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NFIP Eastern Branch Planner

NC Emergency Management, Hazard Mitigation Support Program



- Identifies & maps flood hazard areas
- Provides a framework for floodplain management regulations
- Makes flood insurance available in Communities that participate in the NFIP



NFIP Goals



- Reduce loss of life & property
- Reduce rising disaster relief costs
- Increase importance of hazard mitigation (flood resistant construction, guide future development, & prohibit development in floodplains that would increase flood levels)
- Decrease taxpayer-funded disaster costs
- Make Federally backed insurance coverage available to property owners
- Restore & protect natural resources & functions of floodplains



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Community Participation in the NFIP

A **VOLUNTARY** program based on a mutual agreement between the Federal government and the local community:

In exchange for adopting, implementing and enforcing a Floodplain Management Ordinance

- Federally-backed flood insurance is made available to property owners throughout the community.
- Federal disaster assistance and mitigation grant programs made available.



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Role of NFIP Participating Community

- Review floodplain development permit applications and issue/deny floodplain development permits
- **Inspect ALL development to ensure compliance with local ordinances**
- Maintain floodplain development records
- Assist in preparation & revision of floodplain maps
- Help citizens obtain information on flood hazards, floodplain map data, flood insurance, & proper construction measures



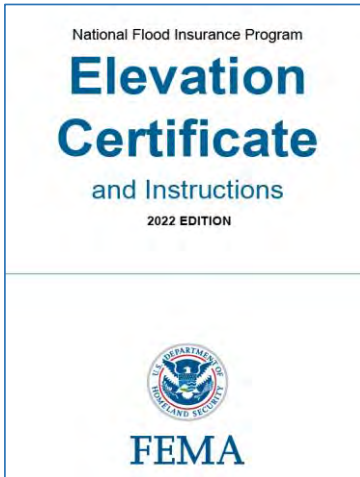
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What is Floodplain Development?

“Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.”



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Elevation Certificate Form

- Verify Regulatory Compliance
- Supporting documentation for map revision & amendment applications
- Provide better/recent data to insurance companies to see if a better rate is available
- **NOTE:** Data collected on this form is for the construction & utility service to a single STRUCTURE only – not the lot or other improvements.



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The Community's EC Review

Community Officials MUST review Elevation Certificate's (ECs) before accepting them to ensure:

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

NFIP requires the Finished Construction EC for all:

- **New Construction**
- **Additions**
- **Substantial Improvements**

To structures located in the Special Flood Hazard Area.

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Question???????

A property owner needs a copy of the elevation certificate for their structure.



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Answer...

- ✓ The local permitting jurisdiction
- ✓ Surveyor
- ✓ Previous/Current Owner
- ✓ Insurance Agent

State NFIP staff do NOT have a database of ECs.



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Online Resources

FRIS – <http://fris.nc.gov>

ReadyNC – <http://readync.org>

Flood.NC.gov – <http://flood.nc.gov>

FIMAN – <http://fiman.nc.gov>

FloodSmart - <http://floodsmart.gov>

FEMA – <http://fema.gov>



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If you need flood zone/risk information for a property, where do you personally go to find that information?



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Flood Risk Information System

FRIS | North Carolina Flood Risk Information System

Am I at risk of flooding?

General Public

Enter all or part of your address and click GO.
Address, City, or ZIP

GO

OR select a county
County: Ashe, North Carolina

Benefits of Floodplain Map

Floods are among the most frequent and costly disasters in terms of human hardship and economic damage. North Carolina's Digital Flood Insurance Rate Map (DFIRM) provides business leaders and residents to more accurately assess flood hazards and prepare for flood risks. Go to flood.nc.gov for more information.

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FRIS | Map Theme

Search

County: Brunswick

DFIRM:

Places:

Streams:

Address: 5607 E. Yacht Drive, Oak Island

Coordinates: Lat - Lon (Decimal Degrees)

Latitude-Northing-Y:

Longitude-Easting-X:

