Environmental Quality

ROY COOPER
Governor

WILLIAM G. ROSS, JR.
Acting Secretary

TO: The Coastal Resources Commission

FROM: Christine A. Goebel, Assistant General Counsel CAG

DATE: January 25, 2017 (for the February 8, 2017 CRC Meeting)

RE: **Variance Request by Andrew & Deborah Thexton (CRC-VR-16-11)**

Petitioners Andrew & Deborah Thexton purchased an oceanfront lot in 2016 located at 1117 Ocean Boulevard in Topsail Beach. As part of a voluntary FEMA mitigation program for homes that have made repetitive loss claims, Pender County contacted Petitioners about participating in a program where the cost to elevate their structure within its existing footprint would be covered 100% by FEMA though Petitioners and future owners would have to agree to keep flood coverage on the elevated structure. Petitioners agreed to participate, and so the consultant hired by Pender County to manage several similar claims, along with Pender County's Planning Director, acted as agents for Petitioners and applied for a CAMA permit on their behalf. DCM denied the CAMA permit as the existing location of the structure does not meet the applicable 60-foot ocean erosion setback on the site. Additionally, the work proposed exceeded 50% of the value of the house structure, and so was not "repair" and was "replacement" under the Commission's rules and CAMA statute. Petitioners now seek a variance from the oceanfront erosion setback in order to elevate the existing house within the same footprint and largely within the setback.

The following additional information is attached to this memorandum:

Attachment A:	Relevant Rules
Attachment B:	Stipulated Facts
Attachment C:	Petitioner's Positions and Staff's Responses to Variance Criteria
Attachment D:	Petitioner's Variance Request Materials
Attachment E:	Stipulated Exhibits including powerpoint

cc(w/enc.): Andrew & Deborah Thexton, Petitioners, electronically
Mary Lucasse, Special Deputy AG and CRC Counsel, electronically
Kyle Breuer, Pender County Planning Director, electronically

RELEVANT STATUTES OR RULES **APPENDIX A**

§ 113A-103. Definitions.

As used in this Article:

(5)a. "Development" means any activity in a duly designated area of environmental concern (except as provided in paragraph b of this subdivision) involving, requiring, or consisting of the construction or enlargement of a structure; excavation; dredging; filling; dumping; removal of clay, silt, sand, gravel or minerals; bulkheading, **driving of pilings**; clearing or alteration of land as an adjunct of construction; alteration or removal of sand dunes; alteration of the shore, bank, or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake, or canal; or placement of a floating structure in an area of environmental concern identified in G.S. 113A-113(b)(2) or (b)(5).

b. The following activities including the normal and incidental operations associated therewith shall not be deemed to be development under this section:

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5. Maintenance or repairs (excluding replacement) necessary to repair damage to structures caused by the elements or to prevent damage to imminently threatened structures by the creation of protective sand dunes.

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c. The Commission shall define by rule (and may revise from time to time) certain classes of minor maintenance and improvements which shall be exempted from the permit requirements of this Article, in addition to the exclusions set forth in paragraph b of this subdivision. In developing such rules the Commission shall consider, with regard to the class or classes of units to be exempted:

1. The size of the improved or scope of the maintenance work;

2. The location of the improvement or work in proximity to dunes, waters, marshlands, areas of high seismic activity, areas of unstable soils or geologic formations, and areas enumerated in G.S. 113A-113(b)(3); and

3.Whether or not dredging or filling is involved in the maintenance or improvement.

SECTION .0300 - OCEAN HAZARD AREAS

15A NCAC 07H .0301 OCEAN HAZARD CATEGORIES

The next broad grouping is composed of those AECs that are considered natural hazard areas along the Atlantic Ocean shoreline where, because of their special vulnerability to erosion or other adverse effects of sand, wind, and water, uncontrolled or incompatible development could unreasonably endanger life or property. Ocean hazard areas include beaches, frontal dunes, inlet lands, and other areas in which geologic, vegetative and soil conditions indicate a substantial possibility of excessive erosion or flood damage.

15A NCAC 07H .0302 SIGNIFICANCE OF THE OCEAN HAZARD CATEGORY

(a) The primary causes of the hazards peculiar to the Atlantic shoreline are the constant forces exerted by waves, winds, and currents upon the unstable sands that form the shore. During storms, these forces are intensified and can cause significant changes in the bordering landforms and to structures located on them. Ocean hazard area property is in the ownership of a large number of private individuals as well as several public agencies and is used by a vast number of visitors to the coast. Ocean hazard areas are critical, therefore, because of both the severity of the hazards and the intensity of interest in the areas.

(b) The location and form of the various hazard area landforms, in particular the beaches, dunes, and inlets, are in a permanent state of flux, responding to meteorologically induced changes in the wave climate. For this reason, the appropriate location of structures on and near these landforms must be reviewed carefully in order to avoid their loss or damage. As a whole, the same flexible nature of these landforms which presents hazards to development situated immediately on them offers protection to the land, water, and structures located landward of them. The value of each landform lies in the particular role it plays in affording protection to life and property. (The role of each landform is described in detail in Technical Appendix 2 in terms of the physical processes most important to each.) Overall, however, the energy dissipation and sand storage capacities of the landforms are most essential for the maintenance of the landforms' protective function.

15A NCAC 07H .0303 MANAGEMENT OBJECTIVE OF OCEAN HAZARD AREAS

(a) The CRC recognizes that absolute safety from the destructive forces indigenous to the Atlantic shoreline is an impossibility for development located adjacent to the coast. The loss of life and property to these forces, however, can be greatly reduced by the proper location and design of structures and by care taken in prevention of damage to natural protective features particularly primary and frontal dunes. Therefore, it is the CRC's objective to provide management policies and standards for ocean hazard areas that serve to eliminate unreasonable danger to life and property and achieve a balance between the financial, safety, and social factors that are involved in hazard area development.

(b) The purpose of these Rules shall be to further the goals set out in G.S. 113A-102(b), with particular attention to minimizing losses to life and property resulting from storms and long-term erosion, preventing encroachment of permanent structures on public beach areas, preserving the natural ecological conditions of the barrier dune and beach systems, and reducing the public costs of inappropriately sited development. Furthermore, it is the objective of the Coastal Resources Commission to protect present common-law and statutory public rights of access to and use of the lands and waters of the coastal area.

15A NCAC 07H .0304 AECS WITHIN OCEAN HAZARD AREAS

The ocean hazard AECs contain all of the following areas:

(1) Ocean Erodible Area. This is the area where there exists a substantial possibility of excessive erosion and significant shoreline fluctuation. The oceanward boundary of this area is the mean low water line. The landward extent of this area is the distance landward from the first line of stable and natural vegetation as defined in 15A NCAC 07H .0305(a)(5) to the recession line established by multiplying the long-term annual erosion rate times 90; provided that, where there has been no long-term erosion or the rate is less than two feet per year, this distance shall be set at 120 feet landward from the first line of stable natural vegetation. For the purposes of this Rule, the erosion rates are the long-term average based on available historical data. The current long-term average

erosion rate data for each segment of the North Carolina coast is depicted on maps entitled "2011 Long-Term Average Annual Shoreline Rate Update" and approved by the Coastal Resources Commission on May 5, 2011 (except as such rates may be varied in individual contested cases or in declaratory or interpretive rulings). In all cases, the rate of shoreline change shall be no less than two feet of erosion per year. The maps are available without cost from any Local Permit Officer or the Division of Coastal Management on the internet at-http://www.nccoastalmanagement.net.

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15A NCAC 07H .0305 GENERAL IDENTIFICATION AND DESCRIPTION OF LANDFORMS

(a) This Paragraph describes natural and man-made features that are found within the ocean hazard area of environmental concern.

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(5) Vegetation Line. The vegetation line refers to the first line of stable and natural vegetation, which shall be used as the reference point for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, which is subject to constant flux due to waves, tides, storms and wind, and the more stable upland areas. The vegetation line is generally located at or immediately oceanward of the seaward toe of the frontal dune or erosion escarpment. The Division of Coastal Management or Local Permit Officer shall determine the location of the stable and natural vegetation line based on visual observations of plant composition and density. If the vegetation has been planted, it may be considered stable when the majority of the plant stems are from continuous rhizomes rather than planted individual rooted sets. Planted vegetation may be considered natural when the majority of the plants are mature and additional species native to the region have been recruited, providing stem and rhizome densities that are similar to adjacent areas that are naturally occurring. In areas where there is no stable and natural vegetation present, this line may be established by interpolation between the nearest adjacent stable natural vegetation by on-ground observations or by aerial photographic interpretation.

(6) Static Vegetation Line. In areas within the boundaries of a large-scale beach fill project, the vegetation line that existed within one year prior to the onset of project construction shall be defined as the "static vegetation line." The "onset of project construction" shall be defined as the date sediment placement begins, with the exception of projects completed prior to the effective date of this Rule, in which case the award of the contract date will be considered the onset of construction. A static vegetation line shall be established in coordination with the Division of Coastal Management using on-ground observation and survey or aerial imagery for all areas of oceanfront that undergo a large-scale beach fill project. Once a static vegetation line is established, and after the onset of project construction, this line shall be used as the reference point for measuring oceanfront setbacks in all locations where it is landward of the vegetation line. **In all locations where the vegetation line as defined in this Rule is landward of the static vegetation line, the vegetation line shall be used as the reference point for measuring oceanfront setbacks.** A static vegetation line shall not be established where a static vegetation line is already in place, including those established by the Division of Coastal Management prior to the effective date of this Rule. A record of all static vegetation lines, including those established by the Division of Coastal Management prior to the effective date of this Rule, shall be maintained by the Division of Coastal Management for determining development standards as set forth in Rule .0306 of this Section. Because the impact of Hurricane Floyd (September 1999) caused significant portions of the vegetation line in the Town of Oak Island and the Town of Ocean Isle Beach to be relocated landward of its pre-storm position, the static line for areas landward of the beach fill construction in the Town of Oak Island and the Town of Ocean Isle Beach, the onset of which occurred in 2000, shall be defined by the general trend of the vegetation line established by the Division of Coastal Management from June 1998 aerial orthophotography.

(7) Beach Fill. Beach fill refers to the placement of sediment along the oceanfront shoreline. Sediment used solely to establish or strengthen dunes shall not be considered a beach fill project under this Rule. A "large-scale beach fill project" shall be defined as any volume of sediment greater than 300,000 cubic yards or any storm protection project constructed by the U.S. Army Corps of Engineers.

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15A NCAC 07H .0306 GENERAL USE STANDARDS FOR OCEAN HAZARD AREAS

(a) In order to protect life and property, all development not otherwise specifically exempted or allowed by law or elsewhere in the Coastal Resources Commission's rules shall be located according to whichever of the following is applicable:

(1) The ocean hazard setback for development is measured in a landward direction from the vegetation line, the static vegetation line, or the measurement line, whichever is applicable.

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(4) The setback distance shall be determined by both the size of development and the shoreline long term erosion rate as defined in Rule .0304 of this Section. "Development size" is defined by total floor area for structures and buildings or total area of footprint for development other than structures and buildings. Total floor area includes the following:

(A) The total square footage of heated or air-conditioned living space;

(B) The total square footage of parking elevated above ground level; and

(C) The total square footage of non-heated or non-air-conditioned areas elevated above ground level, excluding attic space that is not designed to be load-bearing.

Decks, roof-covered porches, and walkways are not included in the total floor area unless they are enclosed with material other than screen mesh or are being converted into an enclosed space with material other than screen mesh.

(5) With the exception of those types of development defined in 15A NCAC 07H .0309, no development, including any portion of a building or structure, shall extend oceanward of the ocean hazard setback distance. This includes roof overhangs and elevated structural components that are cantilevered, knee braced, or otherwise extended beyond the support of pilings or footings. The ocean hazard setback is established based on the following criteria:

(A) A building or other structure less than 5,000 square feet requires a minimum setback of 60 feet or 30 times the shoreline erosion rate, whichever is greater;

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(6) If a primary dune exists in the AEC on or landward of the lot where the development is proposed the development shall be landward of the crest of the primary dune, the ocean hazard setback, or development line, whichever is farthest from vegetation line, static vegetation line, or measurement line, whichever is applicable. For existing lots, however, where setting the development landward of the crest of the primary dune would preclude any practical use of the lot, development may be located oceanward of the primary dune. In such cases, the development may be located landward of the ocean hazard setback but shall not be located on or oceanward of a frontal dune or the development line. The words "existing lots" in this Rule shall mean a lot or tract of land which, as of June 1, 1979, is specifically described in a recorded plat and cannot be enlarged by combining the lot or tract of land with a contiguous lot(s) or tract(s) of land under the same ownership.

(7) If no primary dune exists, but a frontal dune does exist in the AEC on or landward of the lot where the development is proposed, the development shall be set landward of the frontal dune, ocean hazard setback, or development line, whichever is farthest from the vegetation line, static vegetation line, or measurement line, whichever is applicable.

(8) If neither a primary nor frontal dune exists in the AEC on or landward of the lot where development is proposed, the structure shall be landward of the ocean hazard setback or development line, whichever is more restrictive.

(9) Structural additions or increases in the footprint or total floor area of a building or structure represent expansions to the total floor area and shall meet the setback requirements established in this Rule and 15A NCAC 07H .0309(a). New development landward of the applicable setback may be cosmetically, but shall not be structurally, attached to an existing structure that does not conform with current setback requirements.

(10) Established common law and statutory public rights of access to and use of public trust lands and waters in ocean hazard areas shall not be eliminated or restricted. Development shall not encroach upon public accessways, nor shall it limit the intended use of the accessways.

(11) Beach fill as defined in Rule .0305(a)(7) of this Section, represents a temporary response to coastal erosion, and compatible beach fill as defined in 15A NCAC 07H .0312 can be expected to erode at

least as fast as, if not faster than, the pre-project beach. Furthermore, there is no assurance of future funding or beach-compatible sediment for continued beach fill projects and project maintenance. A vegetation line that becomes established oceanward of the pre-project vegetation line in an area that has received beach fill may be more vulnerable to natural hazards along the oceanfront if the beach fill project is not maintained. A development setback measured from the vegetation line may provide less protection from ocean hazards. Therefore, development setbacks in areas that have received large-scale beach fill as defined in 15A NCAC 07H .0305 shall be measured landward from the static vegetation line as defined in this Section, unless a development line has been approved by the Coastal Resources Commission in accordance with 15A NCAC 07J .1300.

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(f) Development shall comply with the general management objective for ocean hazard areas set forth in 15A NCAC 07H .0303.

(g) Development shall not interfere with legal access to, or use of, public resources, nor shall such development increase the risk of damage to public trust areas.

(h) Development proposals shall incorporate measures to avoid or minimize adverse impacts of the project. These measures shall be implemented at the applicant's expense and may include actions that:

(1) minimize or avoid adverse impacts by limiting the magnitude or degree of the action;

(2) restore the affected environment; or

(3) compensate for the adverse impacts by replacing or providing substitute resources.

(i) Prior to the issuance of any permit for development in the ocean hazard AECs, there shall be a written acknowledgment from the applicant to the Division of Coastal Management that the applicant is aware of the risks associated with development in this hazardous area and the limited suitability of this area for permanent structures. By granting permits, the Coastal Resources Commission does not guarantee the safety of the development and assumes no liability for future damage to the development.

(j) All relocation of structures requires permit approval. Structures relocated with public funds shall comply with the applicable setback line as well as other applicable AEC rules. Structures including septic tanks and other essential accessories relocated entirely with non-public funds shall be relocated the maximum feasible distance landward of the present location. Septic tanks may not be located oceanward of the primary structure. All relocation of structures shall meet all other applicable local and state rules.

(k) Permits shall include the condition that any structure shall be relocated or dismantled when it becomes imminently threatened by changes in shoreline configuration as defined in 15A NCAC 07H .0308(a)(2)(B). Any such structure shall be relocated or dismantled within two years of the time when it becomes imminently threatened, and in any case upon its collapse or subsidence. However, if natural shoreline recovery or beach fill takes place within two years of the time the structure becomes imminently threatened, so that the structure is no longer imminently threatened, then it need not be relocated or dismantled at that time. This permit condition shall not affect the permit holder's right to seek authorization of temporary protective measures allowed under 15A NCAC 07H .0308(a)(2).

15A NCAC 07J .0210 REPLACEMENT OF EXISTING STRUCTURES

Replacement of structures damaged or destroyed by natural elements, fire or normal deterioration is considered development and requires CAMA permits. Replacement of structures shall be permitted if the replacements is consistent with current CRC rules. Repair of structures damaged by natural elements, fire or normal deterioration is not considered development and shall not require CAMA permits. The CRC shall use the following criteria to determine whether proposed work is considered repair or replacement.

(1) NON-WATER DEPENDENT STRUCTURES. **Proposed work is considered replacement if the cost to do the work exceeds 50 percent of the market value of an existing structure immediately prior to the time of damage or the time of request.** Market value and costs are determined as follows:

(a) Market value of the structure **does not include the value of the land, value resulting from the location of the property, value of accessory structures, or value of other improvements located on the property.** Market value of the structure shall be determined by the Division based upon information provided by the applicant using any of the following methods:

(i) appraisal;

(ii) replacement cost with depreciation for age of the structure and quality of construction; or

(iii) tax assessed value.

(b) **The cost to do the work is the cost to return the structure to its pre-damaged condition, using labor and materials obtained at market prices, regardless of the actual cost incurred by the owner to restore the structure. It shall include the costs of construction necessary to comply with local and state building codes and any improvements that the owner chooses to construct.** The cost shall be determined by the Division utilizing any or all of the following:

(i) an estimate provided by a North Carolina licensed contractor qualified by license to provide an estimate or bid with respect to the proposed work;

(ii) an insurance company's report itemizing the cost, excluding contents and accessory structures; or

(iii) an estimate provided by the local building inspections office.

STIPULATED FACTS **ATTACHMENT B**

1. Petitioners Andrew and Deborah Thexton ("Petitioners") are the owners of an oceanfront home and lot located at 1117 Ocean Boulevard in the Town of Topsail Beach ("Town"), Pender County, North Carolina (the "Property"). The deed for the sale was recorded on April 1, 2016 when they purchased the property though a deed recorded at Book 4617, Page 1348 of the Pender County Registry, a copy of which is attached as a stipulated exhibit. In connection with the 2016 purchase, Petitioners had a survey of the property done by Charles Riggs, P.L.S., a copy of which is attached.

2. According the Pender County tax records, the purchase price of the Property by the Petitioners was $496,000. The total tax value of the Property is $513,028 and the tax value of the structure is $67,528, based on a 2011 valuation. A copy of the tax card for the Property is attached as a stipulated exhibit.

3. According to tax records, the Property is a developed lot, and includes a three-bedroom 1,408 square foot single-family residential structure built in 1968, a gravel driveway, decks, and beach access walkway. The Petitioners' house is served by septic, which is on the northern-landward portion of the Property based on the 1989 Pender County septic permit and a 2016 septic system inspection, copies of which are attached as stipulated exhibits. The inspection shows that it is located 10' from the landward property line and 9' from the house.

4. Aerial and site photographs are attached as exhibits which depict the Property, Petitioners' home and the surrounding lots and homes.

5. The Property is located within the Ocean Erodible Area of Environmental Concern (AEC).

6. In 1989, the US Army Corps of Engineers ("Corps") released a final EIS for a beach nourishment plan, and a Federal Storm Damage Reduction Project was authorized under the Water Resources Development Act, however no funds were ever appropriated for the project and so not projects pursuant to that plan were undertaken. In 2010, the Town funded a $10 million "large scale" beach nourishment project which included the beach in front of the Property. Accordingly, a pre-project vegetation line was set as a static line in 2010. Other nourishment has taken place in the Town, but these other projects were smaller scale navigation projects and not "large scale" projects.

7. On or about October 25, 2016, DCM Field Representative Jason Dail flagged the location of the first line of stable and natural vegetation ("FLSNV") on the Property, as the FLSNV was landward of, and more restrictive than the static line on the Property. Per 15A NCAC 7H .0305(a)(6), the FLSNV is used as the reference line for determining setbacks where it is landward of and more restrictive than the static line on a site.

8. The Commission's current Average Annual Erosion Rate for the Property is 2 feet per year. Based on the applicable 2 feet per year erosion rate, the applicable Ocean Hazard Setback for

development on this Property, being a structure less than 5,000 square feet, is 60-feet landward of the FLSNV as that term is defined in 15A NCAC 7H .0305(a)(6).

9. Topsail Beach is located on a barrier island that is susceptible to powerful coastal storms that expose properties to wind damage, beach erosion and coastal flooding.

10. The Property is located in flood zone "VE" and the Base Flood Elevation ("BFE") at the Property is 15.0 feet NAVD.

11. Petitioners' Property was included on a priority list made by FEMA of repetitive loss structures which FEMA issues on a regular basis to counties, through NC Division of Emergency Management. FEMA, through this Flood Mitigation Assistance Program (FMA), allows for mitigation of repetitive loss properties though acquisition, demolition, relocation, elevation or dry flood-proofing. It is a voluntary program and covers 100% of the costs for the mitigation work, but requires a deed restriction requiring participation in the NFIP program for the life of the structure. A list of the losses for Petitioners' Property through June 27, 2013 is attached as an exhibit.

12. On July 9, 2015, Pender County issued a RFP for professional services to act a planning and management consultant (and a separate RFP for engineering services) in order to process $2.9 million dollars of funds for use to elevate six structures and acquire five others within Pender County. A copy of this RFP is attached as a stipulated exhibit.

13. On February 2, 2016, Pender County assigned the consulting contract to Holland Consulting Planners, Inc., including HCP employees J. Reed Whitesell, AICP, as Project Manager, Chip Bartlett, AICP as the FMA Program Administrator, Chis Hilbert, as Program Manager, and Gary Miller, as Inspector (collectively the "Consultant"). A copy of the Work Authorization contract is attached as an exhibit. Copies of Mr. Whitesell's and Mr. Bartlett's resumes are attached as exhibits, as is a summary of HCP's recent work in Hazard Mitigation Planning & Project Management.

14. For Petitioners' Property, the Consultant worked with the consulting engineer, Bobby L. Joyner, P.E. and President of Appian Consulting Engineers, PA, about what mitigation measures were possible for the Property. A copy of Mr. Joyner's resume is attached as an exhibit.

15. The engineer recommended the elevation of the structure an additional 2.8 feet, bringing the bottom of the structure from a first-floor elevation of 16.2 feet NAVD to a minimum post-elevation FFE of 19.0 feet NAVD above the applicable BFE. In order to elevate the structure, the structure would be lifted to the prescribed elevation, and using a retrofit of existing pilings and new replacement pilings, a new base will be built, and then the house will be lowered onto the new piling foundation, and the utilities reconnected. The decks will also be elevated and new stairs will be built. The structure would remain within the existing footprint, and would only be moved vertically, though an additional new deck is also proposed to be added. The development size or

the "total floor area" of the structure, as that term is defined by the Commission at 15A NCAC 7H .0306(a)(4) would not be changed or increased. A copy of the scope of work form is attached as an exhibit.

16. The Consultant bid out the work to elevate Petitioners' property through a competitive, sealed bid process. For Petitioners' Property, the low bid was for $89,740 by Goose Creek Construction. A copy of the Consultant's Final Bid Tabulation Form is attached as an exhibit.

17. Through an affidavit, Ron Akers of Goose Creek Construction states that based on his experience, he would "estimate that the additional turnkey cost to relocate the existing structures versus elevating in place would be approximately $20,000.00 per property." A copy of this affidavit is attached as an exhibit.

18. Through an affidavit, the Community Development Manager and Senior Planner at the Consultant, Mr. Reed Whitesell, AICP, states that the purpose of the proposed mitigation through elevation of the structure in the same footprint is "not intended to provide a substantial improvement or increase in existing property value, although the cost sometimes exceeds 50% of the existing structure value." He also states that based on his expertise and discussions with the Project Engineer and the Contracting Company representatives, it is his understanding that the proposed elevation methodology "is a more cost effective method than moving the structures away from the FLSNV and elevating the structures on new pilings." Finally, he states that based on his review, moving the structure back on the lot to meet the CAMA setback "might lead to violation of the Town of the Topsail Beach's zoning requirements, and would significantly limit the owners' ability to construct additional (non-substantial) improvements to decking and accesses in the future." A copy of his affidavit is attached.

19. The work proposed by Petitioners falls within the definition of "development" as defined by NCGS § 113A-103(5)a as it includes the "driving of pilings."

20. The CAMA statute deems activities including "maintenance or repairs (excluding replacement) necessary to repair damage to structure caused by the elements. . ." as not "development" pursuant to NCGS § 113A-103(5)b.(5). The Commission's rules in 15A NCAC 7J .0210 distinguish between repair and replacement, and for non-water dependent structures, define replacement as when the cost of the proposed work "exceeds 50 percent of the market value of an existing structure immediately prior to the time of damage or the time of the request. Following this definition, "repair" is necessarily work which is 50% or less of the market value before damage/time of request. The Commission's rule goes on to note that "market value of the structure does not include the value of the land, value resulting from the location of the property, value of accessory structures, or value of other improvements located on the property." 7J .0210(a)

21. In this case, the cost of the work proposed is $89,740, which was the low bid by Goose Creek and the currently-listed tax value of the structure was $67,528, so the cost of the work

proposed clearly "exceeds 50 percent of the market value" of the structure, and is "development" which is "replacement."

22. Federal FEMA regulations, found at 44 CFR 59.1 define "substantial improvement" 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 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 project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specification which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions . . .

In the September 2015 FEMA Hazard Mitigation Assistance Program Digest, it states that "the costs to elevate or floodproof a damaged structure or facility are not included in determining whether the substantial improvement threshold is triggered. See 44 C.F.R. 9.11(d), Minimization Standards." In contrast, the Commission's "50% rule" includes the cost of labor and materials, and states that

the cost to do the work is the cost to return the structure to its pre-damaged condition, using labor and materials obtained at market prices, regardless of the actual cost incurred by the owner to restore the structure. It shall include the costs of construction necessary to comply with local and state building codes and any improvements that the owner chooses to construct.

15A NCAC 7J .0210(b).

23. Pursuant to NCGS § 113A-118, the proposed "development" takes place in an AEC, and so requires authorization through the issuance of a CAMA permit.

24. On October 25, 2016, Mr. Jason Dail of DCM, Mr. Bartlett, Mr. Whitesell, and Mr. Miller of the Consultant, Mr. Joyner the Engineer, and Michael Rose, Town Manager of Topsail Beach met on site to discuss the project.

25. Also on October 25, 2016, Mr. Dail flagged the first line of stable and natural vegetation present on the Property. This line was surveyed and is indicated on the site plan (incorrectly labeled) as "staked static vegetation line", a copy of which is attached as a stipulated exhibit.

26. On December 5, 2016, the Pender County Board of Commissioners approved a Resolution to approve elevation contract awards for structures included in the FY14 FMA Grant project, including the bid from Goose Creek Construction for Petitioners' Property. A copy of this resolution is attached as an exhibit.

27. On or about November 30, 2016, Petitioners, through their agent Kyle Breuer, the Pender County Planning Director, submitted an application for a CAMA Minor Permit, a copy of which is attached.

28. As part of the CAMA Minor Permit Process, notice of the proposed development was sent to both adjacent riparian owners, the Ennises and Walls. Additionally, notice of the project was posted on site. DCM Received no objections regarding this project. The Ennises are seeking a similar variance from this Commission, and are using the same consultants and agents.

29. On December 18, 2016, DCM denied Petitioners' CAMA Minor Permit application for the elevation of the structure, finding that the proposed work was development within an AEC, but it did not meet the applicable 60' ocean erosion setback landward of the applicable measurement line. Additionally, the proposed work was "replacement" and not "repair" less than 50% of the as described by NCGS § 113A-103(5)b.(5) and 15A NCAC 7J .0210. A copy of the denial letter is attached as an exhibit.

30. Based on the October 25, 2016 location of the FLSNV as staked by Mr. Dail and surveyed by and shown on the Progressive Land Survey, the applicable 60-foot ocean erosion setback line passes through the landward quarter of the house. The distance from the 60-foot setback to the rear property line is approximately 60 feet. The depth of the house (32'), covered back porch (8') and covered oceanfront deck (6') is approximately 46 feet in depth, and so if the house (and porch and deck) were moved landward to meet the setback, there would be approximately 14 feet between the rear of the house and the landward lot line (60' from setback to rear lot line – 46' of house/porch/deck = 14'). In addition, the Town has a street-side setback of 7.5. Petitioners have also proposed the addition of an 8' deep by 36' long uncovered deck (288 sq. ft.).

