FLOOD DAMAGE PREVENTION ORDINANCE

Pender County, NC

ADOPTED December 2, 2019

EFFECTIVE December 6, 2019

PENDER COUNTY

FLOOD DAMAGE PREVENTION ORDINANCE

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ARTICLE 1: PURPOSE AND OBJECTIVES

1.1 Statutory Authorization

The Legislature of the State of North Carolina has in 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 of the North Carolina General Statutes, delegated to local governmental the responsibility units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the Board of Commissioner of the Pender County, North Carolina, does ordain as follows:

1.2 Findings of Fact

A. The flood prone areas within the jurisdiction of the Pender County 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 flood prone areas of uses vulnerable to floods or other hazards.

1.3 Statement of Purpose

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

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

B. Require that uses vulnerable to floods, including facilities that 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 that may increase erosion or flood damage; and

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

1.4 Objectives

A. To protect human life, safety, 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 flood prone areas;

F. To help maintain a stable tax base by providing for the sound use and development of flood prone areas; and

G. To ensure that potential buyers are aware that property is in a Special Flood Hazard Area.

ARTICLE 2: DEFINITIONS

Words and terms set forth below shall have the meanings ascribed to them. Any word, term(s) or phrase used in this Ordinance not defined below shall have the meaning ascribed to such word, term or phrase in the most recent editions of the Pender County Unified Development Ordinance, Merriam-Webster's Dictionary, Black's Law Dictionary or American Planning Association Planner's Advisory Service, Dictionary of Terms unless, in the opinion of the Administrator, established customs or practices in Pender County justify a different or additional meaning. Furthermore, for the purpose of this Ordinance, certain words, terms and phrases are herein defined as follows:

A. Words used in the present tense shall include the future tense.
B. Words used in the singular number shall include the plural number and the plural singular.
C. The word "shall" and "will" are mandatory and not discretionary.
D. The word "may" is permissive.
E. The word "lot" shall include the words "parcel", "plot"' and "tract".
F. The word "building" and "structures" are synonymous.
G. The phrase "used for" shall include the terms "intended to be used", or "intended for" and "designed for" and "occupied for".
H. Words used here in the masculine gender shall be interpreted to include the feminine gender.

Accessory Structure (Appurtenant Structure) means a structure 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 Ordinance.

Area of Shallow Flooding means a designated Zone AO on a community's Flood Insurance Rate Map (FIRM) with base flood depths determined to be from one (1) to three (3) 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)".

Base Flood means the flood having a one (1) percent chance of being equaled or exceeded in any given year.

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

Base Flood Elevation (BFE) means a determination of the water surface elevations of the base flood as published in the Flood Insurance Study. When the BFE has not been provided in a "Special Flood Hazard Area", it may be obtained from engineering studies available from a Federal or State or other source using FEMA approved engineering methodologies. This elevation, when combined with the "Freeboard", establishes the "Regulatory Flood Protection Elevation".

Benchmark means a standard by which to measure or assess a known elevation relative to another. The surveyor determines the subject tract elevations based on the known elevation of the benchmark which is specifically designated and calibrated.

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's) Division of Coastal Management (DCM).

CBRS means Coastal Barrier Resources System.

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 Barrier Resources System (CBRS) consists of undeveloped portions of coastal and adjoining areas established by the Coastal Barrier Resources Act (CoBRA) of 1882, the Coastal Barrier Improvement Act (CBIA) of 1880, and subsequent revisions, and includes areas owned by federal or state governments or private conservation organizations identified as Otherwise Protected Areas (OPA).

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 Section 3.2 of the Pender County Unified Development Ordinance, as Zone VE.

Development means 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.'

Development Activity means above activity which will necessitate a Floodplain Development Permit.

Disposal means, as defined in NCGS 130A-280(a)(6), the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that the solid waste or any constituent part of the solid waste may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.

Elevated Building means a non-basement building which has its lowest elevated floor 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 means a manufactured home park or subdivision for which construction of facilities for servicing the lots on which the manufactured 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) was completed before the original effective date of the floodplain management regulations adopted by the community.

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/or
2) the unusual and rapid accumulation of runoff of surface waters from any source.

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

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 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 area of special flood hazard have been defined as Zone A.

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

Flood Insurance Study (FIS) means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations (if appropriate), flood hazard risk zones, and other flood data in a community issued by the Federal Emergency Management Agency. The Flood Insurance Study report

includes Flood Insurance Rate Maps (FIRMs), and Flood Boundary and Floodway Maps (FBFMs), if published.

Flood Prone Area see "Floodplain"

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

Floodplain Administrator is the individual appointed to administer and enforce the floodplain management regulations.

Floodplain Development Permit means any type of permit that is required in conformance with the provisions of this Ordinance, prior to the commencement of any development activity.

Floodplain Management means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving 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 Management Regulations means this Ordinance 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 flood damage to real estate or improved real property, water and sanitation facilities, structures, and their contents.

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 (1) foot.

