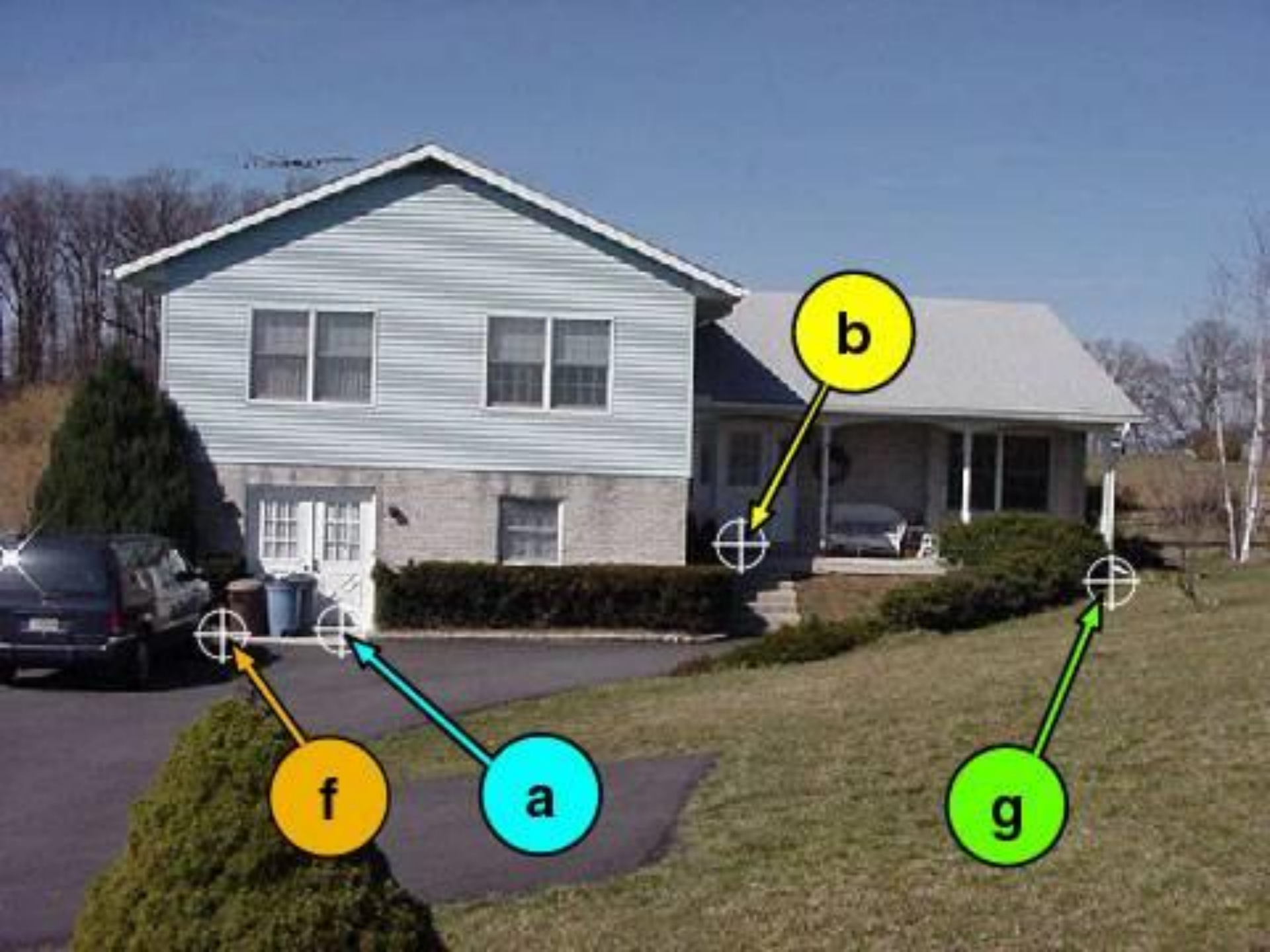
All split-level buildings that are slab-on-grade, either detached or row type (e.g., townhouses); with or without attached garage.