Effective

Flood Information

Map Location

Flood Zone: AE

Flood Source: Atlantic Ocean

Base Flood Elevation: 13 ft

County: Brunswick

Political Area: Brunswick County

CID: 370295

Panel: 2076

Map Number: 3720207600K

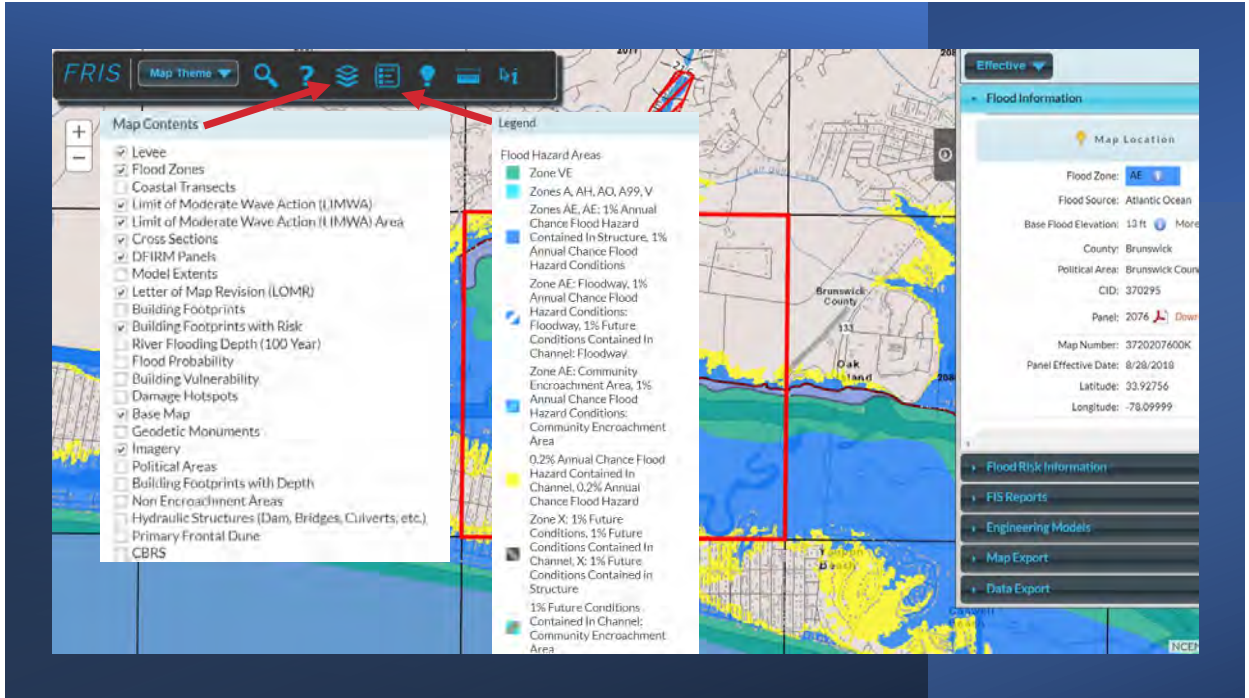
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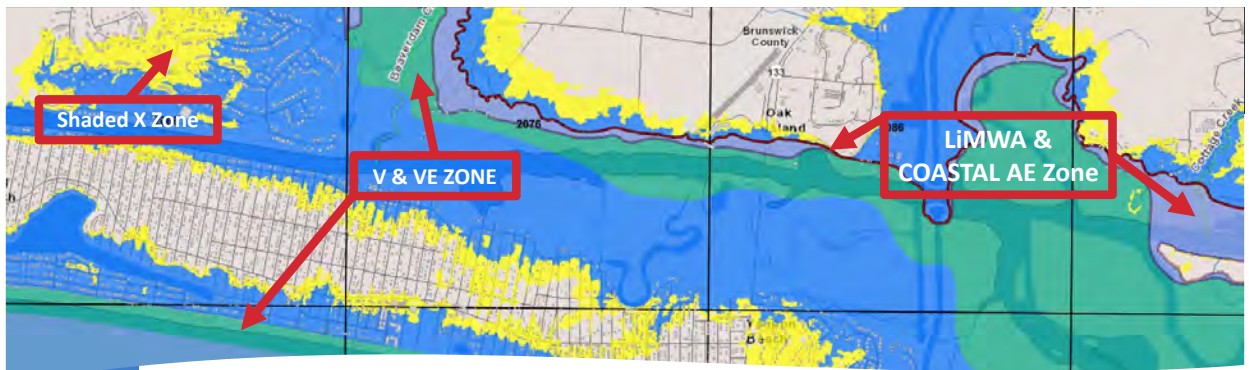
Longitude: -78.09999

- Flood Risk Information
- FIS Reports
- Engineering Models
- Map Export
- Data Export

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FRIS Symbology and What it means for Development

- V & VE Zones = Pile foundations, breakaway walls, flood vents, etc.
- LiMWA = Limit of Moderate Wave Action (Red Line)
- Coastal AE Zone = V-zone development standard
- Shaded X Zone = NOT Special Flood Hazard Area (SFHA)

Always contact your local jurisdictions to learn about their development requirements!!!