Flood Encroachment Analysis means an engineering analysis of the impact that a proposed encroachment into a floodway is expected to have on the floodway boundaries and base flood elevations; the evaluation shall be prepared by a qualified North Carolina licensed engineer using standard engineering methods and models.

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.

Freeboard means the height added to the Base Flood Elevation (BFE) to account for the many unknown factors that could contribute to flood heights greater that the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of

urbanization on the watershed. The Base Flood Elevation plus the freeboard establishes the "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 Facility means, as defined in NCGS 130, Article 8, a facility for the collection, storage, processing, treatment, recycling, recovery, or disposal of hazardous waste.

Highest Adjacent Grade (HAG) means the highest natural elevation of the ground surface, prior to construction, immediately 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 US 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 local inventory of historic landmarks in communities with a "Certified Local Government (CLG) Program"; or
4) Certified as contributing to the historical significance of a historic district designated by a community with a "Certified Local Government (CLG) Program"

Certified Local Government (CLG) Programs are approved by the US Department of the Interior in cooperation with the North Carolina Department of Cultural Resources through the State Historic Preservation Officer as having met the requirements of the National Historic Preservation Act of 1866 as amended in 1880.

Lowest Adjacent Grade (LAG) means the elevation of the ground, sidewalk or patio slab immediately next to the building, or deck support, after completion of the building.

Lowest Floor means the lowest floor 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 Ordinance.

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".

Manufactured Home Park or Subdivision means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Market Value means the building value, not including the land value and that of any accessory structures or other improvements on the lot. Market value may be established by independent certified appraisal: replacement cost depreciated for age of building and quality of construction (Actual Cash Value): or adjusted tax assessed values.

Mean Sea Level means, for purposes of this Ordinance, the National Geodetic Vertical Datum (NGVD) as corrected in 1828, the North American Vertical Datum (NAVD) as corrected in 1888, 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 the community's Flood Damage Prevention Ordinance and includes any subsequent improvements to such structures.

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 (1) foot as designated in the Flood Insurance Study report.

OPA means an Otherwise Protected Area.

Post-FIRM means construction or other development for which the "start of construction" occurred on or after the effective date of the initial Flood Insurance Rate Map for the area.

Pre-FIRM means construction or other development for which the "start of construction" occurred before the effective date of the initial Flood Insurance Rate Map for the area.

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.

Principally Above Ground means that at least 51% of the actual cash value of the structure is above ground.

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) 400 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 seasonable use.

Reference Level is the top of the lowest floor or the bottom of the lowest attendant utility, whichever is lower, for structures within Special Flood Hazard Areas designated as Zone A1-30, AE, A, A88 or AO. The reference level is the bottom of the lowest horizontal structural member of the lowest floor for structures within Special Flood Hazard Areas designated as zone VE.

Regulatory Flood Protection Elevation means the elevation above mean sea level to which the reference level of all structures and other development located within Special Flood Hazard Areas and Future Conditions Flood Hazard Areas must be protected.

- In "Special Flood Hazard Areas" where Base Flood Elevations (BFEs) have been determined, this elevation shall be the BFE plus two (2) feet of freeboard.
- In "Special Flood Hazard Areas" where no BFE has been established, this elevation shall be at least two (2) feet above the highest adjacent grade.
- In Future Conditions Flood Hazard Areas this elevation shall be the Future Conditions Flood Elevation plus two (2) feet of freeboard.

Remedy a Violation means to bring the structure or other development into compliance with State and 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 damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds twenty-five (25%) percent of the market value of the structure before the damage occurred.

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

Sixty-Year Setback means a distance equal to sixty (60) times the average annual long-term recession rate at a site, measured from the reference feature.

Salvage Yard means any non-residential property used for the storage, collection, and/or recycling of any type of equipment, and including but not limited to vehicles, appliances and related machinery.

Solid Waste Disposal Facility means, as defined in NCGS 130A-280(a)(35), any facility involved in the disposal of solid waste.

Solid Waste Disposal Site means, as defined in NCGS 130A-280(a)(36), any place at which solid wastes are disposed of by incineration, sanitary landfill, or any other method.

Special Flood Hazard Area (SFHA) means the land in the floodplain subject to a one (1%) percent or greater chance of being flooded in any given year, as determined in Section 3.2 of this Article.

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 on a site, such as the pouring of slab or footings, the installation of piles, the 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, or a gas, liquid, or liquefied gas storage tank that is principally above ground.

Substantial Damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to it's before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. Repetitive loss shall be considered in determining substantial damage. See definition of "substantial improvement".

Substantial Improvement means any combination of repairs, reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during any one-year period for which the cost 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 is a grant of relief from the requirements of this Ordinance.

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 in Sections 4 and 5 is presumed to be in violation until such time as that documentation is provided.

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

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.

ARTICLE 3: GENERAL PROVISIONS

3.1 Lands to which this Ordinance Applies

This Ordinance shall apply to all Special Flood Hazard Areas within the jurisdiction, including Extra-Territorial Jurisdictions (ETJs) if applicable, of the Pender County and within the jurisdiction of any other community whose governing body agrees, by resolution, to such applicability.