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



DEPARTMENT OF PUBLIC SAFETY

NORTH CAROLINA Emergency Management

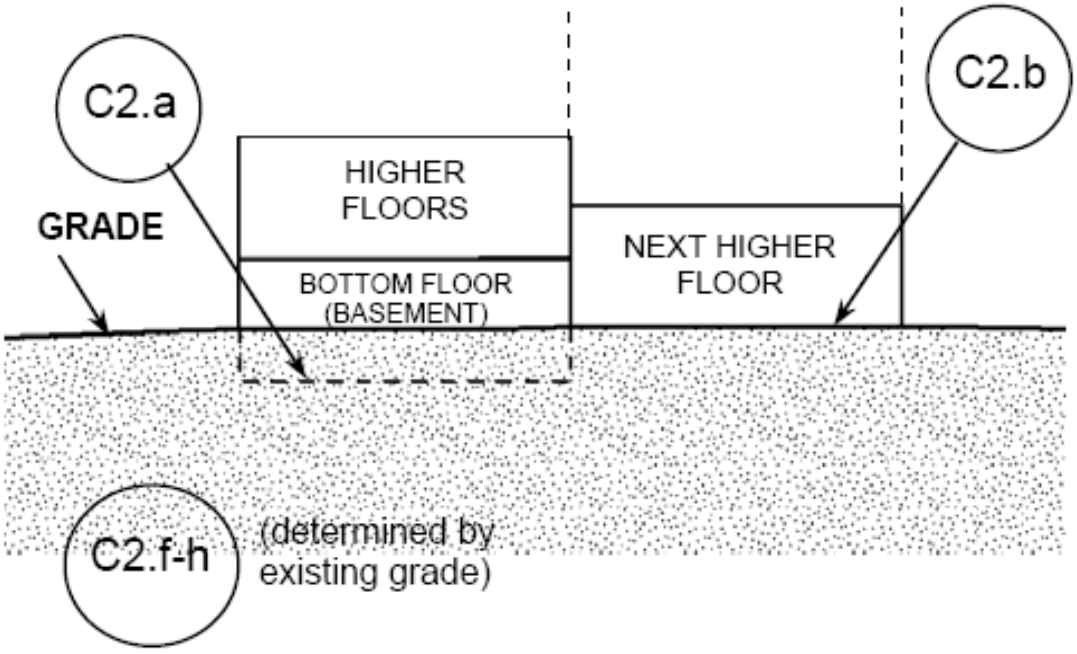

b
f
a
g

Building Diagram 4

DIAGRAM 4

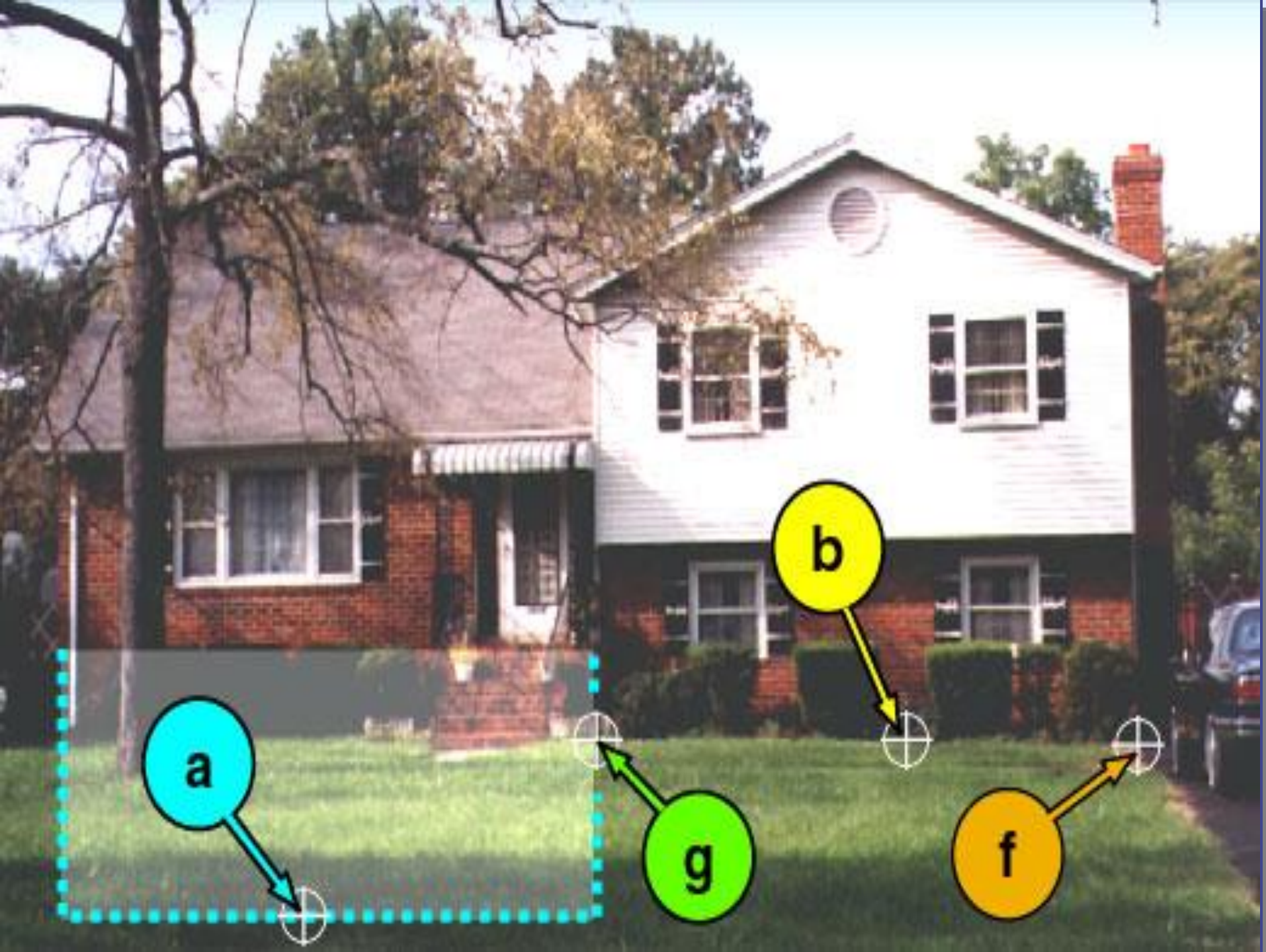
All split-level buildings (other than slab-on-grade), either detached or row type (e.g., townhouses); with or without attached garage.

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



N★C DPS DEPARTMENT OF PUBLIC SAFETY

DEPARTMENT OF PUBLIC SAFETY NORTH CAROLINA Emergency Management

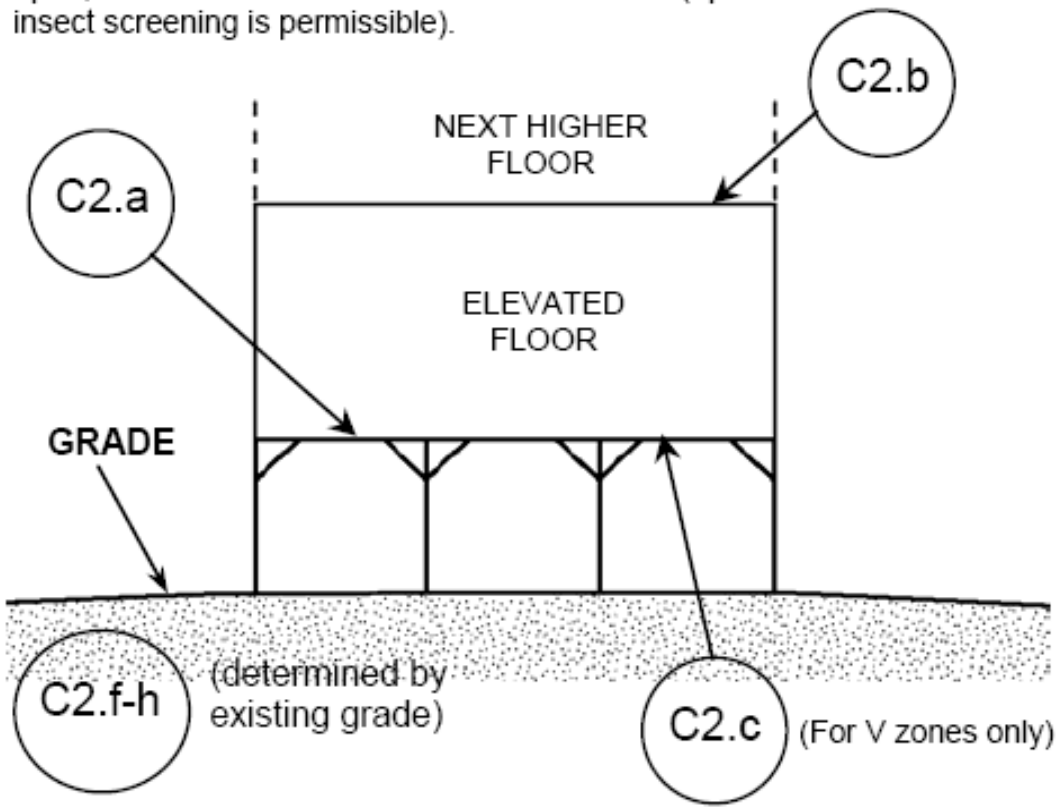

b
a
g
f

Building Diagram 5

DIAGRAM 5

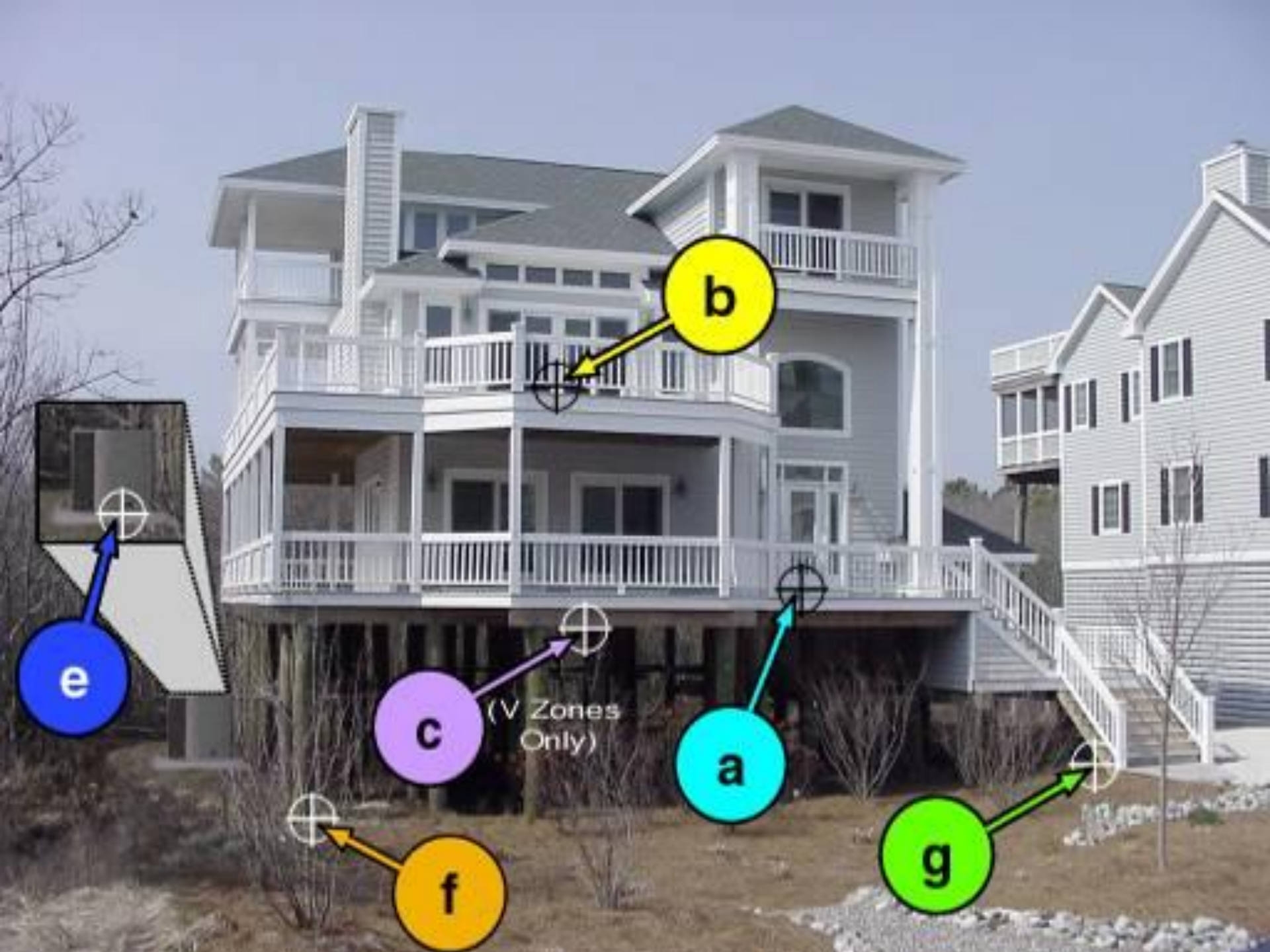
All buildings elevated on piers, posts, piles, columns, or parallel shear walls. No obstructions below the elevated floor.