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FRIS Symbology and What it means for Development

- AE Non-encroachment Area (NEA) = No-Rise Analysis by Engineer
- AE Floodway = No-Rise Analysis by Engineer
- Required for ALL development including fill, grading, storage of materials, etc.



ReadyNC.org

Home Plan And Prepare Stay Informed Recover And Rebuild Get Involved News

Insurance

Español

One of the best things for homeowners, renters and business owners against any type of natural disaster is a good insurance policy. Be aware that homeowner's insurance does not cover flood damage. You need a separate flood insurance policy. Homeowners, renters and business owners can buy flood insurance even if they reside in a high, low or moderate risk area. Policies are available for both residential and commercial buildings as long as the community joins in the National Flood Insurance Program.

For more [North Carolina Insurance Information](#), call 800-546-5664 or 919-807-6750.

For information about the National Flood Insurance Program, call 888-379-9531.

Plan and Prepare

- Evacuating
- Functional Needs
- Get a Kit
- Hurricane Guide
- Insurance**
- Make a Plan
- Pets and Service Animals
- Protect Your Home
- Seniors
- Vital Records



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Flood.NC.gov

flood.NC.gov [Go to FRIS site](#) [Go to FIMAN site](#)

Home | Property Risk | Mapping Program | Find a Document | Events | Floodplain Management | LOMC | Mitigation | Flood Warning | Industries

Property Risk ESTIMATOR

Calculate Risk Level

Insurance Costs ESTIMATOR

Calculate Premiums

Events & Training [See More >](#)

Real Estate Agents

For Agents Who Sell Real-Estate in a Flood-Hazard Area

"Potential buyers want to know how to mitigate flood hazards on property within the flood plain."

Important Links:

- NC Flood Risk Information System
- FEMA Map Service Center
- North Carolina NFIP Updates
- Find Meetings & Training

Frequently Asked Questions

- How do I determine if the structure is in the SFHA?
Check the Flood Risk Information System Website: FRIS
- Will an elevation certificate be required?
A Post-FIRM structure should have an elevation certificate completed at the time of construction. An EC is required for rating the flood insurance policy.
- Do Pre-FIRM structures require an elevation certificate?

EMAP Accredited

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FIMAN

 Flood Inundation Mapping and Alert Network

ABOUT | MAP | SUBSCRIBE | UNSUBSCRIBE | ACCOUNT | LOG OUT

Search for location ...

Bogue Sound at Beaufort, NC - Pivers Island

Last updated: Jul 28, 2020 at 2:54 PM Gage datum: -2.1ft NAVD88 Site ID: 8656483 Owner: NOAA

Showing 372 Gages [Show All Gages](#)

Elevation: 1.9 ft NAVD88

Stream Elevation

Rising

Peak Stage: 2.1 ft 7:30 5:00 PM No Data Available

Forecasted Peak

No Damages Assessed

Damages

Impact

Photos

Gage Level

Gage Symbols

- Current Condition
- Forecast Peak Condition

Risk Ratings

- Normal
- Monitor
- Minor Flooding
- Moderate Flooding
- Major Flooding
- Not Risk Rated
- Out of Service

Trend

- Rising
- Falling
- Constant

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Visit FloodSmart for Agents

- Buying a Policy
- Renewing a Policy
- Flood Risks and Costs
- Before and After a Flood
- Flood Zones and Maps

This is an official site of the National Flood Insurance Program.

The NFIP offers flood insurance to help you protect the life you've built and recover more quickly after a flood.