3.2 Basis for Establishing the Special Flood Hazard Areas

The Special Flood Hazard Areas are those identified under the Cooperating Technical State (CTS) agreement between the State of North Carolina and FEMA in its Flood Insurance Study (FIS) and its accompanying Flood Insurance Rate Maps (FIRM), for Pender County dated December 6, 2019 which are adopted by reference and declared to be a part of this Ordinance.

3.3 Establishment of Floodplain Development Permit

A Floodplain Development Permit shall be required in conformance with the provisions of this Ordinance prior to the commencement of any development activities within Special Flood Hazard Areas determined in accordance with Section 3.2 of this Ordinance.

3.4 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 Ordinance and other applicable regulations.

3.5 Abrogation and Greater Restrictions

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

3.6 Interruption

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

H. Considered as minimum requirements;
I. Liberally construed in favor of the governing body; and
J. Deemed neither to limit nor repeal any other powers granted under State Statutes.

3.7 Warning and Disclaimer of Liability

The degree of flood protection required by this Ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur. Actual flood heights may be increased by man-made or natural causes. This Ordinance 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. This Ordinance shall not create liability on the part of Pender County or by any officer or employee thereof for any flood damages that result from reliance on this Ordinance or any administrative decision lawfully made hereunder.

3.8 Penalties for Violation

Violation of the provisions of this Ordinance 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 Ordinance 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 thirty (30) days, or both. Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent Pender County from taking such other lawful action as is necessary to prevent or remedy any violation.

ARTICLE 4: ADMINISTRATION

4.1 Designation of Floodplain Administrator

The Administrator, or their designated agent, hereinafter referred to as the "Floodplain Administrator", is hereby appointed to administer and implement the provisions of this Ordinance.

4.2 Floodplain Development Application, Permit and Certification Requirements

A. Application Requirements. Application for a Floodplain Development Permit shall be made to the floodplain administrator prior to any development activities located within Special Flood Hazard Areas. The following items 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, utility systems, grading/pavement areas, fill materials, storage areas, drainage facilities, and other development;
   b) the boundary of the Special Flood Hazard Area as delineated on the FIRM or other flood map as determined in Section 3.2, 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 in Section 3.2;
   d) the boundary of the floodway(s) or non-encroachment area(s) as determined in Section 3.2.
   e) the Base Flood Elevation (BFE) where provided as set forth in Sections 3.2; 4.2.K, 4.2.L; or Section 5.3;
   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 designation date of the Coastal Barrier Resource System (CBRS) area or Otherwise Protected Areas (OPA), if applicable.
   h) When a lot or a portion thereof is located in a FEMA designated Special Flood Hazard Area for which elevations have been established, additional information will be required including a map of the lot or building site signed and sealed by a Licensed Surveyor showing an existing established elevation bench mark on the site within 50' of the proposed structure.
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 in Zone AE, A or AO will be flood-proofed; and
   c) Elevation in relation to mean sea level to which any proposed utility systems will be elevated or flood proofed;
3) If floodproofing, a Floodproofing Certificate (FEMA Form 81-65) with supporting data and an operational plan that includes, but is not limited to, installation, exercise, and maintenance of floodproofing measures.

4) A Foundation Plan, drawn to scale, which shall include details of the proposed foundation system to ensure all provisions of this Ordinance are met. These details include but are not limited to:
   a) The proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/posts/piers/piles/shear walls)
   b) Openings to facilitate equalization of hydrostatic flood forces on walls in accordance with Section 5.2.D, when solid foundation perimeter walls are used in Zones A, AO, AE, and A1-30;
   c) The following, in Coastal High Hazard Areas, in accordance with Section 5.2.D.4 and 5.6:
      i) V-Zone Certification with accompanying plans and specifications verifying the engineered structure and any breakaway wall designs;
      ii) Plans for open wood latticework or insect screening, if applicable;
      iii) Plans for non-structural fill, if applicable. If non-structural fill is proposed, it must be demonstrated through coastal engineering analysis that the proposed fill would not result in any increase in the Base Flood Elevation or otherwise cause adverse impacts by wave ramping and deflection on to the subject structure or adjacent properties.
5) Usage details of any enclosed areas below the regulatory flood protection elevation.
6) 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;
7) Copies of all other Local, State and Federal permits required prior to floodplain development permit issuance (Wetlands, Endangered Species, Erosion and Sedimentation Control, CAMA, Riparian Buffers, Mining, etc.)
8) Documentation for placement of Recreational Vehicles and/or Temporary Structures, when applicable, to ensure Section 5.2.F and 5.2.G of this Article are met.
9) A description of proposed watercourse alteration or relocation, when applicable, including 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. Permit Requirements. The Floodplain Development Permit shall include, but not be limited to:
1) A description of the development to be permitted under the floodplain development permit.
2) The Special Flood Hazard Area determination for the proposed development per available data specified in Section 3.2.
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) A statement that no fill material or other development shall encroach into the floodway or non-encroachment area of any watercourse, as applicable.
7) The flood openings requirements, if in Zones A, AO, AE or A1-30.