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

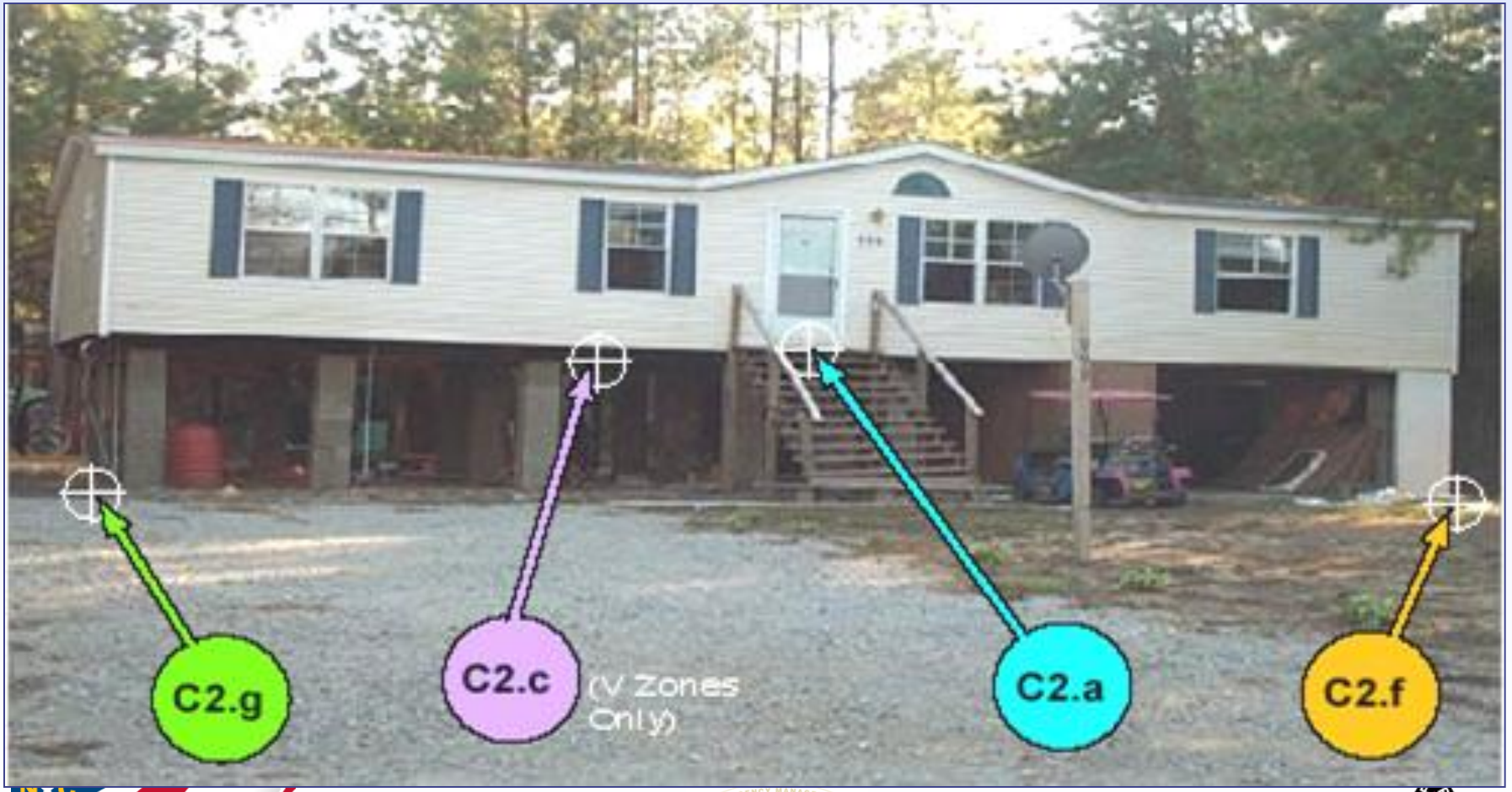


DEPARTMENT OF PUBLIC SAFETY

Emergency Management


b
e
c
(V Zones
Only)
a
f
g

Manufactured home elevated on pier foundation



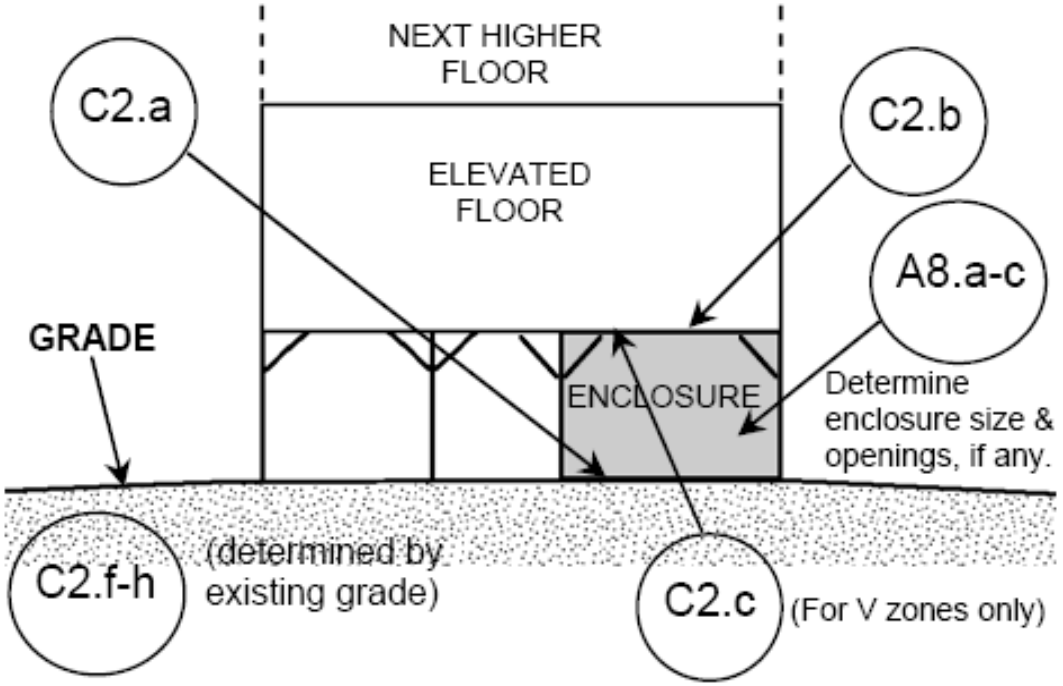
Which Diagram is it?

