Town of Beaufort, NC
701 Front St. - P.O. Box 390 - Beaufort, N.C. 28516
252-728-2141 - 252-728-3982 fax - www.beaufortnc.org

Town of Beaufort Board of Adjustment Regular Meeting
6:00 PM Monday, April 24, 2023 - Town Hall Conference Room, 701 Front Street, Beaufort, NC 28516
Monthly Meeting

Call to Order

Roll Call

Agenda Approval

Minutes Approval

1. BOA Draft Minutes for 10.24.22

Election of Officers

Administration of Oaths

Quasi-Judicial Proceeding

1. Variance Request for 105 Front Street

Commission / Board Comments

Staff Comments

Adjourn

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Town of Beaufort Board of Adjustment Regular Meeting
6:00 PM Monday, October 24, 2022
Minutes

Call to Order

Chair Oliver called the October 24, 2022 Board of Adjustment regular meeting to order at 6:00 pm.

Roll Call

Members Present: Wendi Oliver, Ann Carter, Virginia Cuthrell, and Nick Wilson

Members Absent: Cathy Reeve, Barry Evans, Alternate, and Allison Long, Alternate

A quorum was declared with four members present.

Staff Present: Town Attorney Jill Quattlebaum, Kyle Garner, and Laurel Anderson.

Agenda Approval

Chair Oliver asked if there were any changes to the Agenda.

Chair Oliver made the motion to approve the Agenda and Member Carter made the second. Chair Oliver took a vote that was unanimous.

Voting yea: Chair Oliver, Member Carter, Member Cuthrell, Member Wilson

Minutes Approval

Chair Oliver asked if there were any changes to the September 26, 2022 Meeting Minutes.

Member Carter made the motion to approve the Minutes and Chair Oliver made the second. Chair Oliver took a vote that was unanimous.

Voting yea: Chair Oliver, Member Carter, Member Cuthrell, Member Wilson

Items of Consent

1. Approval of the Order for 141 Lewistown Road

Chair Oliver asked for a motion to approve the Order for 141 Lewistown Road.

Member Carter made the motion to approve the Order and Chair Oliver made the second. Chair Oliver took a vote that was unanimous.

Voting yea: Chair Oliver, Member Carter, Member Cuthrell, Member Wilson

Presentation

1. Board Training

Town Attorney Quattlebaum gave a quasi-judicial presentation specifically focusing on evidentiary hearing items and processes.

Commission / Board Comments

There were no Board comments.

Staff Comments

There were no Staff comments.

Adjourn

Chair Oliver asked for a motion to adjourn the meeting.

Member Carter made the motion to adjourn and Member Cuthrell made the second. Chair Oliver took a vote that was unanimous.

Voting yea: Chair Oliver, Member Carter, Member Cuthrell, Member Wilson

_____

Wendi Oliver, Chair

_____

Laurel Anderson, Board Secretary

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Town of Beaufort Board of Adjustment Regular Meeting
6:00 P.M. April 24, 2023 – 701 Front Street – Town Hall Conference Room

AGENDA CATEGORY: New Business

SUBJECT: Variance Request for 105 Front Street

BRIEF SUMMARY:

Jay Horton (Filter Design Studio) on Behalf of Mr. Billy Wooten, are requesting a variance to allow for:

- The current air handler installed in the crawspace to encroach 0.60 feet below FEMA Base Flood Elevation

REQUESTED ACTION:

Conduct Evidentiary Hearing

Decision on Request

EXPECTED LENGTH OF PRESENTATION:

15 Minutes (Presentation from Staff)

SUBMITTED BY:

Kyle Garner, AICP Planning Director

BUDGET AMENDMENT REQUIRED:

N/A

Town Of Beaufort

Memo

To: Beaufort Board of Adjustment

From: Kyle Garner, AICP, Planning Director

Date: April 10, 2023

Re: Case # 23-01 Variance Request for 105 Front Street

Variance Request

Applicant: Jay Horton – Filter Design **Property Owner:** Billy & Margaret Wooten

Property Address: 105 Front Street **PIN:** 730617001940000

Property Zoning District: R-8 (Medium Density) **Flood Zone:** AE-6

Lot Dimensions: See Attached Survey as part of the application.

Property History: This property is locally known as the Duncan House and in August 2012, was approved by the State Historic Preservation Office as a structure of Statewide Significance (See Attachment with John Wood Email). Less than 15 properties statewide are listed of Statewide Significance.

- In March 2021 a Certificate of Appropriateness was issued for the elevation of the structure from 5.1 feet to 8.2 feet.
- July of 2021 Building Permit Issued

Request:

- A request to allow the current air handler installed in the crawspace to encroach 0.60 feet below FEMA Base Flood Elevation

Description of Project:

The applicant is requesting the variance due to the interior configuration of the historic structure and not being able to relocate the current handler without causing issues to the Historic Character of the structure. (See John Wood Email)

The applicant has submitted a written description as to why they request the variance.

Facts:

- The property is zoned R-8 (Medium Density).
- The structure per elevation certificate has been raised from below the Base Flood Elevation to 2.2 feet above the base flood. (See attached elevation plans submitted to Historic Commission showing previous elevation and proposed/existing elevation of the structure).
- The structure is listed as a structure of Statewide Historic Significance.
- The structure is part of the National Registered District of Beaufort
- Chapter 151 Flood Damage Prevention Ordinance Item C does allow for variances for historic structures if it protects the historic character. An email has been submitted by Mr. John Wood of the State Historic Office states that the mechanical units do not adversely impact the historic character.

Exhibits:

- Exhibit A – Staff Report
- Exhibit B – Vicinity Map
- Exhibit C – List of Property Owners Within 100 Feet
- Exhibit D - Variance Application
- Exhibit E – Chapter 151 Town of Beaufort Flood Damage Prevention Ordinance
- Exhibit F – John Wood Email with SHPO info on Structure
- Exhibit G - FEMA Historic Structures Brochure
- Exhibit H – FEMA Bulletin Variance – Historic Structure
- Exhibit I – Survey for 105 Front St
- Exhibit J – Elevation Drawing showing previous and proposed elevation of Structure.

Case # 23-01 - Variance Request - 105 Front Street

OWNER	AIL_HOU	MAIL_ST	MAIL_CITY	IL_ST	MAIL_ZI	MAIL_ADD2
CANDLEWOOD INVESTMENTS LLC			ROCKY MOUNT	NC	27804	PO BOX K
FLOW,VICTOR IVAN JR	18	GRAYLYN PLACE CT	WINSTON SALEM	NC	27106	
LITTLEWOOD,GEORGE F ETUX PAGE	113	FRONT STREET	BEAUFORT	NC	28516	
SUNSET LANE PROPERTIES LLC			ROCKY MOUNT	NC	27802	PO BOX K
SUNSET LANE TOWNHOUSES	18	GRAYLYN PLACE CT	WINSTON SALEM	NC	27106	
WOOTEN,WILLIAM B ETUX MARGARET	282	MCNAIR RD	TARBORO	NC	27886	

APPLICATION FOR A VARIANCE OF LAND DEVELOPMENT STANDARDS FOR THE TOWN OF BEAUFORT

Instructions:

Please complete the application below, include all the required attachments, and the **application fee of $300.00** and return to the Beaufort Town Hall, 701 Front Street or P.O. Box 390, Beaufort, N.C., 28516. Incomplete applications will not be processed but **will be** returned to the applicant. Please contact Planning and Inspections at 252-728-2142 with any questions.

APPLICANT INFORMATION

Applicant Name: Jay Horton-Filter Design Studio

Applicant Address: 707 Bridges St. Morehead City, NC 28557

Phone Number: 252-230-0788 Email: jay@filterdesignstudio.com

Property Owner Name: William B. and Margaret Wooten

Address of Property Owner: 282 Mcnair Rd. Tarboro, NC 27886

Phone Number: _____ Email: _____

PROPERTY INFORMATION

Property Address: 103 Front St. Beaufort, NC 28516

15-Digit PIN: 730617001940000 Lot/Block Number: Lots 1-4

Size of Property (in square feet or acres): 1.033 acres

Current Zoning: R-8 Is the property in the Historic District? Yes

Current Use of Property: ☑Residential ☐Vacant ☐Commercial ☐Other: _____

Jay Horton — Applicant Signature

3/31/2023 — Date of Signature

_____ — Property Owner Signature (if different than above)

_____ — Date of Signature

An application fee of $300.00, is to be paid by either cash, money order, or check made payable to the "*Town of Beaufort*" and must accompany this application. The complete application, payment, and supporting material must be received by Town Staff at least 15 working days prior to a regularly scheduled Board of Adjustment meeting date.

Please refer to the Town's ***Land Development Ordinance***, Section 3 and all other pertinent sections, for the information required to accompany this application.

The Town's website address is **www.beaufortnc.com.**

OFFICE USE ONLY *Revised 8/2020*

Received by: _____ Reviewed for Completeness By: _____

Date: _____ Date Deemed Complete and Accepted: _____

REQUIRED ATTACHMENTS FOR A VARIANCE TO THE BEAUFORT ZONING REGULATIONS

Please provide the following as attachments to the variance request form:

☐ 1. A statement explaining the following:
- The **specific requirements** of the Town of Beaufort that the applicant is asking to be varied (for example: the number of required parking spaces, any yard setbacks, height of a structure etc.) Please reference the exact chapter and section of the Land Development Ordinance (LDO) in question.
- The **EXACT amount** of variance that is being requested. For example, the reduction of a placement of a structure by 5 feet within a setback area; a reduction of parking spaces by 7; or an increase in the amount of permitted signage by 16 square feet, etc.
- The **reason for requesting the Variance**, including an explanation of why the Variance should be considered based on the criteria outlined in Section 21-I (1) of the LDO and any other relevant Sections of the Ordinance that may specifically pertain to the project (see attached excerpts of the code).

☐ 2. A site plan of the property drawn to scale and includes:
- A North Arrow;
- All property lines and accurate property line dimensions;
- The adjacent streets and names;
- The location of all easements (if applicable);
- The location of all existing structures (if applicable);
- The proposed location of new or expanded structures;
- The current and proposed building setbacks from all property lines; and,
- All parking areas, landscaping, and any other requirements of the zoning regulations.

☐ 3. A TYPED list all property owners (with addresses) within 100 feet of the boundary lines of all properties requesting the variance (notification of adjacent property owners by the Town is required by North Carolina law).

☐ 4. Any additional materials such as photographs of the surrounding properties, elevations of proposed structures or information that the applicant would like to present to the Board of Adjustment relevant to the requested variance.

5. Plans or other documents submitted for the Variance should be in an electronic/digital method as well as one paper copy.

APPLICATIONS ARE DUE 15 WORKING DAYS BEFORE A REGULAR BOARD MEETING.

Section 21. *Board of Adjustment*

I) *Variances.*

The power of variances is to be sparingly exercised and only in rare instances and under exceptional circumstances and with due regard to the main purpose of the *Land Development Ordinance* (herein known as *the LDO* or *the Ordinance*): to preserve the property rights of others. No change in permitted uses may be authorized by variance.

1) Application Submittal.

An application for a variance shall be submitted to the Board of Adjustment (BOA) by filing a copy of the application with the Town.

2) Findings for the Variance.

When practical difficulties or unnecessary hardships would result from carrying out the strict letter of the LDO, the BOA shall have the power to vary or modify any of the regulations or provisions of the Ordinance so the spirit of the Ordinance shall be observed, public safety and welfare secured, and substantial justice done. A variance may be granted only upon affirmative finding of the following:

a) Unnecessary hardship would result from the strict application of this Chapter. It shall not be necessary to demonstrate that, in the absence of the variance, no reasonable use can be made of the property;

b) The hardship results from conditions that are peculiar to the property such as location, size or topography. Hardships resulting from personal circumstances, as well as hardships resulting from conditions that are common to the neighborhood or the general public, may not be the basis for granting a variance;

c) The hardship did not result from actions taken by the applicant or the property owner. The act of purchasing property with knowledge that circumstances exist that may justify the granting of a variance shall not be regarded as a self-created hardship; and,

d) The requested variance is consistent with the spirit, purpose, and intent of this Chapter, such that public safety is secured and substantial justice is achieved.

K) *Burden of Proof for Variances.*

2) The applicant for a variance (request) shall have the burden of proof and persuasion.

L) *Board Action on Variances.*

2) Granting a Variance.

Before granting a variance, the BOA must take a separate vote and vote affirmatively by a four-fifths majority, on each of the four required findings stated in subsection I-2 of this Section. A motion to make an affirmative finding on each of the requirements set forth in subsection I-2 (see above reference) of this Section shall include a statement of the specific reasons or findings of fact supporting such motion.

3)Denying a Variance.

A motion to deny a variance shall be made if any one or more of the four required findings set forth is subsection I-2 (see above reference) of this Section are not satisfied or if the application is incomplete. A motion to deny a variance shall include a statement of the specific reasons or findings of fact which were not met and therefore caused the denial of the variance. The motion is adopted as the board's decision if supported by more than one-fifth of the board's voting membership in attendance (excluding vacant seats).

Exact Variance Request

- We are requesting a variance from the Flood Damage Prevention Ordinance
- We are requesting to be allowed to let the current air handler installed in the crawlspace to encroach 0.60' below FEMA Base Flood Elevation

Reason for Requesting Variance

We are requesting a variance from the Flood Damage Prevention Ordinance in order to obtain a Certificate of Occupancy and close out all current building permits. The current "air handler" is installed in the crawlspace and is currently 0.60' below the stated "FEMA Base Flood". Structural elements of the historic structure's floor system will not allow us to raise the unit. The interior in it's current configuration does not allow for an enclosure to support the "air handler".

3.3.13 Historic Structures

A variance may be issued for the reconstruction, rehabilitation, or restoration of historic structures if the variance is the minimum necessary to preserve the historic character and design of the structure. "Historic structures" are those listed in the Department of the Interior (DOI) National Register of Historic Places, a DOI-certified State Inventory of Historic Places, or a certified local inventory, and structures listed as a contributing building in a listed historic district. The original intent of providing special treatment to historic structures was to comply with the intent of the National Historic Preservation Act of 1966 by: 1. Allowing historic structures to always maintain pre-FIRM subsidized insurance rates; and 2. Minimizing the adverse impacts of NFIP requirements on the historic integrity of historic structures. The granting of a variance should be based on a structure-by-structure review to determine whether elevation (or floodproofing, if a non residential structure is involved) to or above the BFE would destroy the historic character or design of the structure. Variances should only be granted for individual structures and should never be granted for portions of a historic district or an entire historic district. For example, if elevating a historic structure would destroy its character and cause it to be removed from the DOI National Register of Historic Places, a variance for the elevation requirement may be considered. However, the community should place conditions on the variance to minimize flood damage such as: 44 CFR 60.6(A) Variances may be issued for the repair or rehabil itation of historic structures upon a determination that (i) the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and (ii) the variance is the min imum necessary to preserve the historic character and design of the structure. For additional guidance on historic structures, see FEMA P-467-2, Floodplain Management Bulletin on Historic Structures (2008). FLOODPLAIN MANAGEMENT BULLETIN: Variances and the National Flood Insurance Program 21 • Elevate all utilities and finished interior workings to or above the BFE or to the maximum extent possible or practically feasible; • Use flood damage-resistant materials for interior and exterior improvements wherever possible; and • Raise the interior floors to or above the BFE or to the maximum extent possible (this is often technically feasible in older structures with high ceilings). If repair or improvements result in the loss of the structure's historic designation, the structure would no longer qualify for the variance and would be required to meet the NFIP floodplain regulations. Community Considerations In addition to this "historic structure" variance criterion, another provision of the NFIP also provides relief for historic structures located in the SFHA. The definition of Substantial Improvement at 44 CFR 59.1 excludes historic structures from its definition by excluding "any alteration of an historic structure provided that the alteration will not preclude the structure's continued designation as 'historic structure.'" The same exclusion also applies to historic structures that have incurred Substantial Damage. In regulating historic structures, communities have the option of using the provisions as stated in the variance criteria at CFR 60.6(a) or the definition of Substantial Improvement to address the unique needs of historic structures. Communities should adopt only one option to regulate historic structures. Some communities have chosen to adopt the variance criteria in their ordinance, while other communities have chosen to include the historic structure exemption as part of their Substantial Improvement definition. In either

case, historic structures can be excluded from the NFIP elevation and floodproofing requirements (non-residential only). When a community exempts a historic structure from the NFIP floodplain management requirements, it should document the process and maintain the documents in the community permit files. Property Owner Considerations Owners of historic structures should be aware that physical alterations made to a historic structure may cause the structure to be removed from the National Register of Historic Places, DOI-certified State Inventory of Historic Places, or local inventory. If such alterations cause the structure to lose its official listing or historic status, the structure would no longer be a historic structure for the purposes of the NFIP and would be required to meet the minimum floodplain management requirements of the local ordinance. A determination of whether the structural alternations would forfeit the historic designation should be made before requesting a permit.

Finding of Fact:

Floodplain Management Bulletin Historic Structures FEMA P-467-

The National Flood Insurance Program (NFIP) gives special consideration to the unique value of one of our Nation's most significant resources – its historic buildings, landmarks, and sites. It does so in two ways. First, the NFIP floodplain management regulations provide significant relief to historic structures. Historic structures do not have to meet the floodplain management requirements of the program as long as they maintain their historic structure designation. They do not have to meet the new construction, substantial improvement, or substantial damage requirements of the program. This exclusion from these requirements serves as an incentive for property owners to maintain the historic character of the designated structure (44 CFR §60.3). It may also serve as an incentive for an owner to obtain historic designation of a structure. Secondly, a designated historic structure can obtain the benefit of subsidized flood insurance through the NFIP even if it has been substantially improved or substantially damaged so long as the building maintains its historic designation. The amount of insurance premium charged the historic structure may be considerably less than what the NFIP would charge a new non-elevated structure built at the same level. Congress requires that the NFIP charge actuarial rates for all new construction and substantially improved structures (National Flood Insurance Act of 1968, 42 U.S.C. 4015).

Definition of "Historic Structures" The definition section of the NFIP [Code of Federal Regulations (CFR) 44 Part 59], defines "historic structure" as "any structure that is: (1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; (This includes structures that are determined to be eligible for listing by the Secretary of the Interior as a historic structure. A determination of "eligibility" is a decision by the Department of

the Interior that a district, site, building, structure or object meets the National Register criteria for evaluation although the property is not formally listed in the National Register.) National Flood Insurance Program Floodplain Management Bulletin Page 4 of 22 (2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; (3) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or (4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either: (a) By an approved state program as determined by the Secretary of the Interior or (b) Directly by the Secretary of the Interior in States without approved programs." This definition was coordinated with the Department of Interior when it was added to the NFIP Regulations in 1989. The purpose of this definition is to provide NFIP communities with criteria to distinguish between "historic structures" and the other existing buildings which remain subject to NFIP floodplain management requirements (44 CFR §60.3). While it is important to preserve historic structures and other cultural resources, it is also critical to ensure that other existing flood-prone structures are protected from flood damage when they are substantially improved or substantially damaged.

Floodplain Management Requirements that Provide Relief for Historic Structures The NFIP floodplain management requirements contain two provisions that are intended to provide relief for "historic structures" located in Special Flood Hazard Areas:

(1) The definition of "substantial improvement" at 44 CFR 59.1 includes the following exclusion for historic structures, "Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as an "historic structure". The same exemption also applies to "historic structures" that have been "substantially damaged". This provision exempts historic structures from the substantial improvement and substantial damage requirements of the NFIP. (2) The other provision of the NFIP floodplain management regulations that provides relief for "historic structures" is the variance criteria at 44 CFR 60.6(a). This provision states: "Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and de sign of the structure."

Flood Insurance for Historic Structures:

In addition to the relief from the NFIP floodplain management requirements described above, owners of "historic structures" can obtain and maintain flood insurance at subsidized rates. Flood insurance coverage is required for most mortgage loans and for obtaining Federal grants and other financial assistance. The ability to obtain flood insurance coverage is also important to ensuring that historic

structures can be repaired and restored after a flood event. The National Flood Insurance Act of 1968, as amended, requires that FEMA charge actuarial rates reflecting the flood risk to buildings built or substantially improved on or after the effective date of the initial Flood Insurance Rate Map (FIRM) for the community or after December 31, 1974, whichever is later. Actuarial rating assures that the risks associated with buildings in flood prone areas are borne by those located in such areas and not by the taxpayers at large. These buildings are referred to as Post-FIRM. The NFIP flood insurance rates are based on the degree of the flood risk. The flood insurance premium calculations take into account a number of factors including the flood risk zone shown on the FIRM, elevation of the lowest floor above or below the BFE, the type of building, the number of floors, and the existence of a basement or an enclosure. The NFIP floodplain management requirements not only are designed to protect buildings constructed in floodplains from flood damages; they also help keep flood insurance premiums affordable (44 CFR §60.3). Buildings not properly elevated will be charged a much higher flood insurance premium due to the increased flood risk. If substantially improved historic structures were not elevated and made subject to these rates, the annual insurance premiums could be many thousands of dollars a year. Allowing historic structures to continue to be insured at subsidized rates, even when they are substantially improved or substantially damaged, represents a significant financial benefit to these building owners.

Property owners within 100'

OWNER:	LITTLEWOOD,GEORGE F ETUX PAGE
Addresses:	102 FRONT STREET 113 FRONT STREET
PIN:	730617002865000
Deed Ref:	1701-096 12/18/2020
Plat Ref:	-
Total Acres:	0.294

OWNER:	CANDLEWOOD INVESTMENTS LLC
Addresses:	115 FRONT STREET
PIN:	730617003801000
Deed Ref:	1589-187 10/5/2017
Plat Ref:	31-620
Total Acres:	0.22

OWNER:	SUNSET LANE PROPERTIES LLC
Addresses:	100 SUNSET LANE
PIN:	730617004925000
Deed Ref:	1609-115 5/23/2018
Plat Ref:	33-651
Total Acres:	0.29

OWNER:	FLOW,VICTOR IVAN JR
Addresses:	95 SUNSET LANE
PIN:	730617003925000
Deed Ref:	1706-030 1/28/2021
Plat Ref:	-
Total Acres:	0.114

OWNER:	FLOW,VICTOR I JR ETUX RODGERYN
Addresses:	110 ANN STREET
PIN:	730617012110000
Deed Ref:	1530-31 1/8/2016
Plat Ref:	31-616
Total Acres:	0.907

OWNER:	FLOW,VICTOR IVAN JR
Addresses:	97 SUNSET LANE
PIN:	730617013060000
Deed Ref:	1696-209 11/18/2020
Plat Ref:	23-6
Total Acres:	0.097

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB No. 1660-0008
Expiration Date: November 30, 2022

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1–9.

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

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE

A1. Building Owner's Name
BILLY WOOTEN (AFTER DWELLING RAISED 2022)

Policy Number:

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

Company NAIC Number:

City	State	ZIP Code
BEAUFORT	North Carolina	28516

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
PIN: 730617001940000

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) RESIDENTIAL

A5. Latitude/Longitude: Lat. 34.71912 Long. -76.66946 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 9

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

a) Square footage of crawlspace or enclosure(s) 2682 sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade 13

c) Total net area of flood openings in A8.b 2860 sq in

d) Engineered flood openings? ☒ Yes ☐ No

A9. For a building with an attached garage:

a) Square footage of attached garage NA 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

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
375346 TOWN OF BEAUFORT	CARTERET	North Carolina

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)
3720730600	J	6-19-2020	7-16-2003	AE	6.0'

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: NC FRIS

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

ELEVATION CERTIFICATE

OMB No. 1660-0008
Expiration Date: November 30, 2022

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. 105 FRONT ST	Policy Number:
City: BEAUFORT, NC 28516 — State — ZIP Code	Company NAIC Number

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: X112 Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below.

☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

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

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	2.8	☒ feet	☐ meters
b) Top of the next higher floor	8.2	☒ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	NA	☒ feet	☐ meters
d) Attached garage (top of slab)	NA	☒ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	5.4	☒ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	4.3	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	4.80	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	4.9	☒ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

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

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

Certifier's Name: JAMES I PHILLIPS III, PLS	License Number: L-3151	
Title: PROFESSIONAL LAND SURVEYOR		
Company Name: JAMES PHILLIPS LAND SURVEYING		
Address: PO BOX 2103		
City: BEAUFORT	State: North Carolina	ZIP Code: 28516
Signature: JAMES IRA PHILLIPS III, PLS — Digitally signed by JAMES IRA PHILLIPS III, PLS, cn=JAMES IRA PHILLIPS III, PLS, ou= JAMES PHILLIPS LAND SURVEYING, o= SAME, l= BEAUFORT, st= NC, c= US, e=mail= jp3@coastalnet.com Date: 2022.12.15 09:07:58 EST	Date: 12-15-2022	Telephone: 252-728-5848 Ext.

NORTH CAROLINA PROFESSIONAL SEAL L-3151 LAND SURVEYOR JAMES IRA PHILLIPS III

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

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

C2E AIR HANDLER IN CRAWL SPACE 5.4 FT
OUTSIDE HVAC UNITS ARE AT 8.4 FT

ELEVATION CERTIFICATE

OMB No. 1660-0008
Expiration Date: November 30, 2022

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. 105 FRONT ST			Policy Number:
City BEAUFORT, NC 28516	State	ZIP Code	Company NAIC Number

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 1–2 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

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

E4. Top of platform of machinery and/or equipment servicing the building is _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown. The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, and E are correct to the best of my knowledge.