C. Certification Requirements.
1) An Elevation Certificate (FEMA Form 81-31) or Floodproofing Certificate (FEMA Form 81-65) is required after the reference level is established. Within seven (7) calendar days of establishment of the reference level elevation, it shall be the duty of the permit holder to submit to the floodplain administrator a certification of the elevation of the reference level, in relation to mean sea level. Elevation certification shall be prepared by, or under the direct supervision of, a registered land surveyor or professional engineer and certified by same. Any work done within the seven (7) 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 required corrections shall be cause to issue a stop-work order for the project.

2) A Final As-Built Elevation Certificate (FEMA Form 81-31) 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 construction of the elevation of the reference level and all attendant utilities. Elevation certification shall be prepared by, or under the direct supervision of, a registered land surveyor or professional engineer 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 required corrections shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy.

3) Floodproofing Certificate

   a) If non-residential floodproofing is used to meet the regulatory flood protection elevation requirements, a Floodproofing Certificate (FEMA Form 81-65), with supporting data and an operational plan, is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the floodplain administrator a certification of the flood proofed design elevation of the reference level and all attendant utilities, in relation to mean sea level. Floodproofing 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 and plan. Deficiencies detected by such review shall be corrected by the applicant prior to permit approval. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit. Failure to construct in accordance with the certified design shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy.

   b) If a manufactured home is placed within Zone A, AO, AE, or A1-30 and the elevation of the chassis is more than 36 inches in height above grade, an engineered foundation certification is required per Section 5.2.C.

   c) If a watercourse is to be altered or relocated, a description of the extent of watercourse alteration or relocation; a professional engineer's certified 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) Certification Exemptions. The following structures, if located within Zone A, AO, AE or A1-30, are exempt from the elevation/floodproofing certification requirements specified in items (a) and (b) of this subsection:

      i) Recreational Vehicles meeting requirements of Section 5.2.F.1;

      ii) Temporary Structures meeting requirements of Section 5.2.G; and

      iii) Accessory Structures less than 150 square feet meeting requirements of Section 5.2.G.8.

4) A V-Zone Certification with accompanying design plans and specifications 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 said certification to ensure the design standards of this Ordinance 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 Ordinance. This certification is not a substitute for an Elevation Certificate.

4.3 Duties and Responsibilities of the Floodplain Administrator

A. The Floodplain Administrator shall perform, but not be limited to, the following duties:

1) Review all floodplain development applications and issue permits for all proposed development within Special Flood Hazard Areas to assure that the requirements of this Ordinance have been satisfied.
2) Advise permittee that additional Federal or State permits (Wetlands, Endangered Species, Erosion and Sedimentation Control, CAMA, Riparian Buffers, Mining, etc.) may be required, and 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 (FEMA).
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 into floodways and non-encroachment areas unless the certification and flood hazard reduction provisions of Section 5.4 are met.
6) Obtain actual elevation (in relation to mean sea level) of the reference level (including basement) and all attendant utilities of all new or substantially improved structures, in accordance with Section 4.2.C
7) Obtain actual elevation (in relation to mean sea level) to which all new and substantially improved structures and utilities have been flood proofed, in accordance with Section 4.2.C.
8) Obtain actual elevation (in relation to mean sea level) of all public utilities in accordance with Section 4.2.C.
9) When floodproofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance with Section 4.2.C and Section 4.2.B.
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 Article.
11) When Base Flood Elevation (BFE) data has not been provided in accordance with Section 3.2, obtain, review, and reasonably utilize any Base Flood Elevation (BFE) data, along with floodway data or non-encroachment area data available from a Federal, State, or other source, including data developed pursuant to Section 5.3.B.2, in order to administer the provisions of this Ordinance.
12) When Base Flood Elevation (BFE) data is provided but no floodway nor non-encroachment area data has been provided in accordance with Section 3.2, obtain, review, and reasonably utilize any floodway data or non-encroachment area data available from a Federal, State, or other source in order to administer the provisions of this Ordinance.

13) When the lowest ground elevation of a parcel or structure in a Special Flood Hazard Area is above the Base Flood Elevation, advise the property owner of the option to apply for a Letter of Map Amendment (LOMA) from FEMA. Maintain a copy of the Letter of Map Amendment (LOMA) issued by FEMA in the floodplain development permit file.
14) Permanently maintain all records that pertain to the administration of this Ordinance 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 Ordinance, 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) Revoke 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.
19) Follow through with corrective procedures of Section 4.4.
20) Review, provide input, and make recommendations for variance requests.
21) Maintain a current map repository to include, but not limited to, the FIS Report, FIRM and other official flood maps and studies adopted in accordance with Section 3.2 of this Ordinance, including any revisions thereto including Letters of Map Change, issued by FEMA. Notify State and FEMA of mapping needs.
22) Coordinate revisions to FIS reports and FIRMs, including Letters of Map Revision Based on Fill (LOMR-F) and Letters of Map Revision (LOMR).