Building Diagram 6

DIAGRAM 6

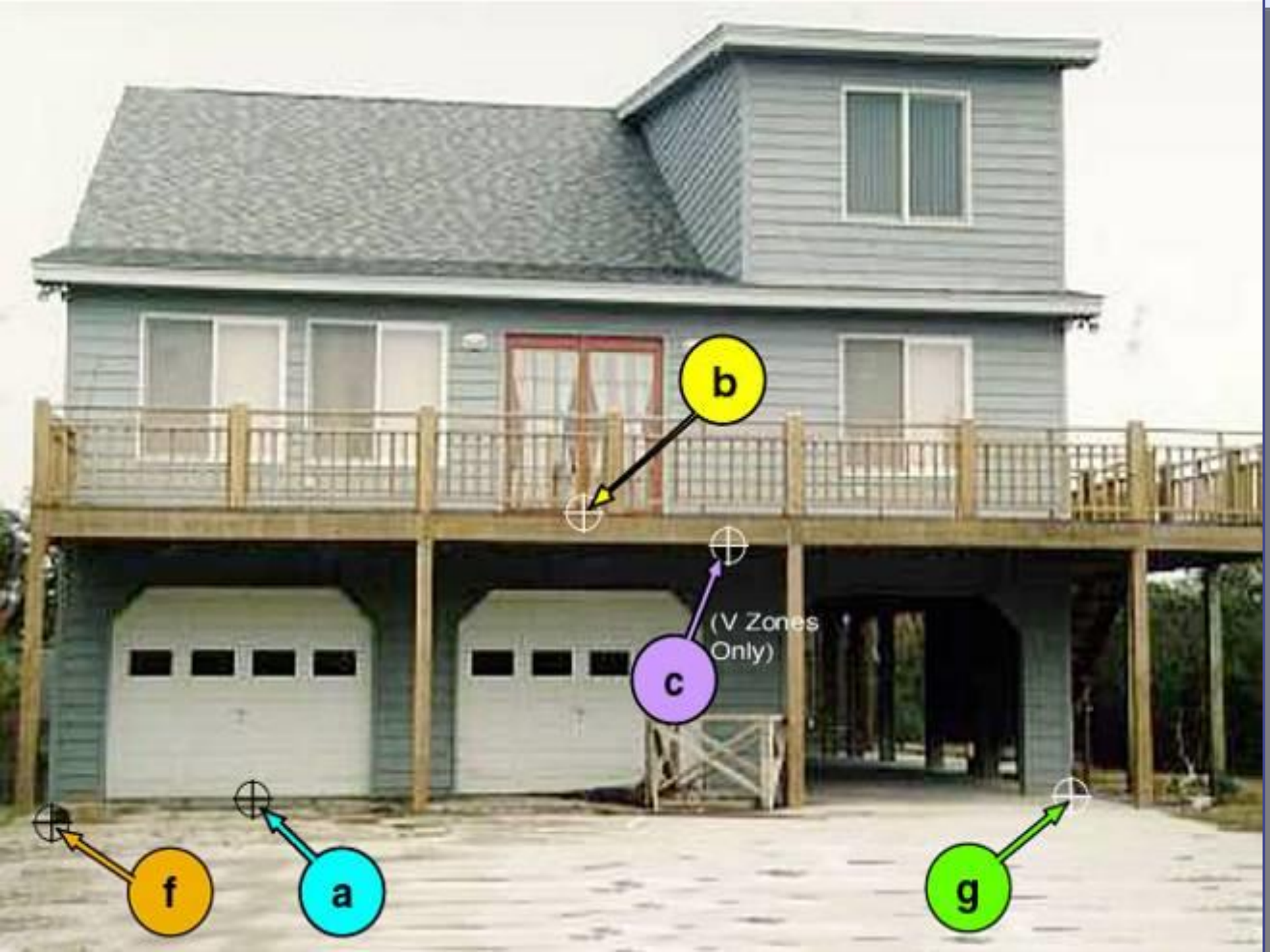
All buildings elevated on piers, posts, piles, columns, or parallel shear walls with full or partial enclosure below the elevated floor.

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.



N★C DPS
DEPARTMENT OF PUBLIC SAFETY

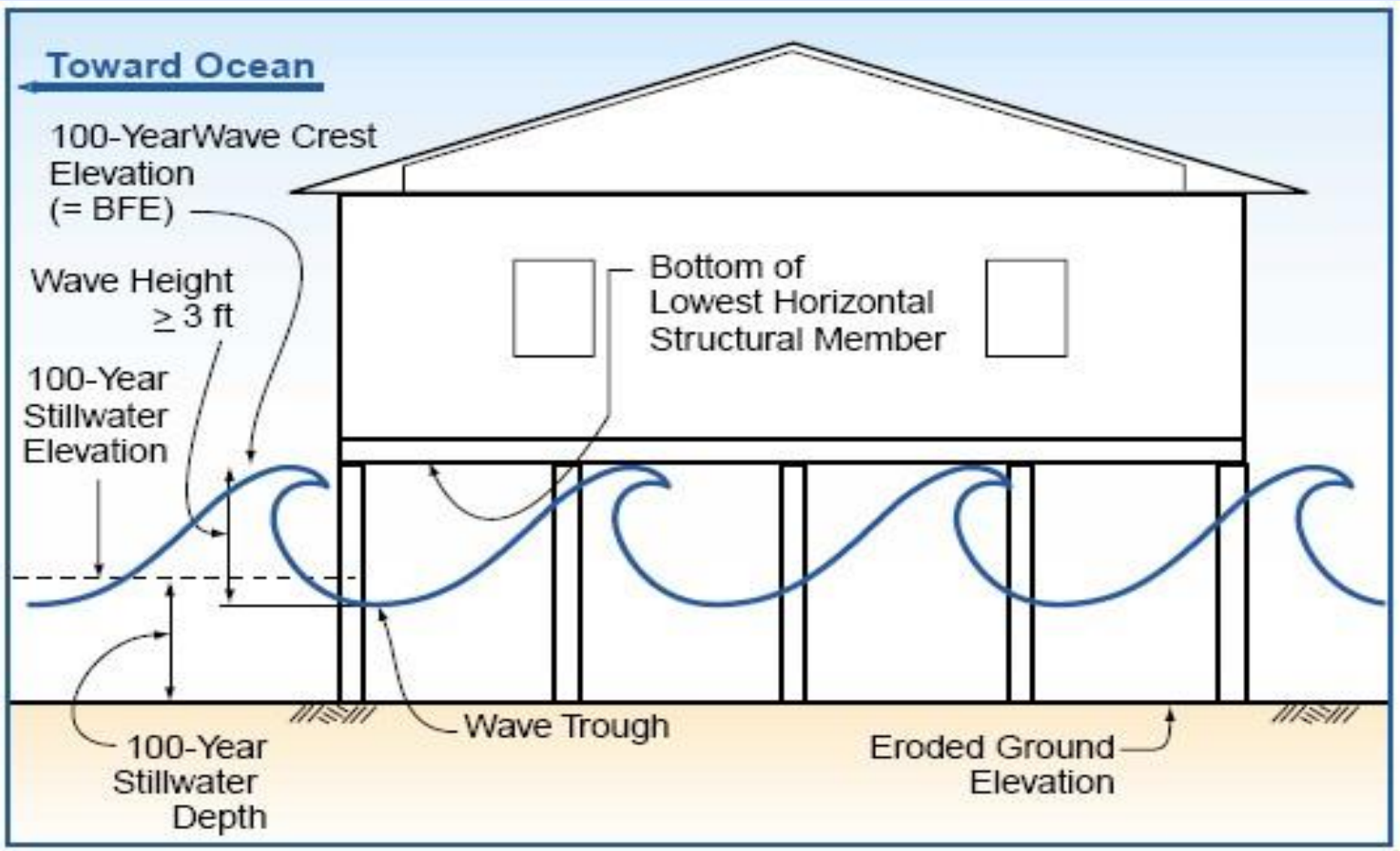
DEPARTMENT OF PUBLIC SAFETY
NORTH CAROLINA
Emergency Management


b
c
(V Zones
Only)
f
a
g

In V zones, Enclosures must be designed to be Breakaway Walls

- Collapse under wind and water loads without causing collapse, displacement, or structural damage to the elevated portion of the building or supporting foundation.
- Design safe loading resistance of not less than 10 and no more than 20 pounds per square foot.
- Is Not Part of the Structural Support of the Building