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

Comments

☐ Check here if attachments.

ELEVATION CERTIFICATE

OMB No. 1660-0008
Expiration Date: November 30, 2022

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. 105 FRONT ST	Policy Number:
City State ZIP Code BEAUFORT, NC 28516	Company NAIC Number

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–G10. In Puerto Rico only, enter meters.

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–G10) 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 Datum _____

G9. BFE or (in Zone AO) depth of flooding at the building site: _____ ☐ feet ☐ meters Datum _____

G10. Community's design flood elevation: _____ ☐ feet ☐ meters Datum _____

Local Official's Name	Title
Community Name	Telephone
Signature	Date

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

☐ Check here if attachments.

ELEVATION CERTIFICATE

BUILDING PHOTOGRAPHS

See Instructions for Item A6.

OMB No. 1660-0008
Expiration Date: November 30, 2022

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. 105 FRONT ST	Policy Number:
City State ZIP Code BEAUFORT, NC 28516	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.

Photo One

Photo One Caption SIDE

Clear Photo One

Photo Two

Photo Two Caption REAR

Clear Photo Two

ELEVATION CERTIFICATE

BUILDING PHOTOGRAPHS
Continuation Page

OMB No. 1660-0008
Expiration Date: November 30, 2022

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. 105 FRONT ST	Policy Number:
City: BEAUFORT, NC 28516 — 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.

Photo Three

Photo Three Caption REAR SIDE — Clear Photo Three

Photo Four

Photo Four Caption FRONT SIDE — Clear Photo Four

Building Diagrams

DIAGRAM 7

All buildings elevated on full-story foundation walls with a partially or fully enclosed area below the elevated floor. This includes walkout levels, where at least 1 side is at or above grade. The principal use of this building is located in the elevated floors of the building.

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

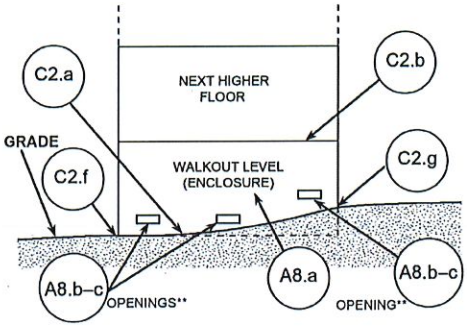


DIAGRAM 8

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

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

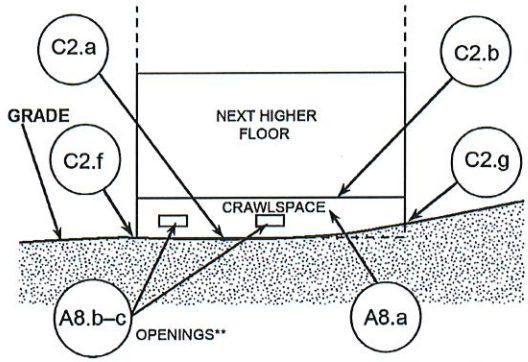
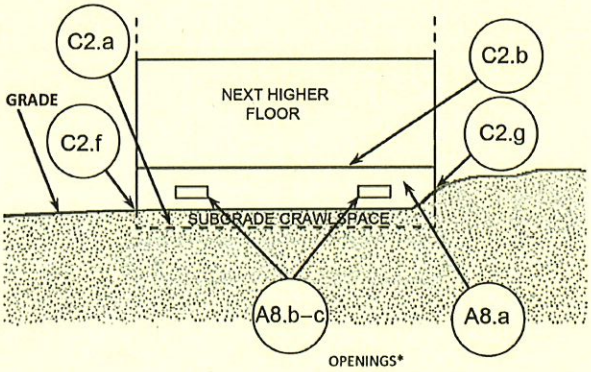


DIAGRAM 9

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

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



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

** An "opening" is a permanent opening that allows for the free passage of water automatically in both directions without human intervention. Under the NFIP, a minimum of 2 openings is required for enclosures or crawlspaces. The openings shall provide a total net area of not less than 1 square inch for every square foot of area enclosed, excluding any bars, louvers, or other covers of the opening. Alternatively, an Individual Engineered Flood Openings Certification or an Evaluation Report issued by the International Code Council Evaluation Service (ICC ES) must be submitted to document that the design of the openings will allow for the automatic equalization of hydrostatic flood forces on exterior walls. A window, a door, or a garage door is not considered an opening; openings may be installed in doors. Openings shall be on at least 2 sides of the enclosed area. If a building has more than 1 enclosed area, each area must have openings to allow floodwater to directly enter. The bottom of the openings must be no higher than 1.0 foot above the higher of the exterior or interior grade or floor immediately below the opening. For more guidance on openings, see NFIP Technical Bulletin 1.

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ESR-3560

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Reissued 09/2015
This report is subject to renewal 09/2017.

DIVISION: 08 00 00—OPENINGS
SECTION: 08 95 43—VENTS/FOUNDATION FLOOD VENTS

REPORT HOLDER:

FLOOD FLAPS®, LLC.

2707 WATERPOINTE CIRCLE
MT. PLEASANT, SOUTH CAROLINA 29466

EVALUATION SUBJECT:

FLOOD FLAPS® FLOOD VENTS: MODELS FFWF12; FFNF12; FFWF08; FFNF08; FFWF05; FFNF05

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ICC-ES Evaluation Report

ESR-3560

Reissued September 2015
This report is subject to renewal September 2017.

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DIVISION: 08 00 00—OPENINGS
Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

FLOOD FLAPS®, LLC
2707 WATERPOINTE CIRCLE
MT. PLEASANT, SOUTH CAROLINA 29466
(843) 849-8031
www.floodflaps.com
info@floodflaps.com

EVALUATION SUBJECT:

FLOOD FLAPS® FLOOD VENTS: MODELS FFWF12; FFNF12; FFWF08; FFNF08; FFWF05; FFNF05

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012 and 2009 *International Building Code®* (IBC)
- 2012 and 2009 *International Residential Code®* (IRC)

Properties evaluated:

- Physical operation
- Water flow
- Weathering

2.0 USES

Flood Flaps® are used to provide for the equalization of hydrostatic flood forces on exterior walls.

3.0 DESCRIPTION

3.1 General:

Flood Flaps® flood vents are engineered mechanically operated flood vents (FVs) that automatically allow flood waters to enter and exit enclosed areas. The FVs are constructed of ABS plastic which serves as the FV's housing, and a front grill that contains an anodized metal screen imbedded in polypropylene plastic. On contact with rising flood water, the grill will disengage from its secured position, allowing flood water and debris to flow through in either direction.

The sealed series models contain two rubber flaps that close the FV to the passage of air when using with conditioned areas or sealed crawl spaces. In the same manner as the grill, the two rubber flaps are pushed open by water pressure, allowing water and debris to flow through the FV in either direction. See Figure 1 for an illustration of the Flood Flaps® FV.

3.2 Engineered Opening:

The Flood Flaps® FVs comply with the design principle noted in Section 2.6.2.2 of ASCE/SEI 24 for a rate of rise and fall of 5 feet per hour (0.423 mm/s). In order to comply with the engineered opening requirement of ASCE/SEI 24, Flood Flaps® FVs must be installed in accordance with Section 4.0.

3.3 Model Sizes:

The Flood Flaps® FV model designations and sizes are as follows:

MODEL	WIDTH (in)	HIGHT (in)	DEPTH (in)
FFWF12 FFNF12	$15^5/_8$	$7^3/_4$	12
FFWF08 FFNF08	$15^5/_8$	$7^3/_4$	8
FFWF05 FFNF05	$15^5/_8$	$7^3/_4$	5

For **SI:** 1 inch = 25.4 mm.

The FFWF series include two rubber flaps for the prevention of air flow. The FFNF series omit the rubber flaps.

3.4 Ventilation:

Flood Flaps® FV models FFNF12, FFNF08, FFNF05, and FFNF02 have metal screens with $^1/_4$ inch by $^1/_4$ inch (6 mm by 6 mm) openings and provide 37 square inches of net free opening to supply natural ventilation for under-floor ventilation. Flood Flaps® FV models FFWF12, FFWF08, and FFWF05 have not been evaluated for use as openings for under-floor ventilation.

4.0 DESIGN AND INSTALLATION

Flood Flaps® FVs are designed to be installed into walls of existing or new construction. Installation of the FVs must be in accordance with the manufacturer's instructions, the applicable code and this report. Flood Flaps® FVs can be installed in wood, masonry and concrete walls up to a thickness of 12 inches (305 mm). In order to comply with the engineered opening design principle noted in Section 2.6.2.2 of ASCE/SEI 24, the Flood Flaps® FVs must be installed as follows:

- With a minimum of two openings on different sides of each enclosed area.

- With a minimum of one FV for every 220 square feet (20 m^2) of enclosed area.
- Below the base flood elevation.
- With the bottom of the FV located a maximum of 12 inches (305 mm) above grade.

5.0 CONDITIONS OF USE

The Flood Flaps® flood vents described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The Flood Flaps® FVs must be installed in accordance with this report, the applicable code and the manufacturer's installation instructions. In the event of a conflict, the instructions in this report govern.

5.2 The Flood Flaps® FVs must not be used in place of "breakaway walls" in coastal high hazard areas, but are permitted for use in conjunction with breakaway walls in other areas.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Mechanically Operated Flood Vents (AC364), dated October 2013.

7.0 IDENTIFICATION

The Flood Flaps models recognized in this report are identified by a label bearing the manufacturer's name, the model number, and the evaluation report number (ESR-3560).

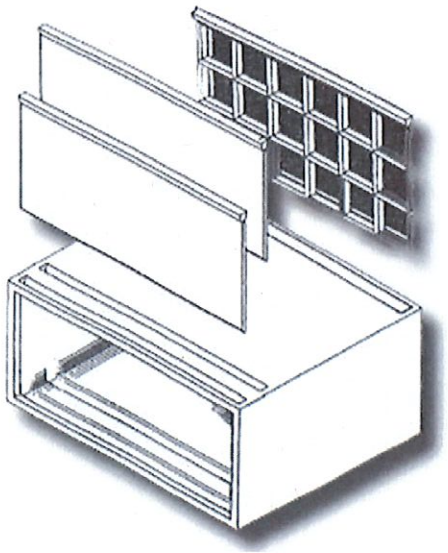

FIGURE 1—FLOOD FLAPS® FLOOD VENT

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ICC-ES Evaluation Report

ESR-3560 FBC Supplement

Reissued September 2015
This report is subject to renewal September 2017.

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DIVISION: 08 00 00—OPENINGS
Section: 08 95 43—Vents/Foundation Flood Vents

REPORT HOLDER:

FLOOD FLAPS®, LLC
2707 WATERPOINTE CIRCLE
MT. PLEASANT, SOUTH CAROLINA 29466
(843) 849-8031
www.floodflaps.com
info@floodflaps.com

EVALUATION SUBJECT:

FLOOD FLAPS® FLOOD VENTS: MODELS FFWF12; FFNF12; FFWF08; FFNF08; FFWF05; FFNF05

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Flood Flaps flood vents, recognized in ICC-ES master evaluation report ESR-3560, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2010 *Florida Building Code—Building*
- 2010 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The Flood Flaps flood vents, described in Sections 2.0 through 7.0 of the master evaluation report ESR-3560, comply with the 2010 *Florida Building Code—Building* and the 2010 *Florida Building Code—Residential*, provided the design and installation are in accordance with the *International Building Code®* provisions noted in the master report.

Use of the Flood Flaps flood vents has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the 2010 *Florida Building Code—Building* and the 2010 *Florida Building Code—Residential* for structures not subject to Section 2326.1 of the 2010 *Florida Building Code—Building* or Section R4409.13.3.1 of the 2010 *Florida Building Code—Residential*, as applicable.

For products falling under Florida Rule 9N-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the master report issued September 2015.

CHAPTER 151. FLOOD DAMAGE PREVENTION

ARTICLE I. GENERAL PROVISIONS

Sec. 151.01. Statutory authorization.

(A) *Municipal.* The Legislature of the State of North Carolina has in G.S. Part 6, Article 21 of Chapter 143; Parts 3, 5, and 8 of Article 19 of Chapter 160A; and Article 8 of Chapter 160A, delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety and general welfare of its citizenry.

(B) *County.* The Legislature of the State of North Carolina has in G.S. Part 6, Article 21 of Chapter 143; Parts 3 and 4 of Article 18 of Chapter 153A; and Part 121, Article 6 of Chapter 153A, delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety and general welfare of its citizenry.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.02. Findings of fact.

(A) The floodprone areas within the jurisdiction of Town of Beaufort are subject to periodic inundation which results in loss of life, property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

(B) These flood losses are caused by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities, and by the occupancy in floodprone areas by uses vulnerable to floods or hazardous to other lands which are inadequately elevated, floodproofed or otherwise unprotected from flood damages.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.03. Statement of purpose.

It is the purpose of this chapter to promote public health, safety, and general welfare and to minimize public and private losses due to flood conditions within floodprone areas by provisions designed to:

(A) Restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion, flood heights or velocities;

(B) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

(C) Control the alteration of natural floodplains, stream channels and natural protective barriers, which are involved in the accommodation of flood waters;

(D) Control filling, grading, dredging and all other development which may increase erosion or flood damage; and

(E) Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.04. Objectives.

The objectives of this chapter are:

(A) To protect human life and health;

(B) To minimize expenditure of public money for costly flood control projects;

(C) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

(D) To minimize prolonged business losses and interruptions;

(E) To minimize damage to public facilities and utilities (i.e. water and gas mains, electric, telephone, cable and sewer lines, streets and bridges) that are located in floodprone areas;

(F) To help maintain a stable tax base by providing for the sound use and development of floodprone areas in such a manner as to minimize flood blight areas; and

(G) To insure that potential home buyers are notified that property is in a Special Flood Hazard Area.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.05. Definitions.

For the purpose of this chapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

Accessory structure (appurtenant structure) means a structure which is located on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Garages, carports and storage sheds are common urban accessory structures. Pole barns, hay sheds and the like qualify as accessory structures on farms, and may or may not be located on the same parcel as the farm dwelling or shop building.

Addition (to an existing building) means an extension or increase in the floor area or height of a building or structure.

Appeal means a request for a review of the Floodplain Administrator's interpretation of any provision of this chapter.

Area of shallow flooding means a designated AO Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths determined to be from one to three feet. These areas are located where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

Area of special flood hazard. See *Special flood hazard area (SFHA).*

Basement means any area of the building having its floor subgrade (below ground level) on all sides.

Base flood means the flood having a one percent chance of being equaled or exceeded in any given year.

Base flood elevation (BFE) means a determination as published in the Flood Insurance Study of the water surface elevations of the base flood.

Breakaway wall means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or the supporting foundation system.

Building. See *Structure.*

CAMA (North Carolina's Coastal Area Management Act). This act, along with the Dredge and Fill Law and the federal Coastal Zone Management Act, is managed through North Carolina Department of Environment and Natural Resources' (NCDENR) Division of Coastal Management (DCM).

Chemical storage facility means a building, portion of a building, or exterior area adjacent to a building used for the storage of any chemical or chemically reactive products.

Coastal high hazard area means a special flood hazard area extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. The area is designated on a FIRM, or other adopted flood map as determined in § 151.46.

Development means any manmade 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.

Disposal means as in G.S. 130A-290(a)(6).

Elevated building means a non-basement building which has its reference level raised above ground level by foundation walls, shear walls, posts, piers, pilings or columns.

Encroachment means the advance or infringement of uses, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

Existing manufactured home park or manufactured home subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is pre-FIRM.

Flood or *Flooding* means a general and temporary condition of partial or complete inundation of normally dry land areas from:

(1) The overflow of inland or tidal waters; and

(2) The unusual and rapid accumulation of runoff of surface waters from any source.

Flood boundary and floodway map (FBFM) means an official map of a community, issued by the Federal Emergency Management Agency, on which the Special Flood Hazard Areas and the floodways are delineated. This official map is a supplement to and shall be used in conjunction with the Flood Insurance Rate Map (FIRM).

Flood hazard boundary map (FHBM) means an official map of a community, issued by the Federal Emergency Management Agency, where the boundaries of the Special Flood Hazard Areas have been defined as Zone A.

Flood insurance means the insurance coverage provided under the National Flood Insurance Program.

Flood insurance rate map (FIRM) means an official map of a community, issued by the Federal Emergency Management Agency, on which both the special flood hazard areas and the risk premium zones applicable to the community are delineated.

Flood insurance study (FIS) means an examination, evaluation and determination of flood hazard areas, corresponding water surface elevations (if appropriate), flood insurance risk zones and other flood data in a community issued by FEMA. The Flood Insurance Study report includes Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs), if published.

Floodplain or *floodprone area* means any land area susceptible to being inundated by water from any source.

Floodplain management means the operation of an overall program of corrective and preventive measures for reducing flood damage and preventing and enhancing, where possible, natural resources in the floodplain, including, but not limited to, emergency preparedness plans, flood control works, floodplain management regulations and open space plans.

Floodplain administrator means the individual appointed to administer and enforce the floodplain management regulations.

Floodplain regulations means this chapter and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances and other applications of police power which control development in flood-prone areas. This term, describes federal, state or local regulations in any combination thereof; which provide standards for preventing and reducing flood loss and damage.

Floodproofing means any combination of structural and nonstructural additions, changes or adjustments to structures, which reduce or eliminate risk of flood damage to real estate or improved real property, water and sanitation facilities, or structures with their contents.

Floodprone area. See *floodplain.*

Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

Flood zone means a geographical area shown on a Flood Hazard Boundary Map or Flood Insurance Rate Map that reflects the severity or type of flooding in the area.

Floor. See *Lowest floor.*

Freeboard means the additional amount of height added to the Base Flood Elevation (BFE) to account for uncertainties in the determination of flood elevations. See also *regulatory flood protection elevation.*

Functionally dependent facility means a facility which cannot be used for its intended purpose unless it is located in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding or ship repair. The term does not include long-term storage, manufacture, sales or service facilities.

Hazardous waste management facility means a facility for the collection, storage, processing, treatment, recycling, recovery or disposal of hazardous waste as defined in G.S. Article 9 of Chapter 130A.

Highest adjacent grade (HAG) means the highest natural elevation of the ground surface, prior to construction, next to the proposed walls of the structure.

Historic structure means any structure that is:

(1) Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of Interior as meeting the requirements for individual listing on the National Register;

(2) Certified or preliminarily determined by the Secretary of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

(3) Individually listed on a State inventory of historic places;

(4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified:

    (a) By an approved state program as determined by the Secretary of Interior; or

    (b) Directly by the Secretary of Interior in states without approved programs.

Lowest adjacent grade (LAG) means the elevation of the ground, sidewalk, patio slab or deck support immediately next to the building after completion of the building. For Zone A and AO, use the natural grade elevation prior to construction.

Lowest floor means the subfloor, top of slab or grade of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or limited storage in an area other than a basement area is not considered a building's lowest floor provided that such an enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this chapter.

Manufactured home means a structure, transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term *manufactured home* does not include a recreational vehicle.

Market value means the building value, excluding the land (as agreed to between a willing buyer and seller), as established by what the local real estate market will bear. *Market value* can be established by independent certified appraisal, replacement cost depreciated by age of building (Actual Cash Value) or adjusted assessed values.

Mean sea level means, for purposes of the NFIP, the National Geodetic Vertical Datum (NGVD) as corrected in 1929, the North American Vertical Datum (NAVD) as corrected in 1988 or other vertical control datum used as a reference for establishing varying elevations within the floodplain, to which Base Flood Elevations (BFEs) shown on a FIRM are referenced. Refer to each FIRM panel to determine datum used.

New construction means structures for which the start of construction commenced on or after the effective date of the original version of this chapter and includes any subsequent improvements to such structures.

Nonconforming building or development means any legally existing building or development which fails to comply with the current provisions of this chapter.

Non-encroachment area means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot as designated in the Flood Insurance Study report.

Obstruction includes, but is not limited to, any dam, wall, wharf, embankment, levee, dike, pile, abutment, protection, excavation, channelization, bridge, conduit, culvert, building, wire, fence, rock, gravel, refuse, fill, structure, vegetation or other material in, along, across or projecting into any watercourse which may alter, impede, retard or change the direction and/or velocity of the flow of water, or due to its location, its propensity to snare or collect debris carried by the flow of water, or its likelihood of being carried downstream.

Post-FIRM means construction or other development which started on or after January 1, 1975 or on or after the effective date of the initial Flood Insurance Rate Map for the area, whichever is later.

Pre-FIRM means construction or other development which started before January 1, 1975 or before the effective date of the initial Flood Insurance Rate Map for the area, whichever is later.

Primary frontal dune means a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and over-topping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

Public safety and/or nuisance means anything which is injurious to the safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal or basin.

Recreational vehicle (RV) means a vehicle, which is:

(1) Built on a single chassis;

(2) Four hundred square feet or less when measured at the largest horizontal projection;

(3) Designed to be self-propelled or permanently towable by a light duty truck; and

(4) Designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel or seasonal use.

Reference level means the portion of a structure or other development that must be compared to the regulatory flood protection elevation to determine regulatory compliance of the building. Within Special Flood Hazard Areas designated as zones A1-A30, AE, A, A99, AO or AH, the reference level is the top of the lowest floor. Within special flood hazard areas designated as zones VE or V1-V30, the reference level is the bottom of the lowest horizontal structural member.

Regulatory flood protection elevation means the elevation to which all structures and other development located within the Special Flood Hazard Areas must be elevated or floodproofed, if non-residential. Within areas where Base Flood Elevations (BFEs) have been determined, this elevation shall be the BFE plus one foot of freeboard. In areas where no BFE has been established, all structures and other development must be elevated or floodproofed, if non-residential, to two feet above the highest adjacent grade. Two feet is minimum but a state standard, greater than two feet is optional.

Remedy a violation means to bring the structure or other development into compliance with state or community floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing federal financial exposure with regard to the structure or other development.

Repetitive loss means flood-related damages sustained by a structure on two separate occasions during any ten-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

Retrofitting means measures, such as floodproofing, elevation, construction of small levees, and other modifications, taken on an existing building or its yard to protect it from flood damage.

Riverine means relating to, formed by, or resembling a river (including tributaries), stream, brook and the like.

Salvage yard means property used for the storage, collection and/or recycling of any type of equipment whatsoever, whether industrial or noncommercial, and including, but not limited to, vehicles, appliances and related machinery.

Special flood hazard area (SFHA) means the land in the floodplain subject to a one percent or greater chance of being flooded in any given year as determined herein.

Solid waste disposal facility means any facility involved in the disposal of solid waste, as defined in G.S. 130A-290(a)(35).

Solid waste disposal site means as in G.S. 130A-290(a)(36).

Start of construction includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure (including a manufactured home) on a site, such as the pouring of slabs or footings, installation of piles, construction of columns or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundations or the erection of temporary forms; nor does it

include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor or other structural part of the building, whether or not that alteration affects the external dimensions of the building.

Structure means a walled and roofed building, a manufactured home, a gas or liquid storage tank that is principally above ground.

Substantial damage means damage of any origin sustained by a structure during any one-year period whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. See definition of substantial improvement. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a ten-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred. (Last sentence is OPTIONAL)

Substantial improvement means any combination of repairs, reconstruction, rehabilitation, addition or other improvement of a structure, taking place during any one-year period whereby the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. This term includes structures which have incurred substantial damage, regardless of the actual repair work performed. The term does not, however, include either:

(1) Any correction of existing violations of state or community health, sanitary or safety code specifications which have been identified by the community code enforcement official and which are the minimum necessary to assure safe living conditions; or

(2) Any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.

Variance means a grant of relief from the requirements of this chapter.

Violation means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications or other evidence of compliance required § 151.26 is presumed to be in violation until such time as that documentation is provided.

Watercourse means a lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically.

Watercourse includes specifically designated areas in which substantial flood damage may occur.

Water surface elevation (WSE) means the height, in relation to mean sea level, of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.06. Lands to which ordinance applies.

This chapter shall apply to all special flood hazard areas within the jurisdiction, including Extra-Territorial Jurisdictions (ETJ) if applicable, of Town of Beaufort and within the jurisdiction of any other community whose governing body agrees, by resolution, to the applicability.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.07. Basis for establishing the special flood hazard areas.

(A) The special flood hazard areas are those identified by the Federal Emergency Management Agency (FEMA) or produced under the Cooperating Technical State (CTS) agreement between the State of North Carolina and FEMA in its Flood Hazard Boundary Map (FHBM) or Flood Insurance Study (FIS) and its accompanying flood maps such as the Flood Insurance Rate Map(s) (FIRM) and/or the Flood Boundary Floodway Map(s) (FBFM), for Town of Beaufort dated July 16, 2003, which with accompanying supporting data, and any revision thereto, including Letters of Map Amendment or Revision, are adopted by reference and declared to be a part of this chapter. The Special Flood Hazard Areas also include those defined through standard engineering analysis for private developments or by governmental agencies, but which have not yet been incorporated in the FIRM. This includes, but is not limited to, detailed flood data, generated as a requirement hereof; preliminary FIRMS where more stringent than the effective FIRM; or post-disaster flood recovery maps.

(B) In addition, upon annexation to Town of Beaufort or inclusion in the Extra-Territorial Jurisdiction (ETJ), the special flood hazard areas identified by the Federal Emergency Management Agency (FEMA) and/or produced under the cooperating technical state agreement between the State of North Carolina and FEMA as stated above for the Unincorporated Areas of Carteret County, with accompanying maps and other supporting data, and any revision thereto, are adopted by reference and declared to be a part of this chapter.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.08. Floodplain development permit.