31. On December 28, 2016, Petitioners filed this variance request, a copy of which is attached, seeking a variance from the applicable 60-foot ocean erosion setback in order to undertake the work as proposed in order to elevate the structure within the existing footprint.

32. On January 16, 2017, Petitioners provided notice of this variance request to the adjacent riparian neighbors. If any comments are received by DCM before the variance hearing, DCM will provide a copy of the comments to the Commission as part of the stipulated facts.

33. Petitioners stipulate that their proposed development is contrary to 15A NCAC 7H .0305 and .3036 which set the ocean erosion setback line, and that their proposed development is not "repair" and is "replacement" as those terms are defined by NCGS § 113A-103(5)b.(5) and 15A NCAC 7J .0210

Stipulated Exhibits:

A. Deed 4617/1348
B. Riggs Survey of Thexton
C. Pender Co. Tax Card for the Property
D. Thexton Property septic permit and inspection documents
E. FEMA repetitive loss statement for Thexton Property
G. Scope of Work with Consultant
H. Whitesell Resume
I. Whitesell Affidavit
J. Bartlett Resume
K. Engineer Joyner Resume
L. Engineer Company Description
M. Scope of Work by Joyner
N. Low Bid Summary- Goose Creek
O. 12/5 Pender Resolution on Goose Creek
P. Ayers of Goose Creek Affidavit
Q. 2015 FEMA Hazard Mitigation Assistance Guidance excerpt and FEMA Unit 8 excerpt
R. CAMA Minor Permit Application for Thexton, including site surveys, notice, ocean hazard notice form
S. CAMA Minor Permit Denial Letter
T. Powerpoint of site photos

PETITIONERS' and STAFFS' POSITIONS **ATTACHMENT C**

I. Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? If so, the petitioner must identify the hardships.

Petitioner's Position: Yes.

The NFIP-insured property has been affected by enough flooding events to have it considered a Severe Repetitive Loss Property by FEMA. The petitioner has the opportunity to mitigate the structure through grant funding which will bring the structure into compliance with the current floodplain regulations. Funding under these projects reduces overall risk to the population and structures while also reducing reliance on limited funds that may not be available after a disaster.

Staff's Position: No.

In this difficult situation, upon review of the stipulated facts and Petitioners' argument, on balance, Staff disagrees that the Petitioners will suffer an unnecessary hardship from strict application of the Commission's oceanfront setback rules. While the narrow scope of the FEMA mitigation plan may help to mitigate flood damage, it fails to address the effects of wind and waves on the Property which are also stated concerns of the Commission through its Ocean Hazard Rules and its Shoreline Erosion Policy Rules.

As the Commission's rules note, the area along the Atlantic Ocean shoreline is a natural hazard area where, "because of their special vulnerability to erosion or other adverse effects of sand, wind, and water, uncontrolled or incompatible development could unreasonably endanger life or property. Ocean hazard areas include beaches, frontal dunes, inlet lands, and other areas in which geologic, vegetative and soil conditions indicate a substantial possibility of excessive erosion or flood damage." 15A NCAC 07H .0301 The Commission's rules further note the significance of Ocean Hazard Areas in that "The primary causes of the hazards peculiar to the Atlantic shoreline are the constant forces exerted by waves, winds, and currents upon the unstable sands that form the shore. During storms, these forces are intensified and can cause significant changes in the bordering landforms and to structures located on them." 15A NCAC 07H .0302.

As noted in these rules, the danger to structures along the Atlantic Ocean shoreline is not only from flooding, but from wind, waves and currents as well. Petitioners' house has experienced repetitive damage from flooding resulting flooding claims, though none has been "substantial damage" as defined by FEMA, so the house has been repaired and not relocated or replaced. Earlier repairs have been less than 50% of the structure's pre-storm value, and so have qualified as "repair" and thus not "development" under CRC rules and so no permit was needed and the oceanfront setback didn't come into play. While from a FEMA perspective, elevating the house within the existing footprint in an attempt to mitigate future flood claims may make sense, even when the cost to elevate the structure exceeds the tax value of the structure itself the overall risk to the structure from erosion is not being addressed. Based on this, Staff questions Petitioners' statement that this mitigation "reduces overall risk to the population and structures while also reducing

reliance on limited funds that may not be available after a disaster." How much risk to structures does this actually reduce when the structure is already within the oceanfront erosion setback and without further nourishment, might eventually be on the dry-sand beach? How much benefit comes from spending $89,740 to protect a home built in 1968 which is valued at $67,528, simply by elevating it? These are difficult calculations to make, and Staff has significant concerns that spending money to mitigate only for flood damage misses other noted and significant hazards.

Staff note that this mitigation approach only deals with one of the hazards noted above. If the elevation takes place, the structure will have higher, newer pilings. While this higher and stronger foundation may be able to keep the structure above floodwaters, it does not address the possibly of continued erosion of the vegetation line leading to the house becoming located on the public dry-sand beach. This result is noted in the Commission's Shoreline Erosion policies, specifically, at 15A NCAC 07M.0202(a), which requires that erosion responses do not interfere with the public's use of the dry-sand beach. The policy directs that

> The public right to use and enjoy the ocean beaches must be protected. The protected uses include traditional recreational uses (such as walking, swimming, surf-fishing, and sunbathing) as well as commercial fishing and emergency access for beach rescue services. Private property rights to oceanfront properties including the right to protect that property in ways that are consistent with public rights should be protected. (b) Erosion response measures designed to minimize the loss of private and public resources to erosion should be economically, socially, and environmentally justified. Preferred response measures for shoreline erosion shall include but not be limited to AEC rules, land use planning and land classification, establishment of building setback lines, building relocation, subdivision regulations and management of vegetation.

15A NCAC 07M .0202(a).

Finally, it is important to note that even if Topsail Beach had a static line exception, which it does not because it does not have a long-term nourishment program, it wouldn't change the result in this case because the FLSNV on the site is landward of the static line.

In this case, the strict application of oceanfront setbacks should be supported by the Commission, where "replacement" is proposed which does not meet the setback.

II. Do such hardships result from conditions peculiar to the Petitioner's property, such as location, size, or topography of the property? Explain.

Petitioner's Position: Yes.

The existing house (built in the 1960's) is located on a lot that is susceptible to severe ocean flooding during storm events. Although the Town of Topsail has a very successful beach renourishment program in this area, the structure on property is still vulnerable unless mitigation measures can be taken to protect it.

Staff's Position: No.

Staff doesn't believe any hardships alleged by Petitioner result from conditions peculiar to the property, such as location, size or topography. First, Staff believe Petitioners overstate when they describe the Town's "very successful beach renourishment program in this area." Other than occasional small-scale navigation dredging nourishment projects near New Topsail Inlet, there has only been one, town-funded large-scale nourishment project in 2010. While a federal Storm Damage Reduction Project was authorized and the FEIS was released in 1989, the project has not been funded. In addition, the FLSNV is further landward than the static line (which is the FLSNV location in 2010 before the large-scale project was undertaken), so despite large-scale nourishment seven years ago, the vegetation has continued to retreat.

The Property is otherwise a typical oceanfront lot on Topsail Beach, as seen on photographs of the Property and the larger vicinity. Like most oceanfront lots, without long-term nourishment projects and even some with such projects, Petitioners' lot is subject to ocean flooding. As Petitioners' lot is a typical oceanfront lot, Staff believe it has no peculiar conditions which cause any hardship.

III. Do the hardships result from the actions taken by the Petitioner? Explain.

Petitioner's Position: No.

The home's location and existing elevation have created the hardship resulting in repeated flood damage to real and personal property.

Staff's Position: Yes.

When Petitioners just purchased this non-conforming property in 2016, they decided to voluntarily participate in this flooding hazard mitigation/elevation program. As the goal of this program is to mitigate future flood-related damage by elevation of the home, the consulting engineer chose to elevate the house within the existing footprint and utilize some of the existing piles. Based on an affidavit of the contractor Ron Akers of Goose Creek Construction, it would cost Petitioners an additional $20,000 out-of-pocket to relocate the house further landward on the lot, in addition to the FEMA funded $89,740cost to simply elevate the house. While there is room on the lot to meet the setback without a variance, it would admittedly leave less room for a rear porch and parking, and may interfere with the existing placement of the septic system, though the house could be moved back on the lot a distance less than the setback and still meet local setbacks and have room for septic. The Petitioners however, have not pursued relocating the structure further landward on the lot, citing financial and geographic constraints. Staff does not agree that any hardships do not result from actions taken by the Petitioners.

IV. Will the variance requested by the petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Petitioner's Position: Yes.

The variance will allow the petitioner to properly mitigate probable subsequent repetitive flood damage to the existing structure. The proposed work does not involve the expansion or upgrades to the existing footprint. Elevation of the structure to the current standards will protect property and residents. The preferred elevation method will actually reduce damage to the dunes and associated vegetation that would certainly occur if the house was moved closer to Ocean Boulevard. In addition, the current and any future owners will be required to maintain flood insurance in perpetuity.

Staff's Position: No.

Staff believes that, on balance, the variance requested by Petitioner is inconsistent with the spirit, purpose, and intent of the Commission's ocean erosion setback rules and its shoreline erosion policies, because while the elevation may mitigate flooding damage in the future, staying within the same footprint and not moving the house landward fails to address the other ocean hazards associated with the Atlantic Ocean shoreline and noted in the Commission's rules, as described in section I, above.

The variance may help to secure public safety and welfare by elevating the home within the footprint, hopefully above any future flooding events, but may harm public safety and welfare at the same time by reinforcing the current piling foundation and increasing the likelihood that the house will remain standing on the dry-sand public beach after the vegetation line continues to erode landward unless nourishment steps are taken by Topsail Beach.

The variance does not preserve substantial justice where it would encourage the use of significant FEMA mitigation dollars to elevate a non-conforming structure already located near the ocean hazards of the Atlantic Ocean shoreline but without proposing to move it further away from the ocean hazards.

ATTACHMENT D:
PETITIONERS' VARIANCE REQUEST MATERIALS

CAMA VARIANCE REQUEST FORM **DCM FORM 11**

DCM FILE No.: _____

PETITIONER'S NAME Andrew & Deborah Thexton

COUNTY WHERE THE DEVELOPMENT IS PROPOSED Pender County

Pursuant to N.C.G.S. § 113A-120.1 and 15A N.C.A.C. 07J .0700 *et seq.*, the above named Petitioner hereby applies to the Coastal Resources Commission (CRC) for a variance.

VARIANCE HEARING PROCEDURES

A variance petition will be considered by the CRC at a regularly scheduled meeting, heard in chronological order based upon the date of receipt of a complete petition. 15A N.C.A.C. 07J .0701(e). A complete variance petition, as described below, must be *received* by the Division of Coastal Management (DCM) a minimum of six (6) weeks in advance of the first day of a regularly scheduled CRC meeting to be eligible for consideration by the CRC at that meeting. 15A N.C.A.C. 07J .0701(e). The final set of stipulated facts must be agreed to at least four (4) weeks prior to the first day of a regularly scheduled meeting. 15A N.C.A.C. 07J .0701(e). The dates of CRC meetings can be found at DCM's website: **www.nccoastalmanagement.net**

If there are controverted facts that are significant in determining the propriety of a variance, or if the Commission determines that more facts are necessary, the facts will be determined in an administrative hearing. 15A N.C.A.C. 07J .0701(b).

VARIANCE CRITERIA

The petitioner has the burden of convincing the CRC that it meets the following criteria:

(a) Will strict application of the applicable development rules, standards, or orders issued by the Commission cause the petitioner unnecessary hardships? Explain the hardships.

(b) Do such hardships result from conditions peculiar to the petitioner's property such as the location, size, or topography of the property? Explain.

(c) Do the hardships result from actions taken by the petitioner? Explain.

(d) Will the variance requested by the petitioner (1) be consistent with the spirit, purpose, and intent of the rules, standards or orders issued by the Commission; (2) secure the public safety and welfare; and (3) preserve substantial justice? Explain.

Please make your written arguments that Petitioner meets these criteria on a separate piece of paper. *The Commission notes that there are some opinions of the State Bar which indicate that non-attorneys may not represent others at quasi-judicial proceedings such as a variance hearing before the*

Commission. These opinions note that the practice of professionals, such as engineers, surveyors or contractors, representing others in quasi-judicial proceedings through written or oral argument, may be considered the practice of law. Before you proceed with this variance request, you may wish to seek the advice of counsel before having a non-lawyer represent your interests through preparation of this Petition.

For this variance request to be complete, the petitioner must provide the information listed below. The undersigned petitioner verifies that this variance request is complete and includes:

✓ The name and location of the development as identified on the permit application;

✓ A copy of the permit decision for the development in question;

✓ A copy of the deed to the property on which the proposed development would be located;

✓ A complete description of the proposed development including a site plan;

✓ A stipulation that the proposed development is inconsistent with the rule at issue;

✓ Proof that notice was sent to adjacent owners and objectors, as required by 15A N.C.A.C. 07J .0701(c)(7);

N/A Proof that a variance was sought from the local government per 15A N.C.A.C. 07J .0701(a), if applicable;

✓ Petitioner's written reasons and arguments about why the Petitioner meets the four variance criteria, listed above;

✓ A draft set of proposed stipulated facts and stipulated exhibits. Please make these verifiable facts free from argument. Arguments or characterizations about the facts should be included in the written responses to the four variance criteria instead of being included in the facts.

✓ This form completed, dated, and signed by the Petitioner or Petitioner's Attorney.

Due to the above information and pursuant to statute, the undersigned hereby requests a variance.

✓ A Thexton Signature of Petitioner or Attorney	✓ 12/28/16 Date
ANDREW THEXTON Printed Name of Petitioner or Attorney	athexton@MudSprings.com Email address of Petitioner or Attorney
12766 River Rd Mailing Address	(804) 338-2569 Telephone Number of Petitioner or Attorney
Richmond VA 23238 City State Zip	( ) Fax Number of Petitioner or Attorney

DELIVERY OF THIS HEARING REQUEST

This variance petition must be **received by** the Division of Coastal Management at least six (6) weeks before the first day of the regularly scheduled Commission meeting at which it is heard. A copy of this request must also be sent to the Attorney General's Office, Environmental Division. 15A N.C.A.C. 07J .0701(e).

Contact Information for DCM:

By mail, express mail or hand delivery:
Director
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

By Fax:
(252) 247-3330

By Email:
Check DCM website for the email address of the current DCM Director
www.nccoastalmanagement.net

Contact Information for Attorney General's Office:

By mail:
Environmental Division
9001 Mail Service Center
Raleigh, NC 27699-9001

By express mail:
Environmental Division
114 W. Edenton Street
Raleigh, NC 27603

By Fax:
(919) 716-6767

Revised: February 2011

Petitioner: Andrew & Deborah Thexton

Variance Criteria:

1) **Will strict application of the applicable development rules, standards or orders issued by the Commission cause the petitioner unnecessary hardships? Explain the hardships.**

Yes; *The NFIP-insured property has been affected by enough flooding events to have it considered a Severe Repetitive Loss Property by FEMA. The petitioner has the opportunity to mitigate the structure through grant funding which will bring the structure into compliance with the current floodplain regulations. Funding under these projects reduces overall risk to the population and structures while also reducing reliance on limited funds that may be available after a disaster.*

2) **Do such hardships result from conditions peculiar to the petitioner's property such as the location, size or topography of the property? Explain.**

Yes; *The existing house (built in the 1960's) is located on a lot that is susceptible to severe ocean flooding during storm events. Although the Town of Topsail Beach has a very successful beach renourishment program in this area, the structure on property is still vulnerable unless mitigation measures can be taken to protect it.*

3) **Do the hardships result from actions taken by the petitioner?**

No; *The home's location and existing elevation have created the hardship resulting in repeated flood damage to real and personal property.*

4) **Will the variance requested by the petitioner (1) be consistent with the spirit, purpose and intent of the rules, standards or orders issued by the Commission (2)secure the public safety and welfare, and (3) preserve substantial justice? Explain.**

Yes; *The variance will allow the petitioner to properly mitigate probable subsequent repetitive flood damage to the existing structure. The proposed work does not involve the expansion or upgrades to the existing footprint. Elevation of the structure to the current standards will protect property and residents. The preferred elevation method will actually reduce damage to the dunes and associated vegetation that would certainly occur if the house was moved closer to Ocean Boulevard. In addition, the current and any future owners will be required to maintain flood insurance in perpetuity.*

NOTICE OF VARIANCE PETITION
BY ADJACENT PROPERTY OWNER

January 16, 2017

Wendell Wall
1613 Jamaica Drive
Key West, FL 33040

Dear Adjacent Property:

As you have been previously notified, Andrew & Deborah Thexton at 1117 Ocean Blvd, Topsail Beach, NC are proposing to elevate their existing home through a county flood mitigation program in order to bring it into compliance with current floodplain regulations.

This letter is to inform you that the owners have now applied for a variance to the 60' CAMA ocean hazard setback rule in order to elevate their existing structure in place.

The variance petition will be addressed at the next scheduled meeting of the Coastal Resources Commission (CRC) scheduled for Feb 7-8, 2017 at the Hilton Doubletree in Atlantic Beach, NC.

No action is required from you. If you have questions or comments about the proposed project, please contact Kyle Breuer, Pender County Planning Director at 910-259-1202. If you wish to file written comments or objections with the variance petition, you may submit them to:

Jason Dail, DCM Field Representative
LPO, Town of Topsail Beach
NC DEQ/DCM
127 Cardinal Drive Ext.
Wilmington, NC 28405

Property Owner:

Andrew & Deborah Thexton
12766 River Road
Richmond, VA 23238

U.S. Postal Service
Certified Mail Receipt

ARTICLE NUMBER
9414 8118 9956 4993 7277 07

ARTICLE ADDRESS TO:
Wendall Wall
1613 Jamaica Dr
Key West FL 33040-5230

FEES

Postage per piece	$1.81½
Certified Fee	3.30
Total Postage & Fees:	**$5.11½**

Postmark Here

ATTACHMENT E:
STIPULATED EXHIBITS INCLUDING POWERPOINT

#1117 Ocean Blvd

BK 4617 PG 1348 - 1354 (7) DOC# 20008887
This Document eRecorded: 04/01/2016 10:55:20 AM
Fee: $26.00 DocType: DEED Tax: $992.00
Pender County, North Carolina
Sharon Lear Willoughby, Register of Deeds

025

NORTH CAROLINA GENERAL WARRANTY DEED

Excise Tax: $992.00
Parcel I. D. No. 4212-14-8718-0000

Brief Description for the Index: Lot 9 and northeast 1/2 of Lot 10, Block 22, New Topsail Beach

Prepared by: Dan Rizzo, Attorney, PO Box 2676, Surf City, NC 28445
Mail/Hold after recording to: Dan Rizzo, Attorney, P.O. Box 2676, Surf City, NC 28445

THIS DEED, made this 15th day of March 2016, by and between **ELIZABETH KIRKLAND PETERS and husband, HYMAN WALSTON PETERS AND ROBERT EDWARD KIRKLAND, III and wife, TERESA JONES KIRKLAND AND LELA LEE KIRKLAND KING and husband, DAVID R. KING** GRANTORS; and **ANDREW S. THEXTON and wife, DEBORAH L. THEXTON** GRANTEE; having an address of: 12766 River Road, Richmond, VA 23238

[The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.]

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in city of Topsail Beach, Topsail Township, Pender County, North Carolina, and more particularly described as follows:

Lot 9 and the northeastern one-half (1/2) of Lot 10 in Block 22 of a subdivision known as New Topsail Beach, North Carolina, shown on a map prepared by J.T. Wells, Surveyor, and recorded in Map Book 3, Page 72 of the Registry of Pender County; for reference see deeds recorded in Book 683, Page 133 and Book 684, Page 148, Pender County Registry.

The property hereinabove described was acquired by Grantor by instrument recorded in Book 1709, Page 237, Pender County Registry, North Carolina.

All or a portion of the property herein conveyed ____ includes or X does not include the primary residence of a Grantor.

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever, other than the following exceptions:

Easements and Restrictions of record.

2016 ad valorem taxes.

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

Elizabeth Kirkland Peters (SEAL)
ELIZABETH KIRKLAND PETERS

_____ (SEAL)
HYMAN WALSTON PETERS

_____ (SEAL)
ROBERT EDWARD KIRKLAND, III

_____ (SEAL)
TERESA JONES KIRKLAND

_____ (SEAL)
LELA LEE KIRKLAND KING

_____ (SEAL)
DAVID R. KING

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever, other than the following exceptions:

Easements and Restrictions of record.

2016 ad valorem taxes.

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

_____(SEAL)
ELIZABETH KIRKLAND PETERS

_____(SEAL)
HYMAN WALSTON PETERS

Robert Edward Kirkland III (SEAL)
ROBERT EDWARD KIRKLAND, III

Teresa Jones Kirkland (SEAL)
TERESA JONES KIRKLAND

_____(SEAL)
LELA LEE KIRKLAND KING

_____(SEAL)
DAVID R. KING

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever, other than the following exceptions:

Easements and Restrictions of record.

2016 ad valorem taxes.

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

_____(SEAL)
ELIZABETH KIRKLAND PETERS

_____(SEAL)
HYMAN WALSTON PETERS

_____(SEAL)
ROBERT EDWARD KIRKLAND, III

_____(SEAL)
TERESA JONES KIRKLAND

_____(SEAL)
LELA LEE KIRKLAND KING

_____(SEAL)
DAVID R. KING

State of North Carolina

County of Wilson

I, the undersigned a Notary Public of the County and State aforesaid, certify that **ELIZABETH KIRKLAND PETERS and husband, HYMAN WALSTON PETERS** personally came before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein contained. Witness my hand and notarial stamp or seal this 17 day of March, 2016.

My Commission Expires: 4-29-17

Tracy Wood
Notary Public

TRACY WOOD
Notary Public
Nash Co., North Carolina
My Commission Expires April 29, 2017

State of _____

County of _____

I, the undersigned a Notary Public of the County and State aforesaid, certify that **ROBERT EDWARD KIRKLAND, III and wife, TERESA JONES KIRKLAND** personally came before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein contained. Witness my hand and notarial stamp or seal this _____ day of March, 2016.

My Commission Expires: _____

_____
Notary Public

State of _____

County of _____

I, the undersigned a Notary Public of the County and State aforesaid, certify that **LELA LEE KIRKLAND KING and husband, DAVID R. KING** personally came before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein contained. Witness my hand and notarial stamp or seal this _____ day of March, 2016.

My Commission Expires: _____

_____
Notary Public

State of _____

County of _____

I, the undersigned a Notary Public of the County and State aforesaid, certify that **ELIZABETH KIRKLAND PETERS and husband, HYMAN WALSTON PETERS** personally came before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein contained. Witness my hand and notarial stamp or seal this _____ day of March, 2016.

My Commission Expires:_____ _____
Notary Public

State of North Carolina

County of Wilson

I, the undersigned a Notary Public of the County and State aforesaid, certify that **ROBERT EDWARD KIRKLAND, III and wife, TERESA JONES KIRKLAND** personally came before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein contained. Witness my hand and notarial stamp or seal this 17 day of March, 2016.

My Commission Expires: 2/5/18 Lana L. Ladford
Notary Public

State of _____

County of _____

I, the undersigned a Notary Public of the County and State aforesaid, certify that **LELA LEE KIRKLAND KING and husband, DAVID R. KING** personally came before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein contained. Witness my hand and notarial stamp or seal this _____ day of March, 2016.

My Commission Expires:_____ _____
Notary Public

State of _____

County of _____

I, the undersigned a Notary Public of the County and State aforesaid, certify that **ELIZABETH KIRKLAND PETERS and husband, HYMAN WALSTON PETERS** personally came before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein contained. Witness my hand and notarial stamp or seal this _____ day of March, 2016.

My Commission Expires:_____ _____
Notary Public

State of _____

County of _____

I, the undersigned a Notary Public of the County and State aforesaid, certify that **ROBERT EDWARD KIRKLAND, III and wife, TERESA JONES KIRKLAND** personally came before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein contained. Witness my hand and notarial stamp or seal this _____ day of March, 2016.

My Commission Expires:_____ _____
Notary Public

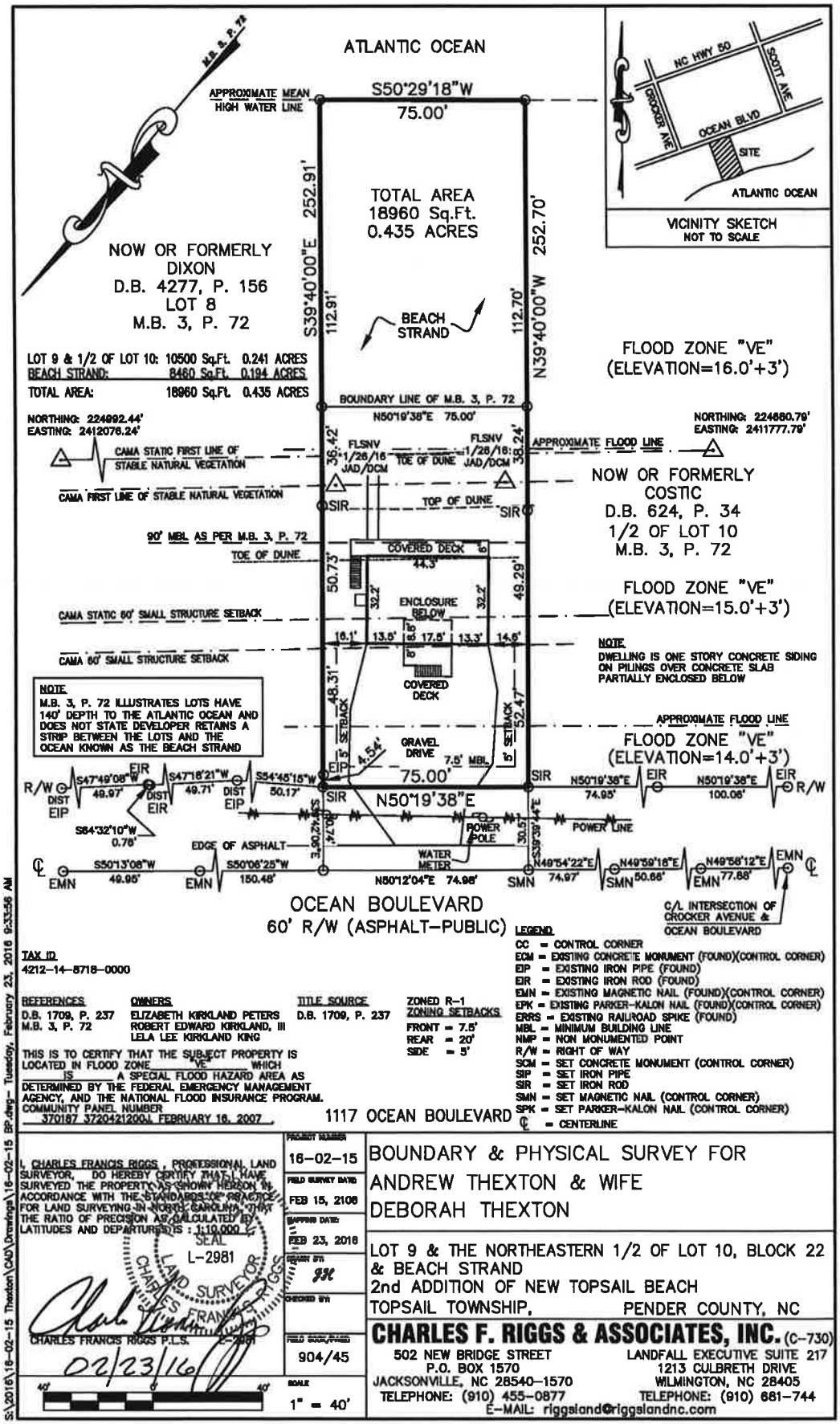
State of North Carolina

County of New Hanover

I, the undersigned a Notary Public of the County and State aforesaid, certify that **LELA LEE KIRKLAND KING and husband, DAVID R. KING** personally came before me this day and acknowledged the due execution of the foregoing instrument for the purposes therein contained. Witness my hand and notarial stamp or seal this 18 day of March, 2016.