NFIP: V Zone Elevation

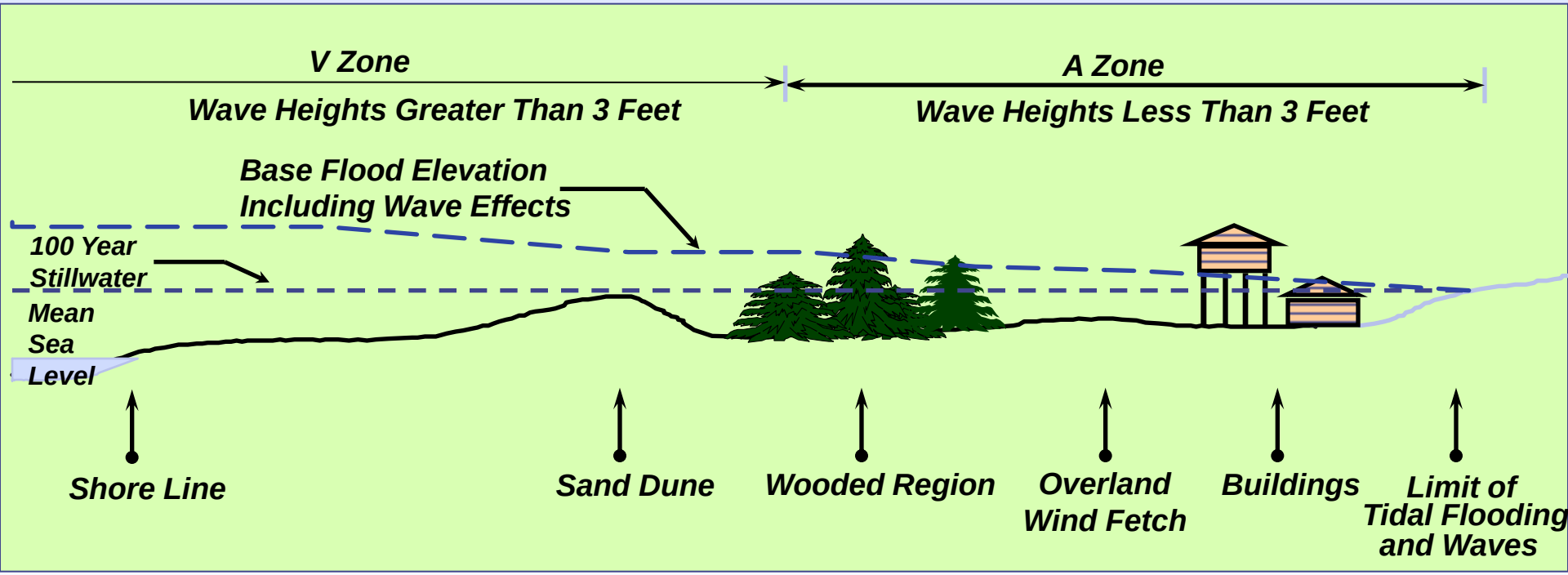


Free-of-Obstruction

All new construction and substantial improvements shall have the space **below the lowest floor** free of obstructions or constructed with breakaway walls...

Such enclosed space shall not be used for human habitation and will be usable solely for parking vehicles, building access, or storage.

Transect Schematic



⑩After analyzing wave heights along each transect, wave elevations were interpolated between transects. Various source data were used in the interpolation, including topographic maps, beach profiles, aerial photos, and engineering judgment. Controlling features affecting the elevations were identified and considered in relation to their positions at a particular transect and their variation between transects.

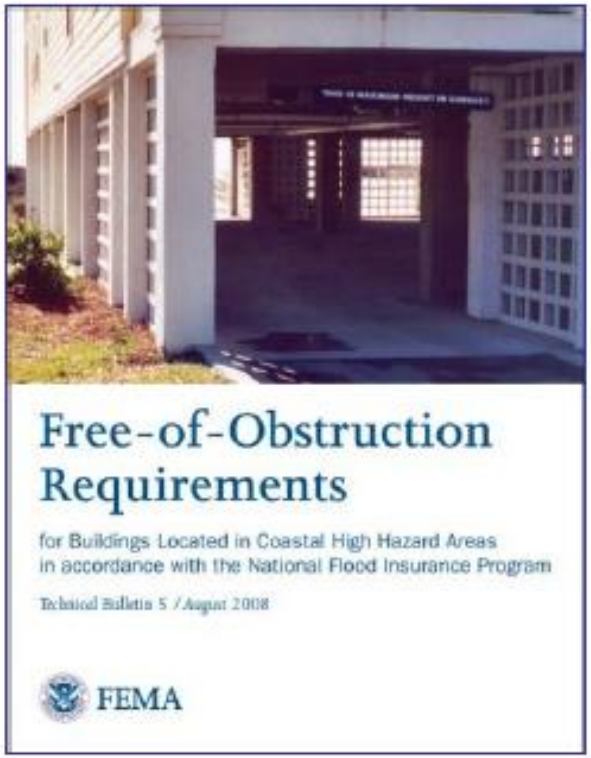
Breakaway Walls

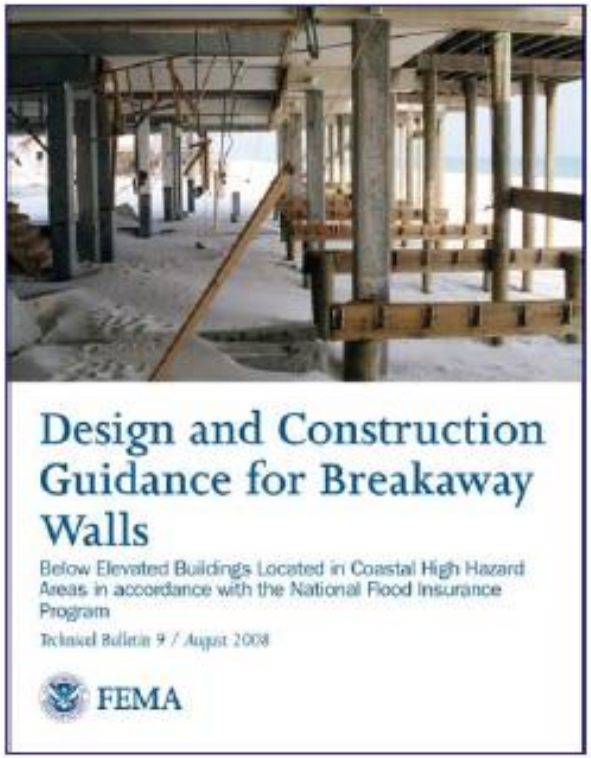
DEPARTMENT OF PUBLIC SAFETY

North Carolina Emergency Management

Emergency Management

Technical Bulletins





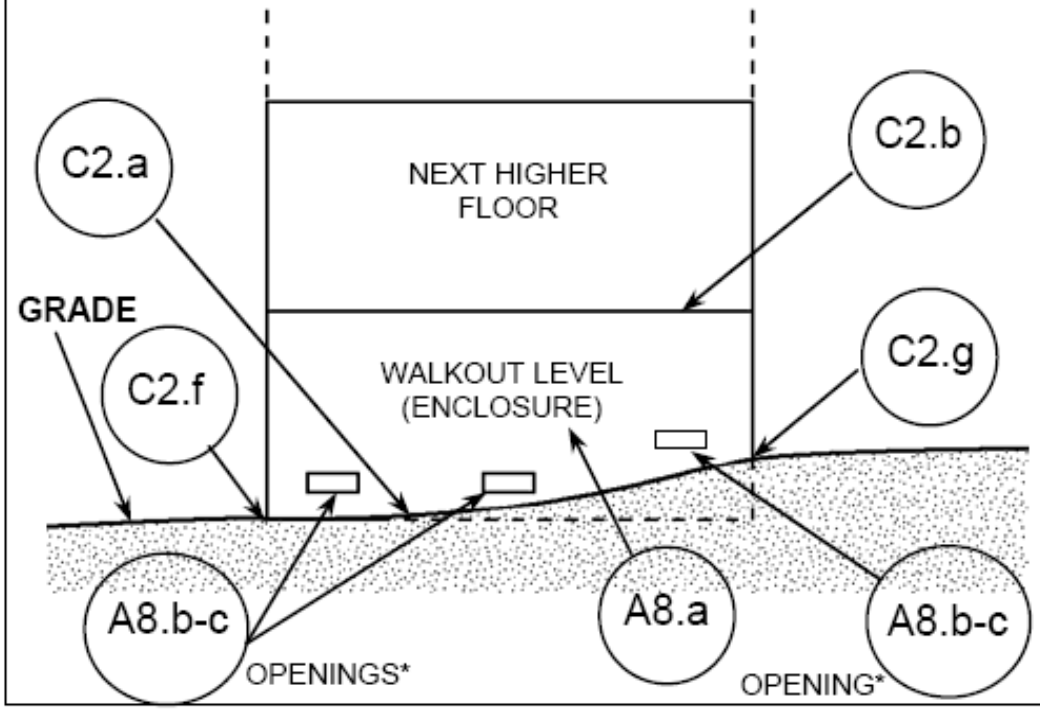
- Prescriptive and simplified breakaway wall designs
- Performance-based designs

Building Diagram 7

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 one side is at or above grade. The principal use of this building is located in the elevated floors of the building.