A floodplain development permit shall be required in conformance with the provisions of this chapter prior to the commencement of any development activities within special flood hazard areas as determined in § 151.41.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.09. Compliance.

No structure or land shall hereafter be located, extended, converted, altered, or developed in any way without full compliance with the terms of this chapter and other applicable regulations.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.10. Abrogation and greater restrictions.

This chapter is not intended to repeal, abrogate or impair any existing easements, covenants or deed restrictions. However, where this chapter and, another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.11. Interpretation.

In the interpretation and application of this chapter, all provisions shall be:

(A) Considered as minimum requirements;

(B) Liberally construed in favor of the governing body; and

(C) Deemed neither to limit nor repeal any other powers granted under state statutes.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.12. Warning and disclaimer of liability.

(A) The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur on rare occasions.

(B) Actual flood heights may be increased by man-made or natural causes.

(C) (1) This chapter does not imply that land outside the special flood hazard areas or uses permitted within such areas will be free from flooding or flood damages.

(2) This chapter shall not create liability on the part of Town of Beaufort or by any officer or employee thereof for any flood damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.

(Ord. 03-018, passed 7-7-2003)

ARTICLE II. ADMINISTRATION

Sec. 151.25. Floodplain administrator.

(A) The Building Inspector, hereinafter referred to as the Floodplain Administrator, is hereby appointed to administer and implement the provisions of this chapter.

(B) Duties of the Floodplain Administrator shall include, but not be limited to:

(1) Review all floodplain development applications and issue permits for all proposed development with in floodprone areas to assure that the requirements of this chapter have been satisfied;

(2) Advise permittee that additional Federal or State permits (i.e., Wetlands, Erosion and Sedimentation Control, CAMA, Riparian Buffers, Mining, etc.) may be required, and if specific federal or state permits are known, require that copies of such permits be provided and maintained on file with the floodplain development permit;

(3) Notify adjacent communities and the North Carolina Department of Crime Control and Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency;

(4) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished;

(5) Prevent encroachments within floodways and non-encroachment areas unless the certification and flood hazard reduction provisions in § 151.44 are met;

(6) Obtain actual elevation (in relation to mean sea level) of the reference level (including basement) of all attendant utilities of all new or substantially improved structures, in accordance herewith;

(7) Obtain the actual elevation (in relation to mean sea level) to which the new or substantially improved structures and all utilities have been floodproofed in accordance herewith;

(8) Obtain actual elevation (in relation to mean sea level) of all public utilities, in accordance herewith;

(9) When floodproofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance herewith;

(10) Where interpretation is needed as to the exact location of boundaries of the Special Flood Hazard Areas (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this chapter;

(11) When Base Flood Elevation (BFE) data has not been provided in accordance herewith, obtain, review and reasonably utilize any Base Flood Elevation (BFE) data, along with floodway data and/or non-encroachment area data available from a Federal, State, or other source, including data developed pursuant hereto, in order to administer the provisions of this chapter;

(12) When Base Flood Elevation (BFE) data is provided but no floodway nor non-encroachment area data has been provided in accordance herewith, obtain, review, and reasonably utilize any floodway data, and/or non-encroachment area data available from a federal, state, or other source in order to administer the provisions of this chapter;

(13) When the exact location of boundaries of the special flood hazard areas conflict with the current, natural topography information at the site, the property owner may apply and be approved for a Letter of Map Amendment (LOMA) by FEMA. A copy of the Letter of Map Amendment issued from FEMA will be maintained by the Floodplain Administrator in the floodplain development permit file;

(14) Permanently maintain all records that pertain to the administration of this chapter and make these records available for public inspection;

(15) Make on-site inspections of work in progress. As the work pursuant to a floodplain development permit progresses, the Floodplain Administrator shall make as many inspections of the work as may be necessary to ensure that the work is being done according to the provisions of the local ordinance and the terms of the permit. In exercising this power, the Floodplain Administrator has a right, upon presentation of proper credentials, to enter on any premises within the jurisdiction of the community at any reasonable hour for the purposes of inspection or other enforcement action;

(16) Issue stop-work orders as required. Whenever a building or part thereof is being constructed, reconstructed, altered, or repaired in violation of this chapter, the Floodplain Administrator may order the work to be immediately stopped. The stop-work order shall be in writing and directed to the person doing the work. The stop-work order shall state the specific work to be stopped, the specific reason(s) for the stoppage, and the condition(s) under which the work may be resumed. Violation of a stop-work order constitutes a misdemeanor;

(17) Revocation of floodplain development permits as required. The Floodplain Administrator may revoke and require the return of the floodplain development permit by notifying the permit holder in writing stating the reason(s) for the revocation. Permits shall be revoked for any substantial departure from the approved application, plans or specifications; for refusal or failure to comply with the requirements of state or local laws; or for false statements or misrepresentations made in securing the permit. Any floodplain development permit mistakenly issued in violation of an applicable state or local law may also be revoked;

(18) Make periodic inspections throughout all special flood hazard areas within the jurisdiction of the community. The Floodplain Administrator and each member of his or her inspections department shall have a right, upon presentation of proper credentials, to enter on any premises within the territorial jurisdiction of the department at any reasonable hour for the purposes of inspection or other enforcement action; and

(19) Follow through with corrective procedures hereof.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.26. Floodplain development permit and certification requirements.

(A) Application for a floodplain development permit shall be made to the Floodplain Administrator on forms furnished by him or her prior to any development activities proposed to be located within floodprone areas. The following items/information shall be presented to the Floodplain Administrator to apply for a floodplain development permit.

(1) A plot plan drawn to scale which shall include, but shall not be limited to, the following specific details of the proposed floodplain development:

(a) The nature, location, dimensions and elevations of the area of development/disturbance; existing and proposed structures, the location of utility systems, proposed grading/pavement areas, fill materials, storage areas, drainage facilities and other proposed development;

(b) The boundary of the special flood hazard area as delineated on the FIRM or other flood map as determined herein or a statement that the entire lot is within the special flood hazard area;

(c) Flood zone(s) designation of the proposed development area as determined on the FIRM or other flood map as determined herein;

(d) The boundary of the floodway(s) or non-encroachment area(s) as determined herein;

(e) The Base Flood Elevation (BFE) where provided as set forth herein;

(f) The old and new location of any watercourse that will be altered or relocated as a result of proposed development;

(g) The boundary and effective date of CoBRA zone or OPA, if applicable; and (Optional)

(h) Preparation of the plot plan by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. (Optional)

(2) Proposed elevation, and method thereof, of all development within a special flood hazard area including, but not limited to:

(a) Elevation in relation to mean sea level of the proposed reference level (including basement) of all structures;

(b) Elevation in relation to mean sea level to which any non-residential structure will be floodproofed;

(c) Elevation in relation to mean sea level to which any proposed utility systems will be elevated or floodproofed;

(d) If floodproofing, a floodproofing certificate and back-up plans from a registered professional engineer or architect certifying that the non-residential floodproofed development will meet the floodproofing criteria herein.

(3) A foundation plan drawn to scale which shall include details of the proposed foundation system to ensure all provisions of this chapter are met. These details include but are not limited to:

(a) Proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/piers);

(b) Should solid foundation perimeter walls be used in floodplain other than coastal high hazard areas, details of sufficient openings to facilitate the unimpeded movements of floodwaters in accordance herewith;

(c) In Coastal High Hazard Areas, the following must also be submitted prior to floodplain development permit issuance. Specific requirements are detailed herein.

1. V-zone certification form with accompanying plans and specifications verifying the engineered structure and breakaway wall designs as set forth herein;
2. Plans for lattice work or decorative screening, if applicable. Plans for any structures that will have lattice work or decorative screening must be submitted to the Floodplain Administrator for approval prior to floodplain development permit issuance;
3. Plans for non-structural fill, if applicable. Plans for placement of any non-structural fill must be submitted to the Floodplain Administrator for approval prior to floodplain development permit issuance. Requirements are detailed herein;
4. Usage details of any enclosed space below the regulatory flood protection elevation;
5. Plans and/or details for the protection of public utilities and facilities such as sewer, gas, electrical, and water systems to be located and constructed to minimize flood damage;
6. Copy of all other local, state and federal permits required prior to floodplain development permit issuance (i.e. Wetlands, Erosion and Sedimentation Control, CAMA, Riparian Buffers, Mining and the like);
7. If floodplain development permit is issued for placement of recreational vehicles and/or temporary structures, documentation to ensure provisions of this code are met.
8. If a watercourse is proposed to be altered and/or relocated, a description of the extent of watercourse alteration or relocation; an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map (if not shown on plot plan) showing the location of the proposed watercourse alteration or relocation.

(B) The following information shall be provided at a minimum on the floodplain development permit to ensure compliance with this code.

(1) A description of the development to be permitted under the floodplain development permit issuance.

(2) The special flood hazard area determination for the proposed development per available data specified herein.

(3) The regulatory flood protection elevation required for the reference level and all attendant utilities.

(4) The regulatory flood protection elevation required for the protection of all public utilities.

(5) All certification submittal requirements with timelines.

(6) State that no fill material shall encroach into the floodway or non-encroachment area of any watercourse, if applicable.

(7) If in an A, AO, AE or Al-30 zone, specify the minimum foundation opening requirements. (Optional)

(8) State limitations of below BFE enclosure uses (if applicable). (i.e., Parking, Building Access and Limited Storage only). (Optional)

(9) If in a VE or V1-30 zone, state that there shall be no alteration of sand dunes which would increase potential flood damage. (Optional)

(10) If in a VE or V1-30 zone, state that there shall be no fill used as structural support. (Optional)

(C) (1) An elevation certificate (FEMA Form 81-31) or floodproofing certificate (FEMA Form 81-65) is required after the reference level is completed. Within 21 calendar days of establishment of the reference level elevation,

or floodproofing, by whatever construction means, whichever is applicable, it shall be the duty of the permit holder to submit to the floodplain Administrator a certification of the elevation of the reference level, or floodproofed elevation, whichever is applicable in relation to mean sea level. The certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When floodproofing is utilized, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. Any work done within the 21-day calendar period and prior to submission of the certification shall be at the permit holder's risk. The Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the certification or failure to make said corrections required shall be cause to issue a stop-work order for the project. (State recommended but optional)

(2) A final as-built elevation certificate (FEMA Form 81-31) or floodproofing certificate (FEMA Form 81-65) is required after construction is completed and prior to certificate of compliance/occupancy issuance. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of final as-built constriction of the elevation or floodproofed elevation of the reference level and all attendant utilities. The certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When floodproofing is utilized, the certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to certificate of compliance/occupancy issuance. In some instances, another certification may be required to certify corrected as-built construction. Failure to submit the certification or failure to make the corrections required shall be cause to withhold the issuance of a certificate of compliance/occupancy. (FEMA forms are optional for floodplain management but recommended. The use of the FEMA elevation certificates is mandatory for CRS communities.)

(3) A V-Zone/breakaway wall certification is required prior to issuance of a floodplain development permit within coastal high hazard areas. It shall be the duty of the permit applicant to submit to the Floodplain Administrator the certification to ensure the design standards of this chapter are met. A registered professional engineer or architect shall develop or review the structural design, plans, and specifications for construction and certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of this chapter. This certification is not a substitute for an elevation certificate.

(4) If a manufactured home is placed within an A, AO, AE or Al-30 zone and the elevation of the chassis is above 36 inches in height, an engineered foundation certification is required herein. If a watercourse is to be altered or relocated, a description of the extent of watercourse alteration or relocation; an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation shall all be submitted by the permit applicant prior to issuance of a floodplain development permit.

(D) The following structures, if located within A, AO, AE or Al-30 zones, are exempt from the elevation/floodproofing certification requirements specified in subsections (A) and (B) above:

(1) Recreational vehicles meeting requirements hereof;

(2) Temporary structures meeting requirements hereof; and

(3) Accessory structures less than 150 square feet meeting requirements hereof.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.27. Corrective procedures.

(A) *Violations to be corrected.* When the Floodplain Administrator funds violations of applicable state and local laws, it shall be his or her duty to notify the owner or occupant of the building of the violation. The owner or occupant shall immediately remedy each of the violations of law pertaining to their property.

(B) *Actions in event of failure to take corrective action.* If the owner of a building or property shall fail to take prompt corrective action, the Floodplain Administrator shall give the owner written notice, by certified or registered mail to the owner's last known address or by personal service, stating:

(1) That the building or property is in violation of the Flood Damage Prevention Ordinance;

(2) That a hearing will be held before the Floodplain Administrator at a designated place and time, not later than ten days after the date of the notice, at which time the owner shall be entitled to be heard in person or by counsel and to present arguments and evidence pertaining to the matter; and

(3) That following the hearing, the Floodplain Administrator may issue such order to alter, vacate, or demolish the building; or to remove fill as appears appropriate.

(C) *Order to take corrective action.* If, upon a hearing held pursuant to the notice prescribed above, the Floodplain Administrator shall find that the building or development is in violation of the Flood Damage Prevention Ordinance, he or she shall make an order in writing to the owner, requiring the owner to remedy the violation within a specified time period, not less than 60 days. Where the Floodplain Administrator finds that there is imminent danger to life or other property, he may order that corrective action be taken in such lesser period as may be feasible.

(D) *Appeal.* Any owner who has received an order to take corrective action may appeal the order to the local elected governing body by giving notice of appeal in writing to the Floodplain Administrator and the Clerk within ten days following issuance of the final order. In the absence of an appeal, the order of the Floodplain Administrator shall be final. The local governing body shall hear an appeal within a reasonable time and may affirm, modify and affirm, or revoke the order.

(E) *Failure to comply with order.* If the owner of a building or property fails to comply with an order to take corrective action from which no appeal has been taken, or fails to comply with an order of the governing body following an appeal, he shall be guilty of a misdemeanor and shall be punished in the discretion of the court.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.28. Variance procedures.

(A) The Board of Adjustments (appeal board) as established by Town of Beaufort, hereinafter referred to as the Appeal Board, shall hear and decide requests for variances from the requirements of this chapter.

(B) Any person aggrieved by the decision of the Appeal Board may appeal such decision to the Court, as provided in G.S. Chapter 7A.

(C) Variances may be issued for the repair or rehabilitation of historic structures upon the determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.

(D) In passing upon variances, the appeal board shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this chapter, and:

(1) The danger that materials may be swept onto other lands to the injury of others; the danger to life and property due to flooding or erosion damage;

(2) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

(3) The importance of the services provided by the proposed facility to the community; the necessity to the facility of a waterfront location, where applicable;

(4) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;

(5) The compatibility of the proposed use with existing and anticipated development;

(6) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;

(7) The safety of access to the property in times of flood for ordinary and emergency vehicles;

(8) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and

(9) The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges.

(E) A written report addressing each of the above factors shall be submitted with the application for a variance.

(F) Upon consideration of the factors listed above and the purposes of this chapter, the appeal board may attach such conditions to the granting of variances as it deems necessary to further the purposes of this chapter.

(G) Variances shall not be issued within any designated floodway or non-encroachment area if any increase in flood levels during the base flood discharge would result.

(H) Conditions for variances:

(1) Variances may not be issued when the variance will make the structure in violation of other federal, state, or local laws, regulations, or ordinances.

(2) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(3) Variances shall only be issued upon:

(a) A showing of good and sufficient cause;

(b) A determination that failure to grant the variance would result in exceptional hardship; and

(c) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense, create nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.

(4) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the Base Flood Elevation (BFE) and the elevation to which the structure is to be built and a written statement that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced reference level elevation. Such notification shall be maintained with a record of all variance actions.

(5) The Floodplain Administrator shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency and the State of North Carolina upon request.

(I) A variance may be issued for solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities that are located in Special Flood Hazard Areas provided that all of the following conditions are met. A floodplain development permit may be issued for such development only if a variance is granted.

(1) The use serves a critical need in the community.

(2) No feasible location exists for the use outside the special flood hazard area.

(3) The reference level of any structure is elevated or floodproofed to at least the regulatory flood protection level.

(4) The use complies with all other applicable federal, state and local laws.

(5) The Town of Beaufort (community) has notified the Secretary of the North Carolina Department of Crime Control and Public Safety of its intention to grant a variance at least 30 days prior to granting the variance.

(Ord. 03-018, passed 7-7-2003)

ARTICLE III. FLOOD HAZARD REDUCTION

Sec. 151.40. General standards.

In all special flood hazard areas the following provisions are required:

(A) All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.

(B) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

(C) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damages.

(D) Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. These include, but are not limited to, HVAC equipment, water softener units, bath/kitchen fixtures, ductwork, electric meter panels/boxes, utility/cable boxes, appliances (i.e., washers, dryers, refrigerator and the like), hot water heaters, electric outlets/switches.

(E) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

(F) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

(G) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.

(H) Any alteration, repair, reconstruction or improvements to a structure which is in compliance with the provisions of this chapter, shall meet the requirements of new construction as contained in this chapter.

(I) Non-conforming structures or other development may not be enlarged, replaced or rebuilt unless such enlargement or reconstruction is accomplished in conformance with the provisions of this chapter. Provided, however, nothing in this chapter shall prevent the repair, reconstruction, or replacement of a

building or structure existing on the effective date of this chapter and located totally or partially within the floodway, non-encroachment area, or stream setback, provided that the bulk of the building or structure below the regulatory flood protection elevation in the floodway, non-encroachment area or stream setback is not increased and provided that the repair, reconstruction or replacement meets all of the other requirements of this chapter.

(J) New solid waste disposal facilities, hazardous waste management facilities, salvage yards and chemical storage facilities shall not be permitted in special flood hazard areas. A structure or tank for chemical or fuel storage incidental to an allowed use or to the operation of a water treatment plant or wastewater treatment facility may be located in a special flood hazard area only if the structure or tank is either elevated or floodproofed to at least the regulatory flood protection elevation and certified according hereto.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.41. Specific standards.

In all special flood hazard areas where Base Flood Elevation (BFE) data has been provided, as set forth in § 151.40, the following provisions are required:

(A) *Residential construction.* New construction or substantial improvement of any residential structure (including manufactured homes) shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation.

(B) *Non-residential construction.* New construction or substantial improvement of any commercial, industrial or other non-residential structure shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation. Structures located in A, AO, AE and Al-30 Zones may be floodproofed to the regulatory flood protection elevation in lieu of elevation provided that all areas of the structure below the required flood protection elevation are watertight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the official as set forth herein.

(C) *Manufactured homes.*

(1) New or replacement manufactured homes shall be elevated so that the reference level of the manufactured home is no lower than the regulatory flood protection elevation.

(2) Manufactured homes shall be securely anchored to an adequately anchored foundation to resist flotation, collapse and lateral movement in accordance with the *State of North Carolina Regulations for Manufactured/Mobile Homes*, 1995 Edition, and any revision thereto adopted by the Commissioner of Insurance pursuant to G.S. 143-143.15 or a certified engineered foundation. Additionally, when the elevation would be met by an elevation of the chassis 36 inches or less above the grade at the site, the chassis shall be supported by reinforced piers or other foundation elements of at least equivalent strength. When the elevation of the chassis is above 36 inches in height, an engineering certification is required.

(3) All foundation enclosures or skirting shall be in accordance herewith.

(4) An evacuation plan must be developed for evacuation of all residents of all new, substantially improved or substantially damaged manufactured home parks or subdivisions located within floodprone areas. This plan shall be filed with and approved by the Floodplain Administrator and the local Emergency Management coordinator.

(D) *Elevated buildings.* New construction or substantial improvements of elevated buildings that include fully enclosed areas that are below the regulatory flood protection elevation shall not be designed to be used for human habitation, but shall be designed to be used only for parking of vehicles, building access or limited storage of maintenance equipment used in connection with the premises, be constructed entirely of flood resistant materials below the regulatory flood protection level and meet the following design criteria:

(1) In A, AO, AE, and A1-30 zones:

(a) *Measures.* Measures for complying with this requirement shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. To meet this requirement, the foundation must either be certified by a professional engineer or architect or meet the following minimum design criteria:

1. Provide a minimum of two openings on different sides of each enclosed area subject to flooding.

2. The total net area of all openings must be at least one square inch for each square foot of each enclosed area subject to flooding.

3. If a building has more than one enclosed area, each area must have openings on exterior walls to allow floodwater to directly enter;

4. The bottom of all required openings shall be no higher than one foot above the adjacent grade; and

5. Openings may be equipped with screens, louvers, or other opening coverings or devices provided they permit the automatic flow of floodwaters in both directions;

(b) *Foundation enclosures.*

1. Vinyl or sheet metal skirting is not considered an enclosure for regulatory and flood insurance rating purposes. Therefore such skirting does not require hydrostatic openings as outlined above.

2. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires hydrostatic openings as outlined above to comply with this chapter.

3. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator). The interior portion of such enclosed area shall not be partitioned or finished into separate rooms, except to enclose storage areas.

(2) In Coastal High Hazard Areas (VE and V1-30 zones):

(a) *Breakaway walls, lattice work or decorative screening.* Breakaway walls, lattice work or decorative screening shall be allowed below the regulatory flood protection elevation provided they are not part of the structural support of the building and are designed so as to breakaway, under abnormally high tides or wave action, without damage to the structural integrity of the building on which they are to be used and provided the following design specifications are met:

1. Material shall consist of open wood lattice or mesh insect screening; or

2. Breakaway walls meeting the following design specifications:

    a. Design safe loading resistance of each wall shall be not less than ten nor more than 20 pounds per square foot; or

    b. If more than 20 pounds per square foot, a registered professional engineer or architect shall certify that the design wall collapse would result from a water load less than that which would occur during the base flood event, and the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). The water loading values used shall be those associated with the base flood. The wind loading values used shall be those required by the North Carolina State Building Code.

(b) *Additions/improvements.*

1. Additions and/or improvements to pre-FIRM structures whereas the addition and/or improvements in combination with any interior modifications to the existing structure

    a. Are not a substantial improvement, the addition and/or improvements must be designed to minimize flood damages and must not be any more non-conforming than the existing structure are a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.

2. Additions to post-FIRM structures with no modifications to the existing structure shall require only the addition to comply with the standards for new construction.

3. Additions and/or improvements to post-FIRM structures whereas the addition and/or improvements in combination with any interior modifications to the existing structure:

    a. Are not a substantial improvement, the addition and/or improvements only must comply with the standards for new construction.

    b. Are a substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.

4. Where a fire wall or independent perimeter load-bearing wall is provided between the addition and the existing building, the addition(s) shall be considered a separate building and only the addition must comply with the standards for new construction.

(E) *Recreational vehicles.* Recreation vehicles placed on sites within a special flood hazard area shall either:

(1) Be on site for fewer than 180 consecutive days and be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and has no permanently attached additions); or

(2) Meet all the requirements for new construction, including anchoring and elevation requirements hereof.

(F) *Temporary structures.* Prior to the issuance of a floodplain development permit for a temporary structure, the following requirements must be met:

(1) Applicants must submit to the Floodplain Administrator a plan for the removal of such structure(s) in the event of a hurricane or flash flood warning notification. The plan must include the following information:

(a) A specified time period for which the temporary use will be permitted;

(b) The name, address and phone number of the individual responsible for the removal of the temporary structure;

(c) The time frame prior to the event at which a structure will be removed (i.e. minimum of 72 hours before landfall of a hurricane or immediately upon flood warning notification);

(d) A copy of the contract or other suitable instrument with a trucking company to insure the availability of removal equipment when needed; and

(e) Designation, accompanied by documentation, of a location outside the Special Flood Hazard Area to which the temporary structure will be moved.

(2) The above information shall be submitted in writing to the Floodplain Administrator for review and written approval.

(G) *Accessory structures.* When accessory structures (sheds, detached garages and the like) are to be placed within a Special Flood Hazard Area, the following criteria shall be met:

(1) Accessory structures shall not be used for human habitation (including work, sleeping, living, cooking or restroom areas);

(2) Accessory structures shall be designed to have low flood damage potential;

(3) Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;

(4) Accessory structures shall be firmly anchored in accordance herewith;

(5) All service facilities such as electrical and heating equipment shall be installed in accordance herewith;

(6) Openings to relieve hydrostatic pressure during a flood shall be provided below regulatory flood protection elevation in conformance herewith;

(7) An accessory structure with a footprint less than 150 square feet does not require an elevation or floodproofing certificate. Elevation or floodproofing certifications are required for all other accessory structures in accordance herewith.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.42. Subdivisions, manufactured home parks and major developments.

All subdivision, manufactured home park and major development proposals located within special flood hazard areas shall:

(A) Be consistent with the need to minimize flood damage;

(B) Have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;

(C) Have adequate drainage provided to reduce exposure to flood hazards; and

(D) Have Base Flood Elevation (BFE) data provided if development is greater than the lesser of five acres or 50 lots/manufactured home sites. Such Base Flood Elevation (BFE) data shall be adopted by reference per these provisions to be utilized in implementing this code.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.43. Standards for floodplains without established base flood elevations.

Within the special flood hazard areas established herein, where no Base Flood Elevation (BFE) data has been provided, the following provisions shall apply:

(A) No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within a distance of 20 feet each side from top of bank or five times the width of the stream whichever is greater, unless certification with supporting technical data by a registered professional engineer is provided demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.