4.4 Corrective Procedures

A. Violations to be corrected: When the floodplain administrator finds 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 cited in such notification.

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 (10) 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 an 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, they shall issue an order in writing to the owner, requiring the owner to remedy the violation within a specified time period, not less than sixty (60) calendar days, nor more than 180 calendar days. Where the floodplain administrator finds that there is imminent danger to life or other property, they 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 (10) 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 for which no appeal has been made or fails to comply with an order of the governing body following an appeal, the owner shall be guilty of a misdemeanor and shall be punished at the discretion of the court.

4.5 Variance Procedures

F. The Board of Adjustment as established by Pender County, hereinafter referred to as the "appeal board", shall hear and decide requests for variances from the requirements of this Ordinance.

G. Any person aggrieved by the decision of the appeal board may appeal such decision to the Court, as provided in Chapter 7A of the North Carolina General Statutes.

H. Variances may be issued for:

1) 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 that the variance is the minimum necessary to preserve the historic character and design of the structure.
2) Functionally dependent facilities if determined to meet the definition as stated in Section 2 of this Ordinance, provided provisions of Section 4.5.I. (2),(3), and (5) have been satisfied, and such facilities are protected by methods that minimize flood damages.
3) Any other type of development provided it meets the requirements stated in this Section.

I. In passing upon variances, the appeal board shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this Ordinance, and:

1) The danger that materials may be swept onto other lands to the injury of others
2) The danger to life and property due to flooding or erosion damage;
3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

4) The importance of the services provided by the proposed facility to the community;
5) The necessity to the facility of a waterfront location as defined under Article 2 of this Ordinance as a functionally dependent facility, where applicable;
6) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
7) The compatibility of the proposed use with existing and anticipated development;
8) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
9) The safety of access to the property in times of flood for ordinary and emergency vehicles;
10) The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and
11) 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.

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

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

L. 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 that such construction below the Base Flood Elevation increases risks to life and property, and that the issuance of a variance to construct a structure below the Base Flood Elevation will result in increased premium rates for flood insurance up to $25 per $100 of insurance coverage. Such notification shall be maintained with a record of all variance actions, including justification for their issuance.

M. 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.

N. Conditions for Variances:
1) Variances shall 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 not be issued within any designated floodway or non-encroachment area if the variance would result in any increase in flood levels during the base flood discharge.
3) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
4) Variances shall only be issued prior to development permit approval.
5) 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.
6) 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) The use serves a critical need in the community.

b) No feasible location exists for the use outside the Special Flood Hazard Area.
c) The reference level of any structure is elevated or flood proofed to at least the regulatory flood protection elevation.
d) The use complies with all other applicable Federal, State and local laws.
e) The Pender County has notified the Secretary of the North Carolina Department of Crime Control and Public Safety of its intention to grant a variance at least thirty (30) calendar days prior to granting the variance.

ARTICLE 5: PROVISIONS FOR FLOOD HAZARD REDUCTION

5.1 General Standards

A. In all Special Flood Hazard Areas the following provisions are required:

1) All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, and lateral movement of the structure.
2) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
3) All new construction and substantial improvements shall be constructed by methods and practices that minimize flood damages.
4) 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 to the Regulatory Flood Protection Elevation. These include, but are not limited to, HVAC equipment, water softener units, bath/kitchen fixtures, ductwork, electric/gas meter panels/boxes, utility/cable boxes, appliances (washers, dryers, refrigerators, freezers, etc.), hot water heaters, and electric outlets/switches.
5) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
6) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into flood waters.
7) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
8) Any alteration, repair, reconstruction, or improvements to a structure, which is in compliance with the provisions of this Ordinance, shall meet the requirements of "new construction" as contained in this Ordinance.
9) Nothing in this Ordinance shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of this Ordinance and located totally or partially within the floodway, non-encroachment area, or stream setback, provided there is no additional encroachment below the regulatory flood protection elevation in the floodway, non-encroachment area, or stream setback, and provided that such repair, reconstruction, or replacement meets all of the other requirements of this Ordinance.
10) New solid waste disposal facilities and sites, hazardous waste management facilities, salvage yards, and chemical storage facilities shall not be permitted, except by variance as specified in Section 4.5.I.6. 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 flood proofed to at least the regulatory flood protection elevation and certified according to the provisions of Section 4.2.C of this Ordinance.
11) All subdivision proposals and other development proposals shall be consistent with the need to minimize flood damage.
12) All subdivision proposals and other development proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.