My Commission Expires: 01/03/2021 Casey B. Cochran
Notary Public

CASEY B COCHRAN NOTARY PUBLIC PENDER COUNTY, NC



TAX ID
4212-14-8718-0000

REFERENCES
D.B. 1709, P. 237
M.B. 3, P. 72

OWNERS
ELIZABETH KIRKLAND PETERS
ROBERT EDWARD KIRKLAND, III
LELA LEE KIRKLAND KING

TITLE SOURCE
D.B. 1709, P. 237

ZONED R-1
ZONING SETBACKS
FRONT = 7.5'
REAR = 20'
SIDE = 5'

THIS IS TO CERTIFY THAT THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE VE WHICH IS A SPECIAL FLOOD HAZARD AREA AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, AND THE NATIONAL FLOOD INSURANCE PROGRAM.
COMMUNITY PANEL NUMBER
370187 3720421200J FEBRUARY 16, 2007

1117 OCEAN BOULEVARD

I, CHARLES FRANCIS RIGGS, PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I HAVE SURVEYED THE PROPERTY AS SHOWN HEREON IN ACCORDANCE WITH THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA; THAT THE RATIO OF PRECISION AS CALCULATED BY LATITUDES AND DEPARTURES IS 1:10,000 +.

SEAL L-2981

CHARLES FRANCIS RIGGS P.L.S. L-2981

02/23/16

PROJECT NUMBER	16-02-15
FIELD SURVEY DATE	FEB 15, 2108
MAPPING DATE	FEB 23, 2016
DRAWN BY	JH
CHECKED BY	
FIELD BOOK/PAGES	904/45
SCALE	1" = 40'

BOUNDARY & PHYSICAL SURVEY FOR
ANDREW THEXTON & WIFE
DEBORAH THEXTON

LOT 9 & THE NORTHEASTERN 1/2 OF LOT 10, BLOCK 22
& BEACH STRAND
2nd ADDITION OF NEW TOPSAIL BEACH
TOPSAIL TOWNSHIP, PENDER COUNTY, NC

CHARLES F. RIGGS & ASSOCIATES, INC. (C-730)
502 NEW BRIDGE STREET
P.O. BOX 1570
JACKSONVILLE, NC 28540-1570
TELEPHONE: (910) 455-0877
LANDFALL EXECUTIVE SUITE 217
1213 CULBRETH DRIVE
WILMINGTON, NC 28405
TELEPHONE: (910) 681-744
E-MAIL: riggsland@riggslandnc.com

S:\2016\16-02-15 Thexton\CAD\Drawings\16-02-15 BP.dwg- Tuesday, February 23, 2016 9:33:56 AM

033

OWNERSHIP 03312016 695806
PETERS, ELIZABETH KIRKLAND ETA

P O BOX 1207
WILSON, NC 27893
DEED: 1709 237 05182001

PROPERTY DESCRIPTION
L9 & N/E 1/2 L10 NEW TOPSAIL B
PB 3/72, BLK 22

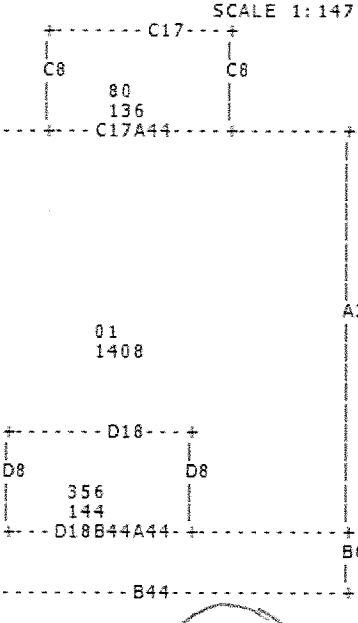
1117 OCEAN BLVD

TAX SUBDIVISIONS
TWP TOPSAIL
TOWN OF TOPSAIL BEAC

PENDER EMS
S64

PIN CARD NO
4212-14-8718-0000
RECORD NUMBER: 06136
ROUTE 61000.0
LISTER: GD 121609 - E
REVIEW: DM 072994

SCALE 1: 147



TOPO	STREET	UTILITY	ZONING
ROLLING	EXCELLEN	ELECTRIC	R-1
		WATER (P	
		SPTCTANK	

NOTES: CRT4187 1/4 TO PETERS, HESMER, L KIRKLAND, R KIRKLAND III

#	LAND CLASS	SIZE	BASERATE*	FRNT*	DPTH*	ADJ=	ADJRATE*	UNITS=	LND-VALUE
1	11LRESD PRI	75F 140D	6000	1.00	0.99		5940	75	445500

LAND VALUE: 445500

#	OTHER FEAT	SIZE	BASERATE*	COND	=ADJRATE*	UNITS=	RCNOB-VAL
1	09CWOOD DEC	5* 24	9.95		9.95	120	1194

OTHER VALUE:

FNDATION	XTRFNISH	ROOFTYPE	ROOFMTRL	SIZE/QTY	
FINISHED	CEMFIBBD	GABLE	COMP SHI		
				1.0 STHT	

WALLFNSH	FLOORS	HEAT&AIR	HEATFUEL		
DRY WALL	CARPET	HEATPUMP	ELECT		
	SHEET VI			3 BDRM	
				5 ROOM	

RCN: 1194
RCNLD: 621
DPRT: C
MAP: 00030072

DWELLING BEACH COTC-10 B1968 E1975 AVERAGE CONDITION ADJ: 0% BLDG DEPR: 0.60 %
DIMENSIONS: A-CU32R44D32L44 B-CD6R44U6L44 C-U32R15CU8R17D8L17 D-R11CU8R18D8L18

#	STRUCTURE	SKTCH-SF*	STHT=	AREA	RATE*	GRDF+	HEAT+	EXWL*	WLHT=	ADJRAT*	AREA=	RPCN*	DEPF*	CNDF=	STR-VALUE
A	01CSINGLE F	1408	1.0	1408	71.03	0.9	5.35			69.28	1408	97546			97546
	2 BATHS			3080								3080			3080
B	80CPORCH	264	0.0	264	21.44	0.95				20.37	264	5378			5378
C	80CPORCH	136	0.0	136	24.23	0.95				23.02	136	3131			3131
D	35CUNFIN PI	144		144	11.00					11.00	144	1584			1584

PRIOR VALUE | 1408HSF, 1952TSF RPCN-78.64/HSF 110719 VALU- 47.18/HSF 66431
LAND 512552 | STRUCTURE VALUE: 66431
BLDG 0 | NBHD-ADJ: 2074 CAVB: 66431 * 1= 66431 TOTAL APPRAISED-VALUE: 512552

1117 Ocean Blvd

PENDER COUNTY HEALTH DEPARTMENT
P.O. Box 1209, Burgaw, NC 28425
Telephone 919/259-1233

Repair

SEPTIC TANK IMPROVEMENTS PERMIT AND CERTIFICATE OF COMPLETION
Article 11 N.C. General Statutes Chapter 130A
and
Pender County Rules and Regulations

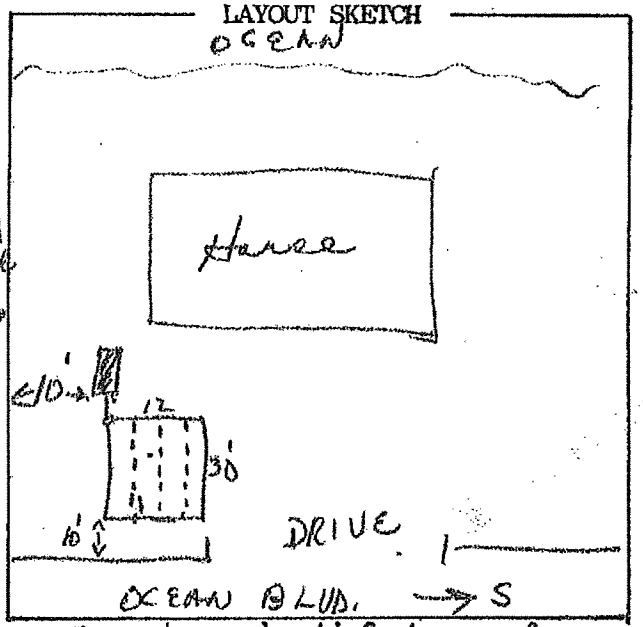
Owner/Agent Janet Heaven Date 20 Jul 1989 Permit# 496233
Address 1905 Sierra Dr., Wilson 27893
Location of Site 1117 Ocean Blvd., Topsail Beach

Subdivision _____ Lot# _____ Section/Block _____
House [X] Mobile Home [ ] (# Bedrm) _____ Business [ ] (# Employees/Members/Seats) _____
SEPTIC TANK SIZE existing Gal. NITRIFICATION FIELD 360 Sq.Ft.
NUMBER OF LINES 3 LENGTH 30 Ft. DEPTH _____ In. BED SYSTEM SIZE 12 X 30'
LOCATION OF SYSTEM: See layout sketch or attached plot plan. NO CHANGE IN SEPTIC TANK SYSTEM OR ITS LOCATION WITHOUT PRIOR APPROVAL FROM PENDER COUNTY HEALTH DEPT.

NOTE: MINIMUM HORIZONTAL SEPARATION OF SEPTIC SYSTEM TO NEAREST: Well: 100 ft., Property Line: 10 ft., Foundation: 5 ft., Ditch or Subsurface Tile: 25 ft. (10 ft if upslope).

SPECIAL INSTRUCTIONS OR REQUIREMENTS:
Install new bed system w/ existing tank. Remove old distribution line. Install new D-box if necessary.

LAYOUT SKETCH



* * * * * * *

This permit does not constitute a warranty or guarantee and satisfactory performance is not assured by the Pender County Health Department.

IMPROVEMENTS PERMIT BY: L. W. Sikes, RS PERMIT VALID 36 MONTHS
CERTIFICATE OF COMPLETION BY: Pamela C. Overstreet DATE: 7-25-89
Installed by: Lo-Kaney

PCHD/EH-3 Rev. 7/88

Repair

IMPROVEMENTS PERMIT APPLICATION

Pender County Health Department
Environmental Health Section, P.O. Box 1209, Burgaw, NC 28425 436233
919/259-1233

Date Received 7/20/89

Owner/Agent Janet Hefmer Phone 328-3007

Address 1905 Sierra Dr. Wilson NC 27893

Directions to property: Right at stop light in Surf City - go past town Hall - Emma Anderson Chapel on Rt. - turn left - to Ocean Blvd - turn Rt. 1117 Ocean Blvd.

Subdivision ______ Lot No. ______ Block/Section ______

Lot Size ______ House [X] Mobile Home [ ] Business [ ] Other [ ] on left on oceanfront

Dwelling - no. of bedrooms 6 ; business/other - no. employees,members,seats ______

Water supply - Individual [X] Public [ ] Loan: FmHA [ ] FHA [ ] VA [ ]

Contractor ______ Address ______

Remarks Need to repair drain lines
tank 20 yrs. old - 1000 gallons

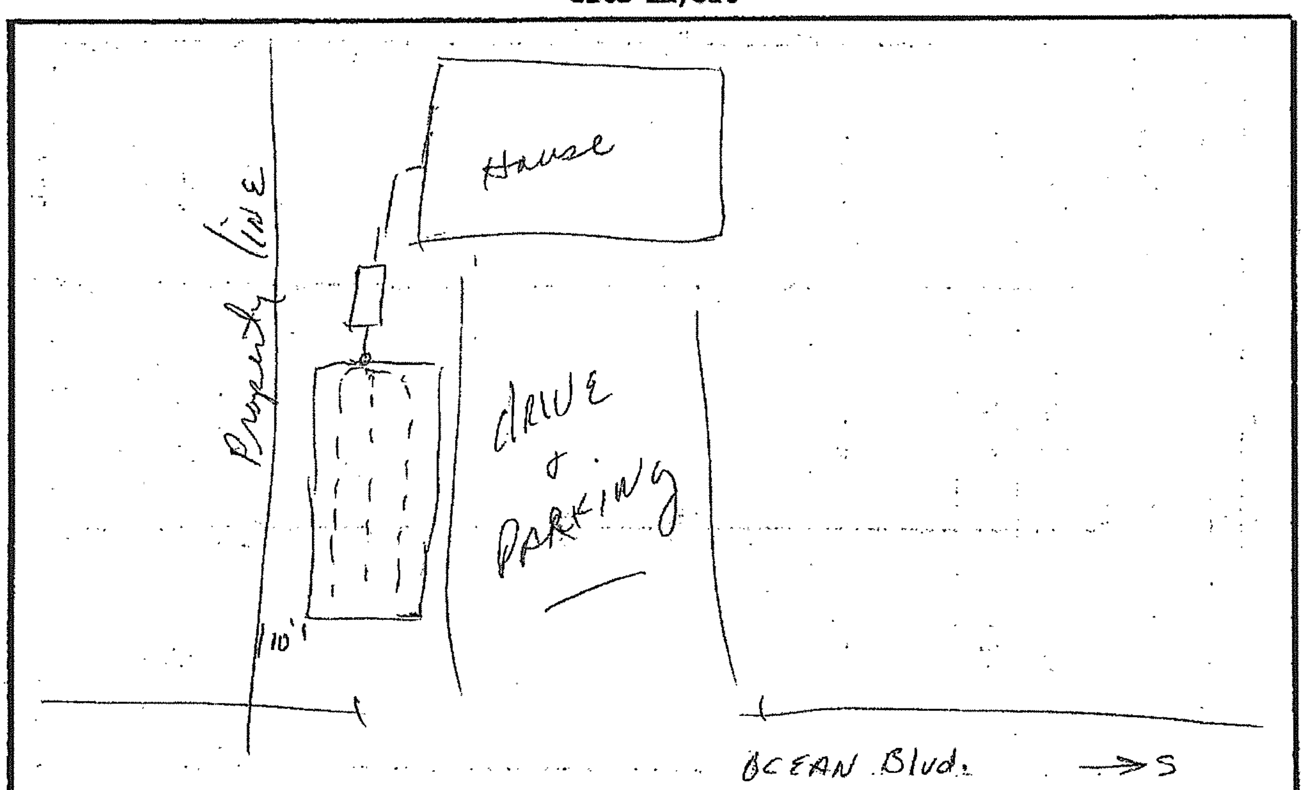
Fees Paid: Evaluation ______ Permit ______ Received by: [illegible]

NOTE: Issuance of an Improvements Permit by this office does not necessarily mean that the structure or use of the septic tank system meets county zoning and land use regulations. Contact the Pender County Zoning Officer or Planning Department if you have questions concerning zoning.

Signature of Applicant: per phone conversation Date 7/20/89

PCHD EH/103 Rev. July 88

* Site Layout *



Charles R. Fisher Construction Inc.

Charles Fisher, Owner
910-262-7861
PO Box 2502, Surf City, NC 28445

ONSITE WASTEWATER INSPECTION REPORT

No representation, warranties or opinions are hereby given, written or expressed otherwise, as to the future performance of onsite wastewater system described herein. This onsite wastewater system inspection is a presentation of system facts in place on date of inspection.

Address of Property 1117 Ocean Blvd Topsail Beach, NC 28445

Current Owner of Record Kirkland

Inspection requested by: ____ Owner of record ✓ Other Name Andrew Thexton

Company (Buyer)

Phone ____

Date of Inspection: 2/15/2016

N/A Copy of Operations Permit from ____ County Environmental Health Attached
✓ Operations permit not available
Type of water supply: ____ Well ✓ Public Water ____ Community Water
Location of Septic Tank and Septic Tank Details:

- 9 ft. from house or structure
- N/A ft. from well if applicable
- 54 ft. from water line if applicable
- 10 ft. from property line
- 12" approximate distance from surface to top of tank
- ____ Access riser(s) ____ yes ✓ no Describe: ____
- ____ Tank lids intact ✓ yes ____ no
- ____ Tank has baffle wall ✓ yes ____ no
- yes Inflow to tank is noted as sufficient
- ____ Inflow to tank is noted as insufficient or blocked
- ____ Outlet has filter ____ yes ✓ no
- ____ Outlet T is present ✓ yes ____ no
- ____ Effluent leaves the outlet ✓ yes ____ no
- ____ Roots present in tank ____ yes ✓ no
- ____ Evidence of infiltration into tank of surface water ____ yes ✓ no
- NO Evidence of tank leakage noted
- N/A Unable to locate tank; System inspection cannot be completed until tank is located.

Date tank was last pumped: Unknown

Percentage of sludge detected in tank 2' %

Client requesting this inspection has been advised that for a complete inspection to be performed the tank needs to be pumped. Client has declined to have the tank pumped at inspection and hereby acknowledges they have so declined.

Client Signature ____ Date ____

Does system have pump tank? ____yes (if yes, complete blanks below) ✓ no

- ____feet from house or structure
- ____feet from well if applicable
- ____feet from water line if applicable
- ____feet from property line
- ____Approximate distance from surface to top of tank
- ____Access risers in place ____yes ____no
- ____feet from septic tank

Location of control panel: ____

- ____Electrical connections are in place and properly grounded
- ____Alarm working
- ____Pump working
- ____Dosing volume correct ____yes ____no
- ____Unable to operate pump due to lack of electricity at site at time of inspection

System requires a subsurface operator ____yes ✓ no

If yes, Operator Name: ____ Phone: ____
Copy of most recent operator report attached

Drainfield: Located 5 feet from property line
2 feet from septic/pump tank
____# of lines located
____length of lines

Type of system: ✓ Conventional __Accepted __Innovative __Experimental __Controlled Demonstration
__Pretreatment; Type of Pretreatment: ____

Brief Description of System Type 12'x20' Conventional Bed w/1000 gal. Tank

NO Evidence of past or current surfacing at time of inspection
Briefly describe: ____

NO Large trees or other vegetation noted over drainfield
yes Evidence of traffic over drainfield
Briefly describe: Parking over System

Other pertinent facts noted during inspection: Recommend pumping Tank + installing new sanitary tee w/ Filter

Inspector Name: Charles R. Fisher Certification #: 1983 I.
Address: P.O. Box 2502 Surf City, NC 28445
Phone: 910-262-7861
Inspector Signature: Charles R. Fisher Date: 2/15/2016

Charles Fisher
P.O. Box 2502
Surf City, NC 28445

Contractors Invoice

WORK PERFORMED AT:
1117 Ocean Blvd
Topsail Beach, NC.

TO:
Andrew Thexton

DATE	YOUR WORK ORDER NO.	OUR BID NO.
2/15/2016		

DESCRIPTION OF WORK PERFORMED

Septic System

Septic System Inspection	325.00
Backhoe	150.00
Total	$ 475.00

Thank you!
Charles

Note: Report Attached

All Material is guaranteed to be as specified, and the above work was performed in accordance with the drawings and specifications provided for the above work and was completed in a substantial workmanlike manner for the agreed sum of _____ Dollars ($_____).

This is a ☐Partial ☐Full invoice due and payable by: _____ (Month) _____ (Day) _____ (Year)

in accordance with our ☐Agreement ☐Proposal No. _____ Dated _____ (Month) _____ (Day) _____ (Year)

adams TC8122 11-12

NATIONAL FLOOD INSURANCE PROGRAM PROPERTY LOSS HISTORY

01-125624
CURRENT COMPANY/POLICY NUMBER: NFIP SERVICING AGENT/RL00004846
CURRENT PROPERTY ADDRESS:
BLK 22 E S OCEAN BLVD
NEW TOPSAIL BCH, NC 28445-0000

THE INFORMATION PROVIDED BELOW IS THE FLOOD INSURANCE LOSS PAYMENT HISTORY FOR CLAIMS PAID BY THE NATIONAL FLOOD INSURANCE PROGRAM SINCE 1978 FOR THE ABOVE PROPERTY ADDRESS. IF YOU HAVE ANY QUESTIONS ABOUT THIS INFORMATION PLEASE CONTACT THE NFIP AT 866-395-7496.

DATE OF LOSS	BUILDING PAYMENTS	CONTENTS PAYMENTS	TOTAL PAYMENTS
09/16/1999	31556.77	435.48	31992.25
08/27/1998	11484.13	.00	11484.13
09/06/1996	67543.76	8276.55	75820.31
07/12/1996	31462.05	2799.57	34261.62

Loss Payments –
1117 Ocean Blvd

Kirkland

FMA Administration Contract

W/M file

Work Authorization #1 (November 20, 2015 through March 31, 2016)
Contract for Consultant Services
Holland Consulting Planners, Inc. and Pender County
FY14 Flood Mitigation Assistance Project, HCP #5627

Background

WHEREAS, Pender County (the County) has received funding for an FY14 Flood Mitigation Assistance (FMA) Elevation and Acquisition Project, and wishes to continue with the initial (preconstruction) phase of the project, including homeowner meetings, surveying, appraisals, and engineering.

General Conditions

During completion of the work defined in this Work Authorization, Pender County (the County) and Holland Consulting Planners (the Consultant), agree to abide by all of the terms and conditions outlined in the Contract for Consultant Services for administration of the Pender County FY14-15 Flood Mitigation Assistance Project dated December 14, 2015.

Tasks Approved By This Work Authorization

General Administration and Contract Administration Tasks

- Coordinate homeowner informational process; document citizen concerns and questions; maintain homeowner database.
- Maintain case files.
- Meet with governing body as requested.
- Coordinate project activities with local staff (including financial management).
- Coordinate project activities with designated state agencies; resolve program support and code violation issues.
- Prepare applications for additional Hazard Mitigation and Disaster funds.
- Procurement of Professional Services (Legal/Appraisal/Engineering/Surveying Asbestos Inspections.)

Programmatic Tasks

- Prepare and distribute project information package to eleven (11) acquisition and elevation applicants
- Prepare a general description of scope of work for elevation/retrofitting and acquisition.
- Hold owners' information meetings and obtain preliminary grant agreements from owners.
- Prepare Administrative Guidelines and administrative forms.
- Prepare financial management guidelines and program budget.
- Initiate surveys and structural feasibility inspections for six (6) units included in the FY14 FMA Elevation Project.
- Initiate legal/appraisal/surveying work for five (5) units included in the FY14 FMA Acquisition Project

Fee

For completion of the work items described above, the County agrees to pay the Consultant a not-to-exceed fee of $30,000. Payment terms, including terms for payment of additional services, shall be in accordance with the Contract for Consultant Services dated December 14, 2015. Hourly rates for the Consultant's personnel are agreed to as follows:

Staff Position	Hourly Rate
Holland Consulting Planners, Inc.	
J. Reed Whitesell, AICP, Project Manager	$130.00
Chip Bartlett, Program Administrator	$90.00
Chris Hilbert, Program Manager	$90.00
Gary Miller, Inspector	$75.00
Administrative Services	$60.00

Time Schedule
The tasks approved by this Work Authorization shall be completed by March 31, 2016.

The County and the Consultant hereby agree to the full performance of the covenants contained herein.

IN WITNESS HEREOF, they have executed this authorization, this day and year first above written.

HOLLAND CONSULTING PLANNERS, INC.

T. Dale Holland, President

Witness

(SEAL)

PENDER COUNTY, NC

2/2/2016

Kyle M. Breuer, FMA Designated Agent

Clerk to the Board

This authorization has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

Finance Officer

2-3-2016

Date

J. REED WHITESELL, AICP
Community Development Manager/Senior Planner

PROFESSIONAL AFFILIATIONS:
American Institute of Certified Planners (AICP)
American Planning Association (APA)

EDUCATIONAL BACKGROUND:
Carleton College, B.A. English, 1975

RELEVANT PROJECT EXPERIENCE:

Beaufort County, North Carolina
FY99 NCHFA SFR-Disaster Program
Hurricane Floyd Repair and Replacement Program
FY13 Flood Mitigation Assistance Program
FY13 Flood Mitigation Assistance Program

Town of Bladenboro, North Carolina
FY99 NCHFA SFR-Disaster Program
FY04 NCHFA Urgent Repair Program

Brunswick County, North Carolina
FY99 NCHFA SFR-Disaster Project
Hurricane Floyd Repair and Replacement Program
FY08 NCHFA-SFR Program
FY11 NCHFA-SFR Program Housing Inspection
FY14 NCHFA-SFR Program

Camden County, North Carolina
FY07 NCHFA-SFR Program

City of Charlotte, North Carolina
Revision of Standard Bid Documents for Single-Family Development Programs

Columbus County, North Carolina
FY05 Crisis Housing Assistance Repair & Replacement Program

Craven County, North Carolina
FY99 NCHFA SFR-Disaster Project
Hurricane Floyd Repair and Replacement Program
FY13 Flood Mitigation Assistance Program
FY14 Flood Mitigation Assistance Program

Hyde County, North Carolina
FY08 NCHFA-SFR Program

Pender County, North Carolina
FY05 Crisis Housing Assistance Repair & Replacement Program
FY14 Flood Mitigation Assistance Program

Sampson County, North Carolina
FY08 NCHFA-SFR Program

City of Washington, North Carolina
FY99 NCHFA SFR- Disaster Recovery Project
Hurricane Floyd Repair and Replacement Program

Town of Windsor, North Carolina
Hurricane Floyd Repair and Replacement Program

Mr. Whitesell earned his B.A. in English from Carleton College in Northfield, Minnesota. His experience includes over forty years in **engineering/planning management**, with two years of experience as controller/general manager for a 40-person engineering/construction supervision firm with offices in four locations. He has worked for Holland Consulting Planners, Inc., since 1989, primarily in **community development** and management of housing related projects, with an emphasis in **hazard mitigation** and **hurricane disaster recovery**. His role as **Community Development Manager** has included such interests as overall project management; preparation of **environmental review records and administrative guidelines/policy development**, and general **project compliance/monitoring coordination** with various local, state, federal and other governing agencies/authorities for over 175 housing and infrastructure projects. Mr. Whitesell also served as Project Manager for development of the Eastern Regional Advisory Committee **Medical Response Plan**, which included **hazard analysis, risk assessment, and development of mechanisms for requesting assistance/supplies** from federal, state, and other agencies for a **28-county region** in North Carolina. He is a member of the **American Institute of Certified Planners**.

HOLLAND CONSULTING PLANNERS

HOLLAND CONSULTING PLANNERS

HAZARD MITIGATION PLANNING & PROJECT MANAGEMENT EXPERIENCE

Since 1997, following Hurricane Fran, **Holland Consulting Planners, Inc.,** (HCP) has been at the forefront of North Carolina's hazard mitigation planning and disaster recovery effort, assisting numerous clients in eastern North Carolina with preparation of all hazard mitigation plans, supervision of buyout and retrofitting projects, and management of recovery programs including housing replacement and rehabilitation. HCP has more hands-on flood mitigation and recovery management expertise than any professional consulting firm in North Carolina.

The firm has managed approximately 40 HMGP/HMA elevation and acquisition projects and Crisis Housing Assistance projects (Hurricanes Fran/Bonnie/Floyd/Isabel) and annual Hazard Mitigation Assistance programs. These projects have included preparation of all program assistance policies, contract documents, professional services contracts, homeowner preconstruction and contract administration forms; and complete program management, including comprehensive acquisition and relocation management, elevation and retrofitting or rehab/replacement contract administration, supervision of resident inspection services, and coordination of appraisal, legal, surveying, engineering, and asbestos inspection services. Many of these projects included management of additional funds provided by North Carolina and HUD for utility and floor framing retrofitting and rehabilitation of low-income units.

On an annual basis, HCP provides supervision of the Flood Mitigation Assistance (FMA) acquisition/elevation application process for Beaufort County, Craven County, Hyde County, Pender County, and the Towns of Carolina Beach, Wrightsville Beach, and Windsor (approximately 75 units funded 2008-2016).

Recent experience includes the following:

1987-2004: Preparation of Post-Disaster Recovery and Evacuation Plans and Storm Hazard Mitigation Policies, including mapping of flood-prone areas and high wind zones, for over 35 units of government in eastern North Carolina as part of Land Use Plans required by North Carolina Coastal Area Management Act (CAMA) regulations.

September 1996 – June 1997: Following Hurricane Fran, assisted North Carolina Division of Emergency Management and several eastern North Carolina communities with preparation of "Urgent Need" HMGP Elevation Applications for submittal to FEMA Region IV.

October 1997 – December 2003: Administration of five HMGP elevation and acquisition projects (Hurricane Fran/Bonnie) outlined below, including preparation of all program assistance policies, contract documents, professional services contracts, homeowner preconstruction and contract administration forms; and complete program management, including elevation and retrofitting contract administration, supervision of resident inspection services, and coordination of legal, surveying, engineering, and asbestos inspection services. Projects included management of additional funds provided by North Carolina and HUD for utility and floor framing retrofitting and rehabilitation of low-income units.