(B) If § 151.42 is satisfied and Base Flood Elevation (BFE) data is available from other sources, all new construction and substantial improvements within such areas shall also comply with all applicable provisions of this chapter and shall be elevated or floodproofed in accordance with elevations established in accordance herewith. When Base Flood Elevation (BFE) data is not available from a federal, state or other source, the reference level, including basement, shall be elevated at least two feet above the highest adjacent grade. (Two feet is minimum but a state standard, greater than two feet is optional.)

(Ord. 03-018, passed 7-7-2003)

Sec. 151.44. Standards for floodplains with BFE but without established floodways or non-encroachment areas.

Along rivers and streams where Base Flood Elevation (BFE) data is provided but neither floodway nor non-encroachment areas are identified for a Special Flood Hazard Area on the FIRM or in the FIS, no encroachments, including fill, new construction, substantial improvements or other development, shall be permitted unless certification with supporting technical data by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.45. Floodways and non-encroachment areas.

(A) Located within the special flood hazard areas established herein are areas designated as floodways or non-encroachment areas. The floodways and non-encroachment areas are extremely hazardous areas due to the velocity of floodwaters that have erosion potential and carry debris and potential projectiles.

(B) The following provisions shall apply to all development within such areas:

(1) No encroachments, including fill, new construction, substantial improvements and other developments shall be permitted unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood. Such certification

and technical data shall be presented to the Floodplain Administrator prior to issuance of floodplain development permit.

(2) If these provision are satisfied, all development shall comply with all applicable flood hazard reduction provisions of this chapter.

(3) No manufactured homes shall be permitted, except replacement manufactured homes in an existing manufactured home park or subdivision provided the following provisions are met:

(a) The anchoring and the elevation standards hereof the no encroachment standards hereof are met.

(b) The no encroachment standards of subsection (B)(1) are met.

(Ord. 03-018, passed 7-7-2003)

Sec. 151.46. Coastal high hazard areas (VE and V1-30 Zones).

Coastal High Hazard Areas are Special Flood Hazard Areas established herein, and designated as Zones VE or V1-30. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting all provisions in this chapter, the following provisions shall apply to all new construction, substantial improvements and all other development:

(A) All development shall:

(1) All development shall be located landward of the reach of mean high tide;

(2) Be located landward of the first line of stable natural vegetation, and

(3) Comply with all applicable CAMA setback requirements.

(B) All development shall be elevated so that the bottom of the lowest supporting horizontal member (excluding pilings or columns) is located no lower than the regulatory flood protection elevation. Floodproofing may not be utilized on any structures in Coastal High Hazard Areas to satisfy the regulatory flood protection elevation requirements.

(C) All space below the regulatory flood protection elevation shall be open so as not to impede the flow of water.

(D) Open wood lattice work or mesh insect screening may be permitted below the regulatory flood protection elevation for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action and in accordance with § 151.41(D)(2). Design plans shall be submitted in accordance with § 151.26(A)(3)(c).

(E) All development shall be securely anchored on pilings or columns.

(F) All pilings and columns and the attached structures shall be anchored to resist flotation, collapse, and lateral movement due to the effect of wind and water loads acting simultaneously on all building components.

(G) A registered professional engineer or architect shall certify that the design, specifications and plans for construction are in compliance with the provisions contained in § 151.41(A) and subsections (D), (E) and (H).

(H) There shall be no fill used as structural support. Non-compacted fill may be used around the perimeter of a building for landscaping/aesthetic purposes provided the fill will wash out from storm surge, thereby rendering the building free of obstruction prior to generating excessive loading forces, ramping effects, or wave deflection. Design plans shall be submitted in accordance with § 151.26(A)(3)(c). The

Floodplain Administrator may approve design plans for landscaping/aesthetic fill only after the applicant has provided an analysis by an engineer, architect and/or soil scientist which demonstrates that the following factors have been fully considered:

(1) Particle composition of fill material does not have a tendency for excessive natural compaction;

(2) Volume and distribution of fill will not cause wave deflection to adjacent properties; and,

(3) Slope of fill will not cause wave run-up or ramping.

(I) There shall be no alteration of sand dunes which would increase potential flood damage.

(J) No manufactured homes shall be permitted except in an existing manufactured home park or subdivision. A replacement manufactured home may be placed on a lot in an existing manufactured home park or subdivision provided the anchoring and elevation standards are in compliance with this section of code.

(K) Recreational vehicles shall be permitted in coastal high hazard areas provided that they meet the recreational vehicle criteria of § 151.41(E)(1) and the temporary structure provisions of § 151.41(F).

(Ord. 03-018, passed 7-7-2003)

Sec. 151.47. Standards for areas of shallow flooding (AO zones).

(A) Located within the Special Flood Hazard Areas established herein, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one to three feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate.

(B) The following provisions shall apply within such areas:

(1) All new construction and substantial improvements of all structures shall have the lowest floor, including basement, elevated to the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor, including basement, shall be elevated at least to the regulatory flood protection elevation as defined for the Special Flood Hazard Areas where no BYE has been established.

(2) All new construction and substantial improvements of non-residential structures shall have the option to, in lieu of elevation, be completely floodproofed together with attendant utilities and sanitary facilities to or above that level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Certification is required as per §§ 151.26(C) and 151.41(B).

(Ord. 03-018, passed 7-7-2003)

Sec. 151.99. Penalty.

Violation of the provisions of this chapter or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance or special exceptions, shall constitute a misdemeanor. Any person who violates this chapter or fails to comply with any of its requirements shall, upon conviction thereof, be fined not more than $50.00 or imprisoned for not more than 30 days, or both. Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent Town of Beaufort from taking such other lawful action as is necessary to prevent or remedy any violation.

(Ord. 03-018, passed 7-7-2003)

Kyle Garner

From: Wood, John <john.p.wood@ncdcr.gov>
Sent: Thursday, January 26, 2023 10:32 AM
To: drosejr@djroseandson.com
Cc: Kyle Garner
Subject: RE: [External] 105 Front St Beaufort, NC

Hi Dillon,

In the interest of time, I had left Kyle a voice mail. He will be the one preparing the language for the variance document. Placement of the mechanical systems in their current location under the house does not adversely impact the building's historic character. As we discussed, only a small portion of the building's footprint lies within the flood zone and the building has been elevated, so it is only the mechanical systems that are an issue as far as flood level.

Kyle, if you have further questions, let me know.

John

John P. Wood
Restoration Specialist
Regional Supervisor, Eastern Office
NC State Historic Preservation Office
NC Dept. of Natural and Cultural Resources
Phone: (252) 830-6580, extension 226
john.p.wood@ncdcr.gov

117 West Fifth Street | Greenville, North Carolina 27858

From: Dillon Rose Jr. <drosejr@djroseandson.com>
Sent: Thursday, January 26, 2023 9:40 AM
To: Wood, John <john.p.wood@ncdcr.gov>
Cc: Kyle Garner <k.garner@beaufortnc.org>
Subject: [External] 105 Front St Beaufort, NC

1.

CR0040 | Duncan House

Site ID	CR0040
Status	SO
Site Name	Duncan House
Description	c. 1815 2 1/2-story side gable frame house
Notes	Determined to have statewide significance for purposes of NCGS 160A-400.14(c)
Local Status	LL
Year Survey	
Year Survey Updated	
HD status	NRHD
DOE report or Local Link	
County	Carteret
Quad Name	Beaufort
Township	Beaufort
Density	H
Location	105-107 Front St. Beaufort
Photo Link	More info
Spatial Accuracy	[Aerial]
Latitude	34.719169
Longitude	-76.669432
Internal	

Zoom to

1.

National Flood Insurance Program (NFIP)

Floodplain Management Bulletin
Historic Structures

FEMA P-467-2

May 2008

FEMA

Floodplain Management Bulletin
Historic Structures

This Floodplain Management Bulletin addresses how the National Flood Insurance Program (NFIP) treats historic structures. This bulletin also identifies mitigation measures that can be taken to protect historic structures from floods. The bulletin addresses the following topics:

Introduction

The National Flood Insurance Program (NFIP) gives special consideration to the unique value of one of our Nation's most significant resources – its historic buildings, landmarks, and sites. It does so in two ways.

First, the NFIP floodplain management regulations provide significant relief to historic structures. Historic structures do not have to meet the floodplain management requirements of the program as long as they maintain their historic structure designation. They do not have to meet the new construction, substantial improvement, or substantial damage requirements of the program. This exclusion from these requirements serves as an incentive for property owners to maintain the historic character of the designated structure (44 CFR §60.3). It may also serve as an incentive for an owner to obtain historic designation of a structure.

Secondly, a designated historic structure can obtain the benefit of subsidized flood insurance through the NFIP even if it has been substantially improved or substantially damaged so long as the building maintains its historic designation. The amount of insurance premium charged the historic structure may be considerably less than what the NFIP would charge a new non-elevated structure built at the same level. Congress requires that the NFIP charge actuarial rates for all new construction and substantially improved structures (National Flood Insurance Act of 1968, 42 U.S.C. 4015).

Although the NFIP provides relief to historic structures from having to comply with NFIP floodplain management requirements for new construction, communities and owners of historic structures should give consideration to mitigation measures that can reduce the impacts of flooding on historic structures located in Special Flood Hazard Areas (44 CFR §60.3). Mitigation measures to minimize future flood damages should be considered when historic structures are rehabilitated or are repaired following a flood or other hazard event. Qualified professionals such as architects, historic architects, and engineers who have experience in flood mitigation techniques can help identify measures that can be taken to minimize the impacts of flooding on a historic structure while maintaining the structure's historic designation.

The purpose of this floodplain management bulletin is to explain how the NFIP defines historic structure and how it gives relief to historic structures from NFIP floodplain management requirements (44 CFR §60.3). This bulletin also provides guidance on mitigation measures that can be taken to minimize the devastating effects of flooding to historic structures.

Background on the NFIP

Congress created the NFIP in 1968 to provide federally supported flood insurance coverage, which generally was not available from private companies. The NFIP is based on a mutual agreement with communities that have been identified as having Special Flood Hazard Areas. The Federal Emergency Management Agency (FEMA) will make flood insurance coverage available in a

community provided that it adopts and enforces floodplain management regulations that meet or exceed the minimum requirements of the NFIP (44 CFR §60.3). This is accomplished through local floodplain management regulations.

The NFIP minimum building and development regulations that communities must adopt require that new and substantially improved and substantially damaged residential buildings be elevated so that the lowest floor is at or above the Base Flood Elevation (BFE) determined for the site. Non-residential buildings have the option of elevation or dry floodproofing to the BFE [44 CFR §60.3(c)(2), (c)(3), and (e)(4)]. Dry floodproofing means making a building watertight, substantially impermeable to floodwaters to the BFE.

Substantial improvement means "*any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred substantial damage regardless of the actual repair work performed*."

Substantial improvement also includes the repair of buildings that have been substantially damaged. Substantial damage means "*damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred."*

In summary, structures that are "substantially improved" and "substantially damaged" must be brought into compliance with the community's floodplain management requirements [44 CFR §60.3(c)(2), (c)(3), and (e)(4)].

The NFIP and Historic Structures

This section provides information on the NFIP definition of "historic structure" and the floodplain management requirements that will be included in community floodplain management ordinances.

Definition of "Historic Structures"

The definition section of the NFIP [Code of Federal Regulations (CFR) 44 Part 59], defines "historic structure" as "*any structure that is:*

(1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; (This includes structures that are determined to be eligible for listing by the Secretary of the Interior as a historic structure. A determination of "eligibility" is a decision by the Department of the Interior that a district, site, building, structure or object meets the National Register criteria for evaluation although the property is not formally listed in the National Register.)

(2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

(3) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or

(4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:

(a) By an approved state program as determined by the Secretary of the Interior or

(b) Directly by the Secretary of the Interior in States without approved programs."

This definition was coordinated with the Department of Interior when it was added to the NFIP Regulations in 1989.

The purpose of this definition is to provide NFIP communities with criteria to distinguish between "historic structures" and the other existing buildings which remain subject to NFIP floodplain management requirements (44 CFR §60.3). While it is important to preserve historic structures and other cultural resources, it is also critical to ensure that other existing flood-prone structures are protected from flood damage when they are substantially improved or substantially damaged.

Floodplain Management Requirements that Provide Relief for Historic Structures

The NFIP floodplain management requirements contain two provisions that are intended to provide relief for "historic structures" located in Special Flood Hazard Areas:

(1) The definition of "substantial improvement" at 44 CFR 59.1 includes the following exclusion for historic structures,

> "*Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as an "historic structure*". The same exemption also applies to "historic structures" that have been "substantially damaged".

This provision exempts historic structures from the substantial improvement and substantial damage requirements of the NFIP.

(2) The other provision of the NFIP floodplain management regulations that provides relief for "historic structures" is the variance criteria at 44 CFR 60.6(a). This provision states:

> "*Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.*"

Under the variance criteria, communities can place conditions to make the building more flood resistant and minimize flood damages, but such conditions should not affect the historic

character and design of the building. *See* the section on Minimizing the Impacts of Flooding on Historic Structures for ideas on conditions that could be established to make the building more flood resistant and to minimize flood damages.

Communities have the option of using either provision for addressing the unique needs of "historic structures". Communities should adopt only one option to address "historic structures." Some communities have chosen to adopt an ordinance that requires variances for improvements or repairs to "historic structures" and do not exclude such improvements from the substantial improvement definition in their ordinance. Other communities include the "historic structures" exemption as part of their "substantial improvement" definition. In either case, "historic structures" can be excluded from the NFIP elevation and floodproofing requirements. Whether a community exempts a "historic structure" under the substantial improvement definition or through the variance process, the exemption of the "historic structure" from the NFIP floodplain management requirements should be documented and maintained in the community permit files.

However, if plans to substantially improve a "historic structure" or repair a substantially damaged "historic structure" would result in loss of its designation as an "historic structure", the structure no longer qualifies for the exemption and would be required to meet the NFIP floodplain management regulations (44 CFR §60.3). This determination needs to be made in advance of issuing a permit. This provides an incentive to the property owner to maintain the structure's historic designation rather than altering the structure in such a way that it loses its designation as a "historic structure".

Even if a "historic structure" is exempted from the substantial improvement and substantial damage requirements, consideration should be given to mitigation measures that can reduce the impacts of future flooding. There are mitigation measures that can reduce flood damages to historic structures without affecting the structure's historic designation. *See* the section on Minimizing the Impacts of Flooding on Historic Structures.

Historic buildings may also be subject to the local building codes. Many States and communities use the International Codes as the basis for their buildings codes. The International Codes contain provisions for addressing historic buildings in a manner consistent with the NFIP.

Historic Structures in the Floodway

The NFIP floodplain management requirements could apply to an addition to a "historic structure", if the structure or addition is located in a floodway. The floodway includes the channel of the river and the adjacent floodplain that must be reserved in an unobstructed condition in order to discharge the base flood without increasing flood levels by more than one foot (44 CFR § 59.1, "regulatory floodway"). All structures and improvements to structures, including additions to "historic structures", must comply with the floodway encroachment provisions of 44 CFR § 60.3(c)(10) and (d)(3) of the NFIP Regulations.

44 CFR § 60.3(c)(10) applies to rivers and streams where FEMA has established BFEs, but has not provided the community with the data necessary to designate a floodway:

> *Require until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM [Flood Insurance Rate Map], unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.*

§ 60.3(d)(3) applies to rivers and streams where FEMA has provided both established BFEs and provided the community with the data necessary to designate a floodway:

> *Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.*

As an example, an addition, or any portion thereof, to a "historic structure" that expands the square footage of the structure beyond its footprint into the floodway must comply with the regulatory floodway criteria [44 CFR §60.3(c)(10) and (d)(3)]. These additions can obstruct flood flows and increase flood stages. Under 44 CFR § 60.3(d)(3), such an addition would be prohibited if any rise in the flood level would result from the addition. FEMA defines "any" as meaning a zero increase.

New Construction and Non-contributing Structures in Historic Districts

Generally, registered historic districts contain a mix of buildings. In addition to structures that contribute to the historic significance of the district, there will generally be structures in historic districts that have no historical significance and which do not contribute to the historic significance of a registered historic district (called "non-contributing" structures). In addition, there may be sites in these districts that are undeveloped or vacant land. Whole districts cannot be exempt from floodplain management regulations and a blanket variance cannot be issued for all land within these districts. The non-contributing structures and vacant lots in historic districts remain subject to all of the floodplain management requirements that apply to new construction and substantial improvements (44 CFR §60.3).

Some communities have argued that they should be allowed to grant variances for new buildings or for substantial improvements to non-contributing buildings in historic districts. They claim that requiring that the new structures or substantially improved structures be elevated to BFE could be harmful to the historic significance of the district. FEMA maintains that this would be contrary to the purposes of the NFIP and could result in greatly increased flood damages and, in some instance,

even result in loss of life. There are ways to elevate or floodproof new structures and substantially improve non-contributing structures so that they comply with the NFIP regulations, but that are still in harmony with the historic nature of the district. While the NFIP requires protection to the BFE, it does not specify the means (44 CFR §60.3). An architect should be able to design a new building that is both compliant with NFIP floodplain management requirements and compatible with the historic nature of the district. For example, the protection does not have to be achieved by unsightly mounds of dirt or bare pilings or other elevated foundations. The structure could be elevated on pilings or other foundation elements and the lower area then covered by an architecturally pleasing façade that will not impair the aesthetics of a historic district. The foundation could be camouflaged with landscaping, porches, or staircases (*See* the examples in latter sections of this bulletin).

The NFIP was specifically established by Congress to reduce threats to lives and the potential for damages to new construction in flood hazard areas in exchange for providing flood insurance. Exempting new construction from the NFIP elevation requirements in historic districts would be contrary to the National Flood Insurance Act of 1968, as amended, and it would create a significant flood risk to structures and to the health and safety of the population. Potentially thousands of buildings would be placed in harms way, if new or non-contributing structures are not protected.

Substantial Improvements to Existing Structures in Historic Districts

Some property owners have wanted to substantially improve a non-contributing structure in a historic district, so that it can become a contributing structure to the historical significance of the registered historic district. For example, this type of improvement could involve removal of modern additions to the building, replacement of modern siding or roofing materials with historic materials, and other actions to restore the historic nature of the structure. If the improvement is a substantial improvement to a non-contributing structure, the structure still could qualify for relief from the NFIP floodplain management requirements in the following ways (44 CFR §60.3):

- The property owner could apply through their State Historic Preservation Officer or Tribal Historic Preservation Officer for contributing status for the structure as is, prior to any improvements. If the building qualifies as “contributing to the historical significance of a registered historic district”, the community can grant a variance or exclude the improvements from the NFIP substantial improvement requirement depending on which provision the community has adopted [44 CFR §60.3(c)(2), (c)(3), and (e)(4)].
- The property owner could undertake the minimum work necessary to make the building a contributing structure, as long as the work is less than a substantial improvement. Once the structure is designated as “contributing”, any additional improvements including a substantial improvement could qualify for relief from the NFIP floodplain management requirements, so long as those improvements do not interfere with the designation as “contributing to the historical significance of a registered historic district” (44 CFR §60.3).
- If the property owner chooses to undertake a substantial improvement of the building all at once or the owner needs to undertake the substantial improvement in order for the building

to qualify as "contributing to the historical significance of a registered historic district", the owner should contact the community for guidance on how they might qualify for relief from the NFIP substantial improvement requirement [44 CFR §60.3(c)(2), (c)(3), and (e)(4)]. In this situation, the community would have to issue a variance from the floodplain management ordinance. The community should obtain documentation for assurance that the improvements being proposed would qualify the building for "contributing" status before signing off on permits that would grant them relief under the NFIP. The owner should seek guidance from their State Historic Preservation Officer or Tribal Historic Preservation Officer on proposed improvements and on what documentation is needed to obtain preliminary approval. This information should be shared with the community.

In all cases, the property owner should discuss their proposed plans with the community and seek guidance from the State Historic Preservation Officer or Tribal Historic Preservation Officer before undertaking any improvements to make sure the proposed work would qualify the building for the designation as a contributing structure. For any of the options described above, the community should also encourage the property owner to undertake flood damage reduction measures as part of the improvement, as long as measures do not interfere with its designation as a "historic structure".

Flood Insurance for Historic Structures

In addition to the relief from the NFIP floodplain management requirements described above, owners of "historic structures" can obtain and maintain flood insurance at subsidized rates. Flood insurance coverage is required for most mortgage loans and for obtaining Federal grants and other financial assistance. The ability to obtain flood insurance coverage is also important to ensuring that historic structures can be repaired and restored after a flood event.

The National Flood Insurance Act of 1968, as amended, requires that FEMA charge actuarial rates reflecting the flood risk to buildings built or substantially improved on or after the effective date of the initial Flood Insurance Rate Map (FIRM) for the community or after December 31, 1974, whichever is later. Actuarial rating assures that the risks associated with buildings in flood prone areas are borne by those located in such areas and not by the taxpayers at large. These buildings are referred to as Post-FIRM. The NFIP flood insurance rates are based on the degree of the flood risk. The flood insurance premium calculations take into account a number of factors including the flood risk zone shown on the FIRM, elevation of the lowest floor above or below the BFE, the type of building, the number of floors, and the existence of a basement or an enclosure. The NFIP floodplain management requirements not only are designed to protect buildings constructed in floodplains from flood damages; they also help keep flood insurance premiums affordable (44 CFR §60.3). Buildings not properly elevated will be charged a much higher flood insurance premium due to the increased flood risk. If substantially improved historic structures were not elevated and made subject to these rates, the annual insurance premiums could be many thousands of dollars a year. Allowing historic structures to continue to be insured at subsidized rates, even when they are substantially improved or substantially damaged, represents a significant financial benefit to these building owners.

Flood insurance at subsidized rates is available whether the "historic structure" is exempt from the NFIP substantial improvement requirement or is granted a variance under the variance provision. "Historic structures" are considered Pre-FIRM under the NFIP and are charged subsidized rates similar to existing structures. As long as a historic structure meets the definition of "historic structure" under the NFIP, it will not be actuarially rated (44 CFR §59.1).

If a "historic structure" is substantially improved such that it loses its historic designation without meeting the elevation requirements of the NFIP, it will be actuarially rated as a Post-FIRM structure. This can be significantly higher than the subsidized rate on a "historic structure." Thus, the subsidized flood insurance rate on "historic structures" also serves as an incentive to maintain the historic designation of the structure.

Property owners of historic structures are encouraged to purchase NFIP flood insurance. Flood losses are not covered by homeowner's insurance. Disaster assistance will not take care of all the financial needs, if the historic structure is damaged by flood. Even if disaster assistance is available, it is often in the form of a low-interest loan which has to be repaid, and it is only available if the President formally declares a disaster. Flood insurance compensates for all covered losses and is the best form of financial protection against the devastating effects of floods. Flood insurance policies purchased by individual property owners help them recover from flooding more quickly.

Increased Cost of Compliance (ICC) coverage is not available to a historic structure that is exempt from the floodplain management requirements if a historic structure is substantially damaged (44 CFR §60.3). ICC coverage provides for the payment of a claim for the cost to comply with State or community floodplain management laws or ordinances after a direct physical loss by floods. When a building covered by a State or community declares the building to be substantially or repetitively damaged, ICC will help pay up to $30,000 for the cost to elevate, floodproof, demolish, or relocate the building. However, if an exemption is granted administratively through the community's variance process, and conditions are placed in the variance requiring one of the mitigation measures that meet the local floodplain management criteria, ICC will be available if the structure is declared substantially damaged or repetitively damaged.

Minimizing the Impacts of Flooding on Historic Structures

Protection Measures for Historic Structures

The primary damage to historic buildings in a flood disaster is from immersion of building materials in floodwaters and the moving force of floodwaters that can cause structural collapse. Storm and sanitary sewer backup during flooding is also a major cause of flood damage to buildings. In addition, floods may cause a fire due to ruptured utility lines; result in the growth of mold and mildew; and lead to swelling, warping, and disintegration of materials due to prolonged presence of moisture.

Although "historic structures" are exempt from the NFIP floodplain management requirements for new and substantially improved construction, flood mitigation measures should be a consideration to minimize flood damages when rehabilitating a historic structure or repairing a damaged historic structure (44 CFR §60.3).

Rehabilitating or repairing a historic structure provides an opportunity to incorporate measures to reduce future flood damages. In addressing multiple historic structures in a historic district or a single historic structure, one of the first steps to undertake is to assess the flood risk and estimate the amount of potential flood losses. The "how-to" guides described in the Hazard Mitigation Planning Can Benefit Historic Structures section of this Bulletin can help in assessing the flood risk and the potential flood losses to historic structures. The "how-to" guides can also help in identifying, evaluating, and prioritizing possible mitigation measures that reduce flood damages.

Mitigation measures can take a variety of forms from simple low-cost improvements such as elevating utilities and mechanical equipment to structural measures such as elevation, dry floodproofing, or relocating the building to a site outside the Special Flood Hazard Area. Even the more costly measures such as elevation, dry-floodproofing, or relocation can have significant benefits relative to their cost including:

- Reduction of flood damages. The buildings may not sustain flood damages or at least those damages will be significantly less than if no mitigation measures were implemented.
- Reduction in flood insurance premiums. Buildings that are elevated to or above the BFE or relocated out of the floodplain can qualify for flood insurance at actuarial rates that are generally less expensive than even the subsidized flood insurance rates charged to existing structures.
- Long-term preservation of the building. Historic structures that are repeatedly flooded will deteriorate and eventually may have to be demolished unless they are protected from flooding. Mitigation measures can help preserve the building for future generations.