13) All subdivision proposals and other development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
14) All subdivision proposals and other development proposals shall have received all necessary permits from those governmental agencies for which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1872, 33 U.S.C. 1334.
15) When a structure is partially located in a special flood hazard area, the entire structure shall meet the requirements for new construction and substantial improvements.
16) When a structure is located in multiple flood hazard zones or in a flood hazard risk zone with multiple base flood elevations, the provisions for the more restrictive flood hazard risk and the highest base flood elevation shall apply

5.2 Specific Standards

In all Special Flood Hazard Areas where Base Flood Elevation (BFE) data has been provided, as set forth in Section 3.2, or Section 5.3, the following provisions, in addition to Section 5.1, are required:

A. Residential Construction. New construction and 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, as defined in Section 2 of this Ordinance.

B. Non-Residential Construction. New construction and 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, as defined in Section 2 of this Ordinance. Structures located in A, AE and A1-30 Zones may be flood proofed to the regulatory flood protection elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the regulatory 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. For AO Zones, the floodproofing elevation shall be in accordance with Section 5.5, Section H(3). A registered professional engineer or architect shall certify that the standards of this subsection are satisfied. Such certification shall be provided to the Floodplain Administrator as set forth in Article 4, Section B(3), along with the operational and maintenance plans.

C. Manufactured Homes.
1) New and replacement manufactured homes shall be elevated so that the reference level of the manufactured home is no lower than the regulatory flood protection elevation, as defined in Section 2 of this Ordinance.
2) Manufactured homes shall be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement, either by engineer certification, or in accordance with the most current edition of the State of North Carolina Regulations for Manufactured Homes, adopted by the Commissioner of Insurance pursuant to NCGS 143-143.15 or a certified engineered foundation. Additionally, when the elevation would be met by an elevation of the chassis thirty-six (36) inches or less above the grade at the site, the chassis shall be supported by reinforced piers or engineered foundation. When the elevation of the chassis is above thirty-six (36) inches in height, an engineering certification is required.
3) All enclosures or skirting below the lowest floor shall meet the requirements of Section 5.2.D.

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 flood prone areas. This plan shall be filed with and approved by the floodplain administrator and the local Emergency Management coordinator.

D. Elevated Buildings. Fully enclosed areas of new construction and substantially improved structures, which are below the lowest floor:

1) Shall not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator). The interior portion of such enclosed area shall not be finished or partitioned into separate rooms, except to enclose storage areas;
2) Shall be constructed entirely of flood resistant materials, up to the regulatory flood protection elevation;
3) Shall include, in Zones A, AO, AE, and A1-30, flood openings to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet or exceed the following minimum design criteria;
   a) A minimum of two flood openings on different sides of each enclosed area subject to flooding;
   b) The total net area of all flood openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding;
   c) If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;
   d) The bottom of all required flood openings shall be no higher than one (1) foot above the adjacent grade;
   e) Flood openings may be equipped with screens, louvers, or other coverings or devices, provided they permit the automatic flow of floodwaters in both directions; and
   f) Enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require flood openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires flood openings as outlined above.
4) Shall, in Coastal High Hazard Areas (Zones VE), either be free of obstruction or constructed with breakaway walls, open wood latticework or insect screening, 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 causing damage to the structural integrity of the building. The following design specifications shall be met:
   a) Material shall consist of open wood latticework or insect screening; or
   b) Breakaway walls shall meet the following design specifications:
      i) Design safe loading resistance of each wall shall be not less than 10 nor more than 20 pounds per square foot; or
      ii) Breakaway walls that exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by State or local codes) shall be certified by a registered professional engineer or architect that the breakaway wall will collapse 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.

E. Additions/Improvements.

1) Additions and/or improvements to pre-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
   a) 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.
   b) A substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.
   c) Except in VE zones, where an addition to a non-residential structure has an independent load-bearing perimeter wall adjacent to the existing structure with only minimal changes to the existing structure, the addition(s) shall be considered a separate structure and only the addition must comply with the standards for new construction and substantial improvements.
2) Additions to post-FIRM structures with no modifications to the existing structure other than a standard door in the common wall shall require only the addition to comply with the standards for new construction.
3) Additions and/or improvements to post-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
   a) Not a substantial improvement, the addition and/or improvements only must comply with the standards for new construction.
   b) A substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction. Where an 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.
   c) Except in VE zones, where an addition to a non-residential structure has an independent load-bearing perimeter wall adjacent to the existing structure with only minimal changes to the existing structure, the addition(s) shall be considered a separate structure and only the addition must comply with the standards for new construction and substantial improvements.
4) Recreational Vehicles. Recreational vehicles shall either:
   a) Be on site in a travel trailer park for fewer than 90 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
   b) Not stored on any property without a primary structure or
   c) Meet all the requirements for new construction.

F. Temporary Non-Residential Structures. Prior to the issuance of a floodplain development permit for a temporary structure, the applicant must submit to the floodplain administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification. The following information shall be submitted in writing to the floodplain administrator for review and written approval;

1) A specified time period for which the temporary use will be permitted. Time specified should not exceed three (3) months, renewable up to one (1) year;

2) The name, address, and phone number of the individual responsible for the removal of the temporary structure;
3) The time frame prior to the event at which a structure will be removed (i.e., minimum of seventy-two (72) hours before landfall of a hurricane or immediately upon flood warning notification);
4) A copy of the contract or other suitable instrument with the entity responsible for physical removal of the structure; and
5) Designation, accompanied by documentation, of a location outside the Special Flood Hazard Area, to which the temporary structure will be moved.