[Get Coverage](#)

FloodSmart.gov



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Emergency Management
NC DEPARTMENT OF PUBLIC SAFETY

Development Standards



Mitigation Measures

Coastal Construction Manual

Principles and Practices of Planning, Siting, Designing, Constructing, and Maintaining Residential Buildings in Coastal Areas (Fourth Edition)

FEMA P-55 / Volume 1 / August 2011



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Regulatory Flood Protection Elevation (RFPE)

- Base Flood Elevation PLUS Freeboard (BFE + Freeboard)
- Freeboard – the elevation required by a local jurisdiction above the base flood elevation
- Higher standard adopted by the local jurisdiction
 - Higher level of protection for structures
 - Community Rating System (CRS) Points = increased flood insurance discounts (in the SFHA and out)

**Example: BFE of 9' + 2' local freeboard =
RFPE of 11'**

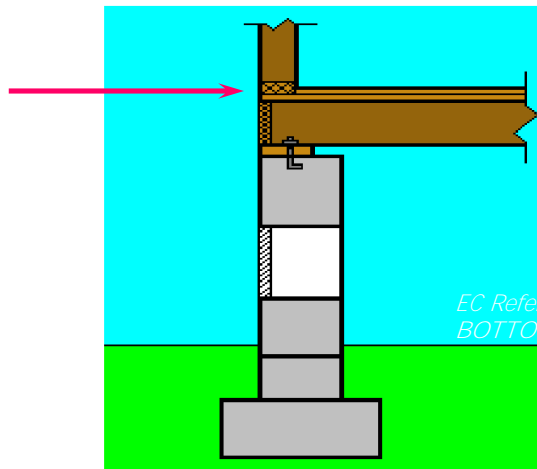


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Lowest Floor in ZONE A, AE, AH, & AO

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

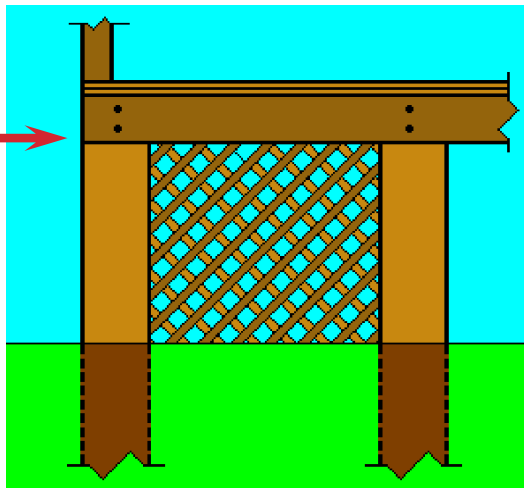


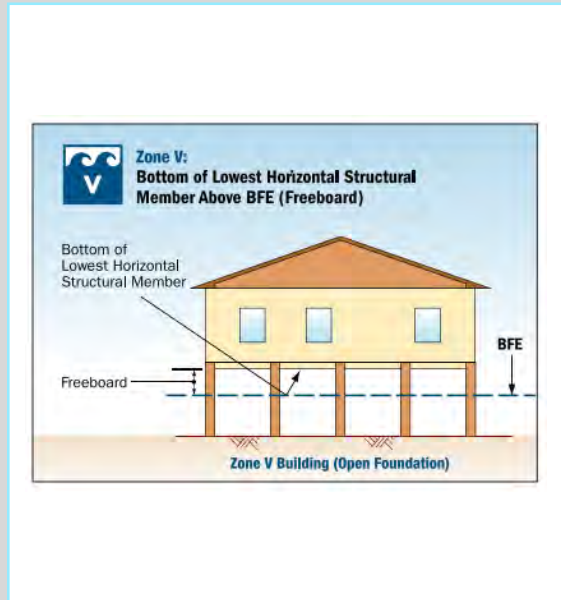
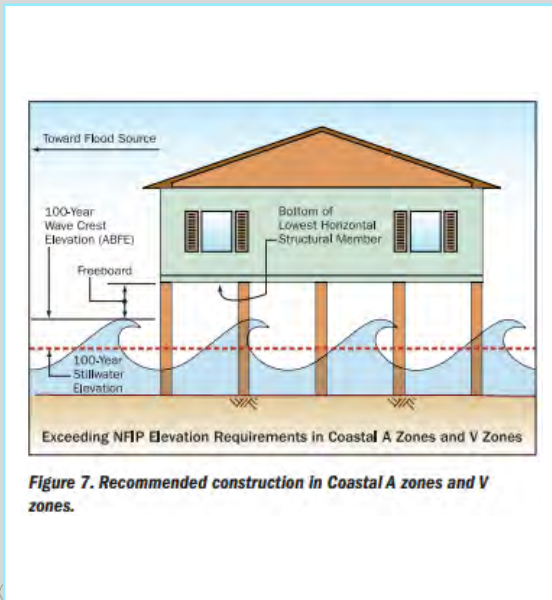
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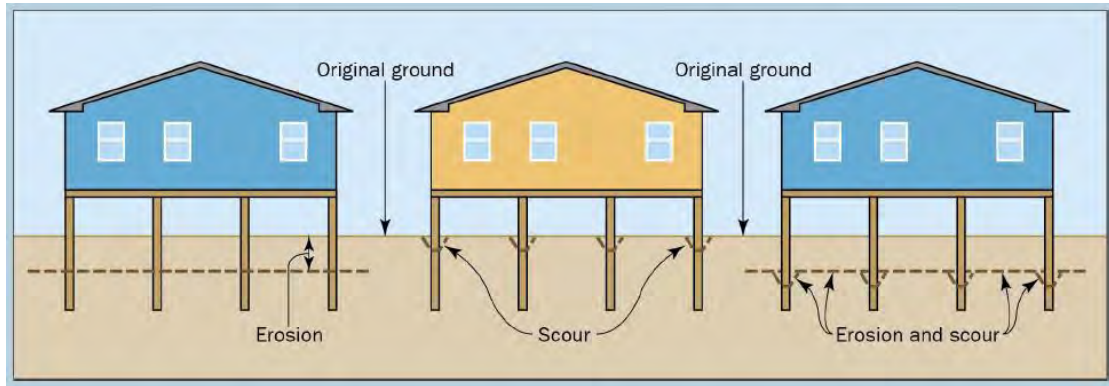