One of the challenges in mitigating the flood risk to a "historic structure" is the need to incorporate mitigation measures in such a way that the structure does not lose its historic designation. When evaluating mitigation measures for historic structures, care should be taken so that new designs and new materials do not obscure existing significant historic features. Retrofitting a historic structure to reduce flood damages can be done that it has minimal impact on the structure's historic integrity and so that it maintains its historic designation.

A range of mitigation measures may be available for a particular historic structure. By adhering to the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and by seeking the help of an architect or engineering professional experienced in rehabilitating historic structures, a structure's original historic setting, scale, and distinctive features can be preserved. You may want to also refer to the *Preservation Briefs* published by the National Park Service, which provide guidance on preserving, rehabilitating, and restoring historic buildings. You may also want to seek guidance from your State Historic Preservation Officer or Tribal Historic Preservation Officer.

There is a variety of relatively simple measures that can be implemented to minimize the effects of flooding. Although these measures are designed to reduce flood damages, they may not eliminate flooding altogether. Many of the techniques described below may have minimal impact on the character-defining design features of the historic structure and some are relatively inexpensive to implement. Several of these will require a design professional and licensed contractor to implement.

- Relocate contents to a safer location. For example, heirlooms and other cultural resources should be located above the BFE. At a minimum, valuable contents should be removed from flood-prone basements.
- Create positive drainage around the building. In places where ground slope against the building facade is either flat or toward the building, increase the grade immediately adjacent to the façade to achieve positive drainage away from the building. In some situations, existing masonry and concrete window wells around basement windows may need to be built up to retain the extra height of the fill.
- Protect mechanical and utility equipment. Elevating mechanical and utility equipment (including electrical, heating, ventilation, plumbing and air conditioning equipment) above the BFE can protect them from flood damage. Guidance for protecting mechanical and utility equipment from flooding can be found in the FEMA publication, *Protecting Building Utilities from Flood Damage, Principles and Practices for the Design and Construction of Flood Resistant Building Utility Systems* (FEMA 348/November 1999).
- Remove modern finished materials from basements or other areas that are floodprone. Often historic structures are constructed from materials that are relatively flood-resistant. For example, basements often had stone or rubble walls and dirt floors. These buildings often were repeatedly flooded with minimal flood damages except to building contents. In more recent years many of these areas have been finished off using modern materials that are less resistant to flood damage and building utilities added. It may be possible to wet-floodproof the building merely by removing these modern materials and restoring these areas to their original configuration.
- Use flood resistant materials below the BFE. When rehabilitating or repairing a damaged historic structure, use flood resistant materials below the BFE to improve the structure's ability to withstand flooding. Guidance for using flood resistant materials can be found in Technical Bulletin 2-93, *Flood-Resistant Materials Requirements for Buildings Located in Special Flood Hazard Area in accordance with the National Flood Insurance Programs*.
- Fill in the basement. For historic structures with basements, a simple solution to minimize flood damage and reduce the potential for structural damage is to abandon the basement, raise any mechanical and utility equipment, and fill in the basement with sand or gravel.
- Wet floodproofing the basement. This measure allows the internal flooding of a basement. Flooding of a structure's interior is intended to counteract hydrostatic pressure on the walls, surfaces, and supports of the structure by equalizing interior and exterior water levels during a flood. Inundation also reduces the danger of buoyancy from hydrostatic uplift forces. Such measures may require alteration of a basement's design and construction, use of flood-

resistant materials, adjustment of the basement's maintenance, relocation of equipment and contents, and emergency preparedness. Guidance for wet floodproofing a basement can be found in Technical Bulletin 7-93 *Wet Floodproofing Requirements for Structures Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program*.

- Install "mini"-floodwalls to protect openings, such as a window well. For low level flooding, a type of "mini"-floodwall can be used to permanently protect various types of openings. Possible materials for this use include brick, concrete block and poured concrete. They should be supported by and securely tied into a footing so that they will not be undercut by scouring and the soil under these walls should be fairly impervious to control seepage. Some form of sealant may be needed on the outside to control seepage.
- Temporary measures. Where it is not possible to use the above measures to protect a building from flooding, it may be possible to use temporary measures to reduce flood damages. Examples include sand-bagging openings, installing temporary barriers or flood shields in openings, and evacuating building contents to floors above the flood level. In order for this approach to work, one must develop an emergency plan and stock-pile the required materials ahead of time. The amount of flood warning time available for the site is critical and it must be ensured that adequate personnel are available to install the measures. Do not try to keep water out of buildings unless an engineering analysis is conducted to ensure that the walls are strong enough to withstand flood forces (hydrostatic, hydrodynamic, debris, and buoyancy).

Property owners may want to undertake more extensive mitigation measures, if there is a likelihood of significant or more frequent flood damage to the historic structure. These mitigation measures could include elevating, floodproofing, or relocating the structure to a site that is outside of the Special Flood Hazard Area. These mitigation measures are described below.

Elevation

One of the common methods of protecting flood-prone buildings is to elevate the lowest floor of a structure above the BFE (elevation of the one-percent-annual chance flood). Elevation is an effective mitigation measure, if designed and constructed appropriately to withstand flood forces. Although elevation is a practical solution for flooding problems, the flooding conditions and other hazards at the site must be carefully examined so that the most suitable technique and foundation type can be determined. There are two types of elevation to consider: (1) The entire building is lifted and placed on a new elevated foundation (columns, piers, posts, or raised foundation walls such as a crawl space). (2) In situations where it is possible to leave the exterior of the building the same, raise the interior floor of the building above the BFE. This may be an alternative for older stone buildings with high ceilings and elevated window sills.

Essentially, the steps required for elevating a building are largely the same in all cases. A cradle of steel beams is inserted under the structure; jacks are used to raise both the beams and structure to the desired height; a new elevated foundation for the house is constructed; and the structure is then lowered back onto the new foundation and reconnected. At a minimum, the foundation of the elevated structure must be able to withstand the expected loads at a site which may include hydrostatic pressure, hydrodynamic loads from velocity water and wave impacts, debris impact resulting from the flood, and buoyancy. The foundation must also be able to resist undermining by any expected erosion or scour. Therefore, the flooding characteristics and building type and condition will need to be examined to determine which type of foundation will be the most suitable.

Elevation of a historic residence in Mandeville, Louisiana

While elevating a structure above the BFE will provide the structure the most protection, a less intrusive elevation may be desired or more feasible for a historic structure. Other protection measures, such as elevating utilities and equipment above the BFE, should be considered if elevating a historic structure to the BFE is not practicable.

Elevation of a historic residence in Mandeville, Louisiana

Elevation of a historic structure does not have to be achieved by unsightly pilings or other foundation that would impair the aesthetics of a historic district. The structure could be elevated on pilings or foundation walls and the foundation area could then be covered by an architecturally pleasing facade that is consistent with materials from the historic structure. The lower area can also be camouflaged with landscaping.

Elevation in South Carolina. 113

Calhoun Street is a 125-year old, three-story house that stands in the heart of the downtown historic district of Charleston, South Carolina. Already abandoned for several years by the time Hurricane Hugo struck in 1989, 113 Calhoun Street was in serious danger of collapse by 1997. Instead of demolishing the building, the City of Charleston donated it to the 113 Calhoun Street Foundation, a non-profit partnership formed between the South Carolina Sea Grant Consortium, Clemson University, and the City of Charleston.

113 Calhoun at inception of project
Photo courtesy of 113 Calhoun Street Foundation.

Using creative design solutions the 113 Calhoun Street Foundation transformed the derelict building into an educational center. Primary funding for the initial construction was provided by FEMA, while additional support, including the donation of products and services, came from the private sector. It was determined that an elevation above the BFE would not have been appropriate for 113 Calhoun Street. Such an elevation would have raised the building more than 5 feet, which would not have been in keeping with the surrounding streetscape and character of the historic district. Instead, the organization elevated the house only one foot, undertaking a variety of other types of interior and exterior improvements to protect against hazards.

Even though it was elevated to below the BFE, the house is still protected from minor flooding events and suffers less damage in major flooding events. Improvements to the house included the following:

- Placing HVAC ductwork at ceiling level and returns above the BFE.
- Placing electrical, telephone, and computer outlets above the BFE, with no splices or connections below the BFE.

113 Calhoun today
Photo courtesy of 113 Calhoun Street Foundation.

- Installing interior decorative wainscoting to the BFE. This wainscoting consisted of water-resistant material, and could be removed to dry after a flood event.
- Designing interior structural elements so that a continuous load path was created that minimized weak links in the building's structural system.
- Replacing the building's deteriorated original foundation of unreinforced masonry brick with a new foundation consisting of concrete footings with steel ties. This new system allowed new timbers members to be bolted to the foundation, protecting against the twisting movements and other movements caused by seismic and wind forces. Brick from the original foundation was re-used as a veneer on the new foundation.

Elevation in Belhaven, North Carolina. The Town of Belhaven, North Carolina, along the Pungo River, is subject to repeated flooding. In its last flood event, over 60 percent of the town's buildings were damaged, including most of the buildings in the National Register-listed Belhaven Historic District. In an effort to retain the town's historic and economic link to the waterfront, the decision was made to elevate the 379 buildings in place rather than relocate them to higher ground or demolish and rebuild them.

Frame building elevated on concrete block foundation faced with brick veneer. Belhaven, North Carolina.

With assistance from the North Carolina State Historic Preservation Officer, plans were developed for an elevation project that would best preserve the historic character of the district. In the plan, frame buildings were raised onto concrete block foundations faced with brick veneer. Brick buildings were elevated onto continuous concrete block foundations, which were also faced with brick veneer. A projecting brick course was used to demarcate where the original house ended and the new foundation began. Additional guidance was drafted for preserving porches, railings, balusters, and steps, and for replacing old materials with appropriate new materials where necessary.

To prepare for the elevation project, large-format archival photographs were taken of each building that would be included in the project. These photographs provided a permanent record of the historic appearance of the district. Due to all these extra planning efforts for preserving its historic properties, the Belhaven Historic District was able to maintain its National Register status.

By the time the next flood struck Belhaven, 32 of the planned 379 houses were elevated. It is estimated that elevation of these 32 properties alone saved the town over $1.3 million in direct and indirect damages.

Floodproofing

Another alternative is to "floodproof" the building, so that it will not sustain damage or so that damages are minimized. There are two types of floodproofing commonly called "dry-floodproofing" and "wet-floodproofing." Dry floodproofing means making a building watertight, substantially impermeable to floodwaters. This form of floodproofing requires that the building be properly anchored to resist flotation, collapse, and lateral movement. It also may require the reinforcement of walls to withstand flood forces and impact forces generated by floating debris; the use of membranes and other sealants to reduce seepage of floodwater through walls and wall penetrations; the installation of pumps to control interior water levels; the installation of check valves to prevent entrance of floodwater or sewage flows through utilities; and the location of electrical, mechanical, utility, and other valuable vulnerable equipment and contents above the expected flood level. Dry-floodproofing must be implemented with an appropriate design by a registered professional engineer or architect. Additional guidance on dry floodproofing can be found in Technical Bulletin 3-93 *Non-Residential Floodproofing – Requirements and Certification for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program* and in *Floodproofing Non-Residential Structures* (FEMA 102/May 1986).

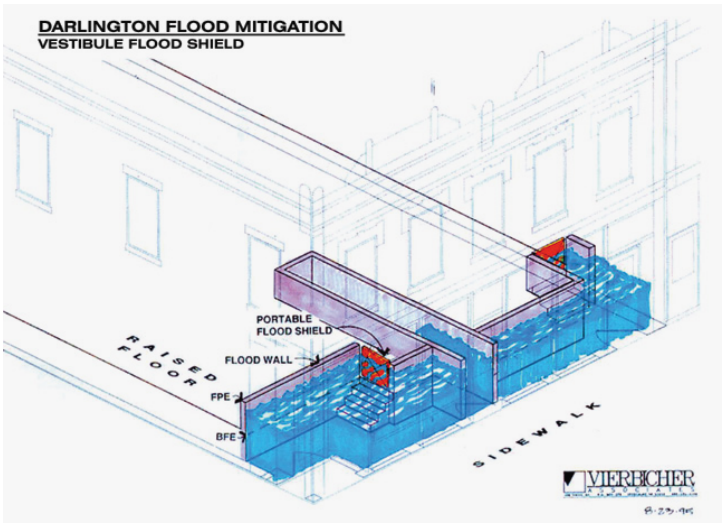
Wet-floodproofing allows for the flooding of a structure's interior to equalize hydrostatic pressure on exterior walls, surfaces, and supports of the structure during a flood. Application of wet-floodproofing as a flood protection technique should be limited to specific situations in A Zones (including A, AE, A1-30, AH, AO, and AR zones).

Flooding of a structure's interior is intended to counteract hydrostatic flood forces on the exterior walls, surfaces, and supports of the structure during a flood. Inundation also reduces the danger of buoyancy from uplift forces. Use of wet floodproofing for historic structures requires careful consideration of protection techniques.

Building materials for the area that is to be wet-floodproofed should be replaced with flood resistant materials. Valuable contents should be relocated to or above the BFE. Light, portable furnishings should be able to be moved quickly and easily before a flood. Utilities and equipment should be elevated to or above the BFE or located on a platform that is above the BFE. Consideration must be given to flood duration, frequency, and depth to determine if wet-floodproofing is a viable option. For example, flood-prone basements may be modified, so that they can be flooded without damage to the building or foundation. Additional guidance on wet floodproofing can be found in Technical Bulletin 7-93 *Wet Floodproofing Requirements for Structures Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program*.

Floodproofing in Wisconsin. Flooding is an ongoing part of life in the rural riverside town of Darlington, Wisconsin, having caused millions of dollars in property damage over the past decade. Following the devastating damage from the 1993 floods, the town could follow one of the three routes: do nothing and continue to suffer the periodic floods; move the central business distinct out of the floodplain and upset the local economy and sense of community; or do something innovative.

Restored and retrofitted buildings in Downtown Darlington, Wisconsin



To provide additional protection against floodwater, removable watertight floodgates were incorporated into the buildings

Darlington chose innovation. It found creative solutions to retain the historic charm of its nineteenth century business district, while eliminating the threat of future flood devastation.

The town took advantage of the very high ceilings common to many of the older buildings in Darlington; their height allowed first floors to be elevated out of flood danger with minimal impact to other historic features. Basements were filled with sand and gravel, floodproofing that portion of the building most vulnerable to flooding, and all utilities were upgraded and raised. All these measures were implemented without altering the exteriors or disrupting the historic integrity of these older buildings.

These mitigation measures resulted in the successful floodproofing of the historic central business district against the 100-year flood event, as well as the revitalization of Darlington's economy.

The successful integration of historic preservation and hazard mitigation earned Darlington a Preservation Achievement Award from the State Historical Society of Wisconsin.

Floodproofing the vestibule of a storefront

Relocation

Relocation is the mitigation measure that can offer the greatest security from future flooding. Relocation involves moving the entire structure out of the floodplain or it may involve dismantling a structure and rebuilding it elsewhere. It may be possible to relocate a building to a higher part of the same parcel or lot, but often it will be necessary to move the building to another site. In either case, it is the most reliable of all mitigation measures. In addition to relieving the property owner from future anxiety about flooding, this method can offer the opportunity to significantly reduce or even eliminate the need for flood insurance. Relocation may be the best option in cases where the building site is subject to repeat flooding or severe flooding, where flood depths and velocities can have significant impact on the building.

Built by John Holm in 1847, the Magnolia Hotel, badly damaged from Hurricane Camille in 1969, was moved 100 yards north and restored by the City of Biloxi in 1972. As a result, the hotel experienced only minimal flooding during Hurricane Katrina.

Obviously, moving a structure is a complex operation and will have to be done by a professional with experience in relocating structures. Relocation generally involves raising the building and placing it on a wheeled vehicle, usually a large flatbed trailer. The building is then transported to the new site and lowered onto a new foundation. In general, structures over a crawl space or basement are the easiest to relocate, while structures that are slab-on-grade or multi-story are more difficult. Masonry buildings, buildings with stone or brick veneer, and buildings with chimneys may require extensive bracing to prevent cracking or structural failure. As structures become larger, moving them may become more complicated and more expensive.

Relocation may, in some cases, be an appropriate option for historic structures by moving them out of harm's way. However, historic structures often share important features to the site, such as landscaping, outbuildings, alleyways, orientation, setback from the street, or other historical context. These contributing features often help to define a neighborhood's historic significance. If this option is being considered for a historic structure, consult with a historic preservation professional. The State Historic Preservation Officer or Tribal Historic Preservation Officer can also offer guidance. An example of a historic structure, which was relocated out of harm's way, follows.

Relocation in Fulton, New York. On January 19, 1996, floodwaters of the Schoharie Creek rose nearly 18 feet damaging many properties in the Town of Fulton, in Schoharie County, New York. The Town of Fulton submitted a Hazard Mitigation Grant Program application to FEMA for the acquisition and demolition of 12 properties. In reviewing the Town of Fulton's application, FEMA initiated consultation under section 106 of the National Historic Preservation Act. As a result, FEMA determined and the New York State Historic Preservation Officer concurred that one of the buildings in the application – known as the "Bruchmann residence" – was eligible for inclusion on the National Register of Historic Places and that its demolition would result in an "adverse effect." The residence is significant as a notable and substantially intact example of a mid-19th century vernacular design and construction.

Dismantling of Bruchmann residence, May 2000

Based on the "adverse effect" determination, a Memorandum of Agreement (MOA) was negotiated between the State Historic Preservation Officer, FEMA, and the Town of Fulton wherein the town would explore alternatives to demolition. The town implemented an advertising campaign in an attempt to identify a party willing and able to relocate the structure to another site. After more than 2 years, an interested party submitted a statement of interest to the applicant and a deal was struck.

The house was re-erected on its new site in Delaware County.

Hazard Mitigation Planning Can Benefit Historic Structures

Historic properties and cultural resources are valuable, economic assets in communities throughout the United States. For many communities, historic and cultural resources are a catalyst for economic development. Often not considered are the potentially devastating effects that flooding can have on historic properties. When disaster strikes and a community's historic resources are damaged, the economic and social vitality of the community can be severely impacted. Communities can take steps to minimize the impacts of flooding on the community's historic resources by integrating historic property and cultural resource protection into hazard mitigation planning.

FEMA has developed a series of mitigation planning "how-to" guides for the purpose of assisting communities, States, and Tribes in developing an effective hazard mitigation plan. These guides have been developed by FEMA to provide an overview of the core elements associated with hazard mitigation planning. The four core elements include – organizing resources, assessing risks, developing a mitigation plan, and implementing the plan and monitoring progress. These "how-to series" include:

- Getting started with the mitigation planning process, including important considerations for how one can organize efforts to develop an effective mitigation plan (FEMA 386-1);
- Identifying hazards and assessing losses to community, State, or Tribe (FEMA 386-2);
- Setting mitigation priorities and goals for community, State, or Tribe, and writing the plan (FEMA 386-3); and
- Implementing the mitigation plan, including project funding and maintaining a dynamic plan that changes to meet new developments (FEMA 386-4).

One particular guide developed specifically to address historic properties and cultural resources is the FEMA publication titled *Integrating Historic Property and Cultural Resource Considerations Into Hazard Mitigation Planning* (FEMA 386-6 / May 2005). This guide should be used in conjunction with the four guides described above. This guide will help communities accomplish the following with respect to historic structures and historic districts:

- Identify and pull together resources for incorporating historic property and cultural resource considerations into a hazard mitigation plan;
- Determine which historic properties and cultural resources are likely to be damaged in a disaster and prioritize them for protection;
- Evaluate potential hazard mitigation actions for historic properties and cultural resources through the use of benefit-cost analysis and other decision-making tools; and
- Develop and implement a hazard mitigation plan that addresses historic properties and cultural resources.

To obtain copies of these publications, refer to Further Information section and Order Information section.

Further Information

State and Local Mitigation Planning "How-To" Guides

Getting Started – building support for mitigation planning, FEMA 386-1, September 2002.

Understanding Your Flood Risk – identifying hazards and estimating losses, FEMA 386-2, August 2001.

Developing the Mitigation Plan – identifying mitigation actions and implementation strategies, FEMA 386-3, April 2003.

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To obtain a copy of these publications, see the section on Ordering Information. They are also available to view and download from http://www.fema.gov/library/index.jsp.

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Floodplain Management Bulletin

Variances and the National Flood Insurance Program

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Acronyms and Abbreviations

BFE	Base Flood Elevation
CFR	Code of Federal Regulations
DOI	Department of the Interior
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
NFIP	National Flood Insurance Program
SFHA	Special Flood Hazard Area
WSEL	Water Surface Elevation

SECTION 1
Purpose and Background

The National Flood Insurance Program (NFIP) variances procedures are designed to help local governments protect their citizens and property from flood damages. Allowing variances to the local floodplain management standards may significantly increase the property's flood insurance rate and decreased the community's resilience. Therefore, by implementing the NFIP variance procedures, a community will ensure that alternative actions are taken that protect and encourage safe development in the floodplain. This publication outlines the floodplain management variance criteria as set forth in Title 44 Code of Federal Regulations (CFR) Part 60, Criteria for Land Management and Use, Subpart A – Requirements for Floodplain Management Regulations, Section 60.6 (44 CFR §60.6).

This publication is not intended to offer legal advice.

1.1 Purpose

This guidance will assist local government officials in reviewing requests for variances and determining if a request meets the minimum requirements of the NFIP. The variance regulation set forth in 44 CFR §60.6 is not absolute; State zoning enabling legislation or State floodplain management regulations and local case law[1] may take precedence and may be more restrictive. Therefore, community officials should consult their local attorney or State Attorney General regarding the specific requirements of State and local variance regulations.

1.2 Background and Meaning of Variance

A variance is an authorization for the construction or maintenance of a structure or other land uses that would otherwise be prohibited by a land use regulation such as a zoning ordinance. Local floodplain regulations may complement and be augmented by zoning regulations to reduce the community's overall risk to flooding. Relevant to this guidance, 44 CFR §59.1 defines "variance" as "a grant of relief by a community from the terms of a floodplain management regulation." Variances are meant to address unique, site-specific and individual circumstances where the strict application of the ordinance may result in an extreme hardship to a property owner. While the variance is intended to provide relief, it still enables the community to:

- Preserve the purpose and intent of the zoning law/ordinance;
- Minimize legal challenges to the zoning law or floodplain management regulations and avoid an unconstitutional "taking" of private property without compensation; and
- Protect the safety, health, and welfare of the public and emergency responders.

1 Case law dictates following the due process of law detailed in the floodplain ordinance, enforcing regulations consistently, and acting under the advisement of the community's attorney. For more information, consult with your community's attorney.

The authority to grant a variance is typically delegated to communities through State statutes. This authority empowers a community to establish a board to adjudicate variance applications and sets out the standards and elements necessary for granting variances. The standards and elements vary from State to State. Some are strictly defined, and others are imprecise and allow the board greater discretion when granting a variance.

In some cases, a variance granted for floodplain management purposes can result in a project that does not meet the minimum standards of the NFIP. Because a variance can lead to an increased risk to life and property, variances from flood elevation requirements or other floodplain management requirements should be granted only rarely.

SECTION 2
Evaluating the General Merits of a Floodplain Management Variance

The floodplain management variance requirements are based on the general principles of zoning laws in State statutes. The minimum floodplain requirements for communities participating in the NFIP are designed to ensure the practice of sound floodplain management. (See 44 CFR §60.6.) To grant a variance from floodplain ordinances, in addition to meeting the requirements set out by State law, the community must determine:

- Good and sufficient cause and exceptional hardship exist;
- The variance will not result in additional threats to public safety, extraordinary public expense, or fraud or victimization of the public; and
- The variance is the minimum action necessary to afford relief.

If the required standards of State law, local ordinances, and 44 CFR §60.6 are closely adhered to, granting variances from floodplain ordinances should be rare. Additionally, where a variance is granted, some level of flood protection and hazard mitigation should always be required.

2.1 Floodplain Regulations versus Zoning Regulations

Floodplain regulation and zoning regulations, when applicable, are land use and development controls that should be administered in concert to promote the general welfare by minimizing the threat from natural hazards to life and property.

Floodplain regulations are similar in nature and function to zoning regulations in that both involve land use regulation and control, have benefits and performance expectations, and are often implemented under the same legislative authorities at the local or State level. However, floodplain regulations differ from zoning regulations because they specifically address human safety and property protection in relation to a known and defined natural hazard. Furthermore, in accordance with the provisions of 44 CFR Part 60, the local jurisdiction must enforce floodplain regulations for all development in the Special Flood Hazard Area (SFHA).

SPECIAL FLOOD HAZARD AREA (SFHA)

Land areas subject to a 1 percent or greater chance of flooding in any given year. These areas are indicated on Flood Insurance Rate Maps (FIRMs) as Zone AE, A1-A30, A99, AR, AO, AH, V, VO, VE, or V1-30. Mapped zones outside of the SFHA are Zone X (shaded or unshaded), B, or C.

2.2 Evaluating a Floodplain Management Variance

When evaluating a request for a variance, communities should first look to their own State law and local land use zoning and floodplain management requirements. While each State has adopted individual and often unique requirements and procedures for the issuance of variances, common examples of variance criteria include the following:

1. **Hardship**
   - An exceptional hardship related to the property such as unique physical and topographical conditions of the property; this is not related to the individual personal circumstances of the applicant.
   - The hardship related to the property was not caused by the applicant or is shared by adjacent parcels.
   - A variance is required for the applicant to make reasonable use of the property.
2. **Increased Risk**
   - Issuing the variance will not impair the adjacent properties or neighborhood.
   - The variance will not be detrimental to public health, welfare, or safety.
3. **Minimum Action**
   - The variance will deviate from the overall zoning as little as possible to afford the necessary relief.