1. Beaufort County, NC (Hurricane Fran) – 75 elevated units – completed in December 2001.

2. Beaufort County, NC (Hurricane Bonnie) – 25 elevated units – completed in December 2002.
3. Belhaven, NC (Hurricane Fran) – 255 elevated units – completed in February 2003.
4. Craven County, NC (Hurricane Fran) – 7 elevated units – completed in December 2000.
5. Washington, NC (Hurricane Fran) – 40 elevated units/21 acquired units – completed in March 2001.

January 1998 – present: Participation in development of NC planning standards for preparation of Hazard Mitigation Plans by local units of government; preparation of Hazard Mitigation Plans for over thirty (30) local units of government, including one of two pilot Regional HMPs within the State of North Carolina. Subsequent preparation of five additional Regional HMPs.

December 2000 – June 2004: Administration of HMGP/HFPAR Acquisition Projects and/or NC Crisis Housing Assistance Projects for sixteen local units of government in eastern North Carolina following Hurricane Floyd (September 1999). HCP has managed the acquisition of over 700 flood-damaged structures with HMGP/HFPAR funds, including management of related homeowner and tenant relocation programs. In Greenville, the firm assisted the city staff with the acquisition of over 400 parcels. Additionally, HCP managed the elevation/repair or replacement of an additional 500 residential units through the Crisis Housing Assistance program.

June 2005 – March 2008: Administration of five HMGP elevation and acquisition projects (Hurricane Isabel) outlined below, including preparation of all program assistance policies, contract documents, professional services contracts, homeowner preconstruction and contract administration forms; and complete program management, including elevation and retrofitting contract administration, supervision of resident inspection services, and coordination of legal, surveying, engineering, and asbestos inspection services.

1. Beaufort County, NC – 14 elevated units – completed in June 2006.
2. Belhaven, NC – 15 elevated units – completed in June 2006.
3. Edenton, NC – 1 elevated unit; 3 acquisition units – completed in June 2006.
4. Hertford County, NC – 3 acquisition units – completed in December 2007.
5. Hyde County, NC – 4 acquisition units; 26 elevation units – completed in October 2006.

August 2005 – December 2007: Management of CDBG Supplemental Assistance Programs for replacement/ rehabilitation of homes damaged by Hurricane Isabel in Hyde County, Beaufort County, and Belhaven, NC.

January 2006 – December 2010: Management of state-funded Crisis Housing Assistance programs in Pender County and Columbus County, NC, for 2004 tropical storm recovery.

January 2008 – Present: Management of annual FMA elevation application/management processes for Beaufort County, Craven County, the Town of Carolina Beach, Pender County, Hyde County, Oak Island, and Wrightsville Beach.

July 2013 – Present: Management of Hurricane Irene HMGP acquisition/elevation projects for Beaufort County, Craven County, Hyde County, and Pamlico County (65 units).

March 2015 – Present: Management of FY13 FMA projects for the Town of Carolina Beach, and Beaufort and Craven Counties (20 units), and FY14 FMA projects for the Town of Carolina Beach, and Beaufort, Craven, and Pender Counties (30 units).

Sworn Affidavit By J. Reed Whitesell, AICP

Date: January 26, 2017

Reference: Pender County Flood Mitigation Assistance Program
Elevation of Properties at 1117 and 1121 Ocean Boulevard, Topsail Beach NC
Variance Request for Required FLSNV Setback

This affidavit made this 26th day of January, 2017, serves to confirm the following facts related to the elevation of the two referenced structures included in the Pender County FY14 FMA Elevation Program. These facts are based on my personal review of all preconstruction and engineering documents related to the proposed elevations, and on my experience in the management of numerous flood mitigation programs in eastern North Carolina since Hurricane Fran in 1996.

1. The purpose of the prescribed mitigation method (elevation) is solely to protect the residential structures and their contents from future flood events through elevation of the structures on the existing footprints to the required freeboard (3.0 ft.) described in the Town of Topsail Beach Flood Damage Prevention Ordinance. FMA-sponsored elevation is not intended to provide a substantial improvement or increase in existing property value, although the cost sometimes exceeds 50% of the existing structure value.

2. Based on extensive discussions with the Project Engineer and the low bidder, it is my clear understanding that the proposed elevation methodology, utilizing a combination of existing and new pilings to elevate the structures to the required freeboard height, is a more cost-efficient method than moving the structures away from the FLSNV and elevating the structures on new pilings. Moreover, my review of the site surveys and my personal on-site inspection of the elevation sites in October 2016, leads me to believe that moving the structures to the required setback for new construction might lead to violation of the Town of Topsail Beach's zoning requirements, and would significantly limit the owners' ability to construct additional (non-substantial) improvements to decking and accesses in the future.

Sworn this 26th day of January, 2017.

J. Reed Whitesell

ROSEMARY O. JOHNSON
Notary Public
Hyde County
My Commission Expires
06/08/2019
NORTH CAROLINA

Sworn to, and subscribed by me, this the 26th day of January, 2017.

Rosemary O. Johnson, Notary Public

My Commission Expires: 6/19/2019

JOHN B. "CHIP" BARTLETT, JR., AICP
Program Administrator

PROFESSIONAL AFFILIATIONS:
American Planning Association (APA)
American Institute of Certified Planners (AICP)

EDUCATIONAL BACKGROUND:
B.S. Urban and Regional Planning, 1993
East Carolina University

Completion of 15 hours of coursework in Law and Administration required by the NC Code Officials Qualification Board, 1997
Certification in Safe Work Practices for Lead Hazard Reduction, 2002
Introduction to ARC/GIS 9, 2004
NCHFA-SFR Implementation Workshop, 2007
Community Development Academy, 2003

RELEVANT PROJECT EXPERIENCE:

Town of Ayden, North Carolina
Planning Services

Town of Bladenboro, North Carolina
FY99 NCHFA SFR-Disaster Program
FY04 NCHFA Urgent Repair Program

Brunswick County, North Carolina
FY99 NCHFA SFR-Disaster Project
Hurricane Floyd Repair and Replacement Program
FY08 NCHFA-SFR Program
FY11 NCHFA-SFR Program Housing Inspection
FY14 NCHFA-SFR Program

City of Clinton, North Carolina
FY09 CDBG Infrastructure (Pugh Road) Program
FY10 CDBG Contingency (Eliza Lane) Program
FY12 CDBG Infrastructure Program

Town of Carolina Beach, North Carolina
FY14 Flood Mitigation Assistance Program

Columbus County, North Carolina
FY05 Crisis Housing Assistance Repair & Replacement Program

Craven County, North Carolina
FY99 NCHFA SFR-Disaster Project
Hurricane Floyd HMGP/SARF Acquisition/Relocation Project
Hurricane Floyd Repair and Replacement Program
FY09 CDBG Scattered Site Program
Hurricane Irene HMGP Elevation/Acquisition Project
FY12 CDBG Scattered Site Program
FY12 CDBG Infrastructure Program
FY13 Flood Mitigation Assistance Program
FY14 Flood Mitigation Assistance Program

Pender County, North Carolina
FY05 Crisis Housing Assistance Repair & Replacement Program
FY14 Flood Mitigation Assistance Program

Mr. Bartlett earned his B.S. in **Urban and Regional Planning** from East Carolina University. He has worked for Holland Consulting Planners, Inc., since 1996. His principal focus has been on **community development** and management of housing related projects. Other areas of experience include **land use planning** and **zoning/subdivision regulations**. Mr. Bartlett has experience in preparation of **environmental review records and administrative guidelines/policy development**, and general **project compliance/monitoring coordination/labor standards compliance** with various local, state, federal and other governing agencies/authorities for numerous housing rehabilitation/redevelopment projects. He has also provided **planning services** to the Town of Ayden, and has assisted in the preparation of **land use plans** and **subdivision/zoning regulations** for several municipalities. He is a member of the **American Institute of Certified Planners**.

HOLLAND CONSULTING PLANNERS

Appian Consulting Engineers, PA
154 Roundabout Ct. • PO Box 7966
Rocky Mount, NC 27804
Phone: (252) 972-7703 • Fax (252) 972-7638
bjoyner@appianengineers.com • www.appianengineers.com

BOBBY L. JOYNER, P.E.

President

Education

1974 Mathematics
1972 Civil Engineering Studies
1968 Associate Degree in Mechanical Engineering

Professional Memberships

Professional Engineer – North Carolina, 1978, Virginia, 1979

Strengths

Creativity in problem solving, innovative, broad based experience in municipal, Civil and Structural engineering, forensic engineering inspections.

Professional Experience

PRIOR TO APPIAN

Experienced in wide range of civil, municipal, and structural projects. Responsible for complete design, contract and construction administration of all public works projects for City of Rocky Mount as Director of Engineering from 1982-1986. Extensive experience in water transmission, sewer collection, and sewerage lift stations, roadway/street design and rebuilding, building design, and hydrological studies and design of large complex drainage systems. As City Engineer, he also established an on-site soils lab to provide staff-based testing and evaluation of soils on City projects. Mr. Joyner as well as staff inspectors were trained in soil testing and evaluation. The lab also provided testing of private development work as it related to projects that would become part of city maintenance. Experience prior to becoming City Engineer was in the capacity of Asst. City Engineer, Traffic Engineer & Staff Engineer.

WITH APPIAN

Mr. Joyner opened Appian Consulting Engineers, PA in 1986. Since then, he has designed many commercial and residential subdivisions, performed site design for hospitals and schools, industrial sites, and large shopping centers. He also has extensive experience in municipal engineering projects such as water distribution systems, booster pump stations, elevated tanks, sewer rehabilitation and complex potable well/tank systems for industrial and rural school applications. Most recently he was responsible, from conception to completion, for site, grading, drainage, and utility design for a 1.2 million SF Universal Leaf Tobacco Processing Plant located on a 1000-acre site in Nash County, NC and a 1 million SF QVC Distribution Facility in located in Edgecombe County. Mr. Joyner has been employed by various industries to solve drainage problems relating to both large roofs and site related issues in NC and SC.

He has experience in retrofit roofing surveys, design, and inspections and structural investigations, water distribution system modeling and analysis, HEC 1 & HEC 2 Flood studies, levee and floodwall design, flood pumps, and NFIP FEMA Map Amendments.

Mr. Joyner has been involved with the EDA grant process at all stages of project development including assisting with the preparation of pre-application, meeting with EDA and governmental officials in preliminary phases, assisting with the grant application, complete project design and project administration/execution in conformance with EDA regulations.

STRUCTURAL

Mr. Joyner is the principal structural Engineer for Appian providing design services for bridges, buildings, and municipal infrastructure such as box culverts, deep drainage structures, etc.

Residential and Commercial Inspections: Mr. Joyner has conducted in excess of 3000 residential, commercial and industrial inspections in North Carolina and Virginia with an emphasis on cause and effect. Forensic investigations often focus on the structure as a whole which may include air quality testing and the contribution of the HVAC to air quality, structural analysis, exterior grading and drainage plans, partial site topographical surveys, and soils investigation.

Hurricane Elevation Raisings: Since 1999, Appian has partnered with Holland Consulting Planners, Wilmington, NC to provide structural inspection and design of foundation systems for more than 200 homes that had been approved for elevating. These homes, approved for Federal assistance, were flooded during a number of Hurricanes. The Counties include Hyde, Pamlico, New Hanover, and Beaufort Counties.

Expert Witness: Mr. Joyner is often employed by Insurance Companies and Attorneys to perform inspections and provide expert testimony on cases involving both residential and commercial structures.

PATENTS

1. Holds 3 U. S. patents from the US Patent Office on the following:

    A. **Industrial Splash Pad – Patent No. 7,052,212**: The Industrial Splashpad is designed to kill the energy from downspouts serving large roof areas, distribute the flow over a wide ogee spillway, and then deposit the flow nearly parallel to the ground at very low non-erosive velocities. 65 of the prototype pads were first installed at Universal Leaf Tobacco's 1.2 million square foot tobacco processing plant. The splashpad is being manufactured and distributed locally. Manufactured from high density polyethylene, the first units are scheduled to come off line in 2013. A second patent was applied for in the summer of 2012 and involved significant improvements to the original patent. Also, the second patent included unique Splashpads for middle-range roofs (i.e. commercial).

    B. **Method of Using High Carbon Coal Ash for Treatment of Stormwater Runoff – Patent No. 7,311,844**: Research conducted by Virginia Tech in 2008. Treatment system significantly reduces Nitrogen, Phosphorus, and other constituents from stormwater runoff. Field trials will be underway shortly

    C. **Method of Using High Carbon Coal Ash for Treatment of Domestic Wastewater – Patent No. 7,455,780**: Research conducted by Virginia Tech in 2008. Tertiary treatment system of domestic waste significantly reduces Nitrogen, Phosphorus, and other constituents and polishes effluent prior to placement in underground nitrification field.

    D. **Patents Pending**: Two patents pending in stormwater management (information relating to these two pending patents is proprietary).

OTHER

1. **Book Authored**: Authored a book in 2006 titled *"10 Successful Steps to Successfully Developing a Public Facilities Manual."* Like the manual, the book is sold at trade shows and can be purchased on-line.

2. **MuniSPEC© – A Municipal Public Facilities Manual**: Authored and copyrighted (Registration Number TXu 1-788-389, February 7, 2011) a state-of-the-art Manual of Specifications, Standards and Design that is marketed to municipalities. The manual, a 1,200+ page document, includes Standard Municipal Specifications, 150 to 225 pages of standard Public Works Details, and an extensive design developed by Appian that covers:

   Municipal Design Manual Elements:
   a. Municipal street design Manual (which includes soils evaluation and analysis of traffic loads),
   b. Segmental Retaining Wall Design,
   c. Boardwalk & Footbridge Design,
   d. Water Distribution, Gravity Sewer, Pressure Sewer, and Sanitary Sewer Pump Station Design Manual,
   e. Traffic Calming (design and measures),
   f. Traffic Impact Analysis, and
   g. Stormwater Design: Stormwater design covers hydrological analysis, hydraulic design of surface and subsurface piped systems, BMP design, nutrient management and Low Impact Design (LID) considerations. The stormwater design section provides the minimum design requirements and methods required of a designer when designing systems that will be reviewed and taken over for maintenance by a municipality.

   Example problems are provided throughout the entire design section.

   The Manual, tailored to the municipality, is offered in hardcopy, searchable CD, or web format. The Manual is marketed nationwide and shown at public works tradeshows annually. Some of our clients include: the City of Wilson, NC, the City of Greenville, the Town of Clayton, NC, Orange Water and Sewer Authority (OWASA), NC; the Town of Wake Forest, NC, Kittrell Water Association, Kittrell, NC, The City of Durham, and others.

   In addition, Appian has set up MuniSPEC© as a user-friendly interactive and searchable digital file that uploads to both the web and iPads.

3. **Public Works Details Drawing Base**: Developed a comprehensive in-house library of standard public works details in AutoCAD format. The drawing base is comprised of over 2000 separate details for water, streets, drainage, sewer, traffic calming, BMP's and erosion. Rarely seen in civil/municipal projects, the details we offer are in exploded view and isometric. The details, used extensively by municipalities and private engineering firms across the nation, are available for purchase from Appian. Our catalogue of details also includes a large number of NCDOT standard details in AutoCAD format; drawings generated by our CAD staff directly from NCDOT drawings.

4. **Precasters Catalogues**: As a direct result of our efforts in conveying structures in isometric and exploded view formats, Appian has developed manufacturer's

catalogues (hard copy and CD) for concrete precasting companies and plastic septic tank manufacturers located all over the United States. Some of these catalogues are rendered in color. A unique feature we offer is a standard detail of a specific tank line (e.g. septic, pump, or grease trap) that uses a database to automatically fill in the dimensions, and displays volume, weight, and product number. For grease traps, we provide a separate spreadsheet that computes the average and maximum flow, storage volume and maximum grease volume (based on the uniform plumbing code method). The designer need only select the desired tank size and the drawing instantaneously provides all necessary data for the drawing to be used as a shop drawing or for submittal.

5. **Seminar Speaker**: Mr. Joyner holds/teaches seminars on *How to Develop Your Own Public Facilities Manual* for Public Works Directors and City Engineers; moisture prevention in crawl spaces; and mold detection and prevention in new and existing construction.

Appian Consulting Engineers, PA

Post Office Box 7966	Bobby L, Joyner, PE, President
154 Roundabout Court	252.972.7703, phone
Rocky Mount, NC 27084	252.972.7638, fax
www.AppianEngineers.com	bjoyner@appianengineers.com

Appian Consulting Engineers, P.A. is an engineering design firm structured to serve North Carolina and southeastern Virginia with our office located in Rocky Mount, North Carolina. Appian has been a reliable presence in eastern North Carolina since its inception in 1986 by its owner and President Bobby L. Joyner, PE. Mr. Joyner's experience is extensive in the area of municipal engineering and design as he worked for the City of Rocky Mount for more than 18 years, with the last four years as the Director of Engineering.

Our team's extensive multi-disciplinary experience will ensure that all construction work is performed in conformance with safety requirements, contract requirements, and quality control/ quality assurance practices. Appian will work closely with all parties involved to ensure that a superior construction product is delivered on time and within budget. Hourly rates are attached.

The Appian Team

The Appian Team will consist of the following personnel providing exceptional expertise:

Bobby L. Joyner, P.E., President: Mr. Joyner obtained his Civil Engineering Diploma in 1972 and became a professional engineer in 1978. He has extensive experience in municipal engineering and planning as he worked for the City of Rocky Mount as the Rocky Mount City Engineer (1982-1986) and in the engineering department for more than 18 years. Mr. Joyner has more than three decades of experience in design for FMA, HGMP, SRL, CDBG, municipal, industrial, commercial and residential projects including structural and retrofit design, water system distribution, drainage improvements, sewer rehabilitation and sewage pump station design, pier and bridge design, wave modeling, and flood studies. Mr. Joyner provides forensic studies on both mold and crawl space moisture control in commercial and residential buildings. Recognized as an expert in NC and VA, consultants and attorneys frequently refer their clients to Appian for investigations, design and expert testimony in court cases. In addition to acquiring three patents, he has authored a state of the art *Manual of Specifications, Standards and Design,* which Appian has developed for numerous cities in Virginia and North Carolina. He was involved in *all* of Appian's projects listed below. Mr. Joyner will be the Project Engineer and Inspector (as needed) for the project.

David C. Revoir, P.E.: Bringing experience from Maryland State Highway Administration and Greenhorne & O'Mara, Mr. Revoir has a broad range of experience in CDBG, municipal, industrial, commercial and residential projects including water distribution analysis, street design, stormwater modeling, sewer design, and erosion control. Mr. Revoir routinely leads projects through conceptual layout, detailed design, permitting, contract bidding, construction administration and as-built certification. He is adept at providing railroad design, no-net rise flood studies, SWPPP/SPCC Plans, and swimming pool compliance for the Virginia-Graeme Baker Pool and Spa Safety Act. Contributing

> "The construction drawings and specifications that your firm produces are ***detailed*** and ***comprehensive*** and portray a ***thorough understanding*** of the construction process. As a matter of fact, the U.S. Department of Commerce Economic Development Administration will be using your firm's specifications and contract documents as ***the model*** for other engineering firms to follow…"
>
> Milton Cochran, Sr.
> US Department of Commerce
> Economic Development Administration

author for Stormwater Design for the *Manual of Specifications, Standards and Design,* Mr. Revoir is *the* engineer for Franklin County Stormwater Review. He has extensive experience with stormwater modeling, stormwater BMP design and writing municipal stormwater ordinances. He is a Sustainable Land Development International *(SLDI)* Associate Member and LEED Accredited Professional *(LEED AP Building Design + Construction)* with the U.S. Green Building Council. Mr. Revoir's responsibility on this project will be that of project manager.

Michael Gallina, Jr., CAD Manager: Mr. Gallina has been with Appian for more than 21 years and has extensive experience in creating master plans, site plans, street plans, and profiles, water and sewer lines, grading, and erosion sedimentation control, construction plans, utility plans and staking plans. He has also developed both 3D and isometric details on all our plans to clearly convey the intent of the detail to those in the trenches. As a result, Appian developed catalogues for a number of national precast manufacturers, including: *NC Precast* (Hanson, Needville, TX)*, Fralo Plastics* (Syracuse, NY)*, Dellinger* (Mecklenburg County, NC)*, Mack Industries* (Sharpsburg, NC and Valley City, OH), *Albuquerque Vault* (Albuquerque, NM) and *Ideal Precast* (Raleigh, NC).

Appian will strive to maintain equal participation of *Disadvantaged Business Enterprises (DBEs)* and to utilize DBE's to the maximum extent as possible. Appian will use Small Business Administration (SBA) information and other agencies to determine and develop a list of local DBE's qualified for this project. We are committed to advancing the *Historically Underutilized Business* community.

Engineering & Project Experience

Appian has extensive experience with many municipalities ranging from small to large projects, involving a full range of engineering services. As you can see below, Appian has been involved in a plethora of similar projects in eastern North Carolina for the past three decades:

APPIAN'S FLOOD MITIGATION WORK INCLUDES:

Residential Elevation Raising Projects:

- Craven County
- Beaufort County
- Carolina Beach
- Pamlico County
- Hyde County
- Washington, NC
- Belhaven, NC

Some of the Most Recent Projects:

Pender/ Onslow County House Raising and Foundation Plans (2013)
Craven County 2015/16 (FY 13) FMA
Pamlico County 2015/16 HMGP
Beaufort County 2014 HMGP
Beaufort County 2013 HMGP
Beaufort County 2012 PDM
Beaufort County FY 2010 SRL Program and Hurricane Irene HMGP
Beaufort County SRL Program FY 2008
Beaufort County Isabel HMGP Grant FY 2006

Carolina Beach HMGP 2009 (New Hanover County)
Hyde County 2012 PDM
Hyde County 2013 HMGP
Hyde County 2014 HMGP

RELATED STRUCTURAL WORK INCLUDES:

1. Residential & Commercial Forensic Investigations:
   - Mr. Joyner has performed over 2500+ residential structural inspections; many of which related to foundation problems. His charge was to determine cause and provide recommendations and/or design documents for foundation stabilization/repair.
   - Design pre- and post-construction helical piering plans for both residential and commercial buildings throughout NC & VA. This particularly includes HMGP elevation raisings in high wind zones.
   - Mr. Joyner has extensive soils experience having managed and overseen soils testing services while employed with the City of Rocky Mount and as a branch of Appian Consulting Engineers.

2. Examples of other types of foundation design include:
   - Building & Foundation design for Engineered Metal buildings for Industrial, Commercial, Churches, Municipal and Private companies/individuals.
   - Asphalt Batch Plants Foundations
   - Drying Towers Foundations
   - Microwave Antenna Guy foundations (using helical piers)
   - Drying Pits
   - Rail loading facilities (dump pits, push walls, etc.)
   - Conveyor trusses and foundations for same
   - Grain Silo foundations

3. Design, Contract Documents, Specifications & Project Management Examples:
   - Craven County CDBG Contingency Infrastructure
   - Craven County CDBG-CR
   - Craven County Stormwater Ordinance
   - Site Drainage Mitigation Plan 2013 for QVC Distribution warehouse, Florence, SC,
   - Nash County CDBG 2010: Drake Community Center
   - Town of Wake Forest Street Paving Program 2009-2011
   - Town of Wake Forest Street Paving Program 2012/2013
   - City of Rocky Mount Candlewood Road Culvert Replacement 2015
   - City of Rocky Mount Wastewater Treatment Plant Sludge Pumping Station (2 stations) 2013
   - City of Rocky Mount Fleet Maintenance Tire Repair Facility 2013
   - City of Rocky Mount Annexations Infrastructure 2009-2011
   - City of Raleigh WWTP Maintenance Facility 2013
   - City of Henderson CDBG-HD 2007
   - City of Henderson CDBG 2005

4. Related Contract Document Experience: Appian authored & copyrighted a Public Facilities Manual developed specifically for Engineering & Public Works Departments. Some of the municipalities that have our manuals include:
   - City of Wilson Manual of Specifications, Standards and Design 2008 with annual updates
   - Town of Clayton Manual of Specifications, Standards and Design
   - City of Greenville Manual of Specifications, Standards and Design 2010
   - City of Durham Manual of Specifications, Standards and Design 2012
   - Town of Wake Forest Manual of Specifications, Standards, and Design 2000 & 2012 updates
   - OWASA W&S Manual of Specifications, Standards and Design

OTHER ARCHITECTURAL/STRUCTURAL ENGINEERING PROJECTS PERFORMED BY APPIAN:

- ABC Store – Beaufort County
- ABC Store – Atlantic Beach
- ABC Store – Cape Carteret
- Edgecombe County Farm Bureau (Tarboro)
- Sara Lee (Tarboro), 2009
- South Rocky Mount Community Center
- Smith Creek Wastewater Treatment Plant Maintenance Building 2013 (City of Raleigh)
- Edwards Crane Steel Fabrication Complex
- QVC Distribution Center High Roof Drainage
- Nash Community College Culinary Arts Shelter
- Red Oak Volunteer Fire Depart Cast-in-place UG water storage tank
- Performance Small Engine Center
- Southside Baptist Church, 2014
- Church on the Rise
- Golden East Mall Expansion
- Terminix Conference Center
- Whitakers Business Center Shell Building
- OIC for the City of Rocky Mount
- Coopers Volunteer Fire Department
- Englewood Baptist Church in Roanoke Rapids
- Eyemart, Durham, NC
- Retaining Wall (NC 98 By Pass)
- City of Rocky Mount L&M Stemmery Building (SSMR Roof repair)
- Nash Community College Maintenance Facility Expansion.
- Sylvan Water Fowl Visitor Center

Appian has extensive experience in elevation raising projects; specifically for *Hurricane Isabel* and *Hurricane Irene* though much of the latter has focused on structural inspections, elevation design relating to repairs and recovery. Elevation raising projects have been performed in ***Craven County, New Hanover County, Beaufort County, Carolina Beach, Pamlico County, Hyde County, Belhaven and Washington***. In addition, we assisted in repairs, recovery and elevation raisings for projects relating to *Hurricane Fran* and *Floyd* though not through the Severe Repetitive Loss Hazard Mitigation Grant Programs.

Elevation Raising
Belhaven, NC

PROPOSED SCOPE OF SERVICES:

Obtain elevation certificates from licensed surveyors and determined the final finished floor elevation based on the BFE plus the applicable locally required freeboard.

- Compile an engineering report on each structure and make recommendations to the program administrator as to whether or not the structure could either economically or structurally be elevated. Detailed photographic survey of structure will be made logging locations and types of existing distress observed during the initial inspection.
- Inspect each house (attic framing, interior, exterior and crawl space). If areas of the crawl space are inaccessible, we can send in our "Spiderbot" camera to inspect the inaccessible areas (photo at right).

- Obtain field measurements of the interior, exterior and crawl space of each house. After a comprehensive load analysis (wind and

gravity loads), and using field notes and inspection findings, develop new foundation plans. From the engineered drawings, prepare construction documents which include:

- Existing and proposed foundation plan, foundation and floor framing notes, and construction details (connecting existing wall to the new floor, piling/ floor framing connection, cross bracing, etc.).

Construction Phase:

- Appian will provide limited on-site inspection and review of Contractor's work at the request of the County, including written documentation that the completed foundation and accesses were properly constructed.
- Depending on the conditions exposed during demolition, modify plans as needed to adapt to latent field discoveries. In most cases Appian's engineers are able to evaluate the soils and render an opinion as to suitability or recommend subgrade improvements necessary to stabilize a weak subgrade. For difficult projects, we call in a Geotechnical Engineer.

Sample plan excerpts from both previous *Beaufort County* and *Carolina Beach* elevation projects are included in this proposal.

Hurricane Isabel & Irene HMGP Elevation Projects:

Appian performed a pre-elevation inspection of each structure, provided a technical feasibility analysis for structures requiring design modifications, developed foundation drawings and specifications based on the NC Residential Building Code and provided on-site inspections and review of contractor's work as needed. Appian engaged in contracts with *Beaufort County, Carolina Beach, Pamlico County, Hyde County, and the Town of Belhaven*, elevating *more than 150 houses* in NC coastal regions.

Elevation Raising
Carolina Beach HMGP 2009

Featured Projects & Capabilities

Ocean Ridge Village: Appian provided complete structural design for a number of new single family beachfront dwellings in *North Topsail Island* (135 mph wind zone design speed, a finished floor elevation two feet above the 100 BFE, knock out panels, flood vents, deck assemblies isolated from the main structure, corrosion resistant fasteners, and bracing/reinforcing for pilings, tall walls, window jack studs, headers, etc.).