Lowest Floor in ZONE V, VE & Coastal A

Bottom of the lowest horizontal structural member supporting the lowest floor







Scour and Erosion



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Figure 1: Three neighboring buildings with varying degrees of elevation and damage on Fort Myers Beach, Florida, after Hurricane Ian. The right-most building has the lowest elevation of the three and the most damage to the lower levels, whereas the middle building has the highest elevation and minimal damage to the lower levels.

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Bonita Springs, FL Hurricane Ian



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Bolivar Peninsula, TX 2008



Figure 2. Bolivar Peninsula, TX, V-zone house constructed with the lowest floor (bottom of floor beam) at the BFE (dashed line). The estimated wave crest level during Ike (solid line) was 3 to 4' above the BFE at this location.



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Designing for Flood Levels Above the Minimum Required Elevation After Hurricane Ian

Recovery Advisory 1

July 2023



FEMA

DR-4673-FL RA 1

BUT WAIT.....

Where do the regulations and guidance come from?

- Research following past events
- Field investigations post event
- Collaboration among engineers, researchers, home builders, Institute for Business and Home Safety, International Code Council, National Association of Home Builders, US Dept. of Housing and Urban Development, local community officials, etc.

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Protecting Existing Structures



Purchase Flood Insurance Lower Your Flood Risk

- ✓ Elevate utilities (include duct work)
 - ✓ Install flood openings
 - ✓ Elevate building
- ✓ Flood proof (non-residential only)
 - ✓ Relocate



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Flood 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.

Vents **MAY** be installed into a door or garage door.



Requirements for Flood Openings in Foundation Walls and Walls of Enclosures

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

NFIP Technical Bulletin 1 / March 2020



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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**.



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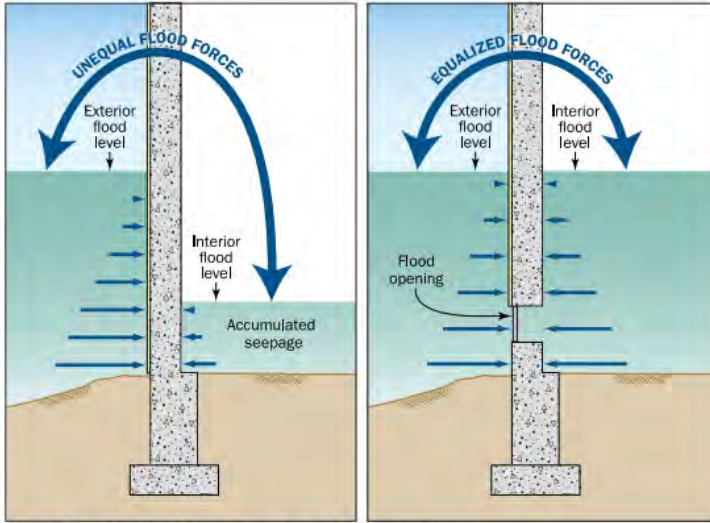
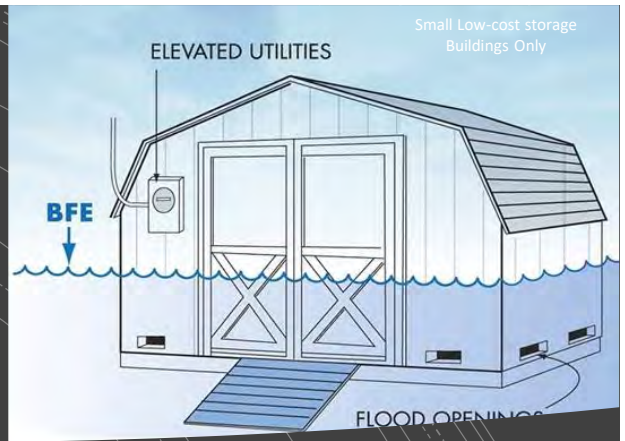