Variance Review Boards

Typically, variance requests are reviewed by the community planning commission, a separate appeals board, or in some cases the city council. These boards will not have the authority to change the ordinance, only to impose the application or interpretation of the ordinance's provisions. Generally, the community's variance board reviews variance requests only on a structure-by-structure basis. Variance requests should not be reviewed or granted for multiple lots, phases of subdivisions, or entire subdivisions. When a review board follows and considers the intent and procedures outlined in the NFIP criteria, few situations would qualify for a floodplain management variance related to flood elevations or flood loss reduction provisions in the local ordinance.

Key Issues to Consider

A community should consider four important issues before granting a variance: (1) the community's liability, (2) the cumulative impacts on the floodplain of granting multiple similar variances, (3) the variance decision will last for the life of the structure, and (4) whether granting a variance will jeopardize the community's participation in the NFIP.

For example, variances are granted for the structure and not associated with the property owner. As such, when communities review a variance request, they should consider the life expectancy of a building. A home built today is expected to last an average of about 100 years; shopping malls with traditional parking lots have a life expectancy of about 12 to 20 years; commercial structures have a life expectancy of about 25 to 75 or more years, depending on building type. If the structure is located within a floodplain, the cumulative effects of development will increase possible flood damage to the structure.

SECTION 3
Floodplain Management Variance Review Process

To properly administer its floodplain management ordinances, including the granting of variances, a local government should establish a standardized variance review procedure. This procedure must be within the bounds of State-enabling law and in accordance with local laws and ordinances. In most cases, the variance standards in 44 CFR §60.6 are incorporated into the body of a community's floodplain management ordinance.

The NFIP variance criteria set forth at 44 CFR §60.6 must be read as a whole and not in segments. Therefore, the granting of a floodplain variance is rare.

Administrative procedures for processing and considering variance requests vary from State to State, and often from community to community. Some communities have separate procedures to hear variance requests related to zoning and building codes, while other communities have only one set of procedures. Procedurally, a variance request is usually presented to the appropriate commission (board), which then considers the request during a public meeting or hearing. During the deliberations, reports from the appropriate community official, as well as testimony from the applicant and other potentially affected or interested parties, are usually accepted orally and in writing.

3.1 Types of Variances

In general, there are two types of variances allowed by State law: use variances and area variances. The responsibility for determining that an applicant qualifies for either of these variances rests solely on the community.

A variance is the only legal means by which a community can permit construction that is inconsistent with the provisions in its floodplain management ordinance.

Use variances. Local officials permit a property owner to use a building or parcel for a purpose not normally allowed in a particular zone. An example of this would be allowing someone to establish an office in a residential zone because the property has some unique characteristic that precludes use or development as a residence, and use as an office would not be detrimental to the surrounding properties or the community as a whole.

Area variances. An area variance may be granted when, for instance, a property owner is able to show that there are serious, practical difficulties associated with complying with the dimensional requirements of the zoning ordinance, such as setback requirements or maximum height restrictions.

Floodplain Management Variances

While variances from NFIP floodplain management criteria may seem, at first glance, to be similar to area variances, this is not actually the case. Variance requests that deal with maximum height or setbacks

are usually related to aesthetic concerns, and may affect property values. Variances from floodplain management criteria are not related to aesthetics, but rather may affect the safety and protection of the public, the environment, and the flood risk of a community.

Any variance from local floodplain management standards must be closely scrutinized to determine if it meets State and local standards for variance issuance, as well as the minimum standards adopted by the community in the variance requirements of the floodplain management ordinance.

Variances can be granted for new construction and Substantial Improvements only if *all* the other NFIP requirements in the local floodplain management ordinance are met. If even one criterion is not met, the variance should not be granted.

DEFINITIONS

Substantial Damage: Defined by the National Flood Insurance Program (NFIP) as *"damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred."*

Substantial Improvement: Defined by the NFIP as *"any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure (or smaller percentage if established by the community) before the 'start of construction' of the improvement. This term includes structures that have incurred 'Substantial Damage,' regardless of the actual repair work performed."*

Refer to FEMA P-758, *Substantial Improvement/ Substantial Damage Desk Reference* (2010) for more information.

3.2 NFIP Variance Standards

The NFIP does not set forth an absolute criterion for granting variances from the minimum floodplain management provisions. NFIP regulations provide the basis for each participating community to determine whether construction or other development activities qualify for a variance from the local floodplain management regulations.

The authority and the responsibility to approve or disapprove a variance rest with the local government. However, because variances may expose insurable property to a higher flood risk, the Federal Emergency Management Agency (FEMA) evaluates variances granted by a community to determine whether they are consistent with sound floodplain management standards as required for participation in the NFIP. The floodplain management variance criteria contained in the NFIP regulations are intended to:

- Provide specific floodplain management input to the community criteria for approving variances;
- Inform participating communities of FEMA's guidelines for evaluating local compliance with the standards required for participation in the NFIP;
- Ensure appropriate notification of the issuance of a variance; and
- Advise applicants and future owners of potentially high flood insurance rates.

The NFIP variance standards are based on the general principle of zoning law that variances pertain to a piece of property and are not personal in nature. Though standards vary among States, in general, a properly issued variance is granted for a parcel of property with "physical characteristics" so unusual that complying with the local floodplain management ordinance would create an exceptional hardship to the applicant or the surrounding property owners. Those characteristics must be unique to that specific parcel or property and not be common to or shared with adjacent parcels. The unique characteristics must pertain to the land itself and the intended function of the structure, *not to its inhabitants or the property owners*. Therefore, financial hardship or the health condition of the property owner is never a sufficient cause for granting a variance**.** Section 3.3.3 of this document details the "Good and Sufficient Cause" that must be considered for approval when reviewing a variance.

Some communities have considered floodplain variances based solely on the fact that another Federal or State agency permit has been issued or a project is federally funded (e.g., a U.S. Army Corps of Engineers Section 404 permit or a U.S. Office of Housing and Urban Development Community Development Block Grant). While the NFIP requires a community "to assure that all necessary permits have been received from those government agencies from which approval is required by Federal or State law" (CFR §60.3(a)(2) before issuing a floodplain development permit or considering a variance, the determining factor should be whether a development permit or variance will meet the requirements of the community's local floodplain management provisions, including the cumulative impacts of development within the SFHA. Even if a Federal or State permit has been issued, a community must still determine whether the requirements of the local floodplain management ordinance have been met, and either issue or deny a floodplain development permit, and then review whether to grant a variance. A variance granted based solely on the applicant obtaining a permit or funding grant from a Federal or State does not meet the NFIP requirement in CFR 44 §60.6.

VARIANCES DURING A POST-DISASTER PERIOD

Frequently, post-disaster situations lead a community to erroneously consider granting variances so the rebuilding process can begin quickly. Often, communities are pressured to grant variances for structures that have incurred Substantial Damage. The enforcement of a floodplain management ordinance requires new construction and structures that have had Substantial Damage in SFHAs to be elevated or floodproofed (non-residential only) so they are at or above the base flood elevation (BFE). The consistent enforcement of such an ordinance should be viewed by community officials as the fulfillment of a responsibility to protect the lives and property of residents and business owners, especially in the aftermath of a disaster. It is also a requirement for implementing a sound floodplain management program for the overall betterment of the community, risk reduction, and continued participation in the NFIP. For these reasons, a variance requesting the alteration of floodplain management ordinances involving elevation of a damaged structure in an SFHA would not meet the NFIP variance criteria.

3.3 NFIP Variance Regulations

The following sections describe each criterion of the variance regulations as stated in 44 CFR §60.6.

3.3.1 Floodways

44 CFR 60.6(A)(1)

Variances shall not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result.

Communities should not issue variances for construction within a floodway if the variance will result in an increase in flood levels during the base flood event.

Floodway Definition and Background

The floodway is defined in the NFIP regulations as:

> *…the channel of a river or other water course and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. (44 CFR §59.1)*

BASE FLOOD ELEVATION (BFE)

Elevation of flooding, including wave height, having a 1 percent chance of being equaled or exceeded in any given year. The BFE is the basis of insurance and floodplain management requirements and are shown on FIRMs.

The floodway is designated on FEMA's Flood Insurance Rate Maps (FIRMs) for riverine areas based on a detailed study called a Flood Insurance Study. It is important to reserve the floodway as a water conveyance area because any encroachments or obstructions placed in the floodway will increase flood heights and/or water velocities, and consequently increase flood damage to other properties.

Floodway Variance Requests

The intent of this variance criterion is to prohibit development that may increase flood levels which, in turn, could increase potential flood damage to the development and to structures of other property owners. In most cases, alternative locations for the proposed development are available outside the limits of the floodway. Other actions may also be taken or required as a condition of approval to compensate for increased flood levels, such as requiring the applicant to install flood-control measures to accommodate increased discharge.

The burden of proof rests on the applicant or developer, not FEMA, the local community, State, or other agency, to demonstrate that scientific data were used to determine that no increase in flood levels would result from the proposed development. Sufficient proof may include, but is not limited to, studies provided by an appropriately licensed professional.

If no feasible or practical alternative location for the proposed development is available, the variance applicant must demonstrate that it conforms to all of the requirements stipulated in NFIP variance regulations and is in accord with other floodplain management regulations such as:

Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge. 44 CFR 60.3(d)(3)

When deciding whether to issue a variance, the community should consider the potential liability it may encounter if the granting of a variance later results in increased property damages, personal injuries, or even loss of life during a flood.

Even when all variance criteria are met and a floodway analysis has been reviewed and approved by the community, a community may still choose not to grant a variance and deny issuance of a floodplain development permit. Some communities choose to adopt a higher regulatory standard that exceeds the minimum requirements of the NFIP. As a result, based on the potential hazards involved, communities can still prohibit the issuance of variances for floodway development.

Generally, a community may prohibit variance requests based on three potential flood hazards in the floodway:

- The hazard to the development itself;
- The increased hazard the development may cause to other properties; and
- The risk to individuals stranded in isolated structures surrounded by what is, in many cases, rapidly flowing, debris-laden floodwater, and the risk to the rescue workers.

For example, granting a variance that allows the placement of a manufactured home below the base flood elevation (BFE) in a floodway will endanger the lives of its inhabitants because a flood will likely severely damage or demolish the home. Additionally, manufactured homes can float into other structures and cause severe damage, or become wedged in a bridge opening or culvert, which can dramatically increase flood heights upstream and endanger other citizens.

A flooded manufactured home can float off its foundation and cause additional damage nearby.

Because of the hazards of granting variances for development in the regulatory floodway, community officials should carefully consider all of the possible dangers created by the variance issuance. For example, local emergency services personnel may be endangered while attempting to rescue the occupants in fast-moving floodwater. In most cases, the incremental benefits of allowing the development are outweighed by the increased costs of future flood damage and increased life safety hazards.

3.3.2 Lots of One-Half Acre or Less

44 CFR 60.6(A) AND (A)(2)

While the granting of variances generally is limited to a lot size less than one-half acre (as set forth in paragraph (a)(2) of this section), deviations from that limitation may occur. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases.

Variances may be issued by a community for new construction and substantial improvement to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the procedures of paragraphs (a)(3), (4), (5) and (6) of this section.

This variance criterion specifies that variances should generally be granted only for lots that are one-half acre or less; variances for lots of larger sizes must include significant technical justification. The intent of this variance provision is not to place a lesser burden of justification on one-half acre lots, but a greater burden on lots larger than one-half acre.

Variance Requests for Lots One-Half Acre or Less

Common misinterpretations of this variance criterion include using it to justify variance requests related to personal convenience, preference, or aesthetics, e.g., the height inconsistency that would result between adjacent structures if the middle one were elevated to or above the BFE. Aesthetics or other personal preferences should never be a consideration when making variance determinations. This variance criterion addresses the physical, not the aesthetic, characteristics of a lot in relation to the adjacent lots. When balancing an applicant's personal issues with issues related to public health and safety, such as the minimum NFIP criteria, a community should always choose public safety and the protection of lives and property.

Some communities misinterpret this variance criterion to mean that variances can be granted systematically for all remnant or "in-fill" lots of less than one-half acre located in subdivisions built prior to the effective date of the community's current FIRM. Granting a variance on an "in-fill" lot of less than one-half acre is not automatic.

The granting of variances for small lots where elevation on fill will pose an exceptional hardship due to drainage problems should be rare. Variances for "in-fill" lots of one-half acre or less should be granted on the basis of potential drainage problems only if, as 44 CFR § 60.6(a)(2) explicitly states, all other variance criteria are met. In addition, communities should grant variances for "in-fill" lots only if a professional engineer or architect has prepared and certified data demonstrating that no technically feasible methods are available to alleviate or mitigate the drainage problems.

Variance Requests for Lots Larger Than One-Half Acre

The 44 CFR §60.6(a) specifically states that "as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases." The one-half acre threshold is meant to be a *general* cutoff point and is related to the intrinsic qualities of the site or parcel; as the regulations state, "deviations from that limitation may occur" provided sufficient cause has been demonstrated by the applicant in accordance with the variance criteria. However, lots larger than one-half acre, in nearly all instances, have sufficient space to elevate structures on fill to or above the BFE without resulting in adverse drainage impacts on adjacent properties and structures, whether or not the adjacent structures' lowest floor elevations are at or below grade. Because of the additional storage and infiltration capacity on

larger lots, and because of the flexibility of being able to choose a location on a large lot that will have less impact, the technical justification required for issuing a variance based on potential drainage problems increases as the lot size increases beyond one-half acre. Site-specific considerations will vary, including the size of the structure relative to the size of the lot, as well as the location of the structures relative to each other.

Compliant Mitigation Measures for Large and Small Lots

Many design and construction alternatives are available to reduce potential drainage problems while still allowing a structure to be built in full compliance with NFIP regulations. Several acceptable elevation techniques cause no more, and usually less, disruption of drainage patterns than building a structure at ground level through a variance. Examples include:

- Elevating the structure on pilings, columns, or extended foundation walls;
- Grading or landscaping the elevated fill pad to drain away from adjoining properties; and
- Creating natural or artificial infiltration fields or systems at the intersection of the fill slope and the natural ground.

These types of alternatives are often cost effective and visually appealing, without creating drainage problems for adjacent structures. Studies have demonstrated that floodplain-compliant development construction practices and alternatives are effective at mitigating the flood threat and risk to life and property while promoting resiliency. The initial cost of flood-resistant construction has been demonstrated to offset the financial impacts of emergency response, recovery, and other costs associated with flooding, such as the cost of reconstruction, displacement from the residence or business, and loss and replacement of building contents.

3.3.3 Good and Sufficient Cause

44 CFR 60.6(A)(3)(I)

Variances shall only be issued by a community upon a showing of good and sufficient cause.

A variance request by an applicant that is based on a "good and sufficient cause" is one that deals solely with the unique site-specific physical characteristics of the property, subdivision lot, or land parcel in question. Physical conditions are uniquely inherent to the land or property and will not change or be significantly altered over time. A "good and sufficient" cause for a variance occurs when a parcel of land possesses physical characteristics so unusual that complying with NFIP regulations in a local ordinance would create an exceptional hardship related to the property, the surrounding property owners, or the community in general. In addition, the unusual physical characteristics must be unique to that property and not be shared by adjacent parcels or be typical of other lots in the community.

A rendering of a "good and sufficient" cause should never be based on the design character of the planned construction or Substantial Improvements to the structure, the personal difficulties of the owner or inhabitants, or local provisions that regulate standards other than health and public safety standards (e.g., aesthetic restrictions of subdivision homeowner associations). The variance should not be based on the convenience that it would afford the applicant. Inconvenience, aesthetic considerations,

physical handicaps, personal preferences, the disapproval of one's neighbors, or homeowners association restrictions do not qualify as "good and sufficient" causes. In addition, the financial hardship of the property owner is never a "good and sufficient" cause for granting a variance. Granting a variance for construction in a flood hazard area based on financial hardship only increases the probability that the owner will suffer high health and safety risks as well as monetary adversity when the structure is damaged during a flood. In addition, the structure will be subject to higher insurance premiums.

The justification for granting a variance based on physical characteristics should be such that it remains valid over time. In contrast, personal difficulties of the owner and intended uses of buildings can change dramatically with changes in ownership. For example, once the personal circumstances of the owner changes (e.g., the property is sold or leased, or the owner no longer suffers from financial hardship) the justification for the variance may no longer exist, but the structure remains, exposing future owners/occupants to the nonconforming nature of the property and any hazards and public safety problems associated with it. This exposure of life and property to risk from flood damage would be directly attributable to a variance issued based on the personal difficulty of the previous owner.

3.3.4 Exceptional Hardship

The hardship that would result from failure to grant a requested variance must be exceptional, unusual, and specific *to the property involved*, not the personal circumstances of the applicant. When determining whether an applicant has established an exceptional hardship sufficient to justify a variance, the local variance appeal board or other governing body must weigh the applicant's hardship against the community-wide flood damage prevention requirements.

44 CFR 60.6(A)(II)

Variances shall only be issued by a community upon a determination that failure to grant the variance would result in exceptional hardship to the applicant.

As stated in Section 3.3.3, inconvenience, aesthetic considerations, physical handicaps, personal preferences, the disapproval of one's neighbors, or homeowners association restrictions do not qualify as exceptional hardships. This applies even if the alternative means of construction are more expensive or complicated than building the structure with a variance, or if they require the property owner to use the parcel differently than originally intended or build the home elsewhere.

Two examples are provided below to illustrate situations in which variances should not be granted:

1. *A property owner requests a variance to the elevation requirement because it will cost the owner several thousand dollars to elevate the house to comply with an ordinance and an additional several thousand to build a wheelchair ramp to provide access for a handicapped family member.*

   While financial considerations are always important to property owners, and the needs of the handicapped person certainly must be accommodated, these difficulties are not in the category of "exceptional hardships" as they relate to floodplain management variances. These characteristics result in personal hardships (the physical condition and financial situation of the homeowner) rather than pertaining to the property itself.

2. *A property owner requests a variance to the elevation requirement because it will result in a structure that is architecturally different from other structures within a subdivision governed by a homeowners association.*

   Homeowners associations or subdivision boards frequently place restrictions on landscaping and construction practices, such as the total height to which structures can be built, to promote architectural and aesthetic consistency. The owner, and usually the prospective neighbors and homeowners association, protest that the structure, if elevated, will be architecturally out of sync with other structures on the block and that property values will be lowered as a result.

   Local governments must never grant variance requests for exceptional hardship stemming from architectural considerations or conflicts with local subdivision aesthetic regulations. The safety of all residents takes precedence over neighborhood aesthetics.

3.3.5 Increased Flood Heights

44 CFR 60.6(A)(3)(III)

Variances shall only be issued by a community upon a determination that the granting of a variance will not result in increased flood heights.

Development that receives a variance must not cause an increase in water surface elevations (WSELs) during floods of any magnitude, not just the base flood. Therefore, to grant a variance under this provision, a community must meet all the other variance requirements, and the applicant must demonstrate through technical studies that the proposed development will not increase flood heights.

The underlying principle is that an increase in flood heights may increase flood damage to structures in the community that otherwise would not be floodprone. Allowing flood heights to increase is inconsistent with the objectives of sound floodplain management and undermines a community's efforts to protect structures by requiring elevation or floodproofing to or above the BFE. Allowing any increase in flood heights would decrease the level of protection provided by the NFIP requirements.

3.3.6 Public Safety and Nuisances

44 CFR 60.6(A)(3)(III)

A variance will not cause additional threats to public safety or create nuisances.

Variances must not result in additional threats to public safety or create nuisances. Local flood damage prevention ordinances and minimum NFIP requirements are intended to help protect the health, safety, well-being, and property of the local citizens. Local floodplain management is a long-range community effort usually made up of a combination of approaches, including adequate drainage systems, warning and evacuation plans, and keeping new property—especially homes—at or above the BFE. These long-term goals can be met only if exceptions to the flood damage prevention ordinances are kept to a minimum.

Variances that allow the construction of habitable area below the BFE, especially in high-hazard areas such as floodways and areas adjacent to coastal Zone V, increase the risk to life and property of both occupants

and emergency services personnel. The potential for loss of life is greatest in structures where the lowest floor is below the BFE, and where flood depths are greater than 3 feet or where high velocity floodwater is present.

structed below the flood elevation, the variance then raises public safety concerns for the homeowner and adjacent properties.

In additional to potentially increasing public safety concerns, granting variances for elevation requirements often results in abandonment when non-elevated structures are damaged during flood events, thereby creating a public nuisance.

3.3.7 Public Expense

Extraordinary public expenses may include protection and/or repairs to structures, time and materials expended by emergency service personnel, the expense involved in operating disaster assistance programs, and the cost to communities to:

44 CFR 60.6(A)(3)(III)

Variances shall only be issued by a community upon a determination that the granting of a variance will not result in extraordinary public expense.

- Repair or replace public facilities and infrastructure that continue to be exposed to flood damage because a variance was issued;
- Publically fund emergency flood protection measures, such as sandbags and temporary floodwalls, used to protect structures exposed to flooding as a result of the issuance of an elevation variance;
- Accommodate time and equipment expended by emergency services personnel to evacuate an area or rescue occupants of flooded structures;
- Identify public disaster assistance needed by occupants of structures exposed to increased flooding following the issuance of a variance; this assistance may be in the form of various Federal disaster assistance programs (e.g., FEMA, Small Business Administration), non-government organization assistance (e.g., Red Cross), and denominational and other private donations; and
- Repair or demolish flood-damaged properties when such properties were granted variances and the owners, unable to afford repairs, abandon them.

3.3.8 Fraud and Victimization

44 CFR 60.6(A)(3)(III)

Variances shall only be issued by a community upon a determination that the granting of a variance will not cause fraud on or victimization of the public.

Local governments should be careful to never grant variances that have the potential to cause public victimization or fraud. Public fraud or victimization can result when a property that was granted a variance changes ownership. An unsuspecting buyer may be unaware that the structure is subject to flood damage and costly flood insurance rates. Frequently, unsuspecting buyers of previously flooded homes are not aware of the

magnitude of previous flood damage to the structure, or that a variance from the required flood elevation was granted.

An example of the potential for public victimization is when a variance for a nonconforming elevation or floodproofing requirement is granted for a storage warehouse. The units or "bays" of the warehouse, typically rented to the public for personal uses, may victimize citizens who are unaware of the flood hazard and the risk to their property. If the warehouse is flooded and its contents damaged, citizens renting units may have no recourse for financial compensation.

3.3.9 Existing Local Laws or Ordinances

A community should not grant a variance from its local floodplain ordinances if the variance is in conflict with other existing local laws or ordinances or Federal and State laws or regulations that, by statute, the community is required to obey.

44 CFR 60.6(A)(3)(III)

Variances shall only be issued by a community upon a determination that the granting of a variance will not result in conflict with existing local laws or ordinances.

Examples of local laws that may conflict with a floodplain management variance include State and local building codes, health and safety regulations, and laws protecting environmental and other natural resources, including but not limited to threatened or endangered species and historic or cultural resources. Any variance must comply with the provisions of State zoning legislation and case law.

While an approved variance to the floodplain management regulations may allow particular development within the SFHA, a variance to the floodplain standards cannot be used to waive compliance or development requirements for other local, State, or Federal requirements. A variance, if granted, must approve only the absolute minimum necessary to relieve the particular hardship identified through the variance process with regard to floodplain management; it must not exclude or exempt the development from compliance with overlapping policies, regulations, authorities, and jurisdictions.

If a variance to the floodplain development requirements is granted, the development must demonstrate receipt of permits and approvals from all other local, State, and Federal agencies as part of the variance process and prior to issuance of the floodplain development permit associated with the proposed development. For example:

- If a community has adopted the 2012 International Building Code the development must still conform to the applicable building code requirement. Conformance includes verification that all other applicable Federal and State permits have been received prior to issuance of the floodplain development permit.
- If a community has not adopted the 2012 International Building Code or other land use regulations, the development must still comply with the stand-alone provisions of the floodplain ordinance as well as all other applicable State and Federal laws. Conformance includes verification that all other applicable permits have been received prior to issuance of the floodplain development permit.

State and Federal laws that may apply even if a variance has been granted include, but are not limited to:

- State health department requirements for well or septic systems, or other requirements
- Threatened and Endangered Species Act of 2005
- National Historic Preservation Act of 1966
- National Environmental Policy Act of 1970
- Clean Water Act
  - Federal and State wastewater or stormwater discharge requirements and permits
  - Clean Water Act, Section 404 permits

A variance to the floodplain ordinance cannot be used to waive compliance or development requirements for other local, State, or Federal requirements.

When it is not feasible to secure all other permits prior to consideration of a variance and issuance of a floodplain development permit, the local jurisdiction may condition issuance of a flood development permit on receipt of these permits. In these instances, it is important to have administrative procedures established to:

1. Identify which permits are required;
2. Refer and notify the applicable authorities and jurisdictions of permit issuance;
3. Specify within the floodplain development permit, as conditions of approval, the expectation and need to secure and provide copies of these permits in a timely fashion;
4. Communicate these requirements to the applicant and provide contact information to initiate the permitting process with other applicable authorities; and
5. Follow up with the applicant to complete the file with copies of the permits from the other applicable jurisdictions.