G. Accessory Structures. When accessory structures (sheds, detached garages, etc.) 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 working, sleeping, living, cooking or restroom areas);
2) Accessory structures shall not be temperature-controlled;
3) Accessory structures shall be designed to have low flood damage potential;
4) Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;
5) Accessory structures shall be firmly anchored in accordance with the provisions of Section 5.1.A.1;
6) All service facilities such as electrical shall be installed in accordance with the provisions of Section 5.1.A.4; and
7) Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided below regulatory flood protection elevation in conformance with the provisions of Section 5.2.D.3,
8) An accessory structure with a footprint less than 144 square feet or cost of less than $500 that satisfies the criteria outlined above does not require an elevation or floodproofing certificate. Elevation or floodproofing certifications are required for all other accessory structures in accordance with the provisions of Section 5.2.C.

H. Tanks. When gas and liquid storage tanks are to be placed within a Special Flood Area, the following criteria shall be met:
1) Underground tanks: Underground tanks in flood hazard areas shall be anchored to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads during conditions of the design flood, including the effects of buoyancy assuming the tank is empty;
2) Above-ground tanks, elevated: above-ground tanks in flood hazard areas shall be attached to and elevated to or above the design flood elevation on a supporting structure that is designed to prevent flotation, collapse or lateral movement during conditions of the design flood. Tank-supporting structures shall meet the foundation requirements of the applicable flood hazard area;
3) Above-ground tanks, not elevated: Above-ground tanks that do not meet the elevation requirements of Section 1.2 B, of this ordinance shall be permitted in the flood hazard areas provided the tanks are anchored or otherwise designed and constructed to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads during conditions of the design flood, including the effects of buoyancy assuming the tank is empty and the effects of flood-borne debris;
4) Tank inlets and vents; Tank inlets, fill openings, outlets and vents shall be:

a) At or above the design flood elevation or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the design flood; and

b) Anchored to prevent lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the design flood.

I. Other Development: prior to the issuance of floodplain development permit for a temporary structure, the applicant must submit to the Floodplain Administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification. The following information shall be submitted in writing to the Floodplain Administrator for review and written approval:

1) Fences in regulated floodways and NEAs that have the potential to block the passage of floodwaters, such as stockade fences and wire mesh fences, shall meet the limitations of Section 5.5 of this ordinance.

2) Retaining walls, sidewalks and driveways in regulated floodways and NEAs. Retaining walls and sidewalks and driveways that involve the placement of fill in regulated floodways shall meet the limitations of Section 5.5 of this ordinance.

3) Roads and watercourse crossing in regulated floodways and NEAs. Roads and watercourse crossings, including roads, bridges, culverts, low-water crossing and similar means for vehicles or pedestrians to travel from one side of a watercourse to the other side, that encroach into regulated floodways shall meet the limitations of the Section 5.5 of this ordinance.

5.3 Standards for Floodplains without Established Base Flood Elevation

Within the Special Flood Hazard Areas designated as Approximate Zone A and established in Section 3.2, where no Base Flood Elevation (BFE) data is available, the following provisions, in addition to the provisions of Section 5.(1) and (2), shall apply:

A. No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within a distance of twenty (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. The BFE used in determining the regulatory flood protection elevation shall be determined based on one of the following criteria set in priority order:

1) If 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 Ordinance and shall be elevated or flood proofed in accordance with standards in Section 5.(1) and (2).

2) All subdivision, manufactured home park and other development proposals shall provide Base Flood Elevation (BFE) data if development is greater than five (5) acres or has more than fifty (50) lots/manufactured home sites. Such Base Flood Elevation (BFE) data shall be adopted by reference in accordance with Article 3, Section B to be utilized in implementing this Ordinance. A formal adoption of Base Flood Elevation (BEF) data by the Pender County Board of County Commissioners is necessary.

3) When Base Flood Elevation (BFE) data is not available from a Federal, State, or other source as outlined above, the reference level shall be elevated to or above the regulatory flood protection elevation, as defined in Section 2.

5.4 Standards for Riverine Floodplains With BFE But Without Established Floodways or Non Encroachment Areas

A. Along rivers and streams where BFE data is provided by FEMA or is available from another source but neither floodway nor non-encroachment areas are identified for a Special Flood Hazard Area on the FIRM or in the FIS report, the following requirements shall apply to all development within such areas:

1) Standards of Article 5.(1) and (2); and
2) Until a regulatory floodway or non-encroachment area is designated, 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.