Figure 1: Equalizing flood forces (hydrostatic loads) on exterior walls



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Flood Openings

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Is the Standard Air Vent acceptable to be used as a flood opening or flood vent?



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Standard Air Vent



Figure 17: Standard air vent that is unacceptable as a flood opening because it is not disabled in the open position

- × Can be closed manually
- × Does not allow the automatic entry and exit of water
- = Not acceptable as a flood opening UNLESS disabled in the OPEN position

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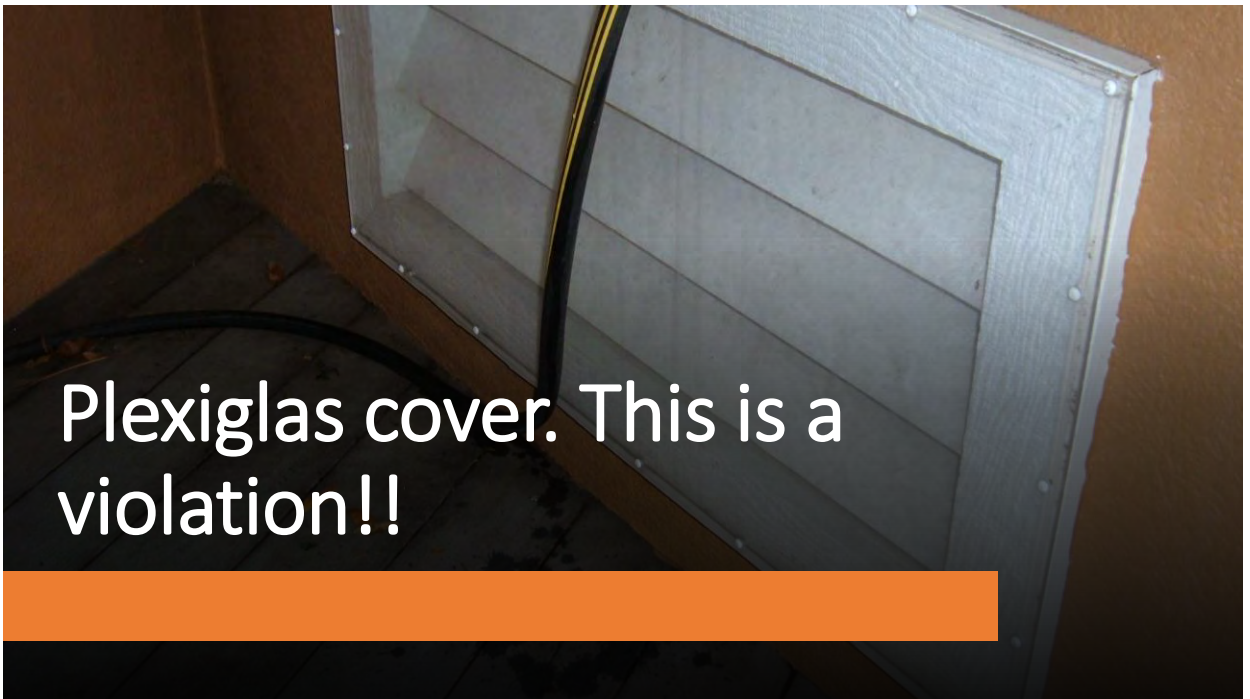
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Spray foam insulation. This is a violation!!