3.3.10 Minimum Necessary to Afford Relief

A variance granted by a community must be the absolute minimum needed to minimize or reduce future flood damage and still relieve the hardship, as defined by the previous provisions. In considering variances, the community review board should use local technical staff expertise and recommendations from the building, planning, zoning, or engineering departments.

A "blanket variance" that would waive all NFIP requirements could never meet all of the requirements of a variance. There will always be some feasible action that can be taken to reduce the potential for flood damage.

44 CFR 60.6.(A)(4)

Variances shall only be issued by a community upon a determination that the granting of a variance is the minimum necessary, considering the flood hazard, to afford relief.

For a variance request to waive the elevation requirement, the community review board must require the "minimum necessary" actions. For example, the minimum actions necessary for a non-residential structure may include implementing "wet floodproofing" techniques and meeting the other provisions in the local floodplain management ordinance, including properly anchoring the structure, using flood damage-resistant materials and construction techniques, and elevating utilities as defined in 44 CFR 60.3(a)(3). As another example, if an applicant can justify a variance from the requirement to elevate building utilities above the BFE, the community review board should still require as much elevation as possible to provide some flood risk protection or risk to adhere to the intent of the flood ordinance.

3.3.11 Disclosure

Community officials must notify the applicant that the issuance of an elevation variance will result in increased flood insurance premium rates and that construction below the BFE will increase risks to life and property.

44 CFR 60.6(A)(5)

…a community shall notify the applicant in writing over the signature of the community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as $25 for $100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required… to afford relief.

If the applicant is not required to purchase flood insurance at the time the variance is granted, costly flood insurance rates may not be a factor. However, if the structure experiences flooding at some point in the future, the owner may wish to purchase flood insurance. In addition, future buyers of a structure for which a variance has been granted may wish or be required to purchase flood insurance and may be discouraged from purchasing the structure because of costly flood insurance rates. This situation can be compounded when an unsuspecting buyer purchases such a structure and later discovers that flood insurance is required, at a prohibitive cost.

In addition to notifying the applicant regarding the insurance implications of a variance, the "Planning Considerations in Floodprone Areas" section of the NFIP regulations (44 CFR 60.22) recommends that a community consider requiring full disclosure of the variance "to all prospective and interested parties (including but not limited to purchasers and renters) [44 CFR 60.22(c)(3)(ii)]. Such a disclosure is important and necessary to inform subsequent buyers of structures for which an elevation variance was granted. Some communities require that a copy of the variance be attached to the property title abstract to protect a prospective buyer from victimization. The attached variance should include any conditions and findings that relate to the granting of the variance.

From a public safety standpoint, the prospective buyer has a right to know that the structure will be susceptible to flooding and its occupants subject to a flood risk. From a financial standpoint, the prospective buyer has a right to know that the structure and its contents will be susceptible to damage and that the premium rates applied can be much higher than structures built in compliance with the minimum NFIP standards.

3.3.12 Functionally Dependent Uses

44 CFR 60.6(A)(7)

Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that (i) the criteria of paragraphs (a)(1) through (a)(4) of this [60.6] section are met, and (ii) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

The NFIP regulations define a "functionally dependent use" as one that cannot perform its intended purpose unless it is located or carried out near water. The term includes only docking facilities necessary for loading and unloading cargo or passengers, and ship building and repair facilities.

The definition of "functionally dependent use" limits variances to the practical problems of building and repairing ships, loading and unloading cargo and passengers from vessels, moving the cargo onto other forms of transportation, and moving the cargo to long-term storage facilities that fully comply with NFIP criteria.

The term does not include long-term storage or related manufacturing facilities since these uses can be located outside the floodplain or fully comply with all NFIP requirements, and are therefore excluded from the definition of functionally dependent use. In accordance with this variance provision, variances for new construction, Substantial Improvements, and any other development necessary for the conduct of a functionally dependent use must meet all other floodplain development and applicable variance requirements. In addition, the structures or other development must be protected by methods that minimize flood damage during the base flood and create no additional threats to public safety.

In many cases, such as port facilities, the seafood industry, or shipbuilding, NFIP floodplain management criteria can be met with the industry still being able to operate as intended. However, because functionally dependent uses must be located on or adjacent to water, practical and operational difficulties may result from the physical characteristics of the property. One way to meet the floodplain management requirements is to use wet floodproofing techniques, such as installing flood damage-resistant materials, elevating mechanical equipment, locating offices above the BFE, using ground fault circuit interrupters, or developing an emergency plan to remove contents before a flood.

If a variance is used to address the unique challenges of functionally dependent uses, it must include only the minimum necessary to afford relief considering the flood hazard. When evaluating variances for functionally dependent uses, the primary concerns should be:

- Preserving human health and safety, both within and surrounding the proposed development, including emergency responders;
- Minimizing flood damage during the base flood;
- Ensuring that no ancillary or additional threats to public welfare will be created; and
- Ensuring that only minimum deviation from the NFIP requirements is made to allow the intended use of the facility.

As with the other variance criteria, no variances for functionally dependent uses may be issued within a designated regulatory floodway if flood levels would increase during the base flood because an increase in flood levels would increase potential flood damage to other property owners.

In many situations, feasible locations for a functionally dependent use are available outside the floodway. If a functionally dependent use must be located in a floodway, the applicant must either demonstrate (using technical analyses) that no increase in the BFE will result or provide additional floodway carrying capacity, such as through channel improvements, to accommodate increased flood flows and ensure that the BFE does not increase as a result of the variance.

Local officials should contact their FEMA Regional office for technical assistance if they encounter situations where functionally dependent uses must be located in a floodway and cannot meet the no-increase-in-flood-stage requirement.

3.3.13 Historic Structures

A variance may be issued for the reconstruction, rehabilitation, or restoration of historic structures if the variance is the minimum necessary to preserve the historic character and design of the structure. "Historic structures" are those listed in the Department of the Interior (DOI) National Register of Historic Places, a DOI-certified State Inventory of Historic Places, or a certified local inventory, and structures listed as a contributing building in a listed historic district.

44 CFR 60.6(A)

Variances may be issued for the repair or rehabilitation of historic structures upon a determination that (i) the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and (ii) the variance is the minimum necessary to preserve the historic character and design of the structure.

The original intent of providing special treatment to historic structures was to comply with the intent of the National Historic Preservation Act of 1966 by:

1. Allowing historic structures to always maintain pre-FIRM subsidized insurance rates; and

2. Minimizing the adverse impacts of NFIP requirements on the historic integrity of historic structures.

For additional guidance on historic structures, see FEMA P-467-2, *Floodplain Management Bulletin on Historic Structures* (2008).

The granting of a variance should be based on a structure-by-structure review to determine whether elevation (or floodproofing, if a non-residential structure is involved) to or above the BFE would destroy the historic character or design of the structure. Variances should only be granted for individual structures and should never be granted for portions of a historic district or an entire historic district. For example, if elevating a historic structure would destroy its character and cause it to be removed from the DOI National Register of Historic Places, a variance for the elevation requirement may be considered. However, the community should place conditions on the variance to minimize flood damage such as:

- Elevate all utilities and finished interior workings to or above the BFE or to the maximum extent possible or practically feasible;
- Use flood damage-resistant materials for interior and exterior improvements wherever possible; and
- Raise the interior floors to or above the BFE or to the maximum extent possible (this is often technically feasible in older structures with high ceilings).

If repair or improvements result in the loss of the structure's historic designation, the structure would no longer qualify for the variance and would be required to meet the NFIP floodplain regulations.

Community Considerations

In addition to this "historic structure" variance criterion, another provision of the NFIP also provides relief for historic structures located in the SFHA. The definition of Substantial Improvement at 44 CFR 59.1 excludes historic structures from its definition by excluding "any alteration of an historic structure provided that the alteration will not preclude the structure's continued designation as 'historic structure.'" The same exclusion also applies to historic structures that have incurred Substantial Damage.

In regulating historic structures, communities have the option of using the provisions as stated in the variance criteria at CFR 60.6(a) or the definition of Substantial Improvement to address the unique needs of historic structures. Communities should adopt only one option to regulate historic structures. Some communities have chosen to adopt the variance criteria in their ordinance, while other communities have chosen to include the historic structure exemption as part of their Substantial Improvement definition. In either case, historic structures can be excluded from the NFIP elevation and floodproofing requirements (non-residential only). When a community exempts a historic structure from the NFIP floodplain management requirements, it should document the process and maintain the documents in the community permit files.

Property Owner Considerations

Owners of historic structures should be aware that physical alterations made to a historic structure may cause the structure to be removed from the National Register of Historic Places, DOI-certified State Inventory of Historic Places, or local inventory. If such alterations cause the structure to lose its official listing or historic status, the structure would no longer be a historic structure for the purposes of the NFIP and would be required to meet the minimum floodplain management requirements of the local ordinance. A determination of whether the structural alternations would forfeit the historic designation should be made before requesting a permit.

SECTION 4
Common Situations in which a Variance May Be Requested

There are several situations in which a variance may be requested. In each case, the variance should be reviewed by the community on its own merit and not in conjunction with an adjacent property.

4.1 Appurtenant/Accessory Structures

One of the most common variance requests that a community may encounter is for appurtenant structures, especially detached garages and storage sheds. If technically feasible, all accessory structures should be elevated to or above the BFE to minimize damage to the structure.

The following are possible conditions that a community may place on a variance for an accessory structure to ensure damage is minimized during a flood event:

ACCESSORY OR APPURTENANT STRUCTURE

Defined in 44 CFR 59.1 as: *"a structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure."*

- Use of the accessory structure must be restricted to parking of personal vehicles or limited storage (storage that is incidental to the primary use of the principal structure). For instance, the storage in the accessory structure should be limited to items such as lawn and garden equipment, snow tires, and other low-damage items that cannot be conveniently stored in the principal structure.
- The accessory structure must be designed with an unfinished interior and constructed with flood damage-resistant materials as described in FEMA's NFIP Technical Bulletin 2, *Flood Damage-Resistant Materials Requirements* (2008).
- The accessory structure must be adequately anchored to prevent flotation, collapse, or lateral movement.
- The accessory structure must have adequate flood openings as described in FEMA's NFIP Technical Bulletin 1, *Openings in Foundation Walls and Walls of Enclosure Below Elevated Buildings in Special Flood Hazard Areas* (2008).
- Any mechanical and utility equipment in the accessory structure must be elevated to or above the BFE or must be floodproofed.
- The accessory structure must comply with floodway encroachment regulations in the floodplain management ordinance.

Communities should not grant variances to entire subdivisions for accessory structures, especially detached garages. As with any other structure type, variances should only be reviewed and issued on an individual or case-by-case basis and be based on the unique characteristics of the site.

Accessory structures located in Zone V areas are subject to excessive hydrodynamic forces associated with wave action and cannot meet the variance conditions described above. In these locations, communities should prohibit accessory structures in Zone V areas, or allow only very low value, "disposable" storage sheds unless the sheds are elevated to or above the BFE. For additional information, see FEMA NFIP *Technical* Bulletin 5, *Free-of-Obstruction Requirements for Buildings Located in Coastal High Hazard Areas.*

4.2 Boat Storage Facilities

Many boat storage facilities constructed in SFHAs are steel-framed buildings with sheet metal exterior walls, a roof, and a concrete floor at ground elevation. Some of these facilities store boats vertically from the ground to the roof on multi-tiered overhead racks using a hydraulic forklift to hoist the boats. Other facilities are simpler in design and function, storing boats on wheeled trailers at ground level.

For the purposes of NFIP floodplain management requirements, boat storage facilities that are walled and roofed buildings are by definition "structures" and must comply with the NFIP requirements. For boat storage facilities to comply with the minimum NFIP requirements, the lowest floor must be elevated to the BFE, or the walls must be floodproofed to be watertight to the BFE.

LOWEST FLOOR

The "lowest floor" of a structure is defined by the NFIP as the lowest floor of the lowest enclosed area.

In determining whether the construction of a boat storage facility is in compliance with minimum NFIP regulations as adopted by the local ordinance, the following factors should be considered:

- Are the construction materials and architectural design of the structure flood resistant?
- Does the proposed operating plan include storage position and techniques (e.g., vertical racks, ground level) and transporting procedures (e.g., forklift, trailers)?
- What is the distance from the water source and the intermediate terrain?
- What is the lot size and orientation?
- What is the severity of the flood hazard (e.g., height of the BFE above natural grade and risk zone designation, Zone V, Zone A, floodway)?
- What is the anticipated water velocity during flood conditions?
- Are the utilities elevated above the BFE?

WET FLOODPROOFING

Wet floodproofing involves purposely designing a building to withstand inundation by floodwaters and constructing it with materials resistant to or minimally damaged by floods. FEMA's Technical Bulletin No. 7-93, *Wet Floodproofing Requirements for Structures Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program,* provides technical information on wet floodproofing.

If the community determines that a variance is warranted, the variance should be issued

only for the minimum necessary to afford relief related to the flood hazard. Communities should place conditions on this type of variance to minimize flood damages. An example would be stipulating that wet floodproofing measures (refer to text box) be applied to a boat storage facility to reduce damage to the structure and its contents. Property owners should understand, however, that wet floodproofing will not result in a reduction of insurance premiums. Structures that are wet floodproofed are rated by the elevation difference between the lowest floor (usually the ground elevation) and the BFE.

4.3 Subdivisions

Variances are not intended to provide a means of exempting lot divisions, phases of subdivisions, or entire subdivisions from floodplain management regulations. Variances should never be granted as part of a split or the creation of multiple lots, phases of subdivisions, or entire subdivisions. Variances can affect public safety, such as variances to the elevation requirement for a subdivision that could potentially increase the risk of flooding for a large number of people, as well as the demand on local emergency services. The granting of variances by a community should be based on a site-specific, structure-by-structure review to determine whether all variance criteria are met. When a property is subdivided, streets and utilities are installed, and individual sites graded, it is generally relatively manageable and cost effective for property owners to meet the floodplain elevation requirements as stated in the local ordinance.

Subdivision design should account for the flood hazard characteristics of the properties. Communities should not approve subdivisions unless the design accounts for the flood hazard. The design of a subdivision should consider access to and from the subdivision to allow local residents a safe evacuation route from the development during a hazard event such as a flood. A safe evacuation route will reduce the demand for emergency services.

4.4 Temporary Development

- Communities may be asked to consider a variance to allow temporary development, such as a highway project or drilling operation, in the floodplain. A variance cannot be granted by a community when the proposed measure is permanent or affects insurable structures.
- Temporary projects, however, for which there is a net public benefit (such as a highway project) are not inconsistent with the variance criteria, provided the conditions described in this subsection are met.

DEVELOPMENT

The NFIP defines development as 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.

4.4.1 Considerations for a Temporary Development Variance

- Two conditions should be closely considered by a community before granting a variance for temporary development:

- The magnitude of the impact (i.e., the potential height of the increase in WSEL) caused by the temporary project; and
- The number of insurable structures that would potentially be affected by such an increase during the base flood, and the severity of the impact.

Before granting a variance for temporary development, communities should consider issuing a temporary permit. The greater the increase in WSEL and number of potentially affected structures, the stricter the temporary performance requirements (e.g., sizing of temporary bridge openings) and the less justification for a variance. If the affected area has a low population density and one or more of the following factors are present, the community may want to consider allowing construction of a temporary project or other temporary development using a less restrictive standard:

- The increased flood hazard would be limited to property owned or leased by the State transportation agency or variance applicant, or property for which the owner has acquired "flowage" easement;
- The increased flood hazard would be limited to undeveloped community areas that the local government judges to have no development potential during the time the temporary measure would be in place;
- The increased flood hazard would not affect insurable structures (i.e., cause an increase in flood levels for structures that are already floodprone or cause non-floodprone structures to become floodprone); or
- The State or county transportation authority, another government agency with the power of eminent domain, or a private applicant has agreed to one of the following actions: (1) purchase or relocate structures affected by the proposed project, (2) elevate such structures to the temporary BFE, (3) purchase flowage or flooding easements, or (4) provide other forms of equivalent mitigation such as purchasing flood insurance for the duration of the temporary increase.

If one or more of the above factors are met, any increase in the BFE for the duration of the temporary permit should not adversely affect insurable structures in the community. In this case, the community may decide to grant a variance allowing a temporary project.

4.4.2 Storage of Equipment and Material in Temporary Development Projects

Per the NFIP definition of development, the storage of equipment and materials is subject to local floodplain development permit requirements. Continuous storage operations—such as lumber yards, landscape material yards, recreational vehicle/automobile storage and sale, and junk yards—are also considered development and are subject to floodplain development permit requirements. The storage of equipment and materials should not increase flood heights in the floodway and should meet the other required standards of the floodplain management ordinance.

It is a community's responsibility to make a prudent and reasonable distinction between types of storage activities. This distinction should be based on considerations such as the length of storage time, nature of the materials or equipment being stored, physical characteristics of the floodplain, and characteristics of the flood flows. As a guide, the smaller the SFHA and longer the storage time, the more concerned a

community should become with the placement of materials and equipment within the SFHA and the potential impact of such activities on the storage and conveyance of floodwaters.

> Local governments should be sure to distinguish between the temporary storage of materials and equipment in flood hazard areas and the storage activities associated with continuous businesses, construction operations, or other commercial and industrial enterprises.

The unique characteristics of the site in relation to the flood threat and type of activity, material, or items to be stored may be significant. The type of flood exposure, such as flash flooding or backwater ponding, water velocity and depth, time of concentration, and potential accumulation of debris are factors to consider when determining the effect of allowing temporary storage within the floodplain. Generally, the potential for water to rise more rapidly, the greater the depth and velocity, and the potential to adversely impact neighboring properties, the greater the concern the community should have with the placement of materials and equipment and its impact on the storage and conveyance of floodwaters.

SECTION 5
NFIP Flood Insurance Implications of Variances

Property owners should understand the financial consequences of constructing or repairing a building using an approved variance. While an approved variance may allow development within the SFHA to deviate from specific performance and building standards specified in a local floodplain ordinance, NFIP flood insurance rates and the flood insurance purchase requirement enforced by lending institutions cannot be waived. As described in Section 3.3.11, Disclosure, the variance regulations require that the community notify the applicant that flood insurance rates will likely be substantially higher than rates for a comparable structure that is fully compliant. A variance from elevation requirements—the most common kind of variance requested—increases the risk to a building, and that increased risk is reflected in higher annual insurance premiums. Insurance rates for a building built below the BFE can be substantially higher than those for elevated buildings.

If a local government receives a variance request to construct a building below the BFE, it must notify the applicant (in writing) that granting the variance will result in increased flood insurance premium rates, up to $25 per $100 of coverage. The variance-induced flood insurance premium rates may increase to a level beyond affordability for the owners. For example, a marine supply store on the Gulf Coast was built 14 feet below the BFE in Zone V, resulting in an annual flood insurance premium of $25,000 on a building valued at $100,000. In some cases, the applicant for the variance may not care about the cost of flood insurance. However, if the variance is approved, the impact of the variance on flood insurance premiums may affect future owners who, if they cannot afford the property's high flood insurance rates, may abandon the building and leave the community with a vacant, flood damaged, and essentially uninsurable building.

Property owners seeking to obtain a variance to reduce construction costs should understand that a variance may save money in the short term, but may result in higher costs over the long term as a result of higher insurance premiums or, if uninsured, in flood losses.

The insurance premiums for a single-family home are directly affected by the elevation of the first floor in relation to the BFE. Figure 1 shows a pre-FIRM building constructed with the lowest floor 7 feet below the BFE and an annual premium of $830 that is flooded by the base flood event, incurring Substantial Damage. Figures 2 and 3 show different reconstruction scenarios and the resulting flood premiums. The illustrations provide a clear picture of the cost of actuarial post-FIRM flood insurance rates and, therefore, the true risk to which the building is exposed.

Note: The premiums cited in these figures are for the purposes of this example. Insurance rates vary based on flood zone, date of construction, and lowest floor elevation, and must be computed case-by-case. The premiums shown for the next series of illustrations were computed based on $100,000 in building coverage. Current rates for these buildings may be different from those shown.

Recent changes to the National Flood Insurance Program may result in long-term premium increases to the Standard Flood Insurance Policy.

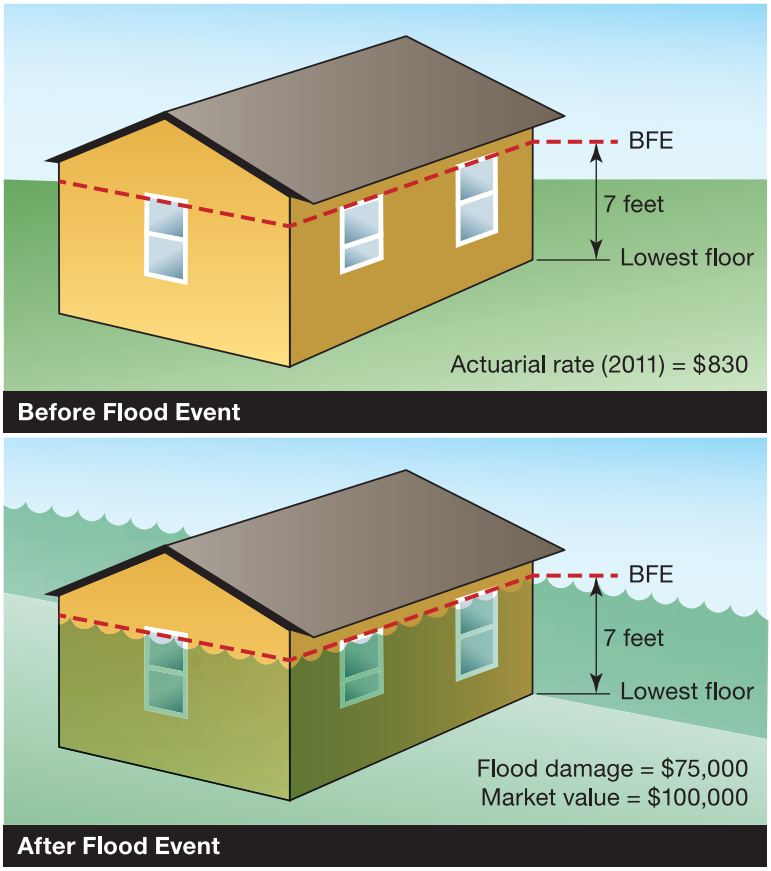


Figure 1: Pre-FIRM building with lowest floor 7 feet below the BFE incurred Substantial Damage during the base flood event.

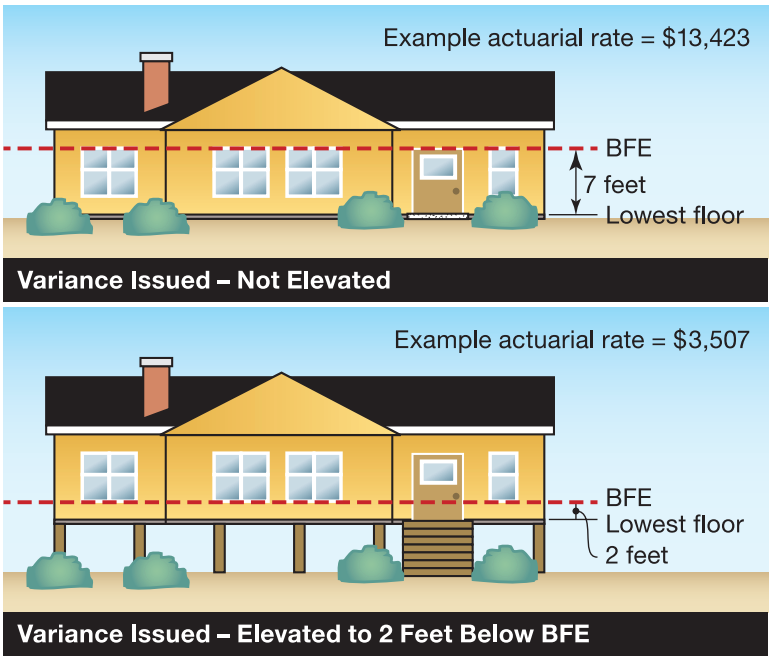


Figure 2: Two examples of repairs requiring a variance to the building shown in Figure 1. Note the example actuarial rates based on $100,000 in building coverage.

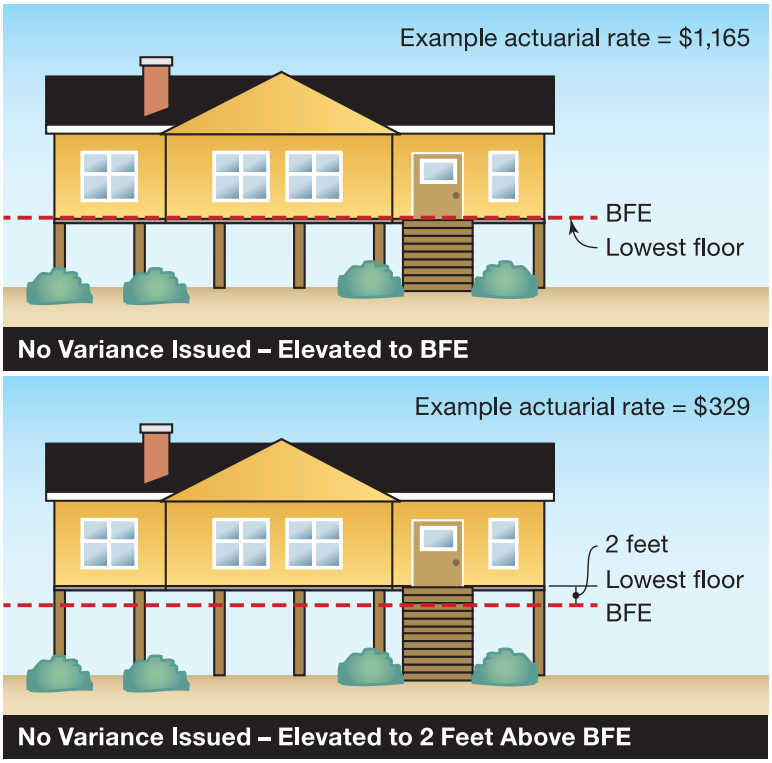


Figure 3: Two examples of repairs where no variance to the building shown in Figure 1. Note the example actuarial rates based on $100,000 in building coverage.