City of Rocky Mount Tar River Bikeway

Appian provided design for the Tar-River Bikeway in Rocky Mount, NC: providing topographical survey, grading plans, HEC-2 studies, no-net rise certification, and design of both a cantilevered aluminum bridge and the iconic timber arch bridge. The timber arch suspension bridge (right) was part of the Tar-River Bikeway project we designed for the City, and was erected in 2001. The bridge has the *World Record for Timber Arch Bridge Span* of 220 feet, which is 40 feet longer than the next longest span. The bridges were part of more than two (2) miles of scenic bike paths and elevated timber walkways for which Appian provided plans and permitting along the Tar River. This Tar River Greenway Trail runs along its namesake and passes through several city landmarks. Flood studies of the Tar River were required for both structures.

Craven County CDBG-CR 2008: Holland Consulting Planners contacted Appian in 2008 to provide a Preliminary Engineering Report (PER) with construction cost estimates for the Community Revitalization Project in James City, NC. The project consists of establishing the existing road right-of-way, 1,420 LF of street paving, 1,200 LF of 6" watermain, 850 LF of 2" sewer forcemain relocation, storm drainage, and rehabilitation by replacement of existing sewer tank effluent pumping *(STEP)* systems. This includes coordination with various governmental agencies including: NCDENR Land Quality, NCDENR Division of Water Quality, NCDENR CAMA, NCDOT, NC Railroad and Norfolk-Southern. Craven County awarded the design, surveying, construction administration, and inspections to Appian.

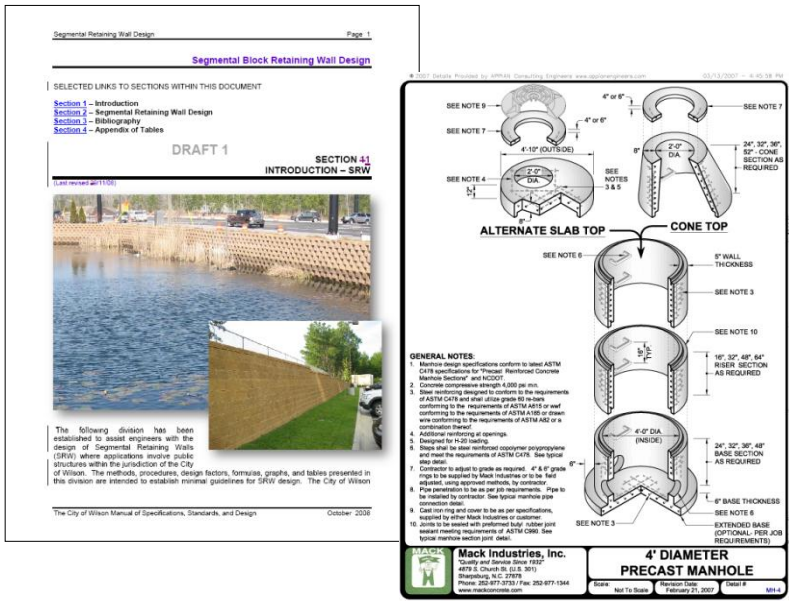
Manuals of Specifications, Standards and Design

With user-friendly isometric and exploded views of each detail, City staff and Contractors know exactly what's expected… at a glance. Appian has partnered with numerous municipalities to provide the technical expertise to a public facilities manual using our Copyrighted MuniSpec© data base. We provide: standard details and specifications, design modules (streets, water, sewer, storm drainage, flexible pavement, etc.), and policies. The City-specific Manual of Specifications, Standard Details and Design is developed *by* former city engineers *for* city engineers and public works officials.

> "None of the other firms we talked to had a Municipal Manual that was as ***comprehensive, detailed*** and easily ***customized to our needs***. The standard details are great."
>
> Tom Wilson, PE
> Director of Streets
> City of Lynchburg, VA

Typical Features of Manuals we Provide:

1. User friendly
2. Contains latest ASTM, AASHTO and AWWA Specification
3. Searchable (in editable and uneditable versions), iPad friendly version
4. FREE Web Hosting of Manual
5. Isometric and Exploded views on all details
6. Details are hyperlinked to Specs
7. Table of Contents is hyperlinked to text
8. Optional update service.
9. Specifications are detailed in execution and product description
10. Pre-approved product list

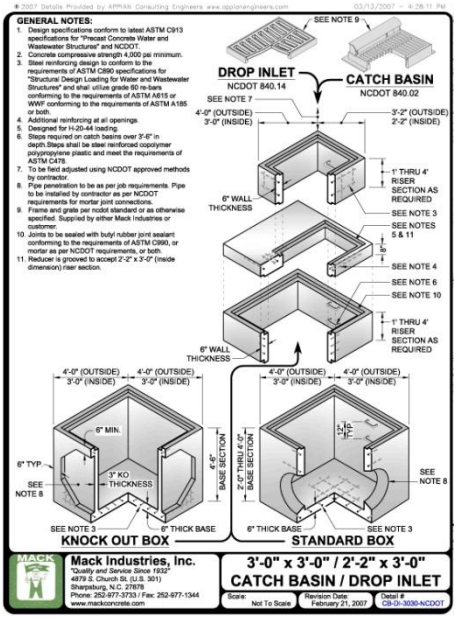


Municipalities to whom we have provided a copyrighted Manual of Specifications, Standards and Design include:

- ***Craven County Stormwater***
- ***City of Greenville***
- ***City of Durham (UC)***
- ***City of Wilson***
- ***City of Jacksonville***
- ***Town of Wake Forest***
- ***Town of Clayton***
- ***Franklin County Stormwater***
- ***Orange County Water and Sewer Authority (OWASA)***, serving Orange County, Carrboro, Chapel Hill and UNC at Chapel Hill

Details for Pre-Cast Manufacturers

For the past 15 years, Appian has provided isometric and exploded view details on our construction drawings and Public Facilities Manuals; the purpose being to clearly convey the intent of the detail to those in the trenches. Two-dimensional details can often be confusing. As a result of precast manufacturers using our drawings to prepare takeoffs for the contractor, the clarity and simplicity of the details caught the eye of management. Appian was asked to develop catalogues for a number of precasters on a national basis… *order their catalogue and you'll see Appian's name in the border of every detail!*



National Precast Manufacturer Catalogues Include:

- Carolina Precast (Hanson)
- Fralo Plastics/ Roth Global (NY)
- Dellinger (NC)
- Mack Industries (NC, OH)
- NC Pipe (TX)
- Albuquerque Vault Company (NM)
- Ideal Precast (NC)

Patents and Copyrights

Appian's extraordinary breadth and depth of expertise is demonstrated by the fact that our company president has three (3) patents with the United States Patent Office. The *"Downspout Energy Dissipater Splash Pad with Spillway"* is an industrial sized splash pad on large industrial buildings with large roof areas that has been used on several Appian projects. The *"Method of Treating Stormwater Runoff and Domestic Waste with Coal Ash"* is a "green" BMP that treats stormwater runoff and domestic sewage using recycled high carbon coal ash (research conducted and confirmed by Virginia Tech). Appian has been designing site with recycled coal ash for more than 20 years, saving clients great expense while protecting the environment. Appian also has one patent pending on a design to protect crawl space from mold decay due to crawl space high humidity. Mr. Joyner has also authored a book entitled, "*10 Successful Steps to Successfully Developing a Public Facilities Manual,"* and is in the process of completing his second book, "*Wholehouse Mold Solutions."*

> "After 25 years of… construction, I can genuinely say that I have never seen a more ***complete, detailed, accurate*** and generally professional set of civil documents… Working with your firm has been one of those experiences I will remember for the rest of my career, and will set my future ***standard for judging excellence*** in civil engineering consultants. It has truly been a pleasure."
>
> Thomas R. Gilcrest
> Director, Design Build Services
> Butler Construction

Other

Appian is also on the *NCDOT Prequalification Register* of Hydraulic Design Studies and is regularly referred to for industrial rail spur design by *CSX Railroad.*

Current HMGP Workload

Pamlico County Hurricane Irene HMGP Elevation Projects:

Appian was selected by Pamlico County for the Hurricane Irene Hazard Mitigation Grant Program for the elevation of approximately 44 residential structures in 2014. Design will be completed in the next few months, and construction of all projects will be completed by August 2016.

Craven County FY 13-14 FMA Elevation Projects:

Craven County recently selected Appian for the Flood Mitigation Assistance (FMA) Program for the elevation of approximately 17 residential structures. Design will be completed in the next several months, and construction of all projects will be completed next year.

Legal

There are no lawsuits, Federal, State or Local tax liens, or any potential claims or liabilities pending against Appian or any of the officers of our firms. *In fact, in the past 29 years of the company's existence, there has never been a lawsuit filed against our firm for any reason.*

Appian carries and maintains professional liability insurance.

Poised to Proceed

We look forward to serving Pender County on this project.

END OF RFP

CONSULTING ENGINEERS, PA
CIVIL, MUNICIPAL & STRUCTURAL ENGINEERS
COMPREHENSIVE ENVIRONMENTAL SERVICES
P.O. Box 7966 • Rocky Mount, NC 27804
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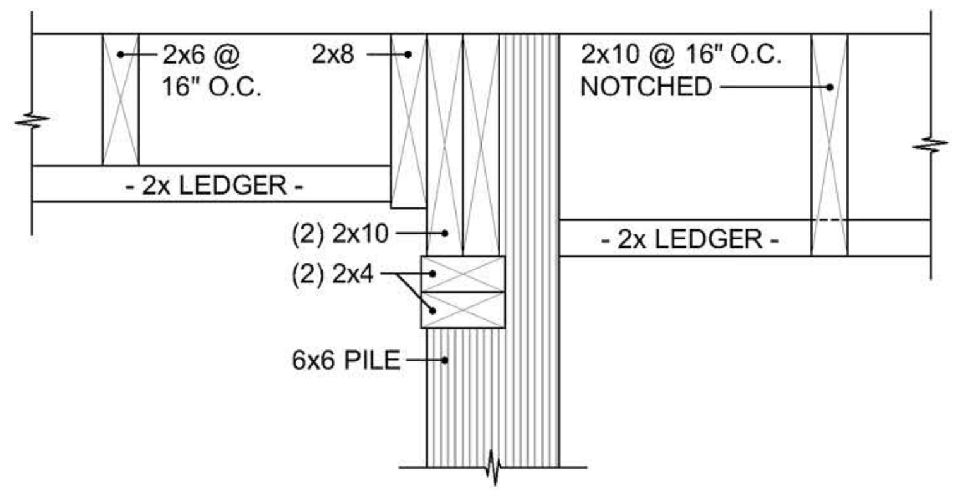
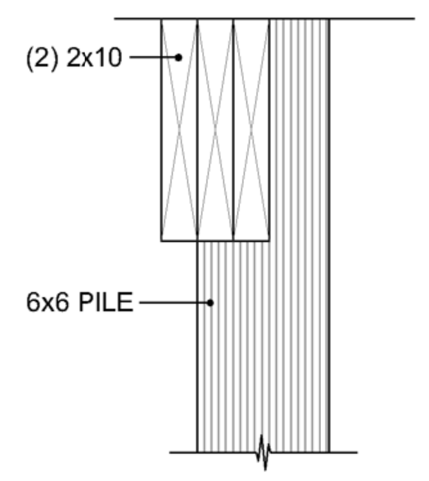
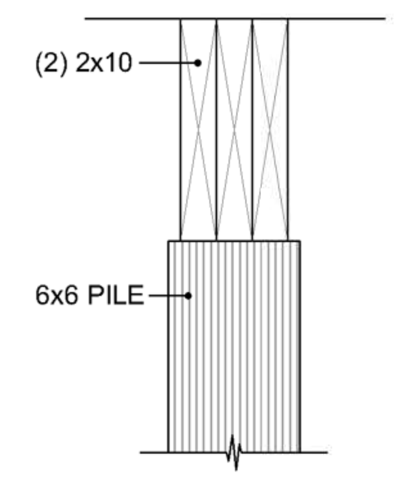
www.appianengineers.com



SECTION A-A
SCALE: 1 1/2"=1'-0" DATE: 5-27-16



SECTION B-B
SCALE: 1 1/2"=1'-0" DATE: 5-27-16



SECTION C-C
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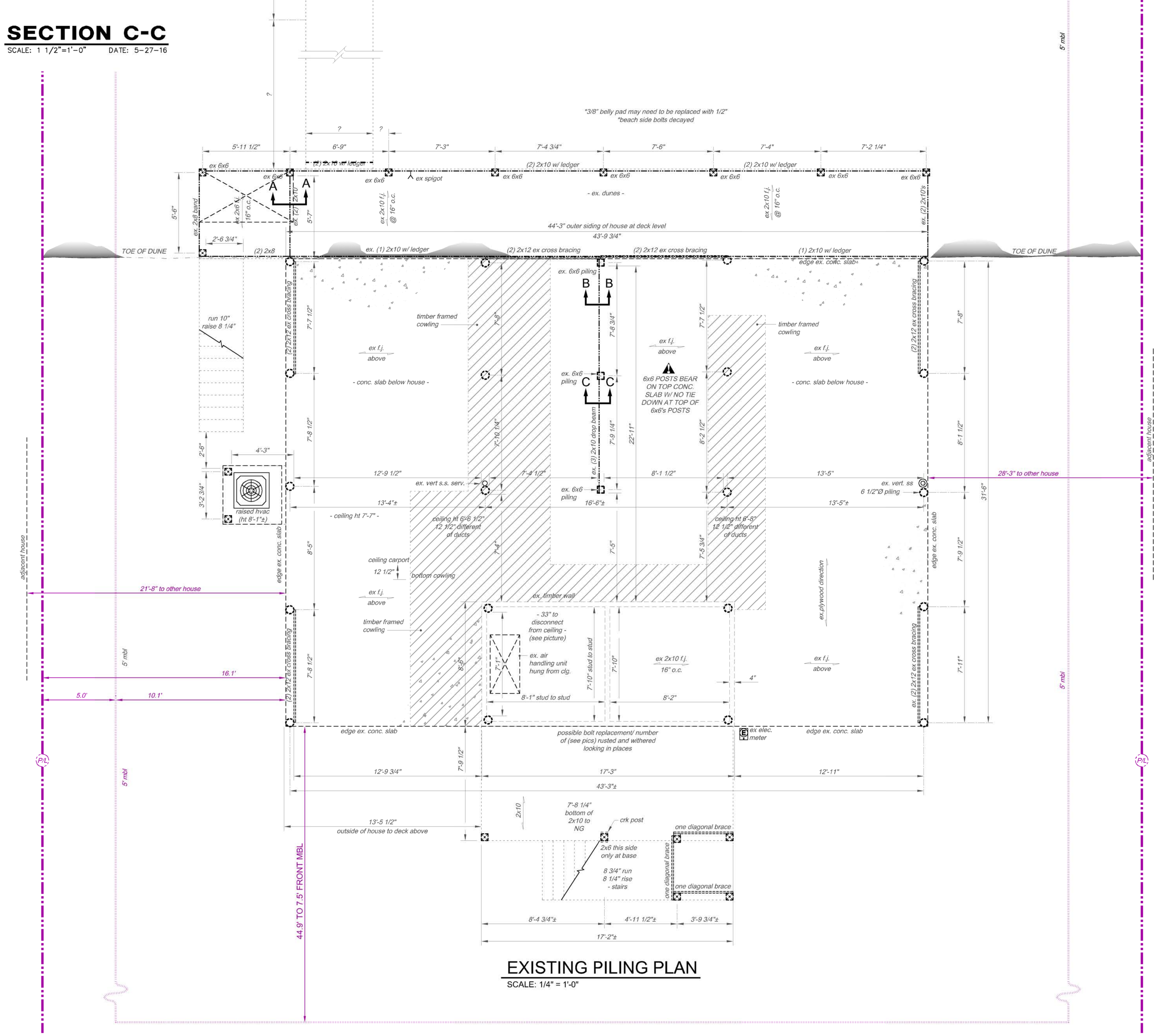

EXISTING PILING PLAN
SCALE: 1/4" = 1'-0"

BEFORE YOU DIG, CALL 811
NORTH CAROLINA ONE-CALL CENTER
www.ncocc.org

CONSTRUCTION SAFETY
These drawings do not contain the requirements for job safety. All provisions for safety shall be the sole responsibility of the contractor.

EXISTING CONDITIONS:
The contractor shall be responsible for reviewing all existing job conditions. Any adverse existing conditions affecting work shown on these drawings shall be brought to the attention of the engineer for possible clarification or reconciliation.

ADA AND LEGAL DISCLAIMER
This document is not represented to comply with all requirements contained in the ADA or other laws. Engineers are not licensed to interpret laws or give advice concerning laws, the owner should have this document reviewed by his attorney to determine legal compliance.

HOR. SCALE: -	DATE: JUNE, 2016	DESIGN: Bobby Joyner	
VER. SCALE: N/A	DRAWN BY: Josh Reason	CHKD:	

REVISIONS

NO.	DATE:	DESCRIPTION:	BY:	CAD:
△	-	-	-	-

Appian
CONSULTING ENGINEERS, P.A.
CIVIL, MUNICIPAL & STRUCTURAL ENGINEERS
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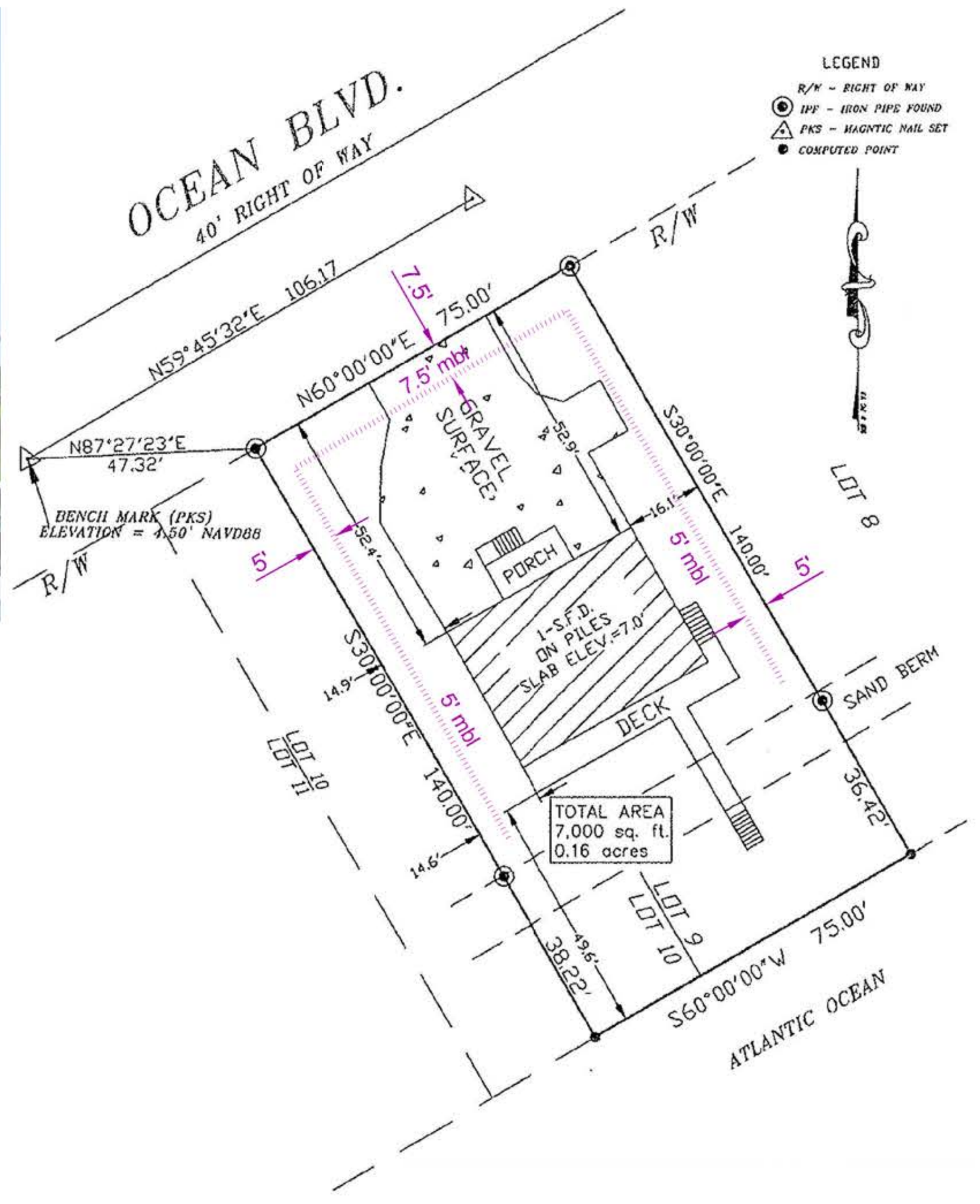
Final Drawings
Review Purposes ONLY

SEAL 8421 ENGINEER BOBBY L. JOYNER
11/07/2016

(#3TB) 1117 OCEAN BLVD. TOPSAIL BEACH, N.C. - Thexton
Pender County FMA FY14 Elevation Project

16-009
D-0000
3TB-A



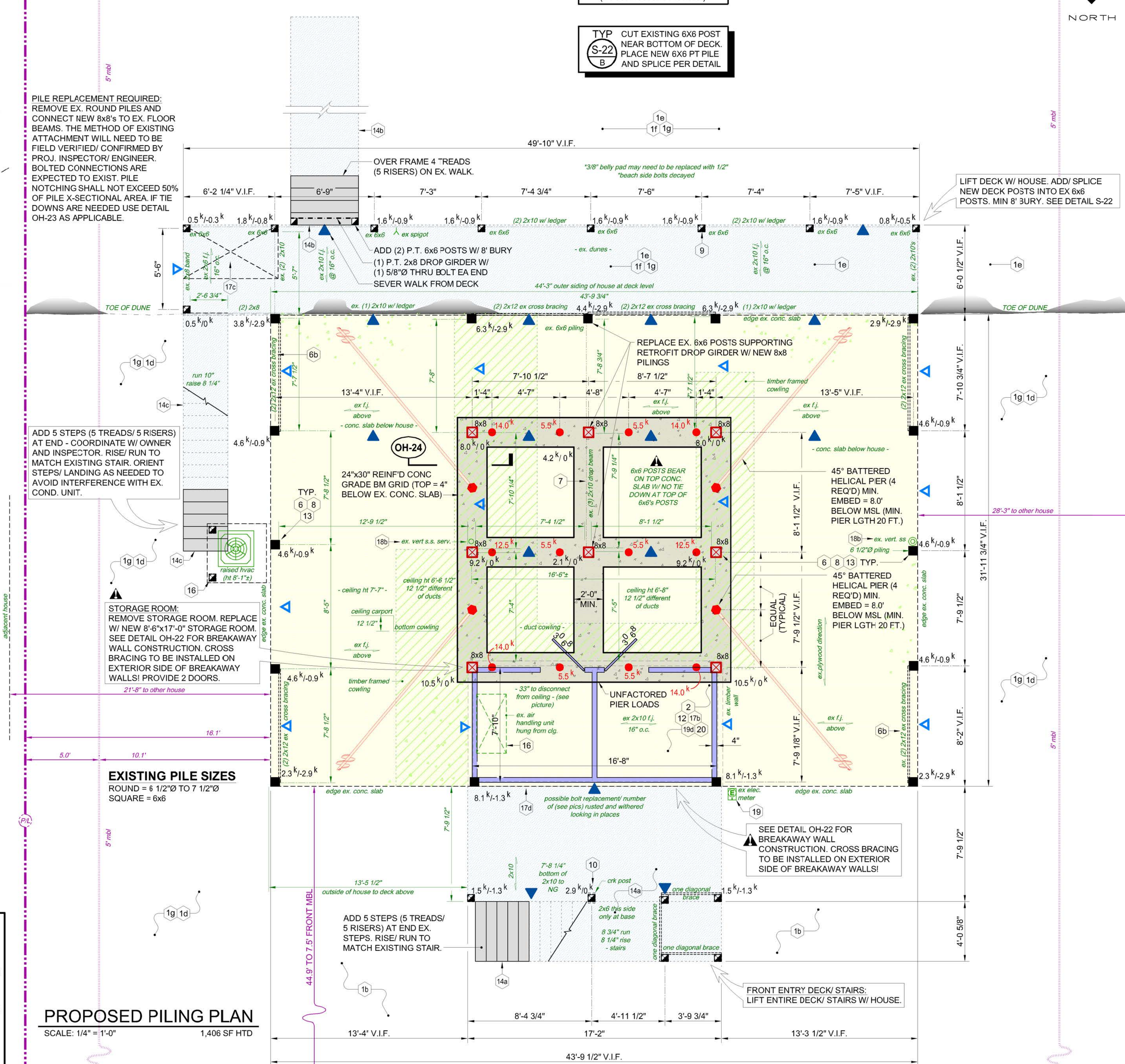
LEGEND

- EXISTING CROSS BRACING
- RODDED CROSS BRACING (OH-17) PERPENDICULAR TO OCEAN WAVE ACTION
- RODDED (RECOMMENDED) (OH-17 OR OH-15) CROSS BRACING PARALLEL TO OCEAN WAVE ACTION
- EXISTING PILES
- EXISTING PILE TO BE REPLACED W/ MIN. 8x8 P.T.PILE
- 3.7 k/-1.9 k DENOTES GRAVITY LOAD AND NET UPLIFT FORCE ON PILE/ CONNECTOR
- PROPOSED 6x6 P.T. DECK PILE
- EXISTING 6x6 POST (SEE DETAIL S-22-B)
- PRO 8x8 PILE IN GRADE BM
- PRO HELICAL PRE-CONSTRUCTION PIER (LOADS SHOWN ARE UNFACTORED)
- PRO BATTERED HELICAL PIER BRACE
- EXISTING HOUSE ABOVE
- EXISTING DECKING/STEPS ABOVE
- # KEY TO NOTES (SEE SHEET 3TB-C)

Elevation Notes:	
Proposed FFE:	19.0
BFE:	15.0
Existing FFE:	16.2
Lowest Adj. Grade:	4.7
*Crawl Area Has Ducts! (1-Foot Freeboard Provided.)	

THIS HOUSE TO BE ELEVATED 2.8'

TYP S-22 B CUT EXISTING 6x6 POST NEAR BOTTOM OF DECK. PLACE NEW 6x6 PT PILE AND SPLICE PER DETAIL



EXISTING PILE SIZES

ROUND = 6 1/2"Ø TO 7 1/2"Ø
SQUARE = 6x6

PROPOSED PILING PLAN

SCALE: 1/4" = 1'-0" 1,406 SF HTD

BEFORE YOU DIG, CALL 811 NORTH CAROLINA ONE-CALL CENTER www.ncocc.org

CONSTRUCTION SAFETY
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EXISTING CONDITIONS:
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ADA AND LEGAL DISCLAIMER
This document is not represented to comply with all requirements contained in the ADA or other laws. Engineers are not licensed to interpret laws or give advice concerning laws, the owner should have this document reviewed by his attorney to determine legal compliance.

NOTES:

1. -
2. THE LOWEST HABITABLE FLOOR SURFACE OF THIS DWELLING MUST BE ELEVATED TO THE TARGET FREEBOARD HEIGHT SHOWN ON DETAIL S-12 ON SHEET D-2. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE LOWEST FLOOR ELEVATION IN THE HOME AND ENSURING THAT THE HOME WILL BE ELEVATED TO THE TARGET FREEBOARD HEIGHT DEPICTED IN DETAIL S-12. IF A CONFLICT IS DISCOVERED BETWEEN THIS REQUIREMENT AND WHAT IS SHOWN IN THE SCOPE OF WORK OR DEPICTED ON THE SITE SPECIFIC DRAWINGS, DETAIL S-12 SHALL GOVERN. VERIFY PROPOSED TARGET FFE ELEVATION WITH ENGINEER OR INSPECTOR PRIOR TO ELEVATION OF HOUSE.