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

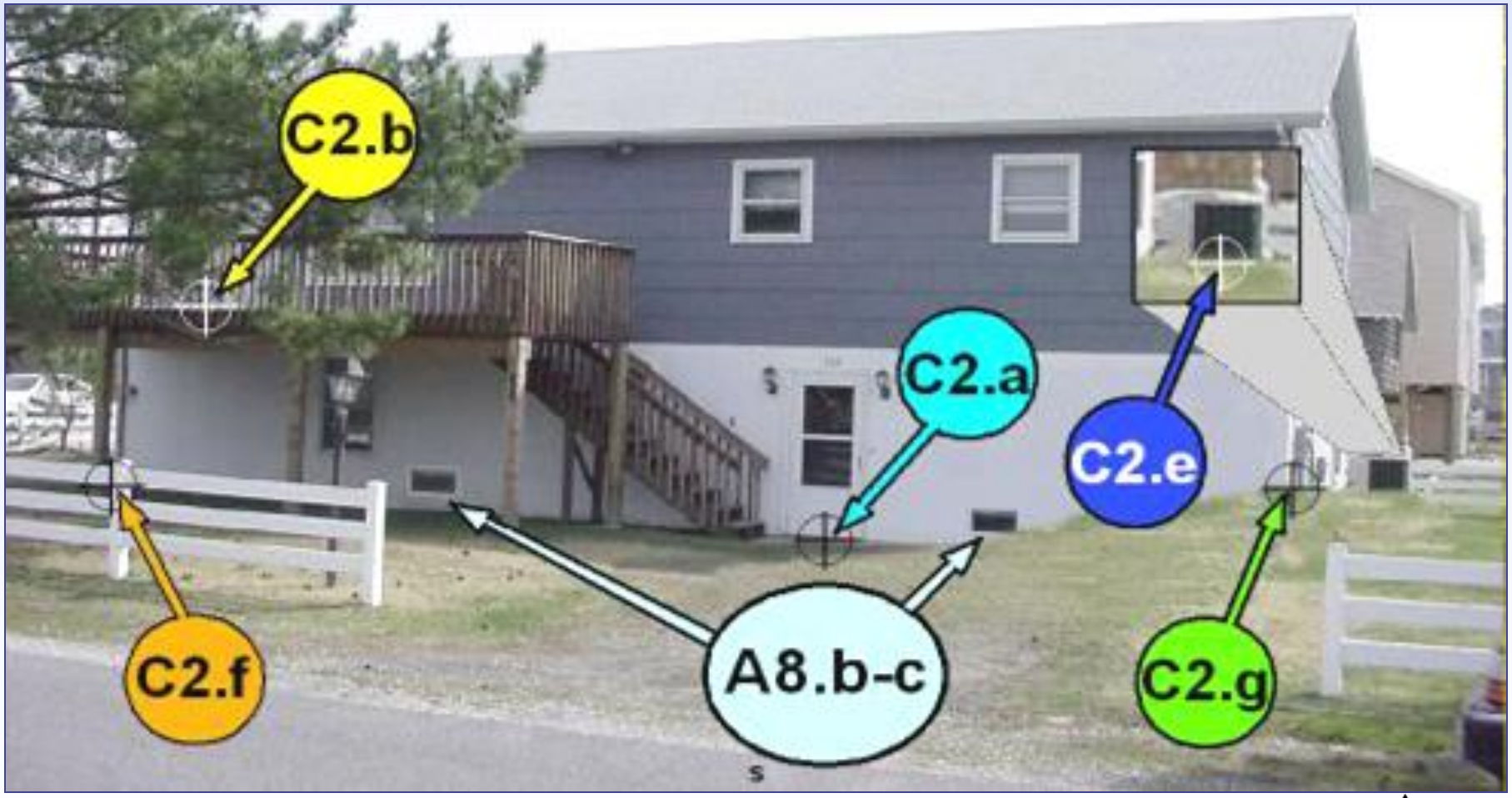


DEPARTMENT OF PUBLIC SAFETY

NORTH CAROLINA Emergency Management

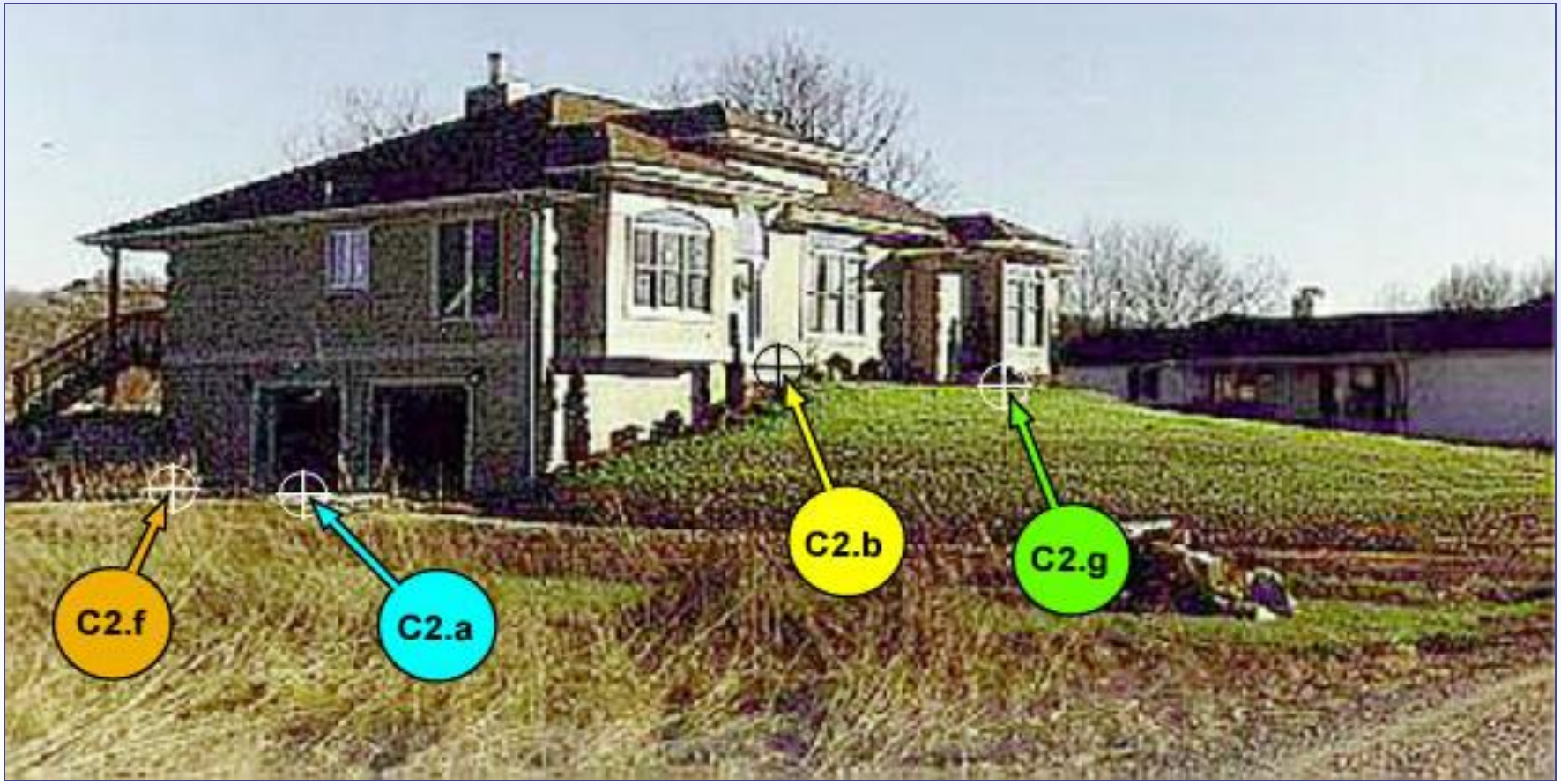
Building elevated on full-story foundation walls