SECTION 6
Additional Resources

Contact the FEMA Regional Office or the State Coordinating Agencies for the NFIP for assistance implementing the NFIP. The current listing of FEMA Regional Offices is provided at http://www.fema.gov/about/contact/regions.shtm. The NFIP State Coordinating Agencies are provided at http://www.floods.org (see State/Local Resource and Tools).

6.1 Federal Emergency Management Agency Publications

Guidance and Manuals

Floodproofing Non-Residential Structures. FEMA 102. May 1986. Available at http://www.fema.gov/library/viewRecord.do?id=3581.

Protecting Building Utilities From Flood Damage: Principles and Practices for the Design and Construction of Flood Resistant Building Utility Systems. FEMA P-348. November 1999. Available at http://www.fema.gov/library/viewRecord.do?id=1750.

Floodplain Management Bulletin on Historic Structures. FEMA P-467-2. May 2008. Available at http://www.fema.gov/library/viewRecord.do?id=3282.

Homeowner's Guide to Retrofitting: Six Ways to Protect Your House from Flooding. FEMA P-312. December 2009. Available at http://www.fema.gov/library/viewRecord.do?id=1420.

Recommended Residential Construction for Coastal Areas: Building on Strong and Safe Foundations. FEMA P-550. December 2009. Available at http://www.fema.gov/library/viewRecord.do?id=1853.

Protecting Your Home And Property From Flood Damage. FEMA P-805. October 2010, http://www.fema.gov/media-library/assets/documents/21471?id=4654.

Substantial Improvement/Substantial Damage Desk Reference. FEMA P-758. May, 2010, http://www.fema.gov/media-library/assets/documents/18562?id=4160.

Repairing Your Flooded Home. FEMA P-234. American Red Cross Publication 4477. October 2010.

Additional resources: http://www.fema.gov/resource-document-library.

National Flood Insurance Program (NFIP) Technical Bulletins

Available at http://www.fema.gov/national-flood-insurance-program-2/nfip-technical-bulletins:

- *Below-Grade Parking Requirements for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program*. FEMA Technical Bulletin-6-93 (FIA-TB-6). April 1993.
- *Non-Residential Floodproofing – Requirements and Certification for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program*. FEMA Technical Bulletin 3-93 (FIA-TB-3). April 1993.
- *Wet Floodproofing Requirements for Structures Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program*. Technical Bulletin 7-93 (FIA-TB-7). December 1993.
- *Corrosion Protection for Metal Connectors in Coastal Areas for Structures Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program*. FEMA Technical Bulletin 8-96 (FIA-TB-8). August 1996.
- *Ensuring That Structures Built on Fill In or Near Special Flood Hazard Areas Are Reasonably Safe From Flooding in accordance with the National Flood Insurance Program*. FEMA Technical Bulletin 10-01 (FIA-TB-10). May 2001.
- *Design and Construction Guidance for Breakaway Walls Below Elevated Buildings Located in Coastal High Hazard Areas in accordance with the National Flood Insurance Program*. FEMA Technical Bulletin 9. August 2008.
- *Openings in Foundation Walls and Walls of Enclosure Below Elevated Buildings in Special Flood Hazard Areas in accordance with the National Flood Insurance Program*. FEMA NFIP Technical Bulletin 1. August 2008.
- *Flood-Damage Resistant Materials Requirements for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program*. FEMA NFIP Technical Bulletin 2. August 2008.
- *Free-of-Obstruction Requirements for Buildings located in Coastal High Hazard Areas in accordance with the National Flood Insurance Program*. FEMA NFIP Technical Bulletin 5. August 2008.

6.2 Comments

Any comments on the Floodplain Management Bulletin should be directed to:

DHS/FEMA
Flood Insurance and Mitigation Directorate
500 C St., SW
Washington, D.C. 20472

6.3 Ordering Information

This document can be downloaded from the following Web site: http://www.fema.gov/library/index.jsp.

Copies of this bulletin and the above-listed publications are available from:

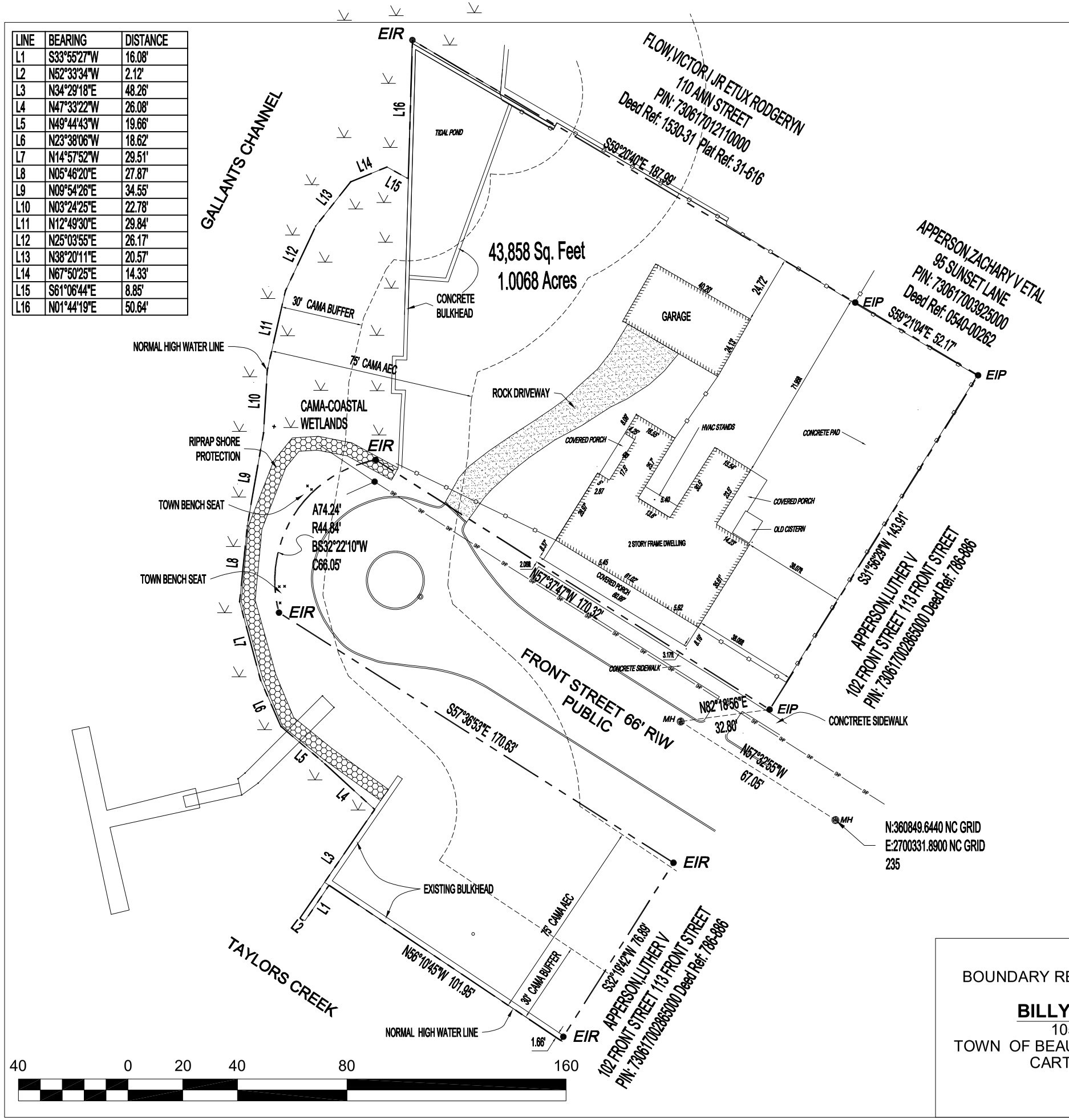
FEMA Publications Warehouse
4440 Buckeystown Pike
Frederick, MD 21704

The FEMA Publications Warehouse also accepts telephone requests (1-800-480-2520) and facsimile requests (240-699-0525)

FEMA

FEMA P-993
Catalog No: 14016-1

LINE	BEARING	DISTANCE
L1	S33°55'27"W	16.08'
L2	N52°33'34"W	2.12'
L3	N34°29'18"E	48.26'
L4	N47°33'22"W	26.08'
L5	N49°44'43"W	19.66'
L6	N23°38'06"W	18.62'
L7	N14°57'52"W	29.51'
L8	N05°46'20"E	27.87'
L9	N09°54'26"E	34.55'
L10	N03°24'25"E	22.78'
L11	N12°49'30"E	29.84'
L12	N25°03'55"E	26.17'
L13	N38°20'11"E	20.57'
L14	N67°50'25"E	14.33'
L15	S61°06'44"E	8.85'
L16	N01°44'19"E	50.64'



117

LEGEND
EIP-EXISTING IRON PIPE
EIR-EXISTING IRON ROD
ECM-EXISTING CONCRETE MONUMENT
EA-EXISTING AXLE
EN-EXISTING NAIL
EPK-EXISTING PK NAIL
POINT-NOTHING EXISTING OR SET
NCGS-NORTH CAROLINA GEODETIC SURVEY
NGS-NATIONAL GEODETIC SURVEY
RIW MON-NCDOT MONUMENT
SIP-SET IRON PIPE
SIR-SET IRON PIPE
SCM-SET CONCRETE MONUMENT
EA-SET AXLE
SN-SET NAIL
SPK-SET PK NAIL
OP-OVERHEAD POWER
NOT HELD-NOT CONSIDERED PART OF SURVEY
NHWL-NORMAL HIGH WATER LINE
AEC-AREA OF ENVIRONMENTAL CONCERT
NAVD-NORTH AMERICAN VERTICAL DATUM
NAD-NORTH AMERICAN HORIZONTAL DATUM
PP-POWER POLE
UT-UNDERGROUND TELEPHONE
UP-UNDERGROUND POWER
UWL-UNDERGROUND WATER
DL-DRILL HOLE

NORTH
NC GRID NAD 1983 (2011)

NORTH CAROLINA PROFESSIONAL SEAL L-3151 LAND SURVEYOR IRA PHILLIPS III

SURVEYORS CERTIFICATION

I, JAMES I. PHILLIPS III, CERTIFY THAT THIS PLAT WAS DRAWN BY ME (X), DRAWN UNDER MY SUPERVISION (), FROM AN ACTUAL SURVEY MADE BY ME (X), MADE UNDER MY SUPERVISION ( ); THAT THE RATIO OF PRECISION AS CALCULATED BY COORDINATE METHOD IS 1:10,000+; REGISTRATION NUMBER, AND SEAL THIS 22ND DAY OF SEPTEMBER , A.D. 2020.

JAMES I. PHILLIPS III RLS NO. L-3151

THIS IS AN EXISTING PARCEL OF LAND

JAMES IRA PHILLI PS III, PLS

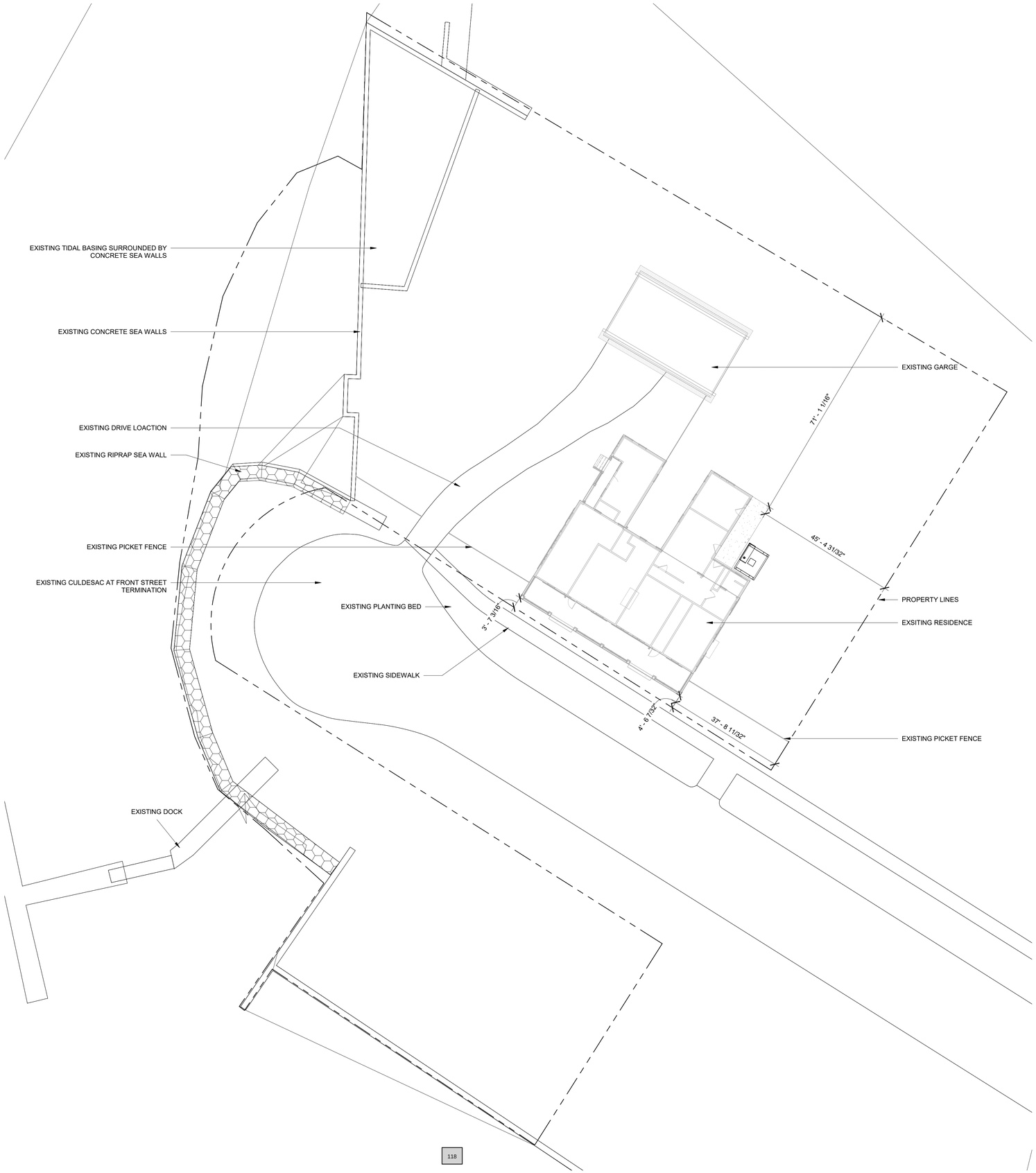
Digitally signed by JAMES IRA PHILLIPS III, PLS
DN: c=US, o=n/a, cn=JAMES IRA PHILLIPS III, PLS, ou=LAND SURVEYING, e=JAMES_IRA_PHILLIPS_III_PLS@yahoo.com
Date: 2020.09.22 13:08:43 -05'00'

BOUNDARY RETRACEMENT AND PHYSICAL SURVEY FOR
BILLY WOOTENADDRESS
105 FRONT STREET
TOWN OF BEAUFORT, BEAUFORT TOWNSHIP
CARTERET COUNTY, N.C.
SCALE 1"=40'

PRESENT OWNER: WILPORT LLC
DEED REF: BOOK PAGE 1412-358
MAP REF: BOOK PAGE 31-684
PIN: 7306170019400000
SHEET:1 OF 1
JOB #:20-151
DATE OF FIELD SURVEY:9-21-2022
DATE OF MAPPING:9-22-2020
SURVEY BY: JIP DRAWN BY: JIP CHECKED BY: JIP

REVISIONS

JAMES I. PHILLIPS LAND SURVEYING
PO BOX 2103, 379 Arrington Rd., Beaufort, N.C. 28516
252-728-5848 phone jip3@coastalnet.com



0 8' 16' 32'

SCALE: 1" = 16' - 0"

(CHECK SCALE BEFORE USING)

N

filter DESIGN STUDIO

Architecture | Planning | Landscape Architecture

Landscape Architect Seal

North Carolina Registered Landscape Architect 1538 J. Horton Jr.

NOT FOR CONSTRUCTION

Firm Seal

North Carolina Registered Professional Engineering Corporation C-573 Filter Design Studio, P.L.L.C.

Architecture

Company: Filter Design Studio, P.L.L.C.
Architect: Ryan Edwards
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Morehead City, NC 28557
Phone: 919-422-5598
Email: ryan@filterdesignstudio.com

Landscape Architecture

Company: Filter Design Studio, P.L.L.C.
Landscape Architect: Thomas "Jay" Horton
Address: PO Box 735
Morehead City, NC 28557
Phone: 252-230-0788
Email: jay@filterdesignstudio.com

Duncan House

Front Street

Beaufort, NC 28516

No.	Description	Date

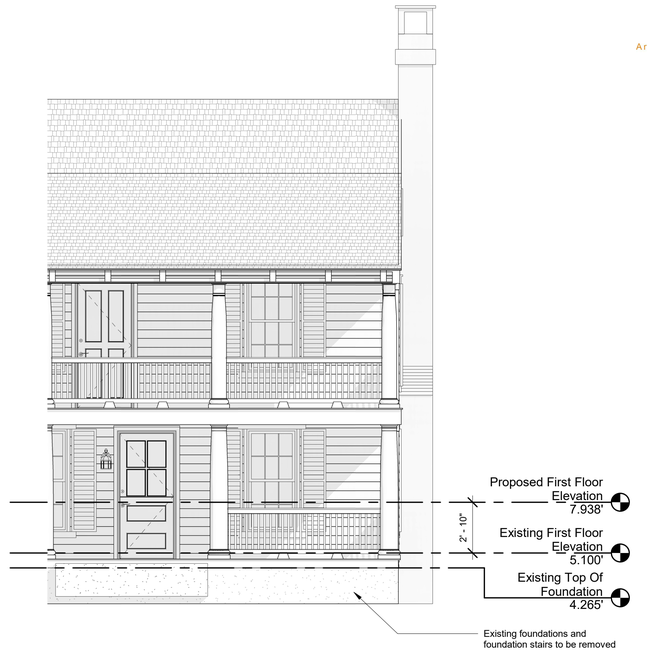
Site Plan Existing

Project number	20-051
Date	2020-12-09

X101

Scale 1/16" = 1'-0"

3 Existing Foundation Photograph - Front
1/4" = 1'-0"



2 Existing Foundation Drawing - Front
1/4" = 1'-0"

1 Existing & Proposed First Floor Height - Front
1/4" = 1'-0"

filter DESIGN STUDIO
Architecture | Planning | Landscape Architecture

Architect Seal

Ryan Edwards Registered Architect 13336 North Carolina
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Firm Seal

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Phone: 252-230-0788
Email: jay@filterdesignstudio.com

Duncan Residence
105 Front Street
Beaufort, NC, 28516

No.	Description	Date

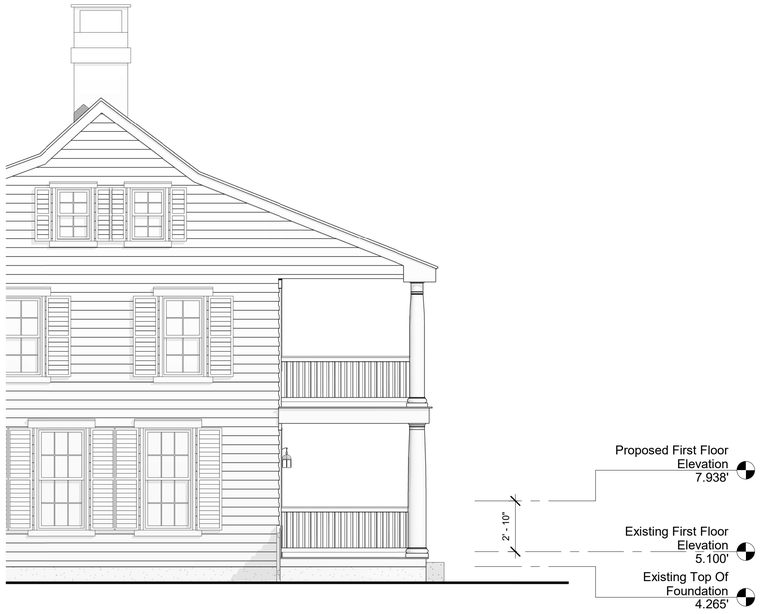
Existing & Proposed Height

Project number	20-051
Date	2021-02-17

A203

Scale 1/4" = 1'-0"

3 Existing Foundation Photograph - Left
1/4" = 1'-0"



2 Existing Foundation Drawing - Left
1/4" = 1'-0"

1 Existing & Proposed First Floor Height - Left
1/4" = 1'-0"

filter DESIGN STUDIO
Architecture | Planning | Landscape Architecture

Architect Seal

Ryan Edwards Registered Architect 13336 North Carolina

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Filter Design Studio P.L.L.C. Registered Architectural Company 53625 North Carolina

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Morehead City, NC 28557
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Email: jay@filterdesignstudio.com

Duncan Residence
105 Front Street
Beaufort, NC, 28516

No.	Description	Date

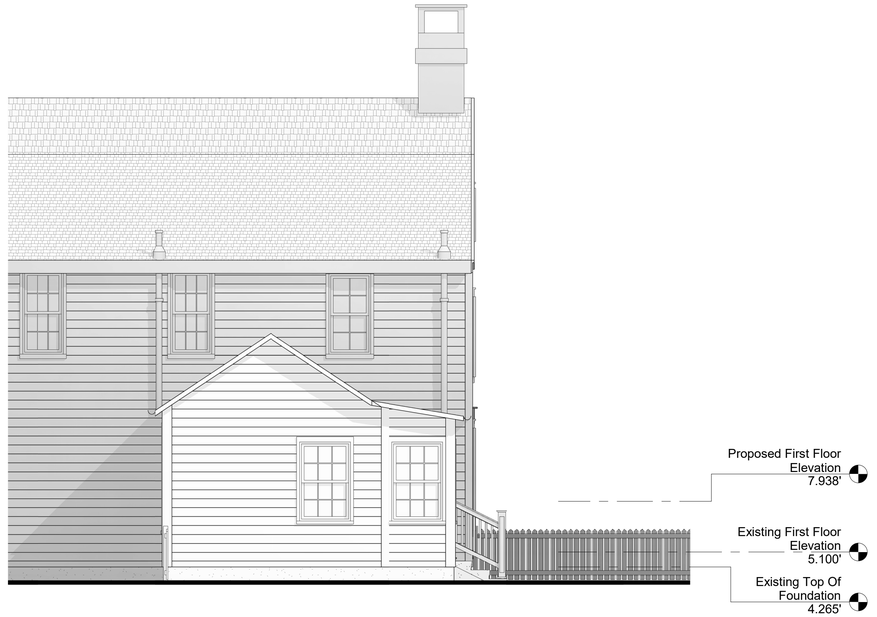
Existing & Proposed Height

Project number	20-051
Date	2021-02-17

A204

Scale 1/4" = 1'-0"

1 Existing Foundation Photograph - Back
1/4" = 1'-0"



3 Existing Foundation Drawing - Back
1/4" = 1'-0"

2 Existing & Proposed First Floor Height - Back
1/4" = 1'-0"

filter DESIGN STUDIO
Architecture | Planning | Landscape Architecture

Architect Seal

Ryan Edwards
Registered Architect
13336
North Carolina
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Firm Seal

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North Carolina

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Email: jay@filterdesignstudio.com

Duncan Residence
105 Front Street
Beaufort, NC, 28516

No.	Description	Date

Existing & Proposed Height

Project number	20-051
Date	2021-02-17

A205

Scale 1/4" = 1'-0"

2 Existing Foundation Photograph - Right
1/4" = 1'-0"

3 Existing Foundation Drawing - Right
1/4" = 1'-0"

1 Existing & Proposed First Floor Height - Right
1/4" = 1'-0"

filter DESIGN STUDIO
Architecture | Planning | Landscape Architecture

Architect Seal

Ryan Edwards Registered Architect 13336 North Carolina

NOT FOR CONSTRUCTION

Firm Seal

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Email: jay@filterdesignstudio.com

Duncan Residence
105 Front Street
Beaufort, NC, 28516

No.	Description	Date

Existing & Proposed Height

Project number	20-051
Date	2021-02-17

A206

Scale 1/4" = 1'-0"

filter
DESIGN STUDIO
Architecture | Planning | Landscape Architecture

Architect Seal

Firm Seal

Architecture

Company: Filter Design Studio, P.L.L.C.
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Email: jay@filterdesignstudio.com

Duncan Residence
105 Front Street
Beaufort, NC, 28516

1 Existing Foundation Photograph - Panorama
1/4" = 1'-0"

No.	Description	Date

Context Elevation

Project number	20-051
Date	2021-02-17

A207

Scale 1/4" = 1'-0"