NORTH

HOR. SCALE: -	DATE: FEBRUARY, 2016	DESIGN: Bobby Joyner
VER. SCALE: N/A	DRAWN BY: Mike Gallina	CHKD: -

REVISIONS

NO.	DATE:	DESCRIPTION:	BY:	CAD:

CONSULTING ENGINEERS, P.A.
CIVIL, MUNICIPAL & STRUCTURAL ENGINEERS
COMPREHENSIVE ENVIRONMENTAL SERVICES
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www.appianengineers.com
admin@appianengineers.com

Final Drawings Review Purposes ONLY

SEAL 8421 ENGINEER BOBBY L. JOYNER 11/07/2016

(#3TB) 1117 OCEAN BLVD. TOPSAIL BEACH, N.C. - Thexton Pender County FMA FY14 Elevation Project

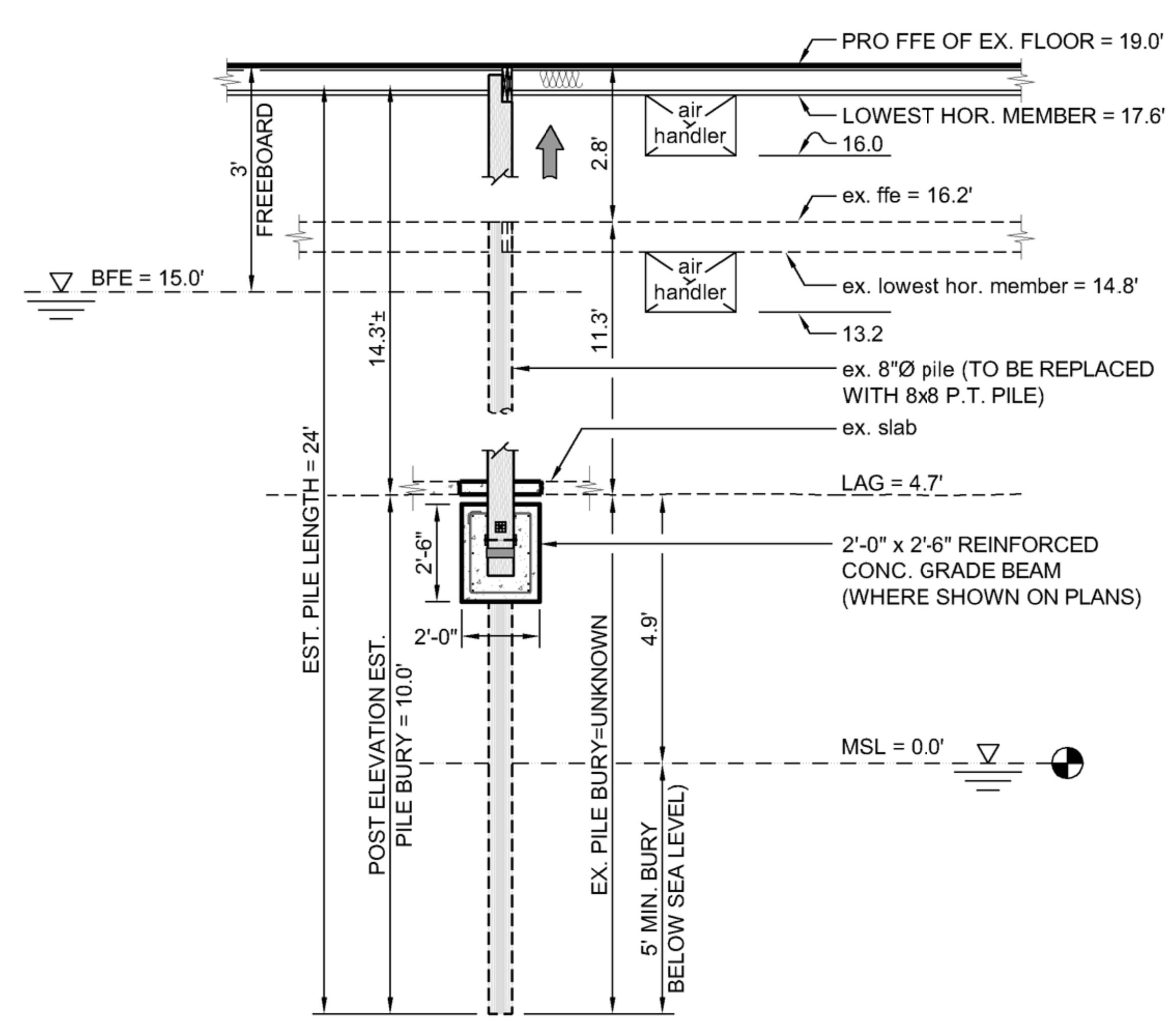
16-009
D-0000
3TB-B

#3TB, Andrew Thexton, 1117 Ocean Blvd, Topsail Beach NC

(Revised 11/7/16)

SITE NOTES:

1. Site:
   a. The lot is relatively flat with a slight slope towards the street. Excluding the dune on the ocean side and slightly beneath the rear deck/porch, what is not pervious stone driveway and concrete parking beneath house, is lightly landscaped with small shrubs and volunteer vegetation.
   b. A coarse stone base has been placed to create a pervious drive and parking area in front of the house. The north and south sides of the stone drive is bordered by a 4x4 pressure treated timber border. If damaged or rutted, grade and/or replace with like stone as necessary.
   c. A concrete parking pad exists below the house. Since this house is being elevated with new perimeter piles and a grade beam below the center of the house, saw cut the concrete as needed to permit placement of the piles. Replace concrete once house has been elevated and stabilized. Thickness to match existing.
      i. Contractor is to video/photograph all exterior hardscapes (concrete pads, drives and parking aprons) and soft landscaping (shrubs and plant beds) prior beginning elevation process.
   d. Side yards are lightly landscaped with small shrubs and volunteer vegetation. Remove as needed to permit removal of existing piles and replacement with new piles.
   e. Contractor is to minimize damage to existing dune vegetation. Dune vegetation exists on the ocean side of the 1st floor deck. To minimize damage to dune vegetation, provide sand fencing or barrier. If damaged, reseed/plant as necessary for dune stabilization in accordance with the applicable provisions of AEC f15A NCAC 07H .0304 and the requirements of the Town of Topsail Beach. Conform to the requirements of the CAMA permit issued by Coastal Management and the Town of Topsail Beach.
   f. There is no room along the rear (Oceanfront) of the lot and limited room on side yard for equipment access.
   g. The Ocean Blvd. front yard setback is 7.5 feet. The side yard setback is 5'. There are currently no access encroachments at this house. The rear setback is limited by the static vegetation line (CAMA). Do not encroach into this zone without a permit! Confirm encroachment limits with Town before beginning construction that may lead to an encroachment of the setbacks.
2. There is an 8'-6" x 17'-0" storage room located at the front of the house at ground level between the two carport parking bays. The storage room houses an air-handling unit Remove the existing storage room and after the house has been elevated 1.8 feet, construct a new 8'-6" x 17-0" timber-framed storage room with breakaway wall per detail OH22. Provide a minimum of 2 doors.
   a. House is being elevated sufficiently an extra foot to provide a 12" freeboard below the air-handling unit.
   b. Provide flood vents as outlined/shown on detail S21.
3. There were no visible signs of an UGST. Confirm with owner before moving any equipment on site.
4. The asbestos report indicates that no Asbestos Containing Material (ACM) was found at this home.
5. Termite Inspection:
   a. No inspection was performed to our knowledge by a licensed pest control specialist. However, no visible evidence of termite infestation (active or inactive) was found at the time of our inspection in the accessible areas.
6. The house rests on 6 ½" to 7 ½" diameter creosote piles.
   a. The piles are apt to be shallow, brittle, and have some degradation such that they cannot or should continue to be used. Pile decay is likely to be found where some piles are currently covered with concrete.
   b. Very little cross bracing exists on the existing piles and what does is inadequately constructed. Bolts have been placed too close to the end of the timber cross bracing. Once the new piles have been placed, place new cross bracing as shown on the plans. When applied, the new cross bracing should provide the necessary lateral bracing of the structure for a 130 mph wind load.
   c. The perimeter pilings are proposed to be replaced with 8x8 pressure treated piles.
      i. Pile replacement along the perimeter will require partial siding and corner board removal and replacement to connect the new piles to the existing band sill. Where corner boards are partially replaced, form a minimum 30 degree bevel joint where existing mates with new; bottom board bevel to slope to exterior.
      ii. Some of the belly board plywood sheathing will need to be partially removed for access to the bolted connections. Remove as needed and replace after new connections have been made. Use stainless steel nails for reattachment of belly board sheathing.
   d. The interior piles are also to be replaced but cut off at the bottom of a proposed reinforced concrete grade beam with the upper pile being new 8x8 pressure treated piles.
7. The pile grid for the house is 4 bays deep and 3 bays wide. At the middle and rear of the 3-bay array of piles, a drop beam has been erected on top of 6x6 pressure treated posts.
   a. The posts have been notched at the top for 2 plies of a 3-ply drop beam. No positive connection from post to beam and from beam to the floor framing is apparent.
   b. The posts rest on top of the concrete slab. Galvanized clip angles hold the 6x6's to the slab. See photos at end of report.
   c. After the new piles are placed, notch to support the 3-ply beam and bolt beam to pile.
   d. Tie drop beam to floor joists with Simpson H2.5A stainless steel tie-down (with stainless steel nails). This will require that the plywood be removed either partially or in whole to permit strap connection. Other alternate and acceptable means of tying the drop beam to the floor joists may be used if approved by the Engineer.
8. Since all of the pile-to-beam connections for the house are covered by the plywood sheathing, we could not determine the type or adequacy of the connections. This house is proposed to be elevated 2.8 feet. With pilings proposed to be replaced, the connections will need to be verified as to their adequacy.
   a. The pilings appear to be notched and bolted to the top of the existing 8x8 pilings. Where plated connections exist, replace corroded plates and/or fasteners with new connectors and bolts. See "bolt spacing/strap sizing guide" detail in the plans.
   b. Where a connection is found to be either corroded or appears to be deficient by either the inspector or Engineer, apply the necessary connection repair. See detail OH23 as well as the "bolt spacing/strap sizing guide" detail in the plans.
   c. For budget purposes, assume all pile connections are insufficient and will need either to be replaced or re-bolted with new bolts.
   d. Note the special provisions in the details as to the type material required for tie-downs. Unless otherwise permitted (see exception in the detail), both thin gauge less than 1/8" thick) and metal plates 1/8" and larger as well as fasteners are to be 316L stainless steel.
9. There are pilings at the rear below the rear deck that support both the porch deck and porch roof. These porch posts appear to be properly bolted to the piles.
10. Where the stairway abuts the front porch deck, there is a cracked 6x6 piling. The pile is the center most post in the front of the deck. Replace and/or spice in a new pressure treated pile.
11. Other than the decks and inside the storage room, the floor framing is covered by a plywood belly board.
12. Some of the floor joist framing visible inside the storage room has not been properly framed as the two joists on either side of a headed off area consists of a single joist; all framing connections being made with joist hangers. The repair of this deficiency is outside the scope of this work.
13. Existing Pile Condition:
   a. Experience has taught that the bury depth on older homes with creosote pilings is suspect and very often buried too shallow by current code and industry standards. Furthermore old creosote piles tend to be brittle and splinter easily so partially embedding them in a concrete grade beam to both effect a shallow bury and to reduce the slenderness ratio was not a viable option either. As such, lifting the existing piles in place was not an option; opting instead for replacement as shown on the plans.
   b. It is probable that some of the pilings may be partially decayed where they have been covered, near grade, with concrete. However, due to the type of treatment used on 8x8 pilings this is not likely to be a concern.
14. Provide conventionaly framed pressure treated timber decks or porches (if applicable), stairs, handrails, and pickets per the NC Residential Building Code, HMGP requirements at each of the following locations. Coordinate location, orientation, and configuration with inspector and owner.
   a. Front Entry Landing and Stairs:
      i. Front entry and stairs is to be elevated with the house.
      ii. At the terminal end of the stairs, where the stair terminates at grade, add 4 steps (5 risers minimum); rise/run to match existing stairs. This will likely require the placement of a new pair of 6x6 posts and double 2x8 pressure treated beams to support both the upper existing stair as well as the stair extension. Extend handrail as required using pressure treated handrail, pickets and steps.
      iii. To avoid interference with the driveway, do not place a boardwalk landing at the end of the stairs.
      iv. Coordinate step placement with Owner and project inspector.
   b. Walkway across and to Ocean (Ocean side):
      i. Porch/Deck connecting to 4'-8"+/- wide walkway across dune to Ocean is to be elevated.
      ii. Before elevating house, place 2 new 6x6 pressure treated posts with 8-foot bury as shown on the plan.
      iii. Add a new single pressure treated 2x8 drop beam and through bolt as shown on the plans. See details 102 and 103 on plans.
      iv. Sever 4' wide walkway.
      v. Over-frame 4 pressure treated timber steps (5 risers of equal riser height) on top of 4'-8" wide walkway to make up the difference in elevation between the deck (post elevation height) and the walkway elevation. Partial handrail removal and replacement will be necessary.
   c. North Side Stairway from Deck to grade:
      i. North side stairway, from deck to grade, is to be elevated with the house.
      ii. At the terminal end of the stairs, where the stair terminates at grade, add 5 steps (5 risers minimum); rise/run to match existing stairs. This will likely require the placement of a new pair of 6x6 posts and double 2x8 pressure treated beams to support both the upper existing stair as well as the stair extension. Extend handrail as required using pressure treated handrail, pickets and steps.
      iii. Shift the condensing unit platform to avoid interference with the stairway extension. Also, do not place a boardwalk landing at the end of the stairs.
      iv. Coordinate step placement with Owner and project inspector.
15. All new access construction is to meet the applicable provisions of chapter 46 "Coastal and Flood Plain Construction Standards" and Appendix M "Wood Decks."
16. HVAC:
   a. There is a condensing unit resting on a timber platform located on the north side of the house at about middepth. An air-handling unit is located inside the storage room and suspended from the upper floor floor framing. Bottom of unit is approximately 36 inches below the existing finished floor.
   b. Temporarily disconnect condensing unit and store and protect until house has been elevated and the unit is ready to be reconnected.
   c. Replace the platform with a new pressure treated timber framed platform set to BFE + 1 foot. Platform is not to be re-attached to house but be freestanding with appropriate cross bracing. Once house has been raised, reconnect unit and restore operation.
   d. A plywood cowling has been constructed along the bottom of the floor framing. The cowling is a chase for supply and return ducts.
   e. House is being elevated sufficiently an extra foot to provide a 12" freeboard below the air-handling unit. This extra foot will more than accommodate the duct chase.
17. Water:
   a. The house is on Town water. There is a meter assembly located near the road. Locate service line and protect line during construction. Reconnect service once house has been elevated.
   b. One or more potable water supply line runs up along one or more piles. Prior to lifting house, disconnect service(s) and, after house has been elevated, reconnect service(s).
   c. A shower exists on the first floor deck at the north end of the rear porch. Temporarily disconnect service if it interferes with pile replacement and reconnect once house has been elevated.
   d. There is a water spigot near grade on the front wall of the ground floor storage room. Prior to lifting house, disconnect service and, after house has been elevated and a new storage room constructed, either replace or reconnect spigot.
18. Sewer:
   a. House is on a public system. Locate service line and cordon off to protect from damage by equipment.
   b. One or more waste lines run up along a couple of piles. One is located inside the front storage room. Prior to replacing piles, disconnect service(s) and, after house has been elevated and new piles installed, reconnect waste line(s).
19. Electrical Service:
   a. An underground electric service is located on the right side of the front deck right at floor level.
   b. Prior to elevation, have service line located and protect from damage during construction. Disconnect service prior to elevation. After the service has been properly elevated, re-establish service once house has been elevated. Service to meet the NC State Electrical Code.
   c. The electric meter is apparently read from the deck. Placement of a ground level access to the meter would interfere with the carport parking. Therefore no access from below is possible due. Unless service provider instructs otherwise, disconnect service and raise meter/panel box up approximately 36 inches such that the meter can be read at eye level (approximately 5 feet above the deck floor) from the deck (as it is now). Coordinate with project inspector and owner.
   d. Inside the storage room at approximately 32 inches from the ceiling, there is what appears to be a Midwest (the manufacturer) power outlet possibly for connecting a standby generator. Electrical appliance is to be adjusted up to meet the BFE+12: freeboard requirement and the NEC. Verify type of appliance
   e. Receptacles and light switches at ground floor level: Correct wiring and fixtures; rewiring and elevating to meet the freeboard requirement for switches and receptacles.
20. Dryer vent extends down into storage room. After room is replaced, re-duct vent using hard tubing with a negative grade to the exterior wall to drain and place a flap valve.
21. Contractor shall be responsible for verifying all dimensions prior to pile placement. Dimensions and floor plan shown was developed from field made by measurements by Appian Consulting Engineers. These dimensions must be verified and altered as necessary for the proper placement of proposed framing elements beneath the existing structure. Some adjustments to fit the actual structure footprint will be required.
22. Provide flood vents on new storage room per the Residential Building Code and detail S-21.



100 ELEVATION DIAGRAM

SCALE: N.T.S.

BEFORE YOU DIG, CALL 811
NORTH CAROLINA ONE-CALL CENTER
www.ncocc.org

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HOR. SCALE:	-	DATE:	FEBRUARY, 2016	DESIGN:	Bobby Joyner
VER. SCALE:	N/A	DRAWN BY:	Mike Gallina	CHKD:	-

REVISIONS

NO.	DATE:	DESCRIPTION:	BY:	CAD:
△	.	.	.	.

Appian
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admin@appianengineers.com

Final Drawings
Review Purposes ONLY

NORTH CAROLINA PROFESSIONAL SEAL 8421 ENGINEER BOBBY L. JOYNER 11/07/2016

(#3TB) 1117 OCEAN BLVD. TOPSAIL BEACH, N.C. - Thexton
Pender County FMA FY14 Elevation Project

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Holland Consulting Planners, Inc.
Final Bid Tabulation Form

Project: Pender Co. FY14 FMA

Bid Opening Date 11/22/2016

Case File #	Occupant/Address	Actual Bid (Tabulated)	Contractor	Recommended Award (X)	Comments
1TB	Barger/1802 Ocean Blvd/Topsail Beach	$116,282.00	Goose Creek Const.		Next low bidder * (see notes below)
		$160,483.00	IMEC		
		$148,000.00	Holland Const.	X	
2TB	Costic/1121 Ocean Blvd/Topsail Beach	$85,720.00	Goose Creek Const.	X	Low bidder
		$211,500.00	IMEC		
		$120,000.00	Holland Const.		
3TB	Thexton/1117 Ocean Blvd/Topsail Beach	$89,740.00	Goose Creek Const.	X	Low bidder
		$185,650.00	IMEC		
		$120,000.00	Holland Const.		
4TB	Hull/1105 Ocean Blvd/Topsail Beach	$116,076.00	Goose Creek Const.	X	Low bidder
		$198,100.00	IMEC		
		$144,000.00	Holland Const.		

REQUEST FOR BOARD ACTION

DATE OF MEETING: December 5, 2016

REQUESTED BY: Kyle M. Breuer, Director, Planning and Community Development

SHORT TITLE: Resolution to Approve Elevation Contract Awards for Structures included the FY14 Flood Mitigation Assistance (FMA) Grant Project.

BACKGROUND: The FY14 FMA Elevation Project involves the elevation of (4) four Severe Repetitive Loss (SRL) structures located in Topsail Beach that are currently insured under the National Flood Insurance Program (NFIP).

The program proposes to elevate and retrofit (4) existing structures in place in order to ensure compliance with current FEMA and Local (Town of Topsail Beach) floodplain requirements. Once complete a deed restriction on the property will require that flood insurance be maintained in perpetuity.

A Mandatory Pre-Bid meeting was advertised and held on November 10, 2016. (4) General Contractors and (2) elevation subcontractors were represented at the meeting. Several items were discussed and bid packages were released to those who attended.

A copy of the advertisement, sign-in sheet and meeting agenda are attached.

The Bid Opening was held on Tuesday, November 22nd at 11:00 AM. (3) Bids were received for each unit. The award recommendations are as follows:

Address	Contractor	Amount	Notes
1121 Ocean Blvd, Topsail Beach	Goose Creek Construction	$85,720.00	Low Bid
1117 Ocean Blvd, Topsail Beach	Goose Creek Construction	$89,740.00	Low Bid
1105 Ocean Blvd, Topsail Beach	Goose Creek Construction	$116,076.00	Low Bid
1802 Ocean Blvd, Topsail Beach	Holland Construction	$148,000.00	2nd Low Bid*

* See notes on final bid tab (attached)

SPECIFIC ACTION REQUESTED: To consider a resolution approving of the Elevation Contract Awards as recommended by Administrative Consultant.

RESOLUTION

NOW, THEREFORE BE IT RESOLVED by the Pender County Board of Commissioners that:

the Board hereby authorizes the elevation contract awards to the contractors approved by the Pender County Board of Commissioners. All units are included in the FY14 FMA (Elevation) grant. The Chairman/County Manager is authorized to execute any/all documents necessary to implement this resolution.

AMENDMENTS:

MOVED Piepmeyer SECONDED Williams

APPROVED ✓ DENIED _____ UNANIMOUS

YEA VOTES: Brown ✓ McCoy ___ Newton ✓ Piepmeyer ✓ Williams ✓

George R. Brown, Jr. 12/5/2016

Melissa Long
ATTEST 12/5/2016

AFFIDAVIT

Reference: Pender County Flood Mitigation Assistance Program
Elevation of Properties at 1117 and 1121 Ocean Boulevard, Topsail Beach, NC
Variance Request for Required FLSNV Setback

Ron Ackers DBA Goose Creek Construction being first duly sworn, under oath, and states that the following information is within his personal knowledge and belief:

Based on my experience with elevating homes in coastal areas, I estimate that the additional turnkey cost to relocate the existing structures versus elevating in place would be approximately $20,000.00 per property.

Ron Akers DBA Goose Creek Construction

P.O. Box 1154
Street

Kitty Hawk, NC 27949
City, State, Zip

STATE OF NORTH CAROLINA

COUNTY OF Dare

Subscribed and sworn to before me this 19 day of January, 2017, by Ron Akers.

Casey C Rawles
Notary Public

My Commission Expires: 2/24/2018

CASEY C. RAWLES NOTARY PUBLIC DARE COUNTY, NC My Comm. Expires 02/24/2018

Hazard Mitigation Assistance Program Digest

2015

FEMA

Introduction

FEMA offers three Hazard Mitigation Assistance (HMA) grant programs – the **Hazard Mitigation Grant Program** (HGMP), the **Pre-Disaster Mitigation** (PDM) program and the **Flood Mitigation Assistance** (FMA) program – to help States, Territories, Indian Tribal governments, local communities, private non-profits and businesses implement cost-effective, long-term mitigation measures for all natural hazards. Supporting this endeavor is most effective when all stakeholders share in a mutual understanding of program purpose, concepts, terminology and procedures. As part of this effort, FEMA has produced this digest of HMA program operational terms and references. The HMA Program Digest is intended to be an easy-to-read, easy-to use, brief summary of the basic HMA program elements.

While the HMA Program Digest is primarily intended for those unfamiliar with the HMA programs, it also may serve as a reference for employees, applicants, and other stakeholders with many years of experience with the programs. Because the digest is not exhaustive, either in topics or in detail, information should be verified with the FEMA **HMA Unified Program Guidance** and FEMA HMA program officials before becoming the basis for decision making.

The HMA Program Digest is available at http://www.fema.gov/hazard-mitigation-assistance. Other key sources of HMA program information are the following:

- HMA Unified Program Guidance and Addendum to HMA Unified Program Guidance;
- 44 Code of Federal Regulations;
- The Robert T. Stafford Disaster Relief and Emergency Assistance Act, As Amended, 42 U.S.C. 5121 et seq.;
- The National Flood Insurance Act of 1968, As Amended, 42 U.S.C. 4001 et seq.

Substantial Improvement

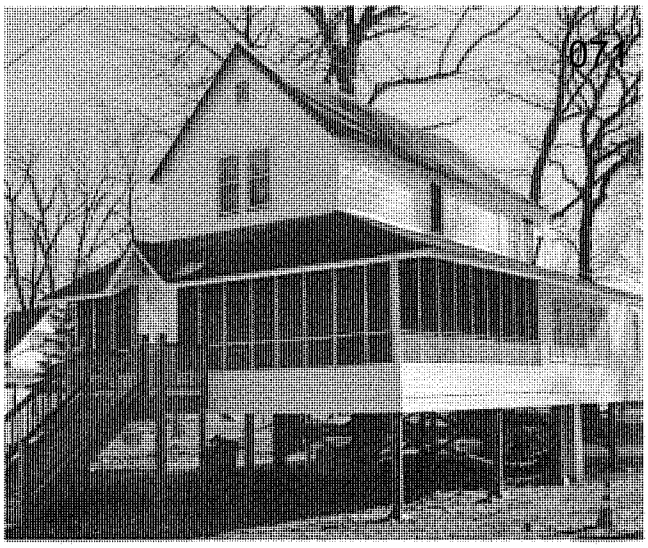
Substantial Improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage" regardless of the actual repair work performed. The term does not, however, include either:

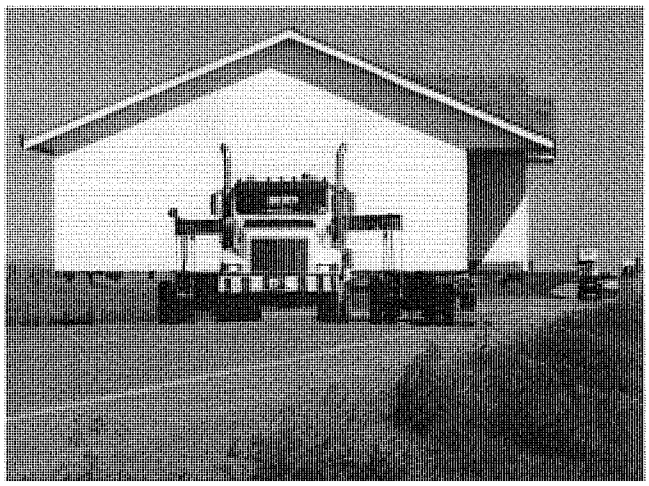
- Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or
- Any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as a "historic structure".

HMGP funds cannot be used to fund new construction or substantial improvement in a floodway or new construction in a **coastal high hazard zone**. However, the costs to elevate or floodproof a damaged structure or facility are not included in determining whether the substantial improvement threshold is triggered. For additional information see 44 C.F.R. § 9.11(d), Minimization Standards.

Applicable HMA program(s): FMA, HMGP, PDM.

References: 44 C.F.R. § 9.11(d) and § 59.1; *Hazard Mitigation Assistance Guidance (February 27, 2015)*, E.6.1 (Floodplain Management and the Protection of Wetlands), page 48.





Hazard Mitigation Assistance Guidance

Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program

February 27, 2015

FEMA

Federal Emergency Management Agency
Department of Homeland Security
500 C Street, S.W.
Washington, DC 20472

award eligibility, in addition to any conditions that may be imposed on the award during the EHP review compliance process.

FEMA reviews the completeness of the responses to the questions in the EHP review section of the project subapplication and any supporting documentation. HMA project subapplications must include the required information for each property identified in the subapplication. For example, information needs may include detailed scopes of work, clearly labeled maps, photos of buildings, ages of all buildings and structures, and copies of any coordination letters with other agencies. FEMA utilizes this information to complete and document the EHP compliance review process. A lack of information may delay the identification of outstanding EHP compliance requirements and project implementation. Also, failing to provide the required information by the application deadline may prohibit FEMA from making an award or subaward.

FEMA has developed guidance to assist in completing the EHP information section of a project subapplication, including an eLearning Tool, online training, and information about historic preservation. For links to these EHP resources, see Part IX, C.5. Technical assistance is also available via the toll-free Project Technical Assistance for Environmental & Historic Preservation Helpline (866) 222-3580 or via e-mail at ehhelpline@fema.dhs.gov.

E.6.1 Floodplain Management and Protection of Wetlands

As noted in Part III, E.6, all activities funded by HMA programs must conform to 44 CFR Part 9. Proposed actions triggering the 8-Step Decision Making Process for Floodplain Management and Wetlands Considerations (see HMA Job Aid, *8-Step Decision Making Process for Floodplain Management and Wetlands Considerations*) will only be eligible for a grant if the Applicant or subapplicant demonstrates that there is no practicable alternative in accordance with 44 CFR Sections 9.9 through 9.11. HMA funds cannot be used to fund new construction or Substantial Improvements in a floodway or new construction in a Coastal High Hazard Area unless it constitutes a functionally dependent use or facilitates an open space use. However, the costs to elevate or floodproof a damaged structure or facility are not included in determining whether the Substantial Improvement threshold is triggered.

DECISION-MAKING FOR CRITICAL ACTION VS. CRITICAL FACILITY

Critical action is an action for which even a slight chance of flooding poses too great of a risk. It may or may not be associated with a critical facility. FEMA is responsible for determining if an action is a critical action. If a critical action is identified, FEMA must evaluate potential harm to the action from the 500-year flood.