5.5 Floodways and Non-Encroachment Areas

A. Areas designated as floodways or non-encroachment areas are located within the Special Flood Hazard Areas established in Section 3.2. 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. The following provisions, in addition to standards outlined in Section 5.(1) and (2), shall apply to all development within such areas:

1) No encroachments, including fill, new construction, substantial improvements and other developments shall be permitted unless:
   a) It is demonstrated that the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood, based on hydrologic and hydraulic analyses performed in accordance with standard engineering practice and presented to the floodplain administrator prior to issuance of floodplain development permit, or
   b) A Conditional Letter of Map Revision (CLOMR) has been approved by FEMA. A Letter of Map Revision (LOMR) must also be obtained upon completion of the proposed encroachment.
2) If Section 5.5.A.1 is satisfied, all development shall comply with all applicable flood hazard reduction provisions of this Ordinance.
3) Manufactured homes may be permitted provided the following provisions are met:
   a) The anchoring and the elevation standards of Section 5.2.C.2; and
   b) The no encroachment standard of Section 5.5.A.1.

5.6 Coastal High Hazards Areas (VE Zones)

A. Coastal High Hazard Areas are Special Flood Hazard Areas established in Section 3.2, and designated as Zones VE. These areas have special flood hazards associated with high velocity waters from

B. torm surges or seismic activity and, therefore, in new construction and substantial improvements shall meet the following requirements in addition to the provisions of Section 5.(1) and (2).

C. All new construction and substantial improvements shall:

1) 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.

D. All new construction and substantial improvements shall be elevated so that the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings or columns) is no lower than the regulatory flood protection elevation. Floodproofing shall not be utilized on any structures in Coastal High Hazard Areas to satisfy the regulatory flood protection elevation requirements.

1) All new construction and substantial improvements shall have the space below the lowest floor free of obstruction so as not to impede the flow of flood waters, with the following exceptions:
2) Open wood latticework or insect screening may be permitted below the lowest floor for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action and in accordance with the provisions of Section 5.2.D.4.a. Design plans shall be submitted in accordance with the provisions of Section 4.2.A.4.c.ii; or

E. Breakaway walls may be permitted provided they meet the criteria set forth in Section 5.2.D.(2) and (4). Design plans shall be submitted in accordance with the provisions of Section 4.2.D and 4.2.D4, Section B(4) and 4.2.A(4)(c)(i).

1) All new construction and substantial improvements shall be securely anchored to pile or column foundations. All pilings and columns and the structure attached thereto 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.
2) Water loading values used shall be those associated with the base flood.

F. Wind loading values used shall be those required by the current edition of the North Carolina State Building Code.

G. A registered professional engineer or architect shall certify that the design, specifications and plans for construction are in compliance with the provisions of Section 4.2, Section 5.6.C, Section 5.6.D and Section 5.7.F of this Ordinance on the current North Carolina "National Flood Insurance Program V-Zone Certification" form.

H. Fill shall not be used for structural support. Limited non-compacted and non-stabilized fill may be used outside the perimeter of a building provided it is demonstrated through coastal engineering analysis that the proposed fill would not result in any increase in the Base Flood Elevation and not cause any adverse impacts by wave ramping or deflection to the subject structure or adjacent properties:

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 of this Section have been satisfied.

K. Recreational vehicles may be permitted in Coastal High Hazard Areas provided that they meet the Recreational Vehicle criteria of Section 5.2.F.1.

ARTICLE 6: LEGAL STATUS PROVISIONS

6.1 Effect on Rights and Liabilities under the Existing Flood Damage Prevention Ordinance

This Ordinance in part comes forward by re-enactment of some of the provisions of the flood damage prevention ordinance enacted June 28, 1977 (adoption date of the community's original Flood Damage Prevention Ordinance) as amended, and it is not the intention to repeal but rather to re-enact and continue to enforce without interruption of such existing provisions, so that all rights and liabilities that have accrued there under are reserved and may be enforced. The enactment of this Ordinance shall not affect any action, suit or proceeding instituted or pending. All provisions of the flood damage prevention ordinance of Pender County enacted on December 6, 2019, as amended, which are not reenacted herein, are repealed.

6.2 Effect on Outstanding Floodplain Development Permits

Nothing herein contained shall require any change in the plans, construction, size, or designated use of any development or any part thereof for which a floodplain development permit has been granted by the floodplain administrator or his or her authorized agents before the time of passage of this Ordinance; provided, however, that when construction is not begun under such outstanding permit within a period of six (6) months subsequent to the date of issuance of the outstanding permit, construction or use shall be in conformity with the provisions of this Ordinance.

6.3 Effective Date

This ordinance shall become effective on December 6, 2019.

6.4 Adoption Certification

I hereby certify that this is a true and correct copy of the Flood Damage Prevention Ordinance as adopted by the Board of Commissioners of Pender County, North Carolina, on the 2nd day of December, 2019.

WITNESS my hand and the official seal of George Brown, Chairman, Pender County Board of Commissioners, this the 2nd day of December, 2019.

George R. Brown, Chairman — 12/2/19 Date

ATTEST — 12/2/19 Date