Fully enclosed area below the elevated floor



Building elevated on full-story foundation walls

Fully enclosed area below the elevated floor

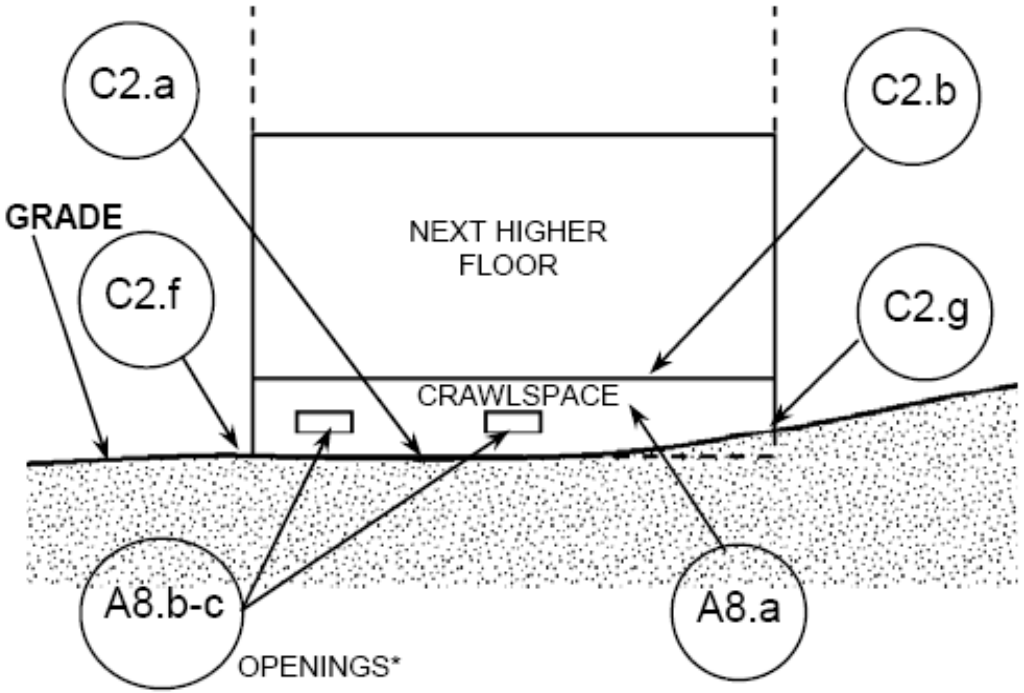


Building Diagram 8

DIAGRAM 8

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

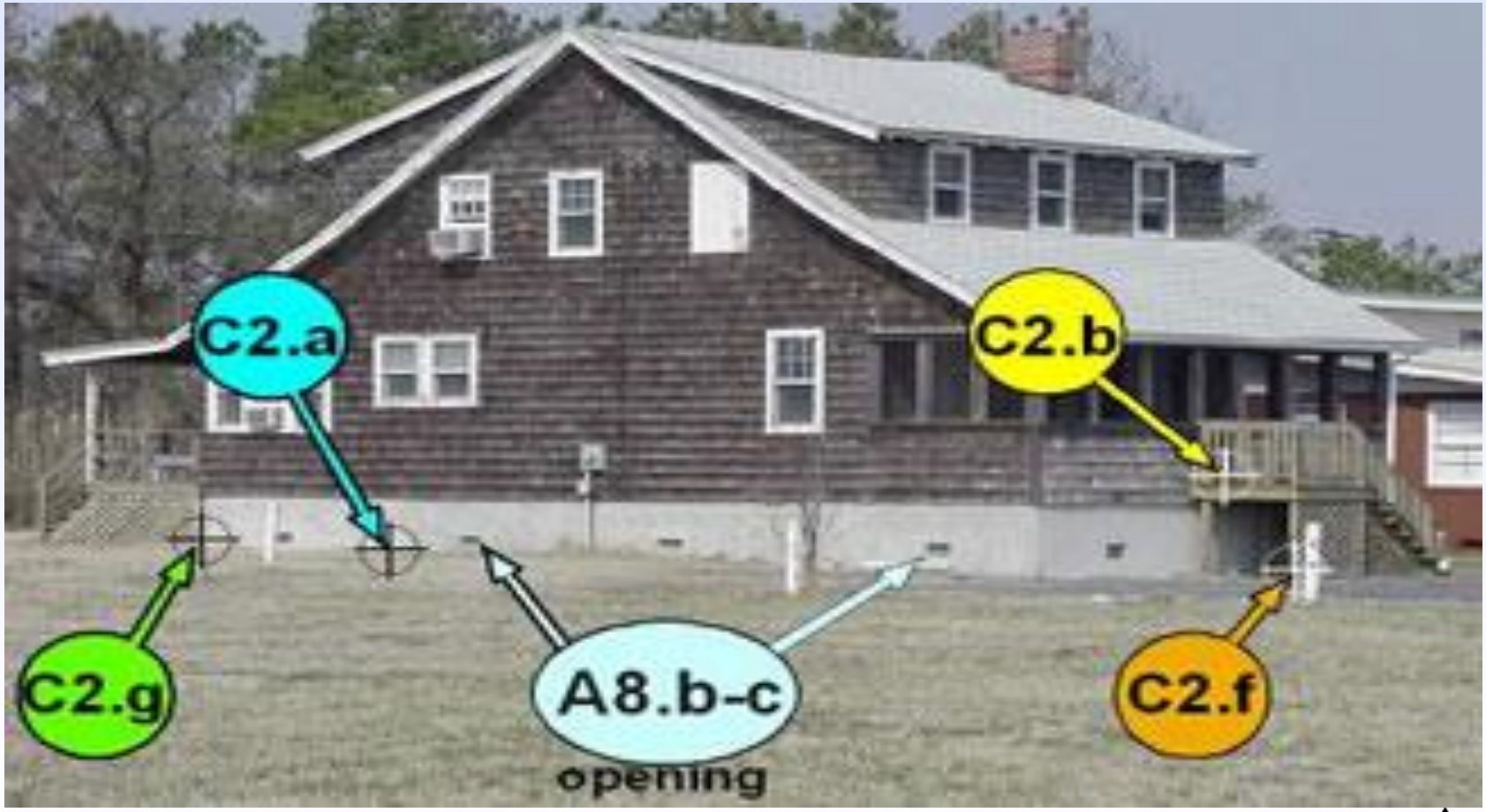
Distinguishing Feature – For all zones, the area below the first floor is enclosed by solid or partial perimeter walls. In all A zones, the crawlspace is with or without openings* present in the walls of the crawlspace. Indicate information about crawlspace size and openings in Section A – Property Information.