Critical facilities are structures and institutions that are deemed by the local community and other jurisdictions as critical to the continuity of the community before, during, and after an event. Although the affected jurisdiction has the primary responsibility for determining what structures and institutions are critical facilities, FEMA reserves the right to make a final determination as needed to support the review and approval of an HMA project application.

For additional information see 44 CFR Section 9.11(d).

UNIT 8:
SUBSTANTIAL IMPROVEMENT AND SUBSTANTIAL DAMAGE

In this unit

This unit covers:

- The substantial improvement rule – how to regulate major additions and other improvements to buildings in the floodplain.
- The substantial damage rule – how to regulate reconstruction and repairs to buildings that have been severely damaged.
- Exceptions to the basic rule for some special cases.

Contents

INTRODUCTION

In previous units we focused on the rules and regulations that prevent or reduce damage from floods to new buildings. But what happens when the owner wishes to make an improvement, such as an addition, to an existing building? What if a building is damaged by a fire, flood or other cause?

Basic rule: If the cost of improvements or the cost to repair the damage exceeds 50 percent of the market value of the building, it must be brought up to current floodplain management standards.

That means an existing building must meet the requirements for new construction.

People who own existing buildings that are being substantially improved will be required to make a major investment in them in order to bring them into compliance with the law. They will not be happy. If the buildings have just been damaged, they will be financially strapped and your elected officials will want to help them, not make life harder for them.

For these reasons, it is easy to see that this basic rule can be difficult to administer. It is also the one time when your regulatory program can reduce flood damage to existing buildings. That's why this course devotes this unit to administering the substantial improvements and substantial damage regulations.

In this course, the term "building" is the same as the term "structure" in the NFIP regulations. Your ordinance may use either term. The terms are reviewed in more detail in Unit 5, Section E.

A. SUBSTANTIAL IMPROVEMENT

> ***44 CFR 59.1.*** *Definitions: "Substantial improvement" means any reconstruction, rehabilitation, addition or other improvement to a structure, the total cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement.*

This section addresses many clarifications and a few exceptions related to substantial improvements.

PROJECTS AFFECTED

All building improvement projects worthy of a permit must be considered. These include:

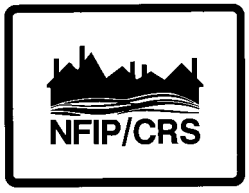
- Remodeling projects.
- Rehabilitation projects.
- Building additions.
- Repair and reconstruction projects (these are addressed in more detail in Section B on substantial damage)

If your community does not require permits for, say, reroofing, minor maintenance or projects under a certain dollar amount, then such projects are not subject to the substantial improvement requirements. However, if you have a larger project that includes reroofing, etc., then it must include the entire cost of the project.

One problem you may face is a builder trying to sneak through a loophole by applying for a permit for only part of the job and then later applying for another permit to finish the work. If both applications are together worth more than 50% of the value of the building, the combined project should be considered a substantial improvement and subject to the rules.

FEMA requires that the entire improvement project be counted as one. In order to help you enforce this, you may want to count all applications submitted over, say, one year as one project. Check with your attorney on whether your ordinance clearly gives you the authority to do this and be sure to spell it out in the permit papers given to the applicant.

Some communities require that improvements be calculated cumulatively over several years. All improvement and repair projects undertaken over a period of five years, 10 years or the life of the structure are added up. When they total 50 percent, the building must be brought into compliance as if it were new construction.



The Community Rating System credits keeping track of improvements to enforce a cumulative substantial improvement requirement. It also credits using a lower threshold than 50 percent. These credits are found under Activity 430, Section 431.c and d in the *CRS Coordinator's Manual* and the *CRS Application*. See also *CRS Credit for Higher Regulatory Standards* for example regulatory language.

Post-FIRM buildings

The rules do not address only pre-FIRM buildings—they cover *all* buildings, post-FIRM ones included.

In most cases, a post-FIRM building will be properly elevated or otherwise compliant with regulations for new construction. However, sometimes a map change results in a higher BFE or change in FIRM zone. A substantial improvement to a post-FIRM building may require that the building be elevated to protect it from the new, higher, regulatory BFE.

It should be remembered that all additions to a post-FIRM building must be elevated at least as high as the BFE in effect when the building was built. (You can't allow a compliant building to become noncompliant by allowing additions at grade.) If a new, higher BFE has been adopted since the building was built, additions that are substantial improvements must be elevated to the new BFE.

THE FORMULA

A project is a substantial improvement if:

$$\frac{\text{Cost of improvement project}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

For example, if a proposed improvement project will cost $30,000 and the value of the building is $50,000:

$$\frac{\$30{,}000}{\$50{,}000} = 0.6 \text{ (60 percent)}$$

The cost of the project exceeds 50 percent of the building's value, so it is a substantial improvement. The floodplain regulations for new construction apply and the building must meet the post-FIRM construction requirements. If the project is an addition, only the addition has to be elevated (see the examples later in this section).

The formula is based on the cost of the project and the value of the building. These two numbers must be reviewed in detail.

Project cost

The cost of the project means all structural costs, including

- all materials
- labor
- built-in appliances
- overhead
- profit
- repairs made to damaged parts of the building worked on at the same time

A more detailed list is included in Figure 8-1.

To determine substantial improvement, you need a detailed cost estimate for the project, prepared by a licensed general contractor, professional construction estimator or your office.

Your office must review the estimate submitted by the permit applicant. To verify it, you can use your professional judgment and knowledge of local and regional construction costs, or you can use building code valuation tables published by the major building code groups. These tables can be used for determining estimates for particular replacement items if the type of structure in question is listed in the tables.

There are two exemptions to calculating the cost of an improvement or repair project: 1) improvements to correct code violations and 2) historic buildings. These are explained in more detail later on.

Market value

In common parlance, market value is the price a willing buyer and seller agree upon. The market value of a structure reflects its original quality, subsequent improvements, physical age of building components and current condition.

However, market value for property can be different than that of the building itself. Market value of developed property varies widely due to the desirability of its location. For example, two houses of similar size, quality and condition will have far different prices if one is on the coast, or in the best school district, or closer to town than the other—but the value of the building materials and labor that went into both houses will be nearly the same.

For the purposes of determining substantial improvement, market value pertains only to the structure in question. It does not pertain to the land, landscaping or detached accessory structures on the property. Any value resulting from the location of the property should be attributed to the value of the land, not the building.

Items to be included

- All structural elements, including:
  - Spread or continuous foundation footings and pilings
  - Monolithic or other types of concrete slabs
  - Bearing walls, tie beams and trusses
  - Floors and ceilings
  - Attached decks and porches
  - Interior partition walls
  - Exterior wall finishes (brick, stucco, siding) including painting and moldings
  - Windows and doors
  - Reshingling or retiling a roof
  - Hardware
- All interior finishing elements, including:
  - Tiling, linoleum, stone, or carpet over subflooring
  - Bathroom tiling and fixtures
  - Wall finishes (drywall, painting, stucco, plaster, paneling, marble, etc.)
  - Kitchen, utility and bathroom cabinets
  - Built-in bookcases, cabinets, and furniture
  - Hardware
- All utility and service equipment, including:
  - HVAC equipment
  - Plumbing and electrical services
  - Light fixtures and ceiling fans
  - Security systems
  - Built-in kitchen appliances
  - Central vacuum systems
  - Water filtration, conditioning, or recirculation systems
- Cost to demolish storm-damaged building components
- Labor and other costs associated with moving or altering undamaged building components to accommodate improvements or additions
- Overhead and profits

Items to be excluded

- Plans and specifications
- Survey costs
- Permit fees
- Post-storm debris removal and clean up
- Outside improvements, including:
  - Landscaping
  - Sidewalks
  - Fences
  - Yard lights
  - Swimming pools
  - Screened pool enclosures
  - Detached structures (including garages, sheds and gazebos)
  - Landscape irrigation systems

Figure 8-1. Items included in calculating cost of the project

Acceptable estimates of market value can be obtained from these sources:

- An independent appraisal by a professional appraiser. The appraisal must exclude the value of the land and not use the "income capitalization approach" which bases value on the use of the property, not the structure.
- Detailed estimates of the structure's actual cash value—the replacement cost for a building, minus a depreciation percentage based on age and condition. For most situations, the building's actual cash value should approximate its market value. Your community may prefer to use actual cash value as a substitute for market value, especially where there is not sufficient data or enough comparable sales.
- Property appraisals used for tax assessment purposes with an adjustment recommended by the tax appraiser to reflect market conditions (adjusted assessed value).
- The value of buildings taken from NFIP claims data (usually actual cash value).
- Qualified estimates based on sound professional judgment made by the staff of the local building department or tax assessor's office.

Some market value estimates are often used only as screening tools (i.e., NFIP claims data and property appraisals for tax assessment purposes) to identify those structures where the substantial improvement ratios are obviously less than or greater than 50 percent (i.e., less than 40 percent or greater than 60 percent). For structures that fall in the 40 percent to 60 percent range, more precise market value estimates are sometimes necessary.

SUBSTANTIAL IMPROVEMENT EXAMPLES

Example 1. Minor rehabilitation

A rehabilitation is defined as an improvement made to an existing structure which does not affect the external dimensions of the structure.

If the cost of the rehabilitation is less than 50 percent of the structure's market value, the building does not have to be elevated or otherwise protected. However, it is advisable to incorporate methods to reduce flood damage, such as use of flood-resistant materials and installation of electrical, heating and air conditioning units above the BFE.

Figure 8-2 shows a building that had a small rehabilitation project. Central air conditioning was installed and the electrical system was upgraded. The value of the building before the project was $60,000. The value of the project was $12,000:

$12,000 = 0.2 (20 percent) The project costs less than 50 percent of the $60,000 building, so this is not a substantial improvement.

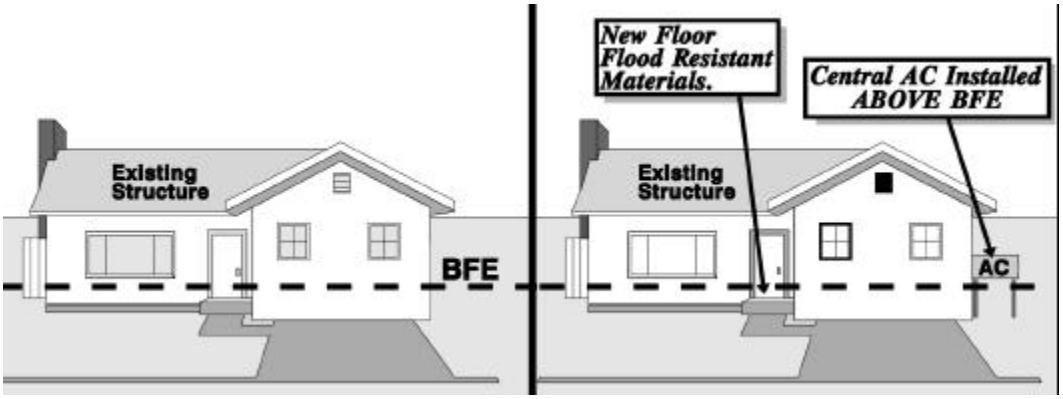


Figure 8-2. Minor rehabilitations use flood-resistant methods and materials. Neither structure would benefit from post-FIRM flood insurance rates because they are not elevated.

Note: To gauge what happens to flood insurance premiums if a substantially improved building is not brought up to post-FIRM standards, see Figures 7-7 through 7-12.

Example 2. Substantial rehabilitation

If the rehab costs more than 50 percent of the value of the building, your ordinance requires that an existing structure be elevated and/or the basement filled to meet the elevation standard.

Figure 8-3 shows a building that has been allowed to run down. It's market value is $35,000. To rehab it will require gutting the interior and replacing all wallboard, built-in cabinets, bathroom fixtures and furnace. The interior doors and flooring will be repaired. The house will get new siding and a new roof. The cost of this rehab will be $25,000:

$\frac{\$25,000}{\$35,000}$ = 71.4 percent Because total cost of the project is greater than 50 %the rehab is a substantial improvement

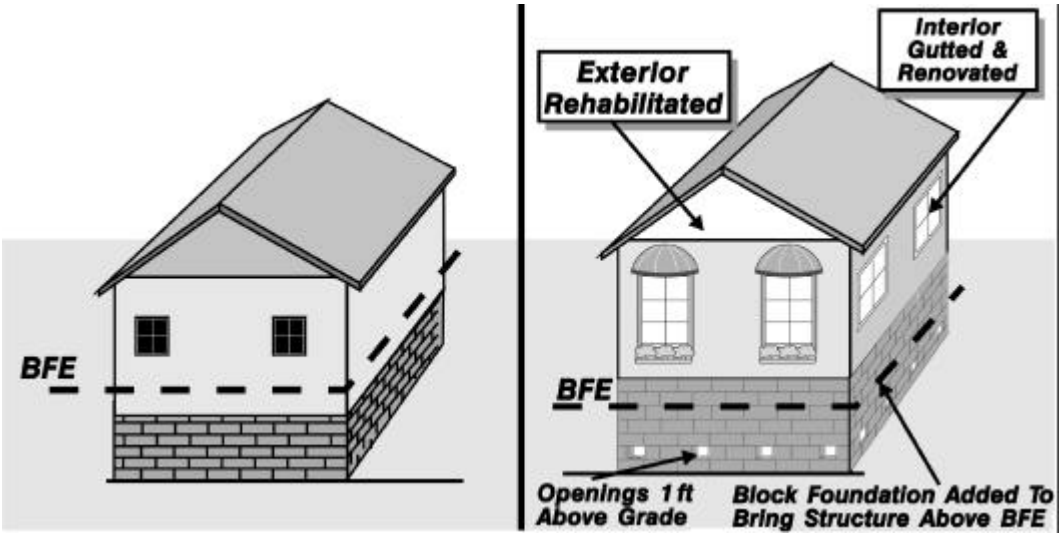


Figure 8-3. substantially rehabilitated building elevated above the BFE.
In A Zones, elevation may be on fill, crawlspace, columns, etc. In V Zones, only pilings, columns or other open foundations are allowed. The new structure would benefit from post-FIRM flood insurance rates.

Example 3. Lateral addition—residential

Additions are improvements that increase the square footage of a structure. Commonly, this includes the structural attachment of a bedroom, den, recreational room garage or other type of addition to an existing structure.

When an addition is a substantial improvement, the addition must be elevated or floodproofed, providing that improvements to the *existing* structure are minimal. Figures 8-4 and 8-5 illustrate lateral additions that are compliant.

Depending on the flood zone and details of the project, the existing building may not have to be elevated. The determining factors are the common wall and what improvements are made to the existing structure. If the common wall is demolished as part of the project, then the entire structure must be elevated. If only a doorway is knocked through it and only minimal finishing is done, then only the addition has to be elevated.

In A Zones only, if significant improvements are made to the existing structure (such as a kitchen makeover), both it and the addition must be elevated and otherwise brought into compliance. Some states and many communities require that both the existing structure and lateral additions be elevated in all cases.

In V Zones, the existing structure always has to be elevated, placed on an engineered foundation system, etc., when an addition is proposed that constitutes a substantial improvement. This is due to the "free-of obstruction" standard whereby the lower existing structure would obstruct the storm surge, causing damage to the addition.

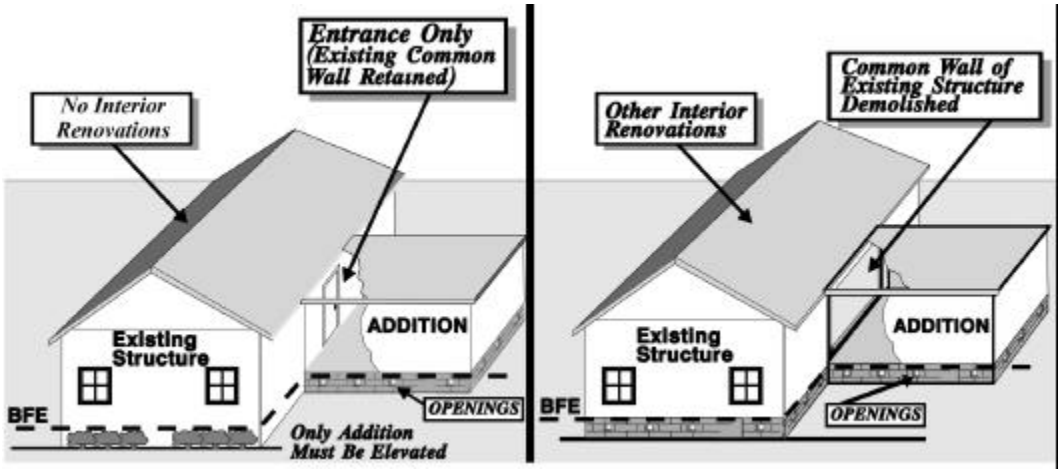


Figure 8-4. Lateral additions to a residential building in an A Zone.
In V Zones, the entire building must be elevated on pilings, columns or other open foundations. The structure on the left would not benefit from post-FIRM flood insurance rates because it was not elevated.

Example 4. Lateral addition—nonresidential

A substantial improvement addition to a nonresidential building may be either elevated or floodproofed. Otherwise, all the criteria for residential buildings reviewed in Example 3 must be met.

If floodproofing is used, the builder must ensure that the wall between the addition and the original building is floodproofed. Floodproofing is not allowed as a construction measure in V Zones.

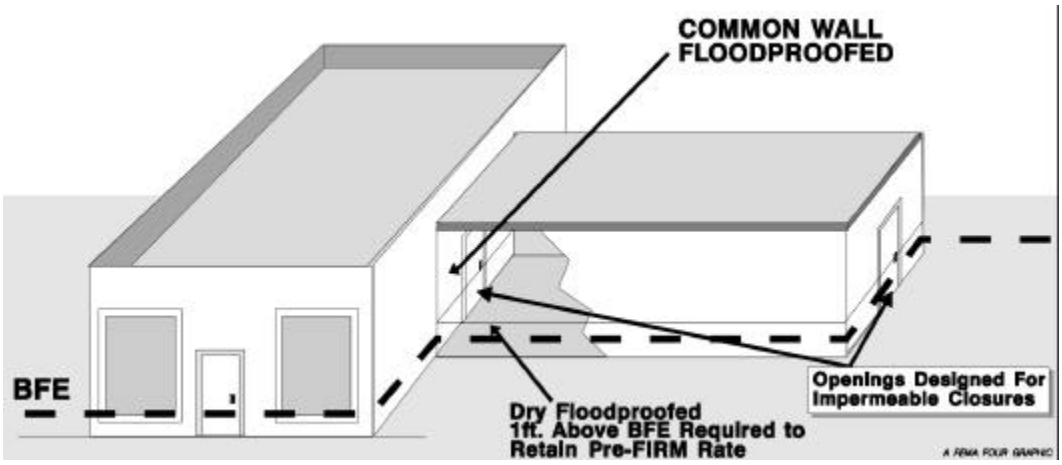


Figure 8-5. Lateral addition to a nonresidential building in an A Zone.
This approach is not allowed in V Zones. The structure would *not* benefit from post-FIRM flood insurance rates because the original building was not elevated or floodproofed.

Example 5. Vertical addition—residential

When the proposed substantial improvement is a full or partial second floor, the entire structure must be elevated (Figure 8-6). In this instance, the existing building provides the foundation for the addition. Failure of the existing building would result in failure of the addition, too.

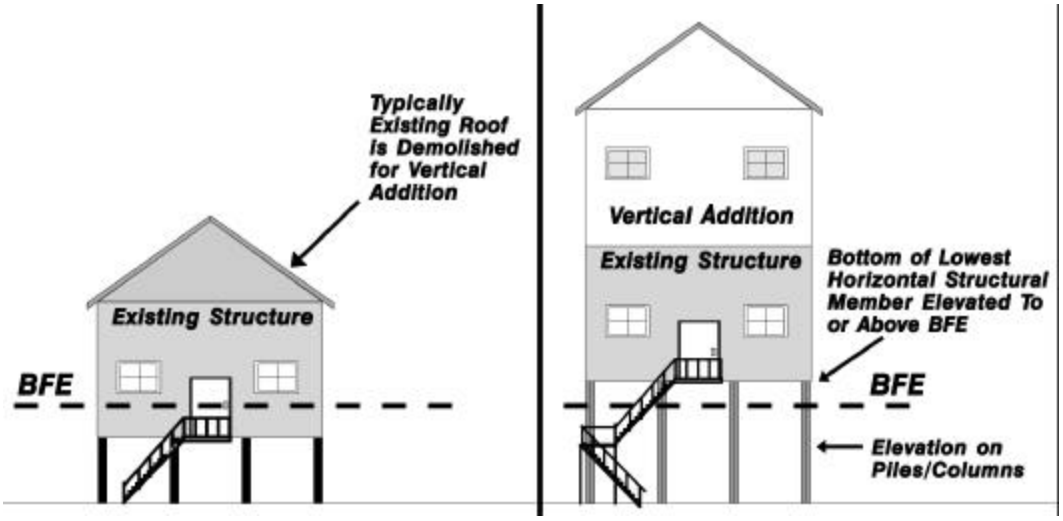


Figure 8-6. Vertical addition to a residential building in a V Zone.
The new structure would benefit from post-FIRM flood insurance rates.

Example 6. Vertical addition—nonresidential

When the proposed substantial improvement is a full or partial second floor, the entire structure must be elevated or floodproofed (Figure 8-7).

The owner could obtain post-FIRM rates on the building if it is floodproofed to one foot above the BFE and he has a floodproofing certificate signed by a registered engineer. An optional approach is to elevate the entire building and obtain an elevation certificate.

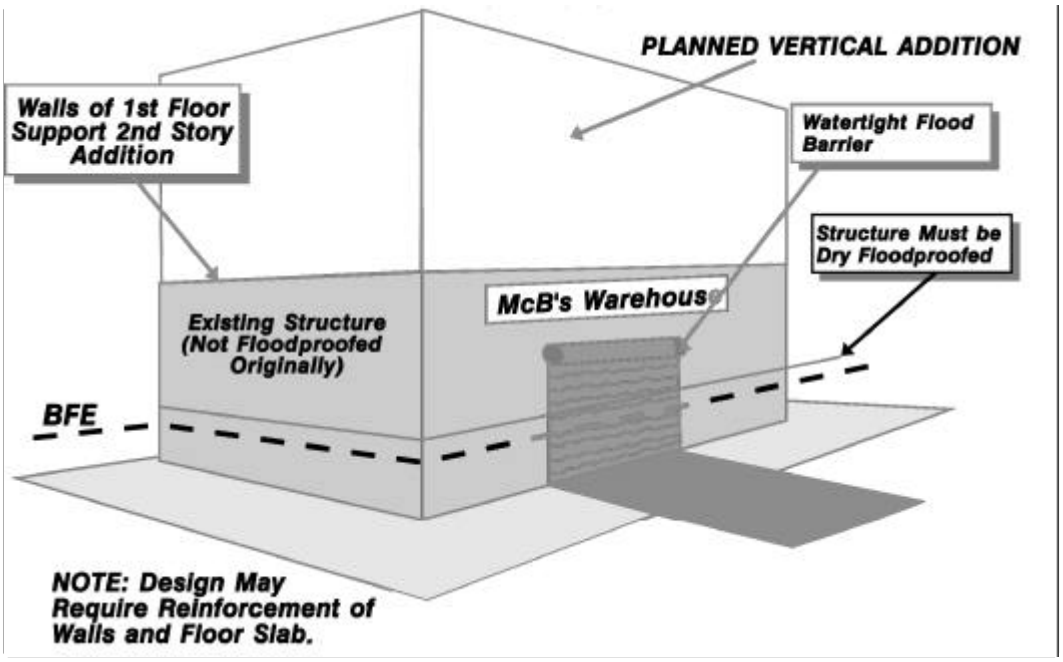


Figure 8-7. Vertical addition to a nonresidential building in an A Zone.
The new floodproofed structure would benefit from post-FIRM flood insurance rates.

Example 7. Post-FIRM building—minor addition

ALL additions to post-FIRM buildings are defined as new construction and must meet the requirements of your floodplain management ordinance regardless of the size or cost of the addition (Figure 8-8). A small addition to a residential structure must be elevated at least as high as the BFE in effect when the building was built.

If a map revision has taken place and the BFE has increased, only additions that are substantial improvements have to be elevated to the new BFE.

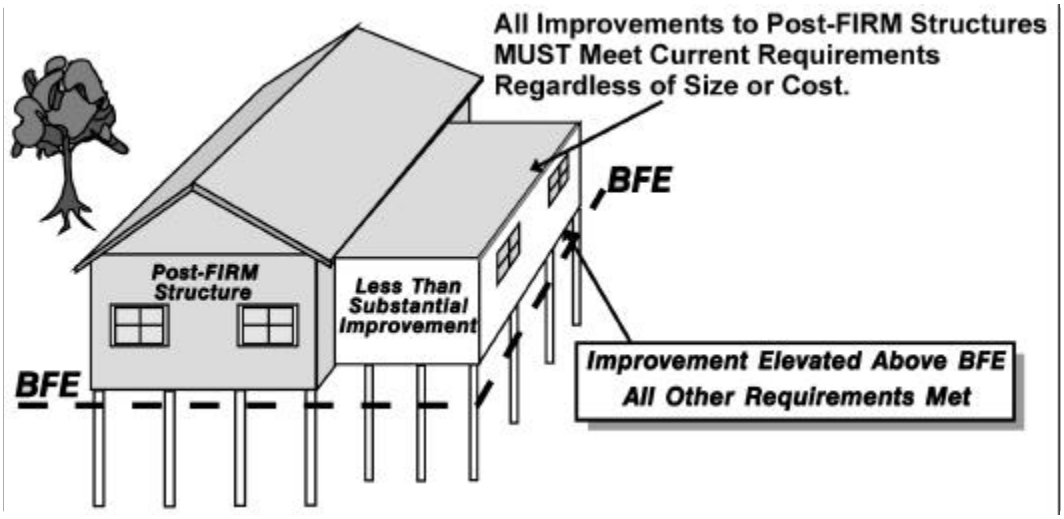


Figure 8-8. Small additions to post-FIRM buildings must be elevated.

Example 8. Post-FIRM building—substantial improvement

Substantial improvements made to a post-FIRM structure must meet the requirements of the current ordinance. Figure 8-9 shows a lateral addition made after a map revision took place and the BFE was increased.

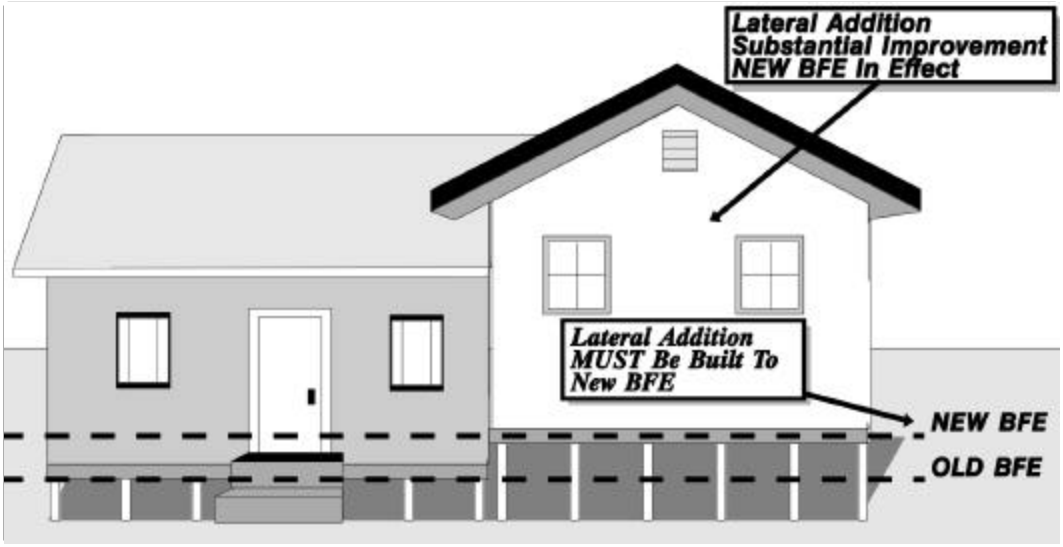


Figure 8-9. Substantial improvements to post-FIRM buildings must be elevated above the new BFE. Nonresidential buildings may be floodproofed

LEARNING CHECK #1

1. What is the basic rule on improvements and repairs to existing buildings in the floodplain?

2. Mrs. Murphy got a permit two months ago to remodel her living room and kitchen. Now she wants a permit to remodel three bedrooms and two bathrooms. Should you check each of these separately to determine if each project is a substantial improvement?