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DPS Emergency Management NC DEPARTMENT OF PUBLIC SAFETY **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	Quantity (Sq. Ft.)	Box Qty.	Box Wt. (Lbs.)	Box Ht. (In.)	Box Dia (In.)
D0036	16" X 16"	120	230	95	
D1220	12" X 20"	240	425	175	
D1232	12" X 32"	300	705	290	
D1636	16" X 16"	255	485	200	
D1634	16" X 24"	300	695	295	
D1632	16" X 32"	310	935	385	
D2032	20" X 32"	60	1,275	595	
D2034	24" X 34"	75	1,595	635	
D2436	24" X 36"	60	1,620	665	

Flood Vent (No Cover)
 One-piece ventplate with easy to insert vermin screens and fixed cover. 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 FEMA Flood Vents

1780 Shreve Drive, Virginia Beach, VA 23463
 757-563-0805 • 1-800-230-0986 • www.crawlspacedoors.com

SMART VENT ICC ES FEMA ACCEPTED ICC-ES EVALUATED

Flood Openings (TB 1 – August 2008)
 1. DESIGN: Refer to TB 008(1)(2), Steel Decking ICC 2006, just listed in Appendix A, in compliance with Federal Emergency Management Agency National Flood Loss Reduction Program. The design follows TB 1 August 2008 and also is optional code for allowing for entry and exit of floodwater during flood events.

Smart VENT 877-441-6388 www.smartvent.com

DETAIL DIAGRAM FLOOD VENT INSULATED

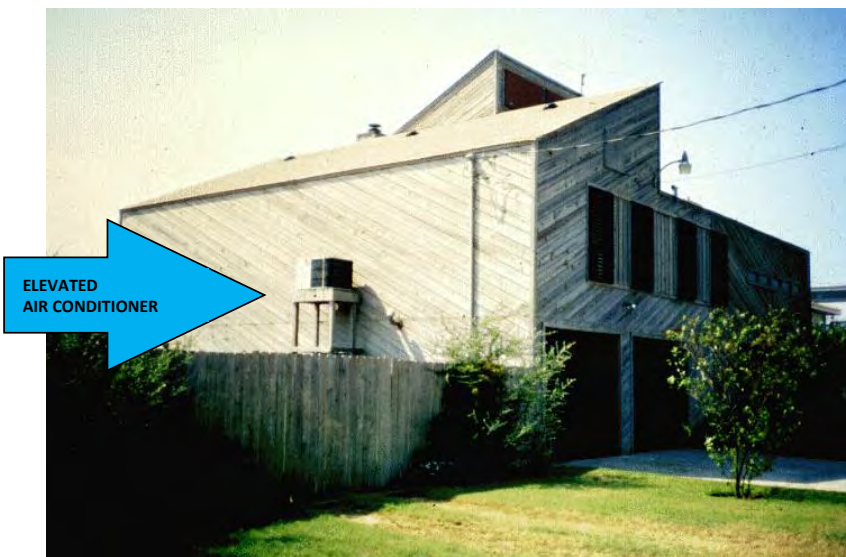
STRAP DETAIL
 1/2\"/>

Installation Conditions and Instructions

Each technical drawing, and this document, is the property of the manufacturer. It is not to be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the manufacturer. This document is for informational purposes only and does not constitute an offer of insurance or any other financial product. For more information, please contact your insurance broker or the manufacturer. This document is not intended to be used as a substitute for professional engineering or architectural services. The manufacturer assumes no liability for any errors or omissions in this document. The manufacturer reserves the right to change the design of the product without notice. © 2014 Smart Vent, LLC. All rights reserved.

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Flood Proofing (Non-residential Only)