DEPARTMENT OF PUBLIC SAFETY

NORTH CAROLINA Emergency Management

Multi-level building elevated on crawl space

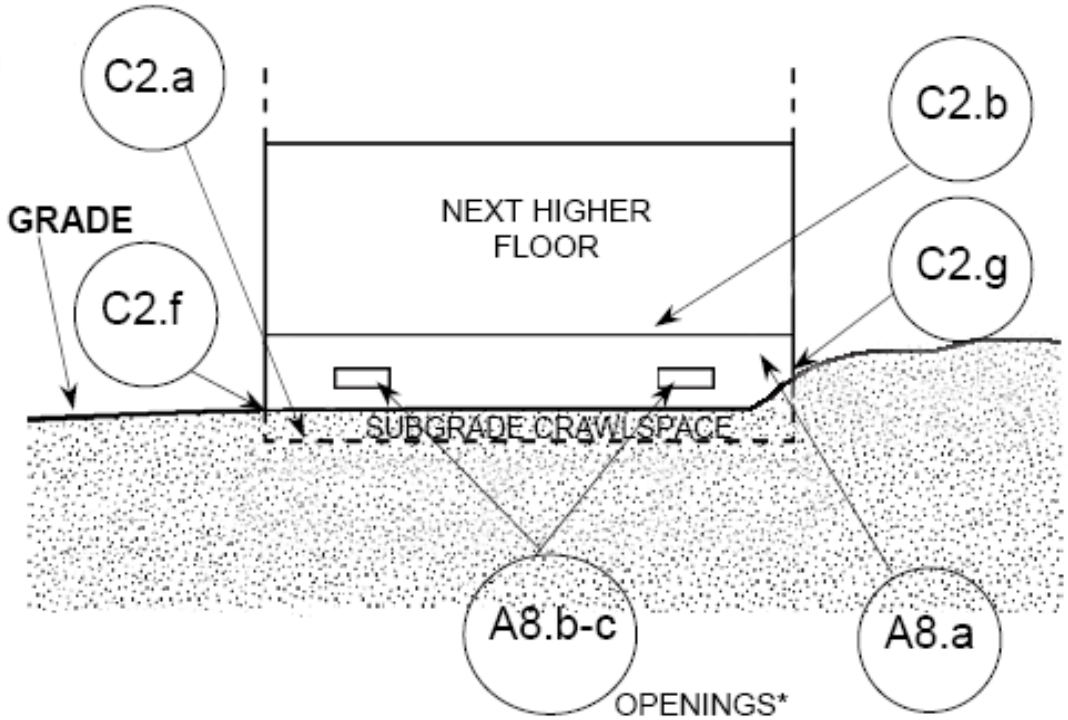


Building Diagram 9

DIAGRAM 9

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

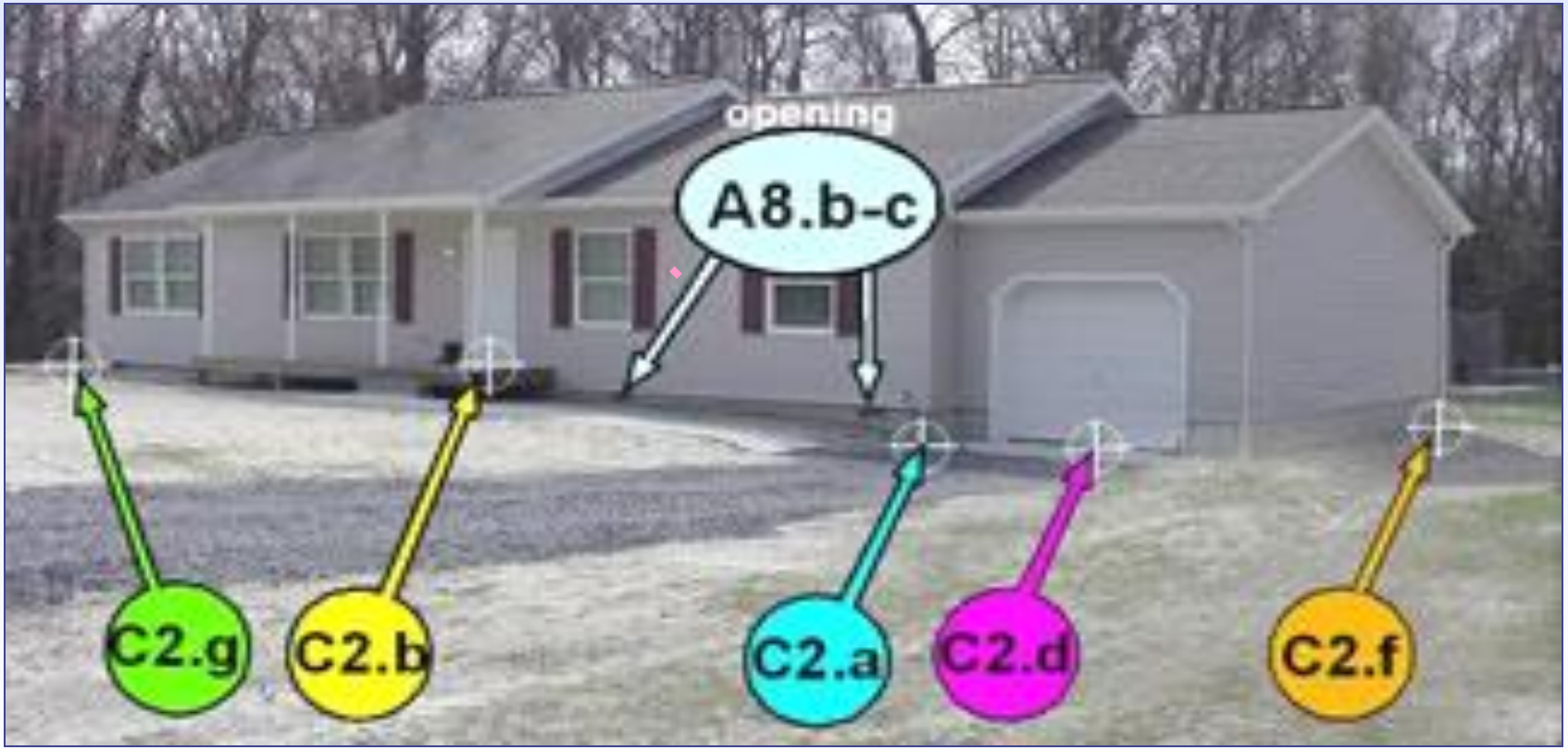
Distinguishing Feature – The bottom (crawlspace) floor is at or below ground level (grade) on all sides.** (If the distance from the crawlspace floor to the top of the next higher floor is more than 5 feet, or the crawlspace floor is more than 2 feet below the grade (LAG) on all sides, use Diagram 2.)



DEPARTMENT OF PUBLIC SAFETY

Emergency Management

One-story building on crawl space
Attached garage



Which Diagram Do You Use?

Which Diagram Do You Use?

#2

DEPARTMENT OF PUBLIC SAFETY

North C

Which Diagram Do You Use?

Which Diagram Do You Use?

#3

Which Diagram Do You Use?

#4

DEPARTMENT OF PUBLIC SAFETY

Emergency Management

Which Diagram Do you Use?

Which Diagram Do You Use?

#5

N★C DPS
DEPARTMENT OF PUBLIC SA

Which Diagram is it?

Which Diagram Do You Use?

#6

DEPARTMENT OF PUBLIC SA

Which Diagram Do You Use?

#7

← *Enclosure*

Which Diagram Do You Use?

Which Diagram Do You Use?

#8

Which Diagram Do You Use?

#9

Contact Information

Risk Management Section –
Floodplain Mapping Program
www.ncfloodmaps.com

John Gerber, P.E., CFM
State NFIP Coordinator
(919) 825-2317
John.Gerber@ncdps.gov

Randy Mundt, AICP, CFM
Community Development Planner III
(919) 825-2339
Randy.Mundt@ncdps.gov

Vacant
Eastern Branch NFIP Planner

Milton Carpenter, CFM
Central Branch NFIP Planner
(919) 825-2302
Milton.Carpenter @ncdps.gov

Terry Foxx, CFM
Western Branch NFIP Planner
(828) 466-5555
Terry.Foxx@ncdps.gov

Federal Emergency Management Agency
1-877-FEMA-MAP
http://www.fema.gov/plan/prevent/fhm/fmc_main.shtm

North Carolina Emergency Management

DEPARTMENT OF PUBLIC SAFETY

NORTH CAROLINA Emergency Management

Questions?

Thank You!

DEPARTMENT OF PUBLIC SAFETY

North Carolina Emergency Management

Emergency Management