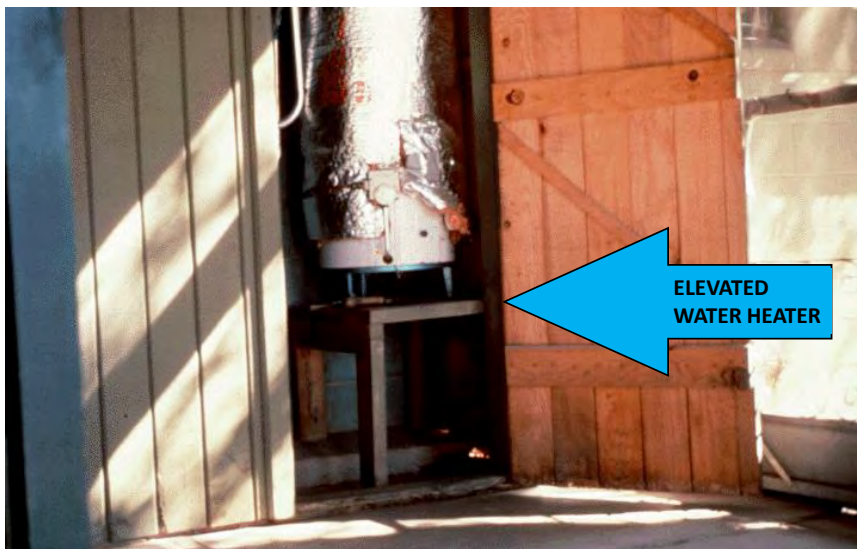


ELEVATED
AIR CONDITIONER

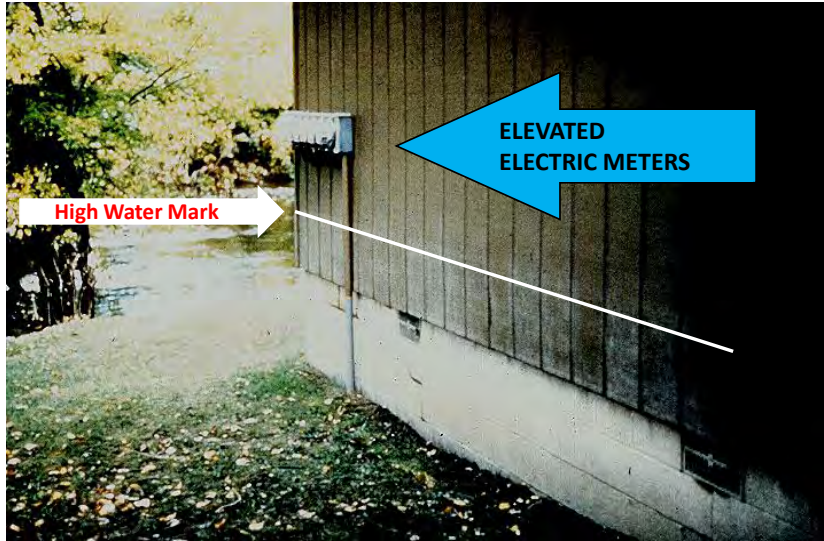




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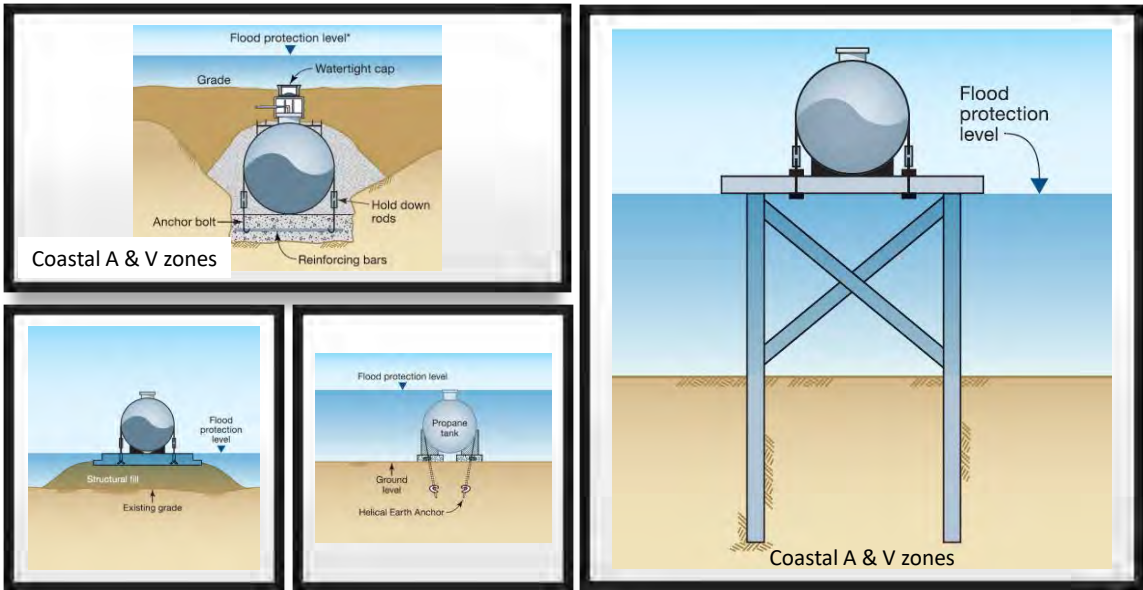


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Other Development

Fuel Tanks

EMAP Accredited



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Hurricane Dorian - 2019



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Questions?
Thank You for having me!



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