3. What is the substantial improvement formula?

4. Which of the following items must be included when calculating the cost of an improvement project?
   - — Attached deck
   - — Plumbing
   - — Permit fees
   - — Contractor's overhead and profit
   - — Architect's plans
   - — Landscaping
   - — Built-in bookcases

5. What factors are considered when determining market value?

6. What are three good sources for obtaining the market value of a house?

7. Mr. Jones proposes a $50,000 addition to his $80,000 home in the floodplain. Is this a substantial improvement?

8. If Mr. Jones' project will be a substantial improvement, what do you need to check to see if the whole house has to be elevated or just the addition?

B. SUBSTANTIAL DAMAGE

> ***44 CFR 59.1.*** *Definitions: "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.*

Two key points:

- The damage can be from any cause—flood, fire, earthquake, wind, rain, or other natural or human-induced hazard.
- The substantial damage rule applies to all buildings in a flood hazard area, regardless of whether the building was covered by flood insurance.

The formula is essentially the same as for substantial improvements:

$$\frac{\text{Cost to repair}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

Market value is calculated in the same way as for substantial improvements. Use the pre-damage market value.

COST TO REPAIR

Notice that the formula uses "cost *to* repair," not "cost *of* repairs." The cost to repair the structure must be calculated for full repair to the building's before-damage condition, even if the owner elects to do less. It must also include the cost of any improvements that the owner has opted to include during the repair project.

The total cost to repair includes the same items listed in Figure 8-1. As shown in Example 2 below, properly repairing a flooded building can be more expensive than people realize. The owner may opt not to pay for all of the items needed. The owner may:

- Do some of the work, such as removing and discarding wallboard.
- Obtain some of the materials free.
- Have a volunteer organization, such as the Mennonites, do some of the work.
- Decide not to do some repairs, such as choosing to nail down warped flooring rather than replace it.

Basic rule: Substantial damage is determined regardless of the actual cost to the owner. You must figure the true cost of bringing the building back to its pre-damage condition using qualified labor and materials obtained at market prices.

The permit office and the owner may have serious disagreements over the total list of needed repairs and their cost, as the owner has a great incentive to show less damage than actually occurred in order to avoid the cost of bringing the building into compliance. Here are four things that can help you:

- Get the cost to repair from an objective third-party or undebatable source, such as:

  -- A licensed general contractor.

  -- A professional construction estimator.

  -- Insurance adjustment papers (exclude damage to contents).

  -- Damage assessment field surveys conducted by building inspection, emergency management or tax assessment agencies after a disaster.

  -- Your office.

  Even if your office does not prepare the cost estimate, it needs to review the estimate submitted by the permit applicant. You can use your professional judgment and knowledge of local and regional construction costs. Or, you can use building code valuation tables published by the major building code groups.

- Use an objective system that does not rely on varying estimates of market value or different opinions of what needs to be repaired. The Substantial Damage Estimator Program discussed later in this section will do this.

- Publicize the need for the regulations and the benefits of protecting buildings from future flooding. A well-educated public won't argue as much as one that sees no need for the requirement.

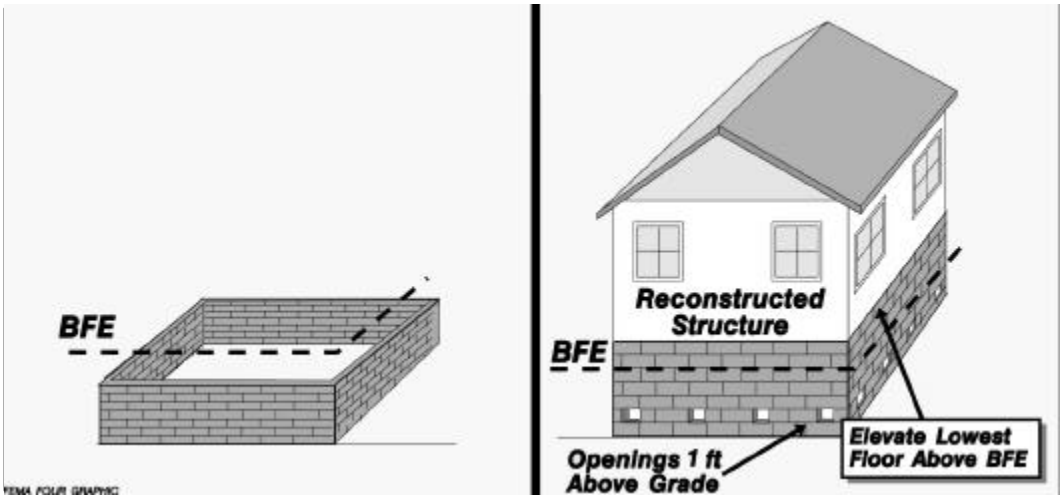
- Help the owner find financial assistance to meet the extra cost of complying with the code. If there was a disaster declaration, there may be sources of financial assistance as discussed in the next unit. If the owner had flood insurance and the building was substantially damaged by a flood, the new Increased Cost of Compliance coverage will help (see next section).

SUBSTANTIAL DAMAGE EXAMPLES

Example 1. Reconstruction of a destroyed building

Reconstructions are cases where an entire structure is destroyed, damaged, purposefully demolished or razed, and a new structure is built on the old foundation or slab. The term also applies when an existing structure is moved to a new site.

Reconstructions are, quite simply, "new construction." They must be treated as new buildings.



Razed or "totaled" building with remaining foundation

Reconstruction on existing foundation

Figure 8-10. A reconstructed house is new construction.
This example is for A Zones only. A new building in the V Zone must be elevated on piles or columns.

Example 2. Substantially damaged structure

To determine if a damaged structure meets the threshold for substantial damage, the cost of repairing the structure to its before-damaged condition is compared to the market value of the structure prior to the damage. The estimated cost of the repairs must include all costs necessary to fully repair the structure to its before-damaged condition.

If equal to or greater than 50 percent of that structure's market value before damage, then the structure must be elevated (or floodproofed if it is nonresidential) to or above the level of the base flood, and meet other applicable local ordinance requirements. This is the basic requirement for substantial damage.

Figure 8-11 graphically illustrates the amount of damage that can occur to a building flooded only four feet deep. Even though the structure appears sound and there are no cracks or breaks in the foundation, the total cost of repair can be significant.

The cost of repair after a flood that simply soaked the building will typically include the following structural items:

- Remove all wallboard and insulation.
- Install new wallboard and insulation.
- Tape and paint.
- Remove carpeting and vinyl flooring.
- Dry floor, replace warped flooring.
- Replace cabinets in the kitchen and bathroom.
- Replace built-in appliances.
- Replace hollow-core interior doors.
- Replace furnace and water heater.
- Clean and disinfect duct work.
- Repair porch flooring and front steps.
- Clean and test plumbing (licensed plumber may be required).
- Replace outlets and switches, clean and test wiring (licensed electrician may be required).

Note: See also Figures 7-7 through 7-12 for what happens to flood insurance premiums if a substantially damaged building is granted a variance and is not brought up to post-FIRM standards.

Figure 8-11. Even slow moving floodwater can cause substantial damage.

SUBSTANTIAL DAMAGE SOFTWARE

FEMA has developed a software program to help local officials make substantial damage determinations. The software is Windows-based and will work on Microsoft Windows 3.1 and Windows 95. While it is based on Microsoft Access, the software is self-contained and does not require any software in addition to Windows.

The software comes with a manual, *Guide on Estimating Substantial Damage Using the NFIP Residential Substantial Damage Estimator*, FEMA 311. This includes a user's manual and worksheets that allow the calculations to be done manually.

Contact your FEMA Regional Office for a copy of the software package and help in using it. Following a major disaster declaration, training sessions and technical assistance may be available.

INCREASED COST OF COMPLIANCE

On June 1, 1997, the NFIP began offering additional coverage to all holders of structural flood insurance policies. This coverage is called Increased Cost of Compliance or ICC.

The name refers to cases where the local floodplain management ordinance requires elevation or retrofitting of a substantially damaged building. Under ICC, the flood insurance policy will not only pay for repairs to the flooded building, it will pay up to $15,000 to help cover the additional cost of complying with the ordinance. This is available for any flood insurance claim and, therefore, is not dependent on the community receiving a disaster declaration.

There are some limitations to ICC:

- It's only available if there was a flood insurance policy on the building before the flood.
- It covers only damage caused by a flood.
- Claims are limited to $15,000 per structure.
- Claims must be accompanied by a substantial damage determination by the floodplain ordinance administrator.

It should also be mentioned that a portion of the rest of the claim payment may help meet the cost of bringing the building up to code. For example, if there was foundation damage, the regular claim will pay for the cost of repairing or replacing the foundation. The ICC funds would only be needed for the extra costs of raising the foundation higher than it was before.

In certain cases, an ICC claim can be filed if the building is repetitively flooded, sustaining losses of less than 50 percent of the market value each time and if the total cost of the losses is 50 percent or more during a certain period of time, provided the community has language in the flood damage ordinance that implements the substantial damage rule in these cases.

Figure 8-12 has example ordinance language. This language exceeds the minimum NFIP requirements, but would be needed if you wanted to trigger the ICC provision for repetitively damaged buildings.

The Community Rating System credits keeping track of improvements to enforce a cumulative substantial improvement requirement. The 1999 *CRS Coordinator's Manual* credits the ordinance language in Figure 8-12. These credits are found under Activity 430, Section 431.c in the *CRS Coordinator's Manual* and the *CRS Application.*

Option 1

A. Adopt the Following Definition:

"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 25 percent of the market value of the structure before the damage occurred.

B. And modify the "substantial improvement" definition as follows:

"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 "repetitive loss" or "substantial damage", regardless of the actual repair work performed.

Option 2

Modify the Asubstantial damage@ definition as follows:

"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. Substantial damage also 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 25 percent of the market value of the structure before the damage occurred.

NOTE 1: Communities need to make sure that these definitions are tied to the floodplain management requirements for new construction and substantial improvements and to any other requirements of the ordinance, such as the permit requirements, in order to enforce this provision.

NOTE 2: An ICC Claim Payment is ONLY made for flood-related damage. The substantial damage part of the definition must still include "damage of any origin" to be compliant with the minimum NFIP Floodplain Management Regulations.

Figure 8-12. Sample ordinance language for ICC repetitive loss definitions
Source: *Interim Guidance for State and Local Officials -- Increased Cost of Compliance Coverage*, FEMA, 1997. This language is only needed to trigger an ICC payment for a repetitive loss. No ordinance changes are needed for the ICC coverage for substantial damage.

C. EXCEPTIONS

As explained in previous sections, the substantial improvement and substantial damage requirements affect all buildings regardless of the reason for the improvement or the cause of the damage. There are three exceptions to this: exempt activities, historic buildings and projects required by code.

EXEMPT ACTIVITIES

Certain activities related to making improvements or repairing damaged buildings do not have to be counted toward the cost of the improvement or repairs. These include:

- Plans and specifications.
- Surveying.
- Permit fees.
- Demolition or emergency repairs made for health or safety reasons or to prevent further damage to the building.
- Improvements or repairs to items outside the building, such as the driveway, fencing, landscaping and detached structures.

HISTORIC STRUCTURES

Historic structures are exempted from the substantial improvement requirements subject to the criteria listed below. The exemption can be granted administratively if the current NFIP definitions of substantial improvement and historic structure are included in your ordinance, or they can be granted through a variance procedure.

In either case, they are usually granted subject to conditions.

If the improvements to a historic structure meet the following three criteria and are approved by the community, the building will not have to be elevated or floodproofed. It can also retain its pre-FIRM flood insurance rating status.

1. The building must be a bona-fide "historic structure." Figure 7-13 has the definition that must be followed.

2. The project must maintain the historic status of the structure. If the proposed improvements to the structure will result in it being removed from or ineligible for the National Register or federally-certified state or local inventory, then the proposal cannot be granted an exemption from the substantial improvement rule.

The best way to make such determinations is to seek written review and approval of proposed plans by the local historic preservation board, if it is federally-certified, or by the state historic preservation office. If the plans are approved, you can grant the exemption. If not, no exemption can be permitted.

3. Take all possible flood damage reduction measures. Even though the exemption to the substantial improvement rule means the building does not have to be elevated to or above BFE, or be renovated with flood-resistant materials that are not historically sensitive, many things can and should be done to reduce the flood damage potential. Examples include:

- Locating mechanical and electrical equipment above the BFE or flood-proofing it.
- Elevating the lowest floor of an addition to or above the BFE with the change in floor elevation disguised externally.
- Building the lowest floor of an addition with flood-resistant materials and providing hydrostatic openings.

CODE VIOLATIONS

The NFIP definition of substantial improvement includes another exemption:

> ***44 CFR 59.1 Definitions:*** *"Substantial improvement" means …. The term does not, however, include … Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions*

Note the key words in this exemption: *correct* existing violations, *identified* by the local official, and *minimum* necessary to assure safe conditions. This language was included in order to avoid penalizing property owners *who had no choice* but to make improvements to their buildings or face condemnation or revocation of a business license.

This exemption was intended for *involuntary* improvements or violations that existed before the improvement permit was applied for or before the damage occurred—for example, a restaurant owner who must remodel and enlarge the kitchen in order to meet current local and state health and safety codes.

You can only exempt the items specifically required by code. For example, if a single stair tread was defective and had to be replaced, do not exempt the cost of rebuilding the entire stairway. Similarly, count only replacement in like kind and what is minimally necessary. If the owner chooses to upgrade the quality of a code-required item, the extra cost is not exempt from the formula—it's added to the true cost of the improvement or repairs.

Unfortunately, many property owners and builders pressure local building official to exclude "code violation corrections" from their voluntary improvement proposals. There are "code violations" in all structures built before the current code was enacted. In many cases, those elements must be brought up to code as part of an improvement project.

This is very different from a code violation citation that forces a property owner to correct those violations and make improvements that were otherwise not planned. The building official must know about and document the violations before or at the time the permit is issued.

Example

A small business in a 40-year old building was damaged by a fire. The building's pre-fire market value was $100,000. The insurance adjuster and the permit office concluded that the total cost to repair would be $45,000.

However, the community's building code states that whenever an applicant applies for a permit to modify or improve a building, the building must be brought up to code. This building would need the following additional work:

- Replace unsafe electrical wiring.
- Install missing fire exit signs, smoke detectors and emergency lighting.
- Widen the front door and install a ramp to make the business accessible to handicapped and mobility-impaired people.

The total cost of these code requirements would be $8,000. However, since these were required by the code before the fire occurred, they would not have to be counted toward the cost to repair. Based on the basic formula:

$\frac{\$45{,}000}{\$100{,}000} = 0.45 \text{ or } 45\%$ The building is not declared substantially damaged

In this example, the building can be repaired without elevating or floodproofing. However, the permit office should strongly recommend incorporating flood protection measures and flood resistant materials in the repair project (as in the example in Figure 8-2).

LEARNING CHECK #2

1. What is the formula for determining substantial damage?

2. What is the basic rule on calculating the cost of the damage?

3. A tornado swept through town and substantially damaged 25 buildings in the floodplain. How can you help the property owners comply with the floodplain ordinance's substantial damage regulations?

4. Mr. Johnson prepared a list of everything he has to do to repair his flooded home. Which of the following items are counted toward the cost of repairs when determining substantial damage? What is the dollar amount that should be counted?

   — Clearing broken trees and debris away from the house ($2,500)

   — Replacing the warped flooring ($3,000)

   — New doors ($1,000) to replace old ones (worth $500)

   — Replacing the old kitchen cabinets (valued at $5,000) with custom hard-wood cabinets valued at $15,000.

   — New wall to wall carpeting ($1,800)

   — New furniture ($12,000)

   — New wiring ($2,000) to bring the building up to current code (This is a standard requirement of the community. The building was not cited as having a code violation.)

   — Permit fee ($500)

   — Clean out and test the furnace (done free as a public service by the utility company, but otherwise worth $250 if done by a private contractor)

   — New bushes and replacement fence ($1,500)

5. What's the best way to determine if a building is "historic" and eligible for exemption from the substantial improvement requirement?

UNIT LEARNING EXERCISE

1. What kind of projects need a permit so you can check to see if they would be substantial improvements?

2. A home was built to post-FIRM standards in 1990. The lowest floor was elevated four feet above grade, to the BFE in effect at that time. In 1995, a new FIRM went into effect. The new BFE is now six feet above grade at that site.

   a. How high would a small (less than substantial) addition have to be elevated?

   b. How high would a large (substantial) addition have to be elevated?

3. Mrs. Murphy bought her property for $100,000 last year. Is this a good basis for determining its market value?

4. Based on tax assessor's records, the market value of 123 Main Street is $75,000. The owner wants to replace the HVAC and plumbing, remodel the kitchen and both bathrooms and convert his basement to a finished family room. His total cost is $20,000 for supplies. If a contractor were to do the job, the total cost would be $45,000. However, since he is a handyman and will do all the work himself, the total cost of his project is $20,000. What is your response?

5. Mrs. Smith wants a new second story that will double the size and value of her house. The floor of the new story will be above the BFE. Will the old first floor have to be elevated?

6. The substantial damage regulations only apply if the building was damaged by a flood. True or false?

7. A flooded property owner has a brother who is a plumbing contractor. His brother's repair estimate shows the damage at 48% of the building's value. You think it should be higher. What can you do to prevent an argument over who's numbers are right?

8. Mrs. McGillicudy is on a fixed income. Her home was flooded and substantially damaged. Her flood insurance policy will pay for the repairs. When told that she will also have to elevate her house, she thinks she should apply for a variance due to the financial hardship. What do you tell her?

9. Before the flood, Mr. Johnson had been cited by the community for a code violation. The paint on his garage door had been peeling, which was a violation of the local housing maintenance code. Since the flood left mud up to the high water line, he decided to repaint the whole house. Can he claim exemption of the cost of the painting because it had been cited as a code violation?

ANSWERS TO THE LEARNING CHECKS

Learning check #1

1. What is the basic rule on improvements and repairs to existing buildings in the floodplain?

   If the cost of improvements or the cost to repair the damage exceeds 50 percent of the market value of the building, it must be brought up to current floodplain management standards.

2. Mrs. Murphy got a permit two months ago to remodel her living room and kitchen. Now she wants a permit to remodel three bedrooms and two bathrooms. Should you check each of these separately to determine if each project is a substantial improvement?

   No. They should be counted as one project and their total cost combined.

3. What is the substantial improvement formula?

   A project is a substantial improvement if:

   $$\frac{\text{Cost of improvement project}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

4. Which of the following items must be included when calculating the cost of an improvement project?

   — Attached deck *yes*

   — Plumbing *yes*

   — Permit fees *no*

   — Contractor's overhead and profit *yes*

   — Architect's plans *no*

   — Landscaping *no*

   — Built-in bookcases *yes*

5. What factors are considered when determining market value?

   "The price a willing buyer and seller agree upon." Factors to consider are the building's original quality, subsequent improvements, age and current condition.

6. What are three good sources for obtaining the market value of a house?

   — *An independent appraisal by a professional appraiser.*

   — *Detailed estimates of the structure's actual cash value (the replacement cost for a building, minus a depreciation percentage based on age and condition).*

— *Property appraisals used for tax assessment purposes with an adjustment recommended by the tax appraiser to reflect market conditions (adjusted assessed value).*

— *The value of buildings taken from NFIP claims data (usually actual cash value).*

— *Qualified estimates based on sound professional judgment made by the staff of the local building department or tax assessor's office.*

7. Mr. Jones proposes a $50,000 addition to his $80,000 home in the floodplain. Is this a substantial improvement?

   Yes, 50,000 divided by 80,000 = 0.625, more than 50%

8. If Mr. Jones' project will be a substantial improvement, what do you need to check to see if the whole house has to be elevated or just the addition?

   Check the extent of work on the common wall and the existing building. If the common wall is demolished as part of the project, the existing building and the addition must be elevated.

Learning check #2

1. What is the formula for determining substantial damage?

   A building was substantially damaged if:

   $$\frac{\text{Cost to repair}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

2. What is the basic rule on calculating the cost of the damage?

   Substantial damage is determined regardless of the actual cost to the owner. You must figure the true cost of bringing the building back to its pre-damage condition using qualified labor and materials obtained at market prices.

3. A tornado swept through town and substantially damaged 25 buildings in the floodplain. How can you help the property owners comply with the floodplain ordinance's substantial damage regulations?

   Help the owner obtain financial assistance. Many programs are available after a disaster declaration.

4. Mr. Johnson prepared a list of everything he has to do to repair his flooded home. Which of the following items are counted toward the cost of repairs when determining substantial damage? What is the dollar amount that should be counted?

   — Clearing broken trees and debris away from the house ($2,500) *$0*

   — Replacing the warped flooring ($3,000) *$3,000*

   — New doors ($1,000) to replace old ones (worth $500) *$1,000*

   — Replacing the old kitchen cabinets (valued at $5,000) with custom hardwood cabinets valued at $15,000. *$15,000*

   — New wall to wall carpeting ($1,800) *$1,800*

   — New furniture ($12,000) *$0 (not part of the structure)*

   — New wiring ($2,000) to bring the building up to current code (This is a standard requirement of the community. The building was not cited as having a code violation.) *$2,000*

   — Permit fee ($500) *$0*

   — Clean out and test the furnace (done free as a public service by the utility company, but otherwise worth $250 if done by a private contractor) *$250*

   — New bushes and replacement fence ($1,500) *$0 (not part of the structure)*

5. What's the best way to determine if a building is "historic" and eligible for exemption from the substantial improvement requirement?

   See if it's on an approved list of historic structures (see Figure 7-13)

Unit Learning Exercise

1. What kind of projects need a permit so you can check to see if they would be substantial improvements?

   — *Remodeling projects.*

   — *Rehabilitation projects.*

   — *Building additions.*

2. A home was built to post-FIRM standards in 1990. The lowest floor was elevated four feet above grade, to the BFE in effect at that time. In 1995, a new FIRM went into effect. The new BFE is now six feet above grade at that site.

   a. How high would a small (less than substantial) addition have to be elevated?

      To at least four feet above grade.

   b. How high would a large (substantial) addition have to be elevated?

      To at least six feet above grade.

3. Mrs. Murphy bought her property for $100,000 last year. Is this a good basis for determining its market value?

   It's a start, but the true market value may be different this year, depending on the local housing market. You also need to subtract the value of the land, landscaping, and detached structures that would have been in the purchase price for the property.

4. Based on tax assessor's records, the market value of 123 Main Street is $75,000. The owner wants to replace the HVAC and plumbing, remodel the kitchen and both bathrooms and convert his basement to a finished family room. His total cost is $20,000 for supplies. If a contractor were to do the job, the total cost would be $45,000. However, since he is a handyman and will do all the work himself, the total cost of his project is $20,000. What is your response?

   The total cost of the project must be the true cost, including the cost of labor and donated materials. This project will be a substantial improvement.

5. Mrs. Smith wants a new second story that will double the size and value of her house. The floor of the new story will be above the BFE. Will the old first floor have to be elevated?

   Yes. The project should be a substantial improvement and the entire building will need to be elevated in this situation.

6. The substantial damage regulations only apply if the building was damaged by a flood. True or false?

   False, the damage can be from any cause.

7. A flooded property owner has a brother who is a plumbing contractor. His brother's repair estimate shows the damage at 48% of the building's value. You think it should be higher. What can you do to prevent an argument over who's numbers are right?

   Get the cost to repair from an objective third-party or undebatable source, such as:

   — *A licensed general contractor.*

   — *A professional construction estimator.*

   — *Insurance adjustment papers (exclude damage to contents).*

   — *Damage assessment field surveys conducted by building inspection, emergency management or tax assessment agencies after a disaster.*

8. Mrs. McGillicudy is on a fixed income. Her home was flooded and substantially damaged. Her flood insurance policy will pay for the repairs. When told that she will also have to elevate her house, she thinks she should apply for a variance due to the financial hardship. What do you tell her?

   Her flood insurance policy has Increased Cost of Compliance coverage that will help pay for the cost of meeting the ordinance's requirement to elevate. Your office may be able to help her find financial assistance to pay for the rest of the cost, if needed.

9. Before the flood, Mr. Johnson had been cited by the community for a code violation. The paint on his garage door had been peeling, which was a violation of the local housing maintenance code. Since the flood left mud up to the high water line, he decided to repaint the whole house. Can he claim exemption of the cost of the painting because it had been cited as a code violation?

   No. Only exempt the items specifically required by the citation and what is minimally necessary to comply.

You are now only two short units from finishing this course. If you think you will be ready in a week, call now for the final examination to be mailed to you.

Locality _____ Permit Number _____

Ocean Hazard _____ Estuarine Shoreline _____ ORW Shoreline _____ Public Trust Shoreline_____ Other_____
(For official use only)

GENERAL INFORMATION

LAND OWNER

Name: Andrew Thexton

Address: 12766 River Rd

City: Richmond State: VA Zip: 23238 Phone: 804-338-2569

Email: athexton@mindspring.com

AUTHORIZED AGENT

Name: Kyle Brever, Planning Director for Pender Co.

Address: Po Box 519

City: Burgaw State: NC Zip: 28425 Phone: 910-259-1202

Email: kbrever@pendercountync.gov

LOCATION OF PROJECT: (Address, street name and/or directions to site. If not oceanfront, what is the name of the adjacent waterbody.) 1117 Ocean Blvd, Topsail Beach, NC

DESCRIPTION OF PROJECT: (List all proposed construction and land disturbance.) Elevation & retrofit existing structure in place from FFE of 16.2' to a FFE of 19'

SIZE OF LOT/PARCEL: 7000 square feet : 16 acres

PROPOSED USE: Residential ☒ (Single-family ☒ Multi-family ☐) Commercial/Industrial ☐ Other ☐

COMPLETE EITHER (1) OR (2) BELOW (***Contact your Local Permit Officer if you are not sure which AEC applies to your property***):

(1) OCEAN HAZARD AECs: TOTAL FLOOR AREA OF PROPOSED STRUCTURE: 1408 ____ square feet (includes air conditioned living space, parking elevated above ground level, non-conditioned space elevated above ground level but excluding non-load-bearing attic space)

(2) COASTAL SHORELINE AECs: SIZE OF BUILDING FOOTPRINT AND OTHER IMPERVIOUS OR BUILT UPON SURFACES: _____ square feet (includes the area of the roof/drip line of all buildings, driveways, covered decks, concrete or masonry patios, etc. that are within the applicable AEC. Attach your calculations with the project drawing.)

STATE STORMWATER MANAGEMENT PERMIT: Is the project located in an area subject to a State Stormwater Management Permit issued by the NC Division of Water Quality?
YES_____ NO ✓

If yes, list the total built upon area/impervious surface allowed for your lot or parcel: _____ square feet.

OTHER PERMITS MAY BE REQUIRED: The activity you are planning may require permits other than the CAMA minor development permit, including, but not limited to: Drinking Water Well, Septic Tank (or other sanitary waste treatment system), Building, Electrical, Plumbing, Heating and Air Conditioning, Insulation and Energy Conservation, FIA Certification, Sand Dune, Sediment Control, Subdivision Approval, Mobile Home Park Approval, Highway Connection, and others. Check with your Local Permit Officer for more information.

STATEMENT OF OWNERSHIP:
I, the undersigned, an applicant for a CAMA minor development permit, being either the owner of property in an AEC or a person authorized to act as an agent for purposes of applying for a CAMA minor development permit, certify that the person listed as landowner on this application has a significant interest in the real property described therein. This interest can be described as: (check one)

✓ an owner or record title, Title is vested in Andrew Thexton, see Deed Book 4617 page 1348 in the Pender County Registry of Deeds.

____ an owner by virtue of inheritance. Applicant is an heir to the estate of _____; probate was in _____ County.

____ if other interest, such as written contract or lease, explain below or use a separate sheet & attach to this application.

NOTIFICATION OF ADJACENT PROPERTY OWNERS:
I furthermore certify that the following persons are owners of properties adjoining this property. I affirm that I have given **ACTUAL NOTICE** to each of them concerning my intent to develop this property and to apply for a CAMA permit.

(Name) (Address)
(1) Sam Ennis, 1036 Bayshore Dr, Wilmington NC 28411
(2) Wendall Wall, 1013 Jamaica Dr, Key West FL 33040
(3) _____
(4) _____

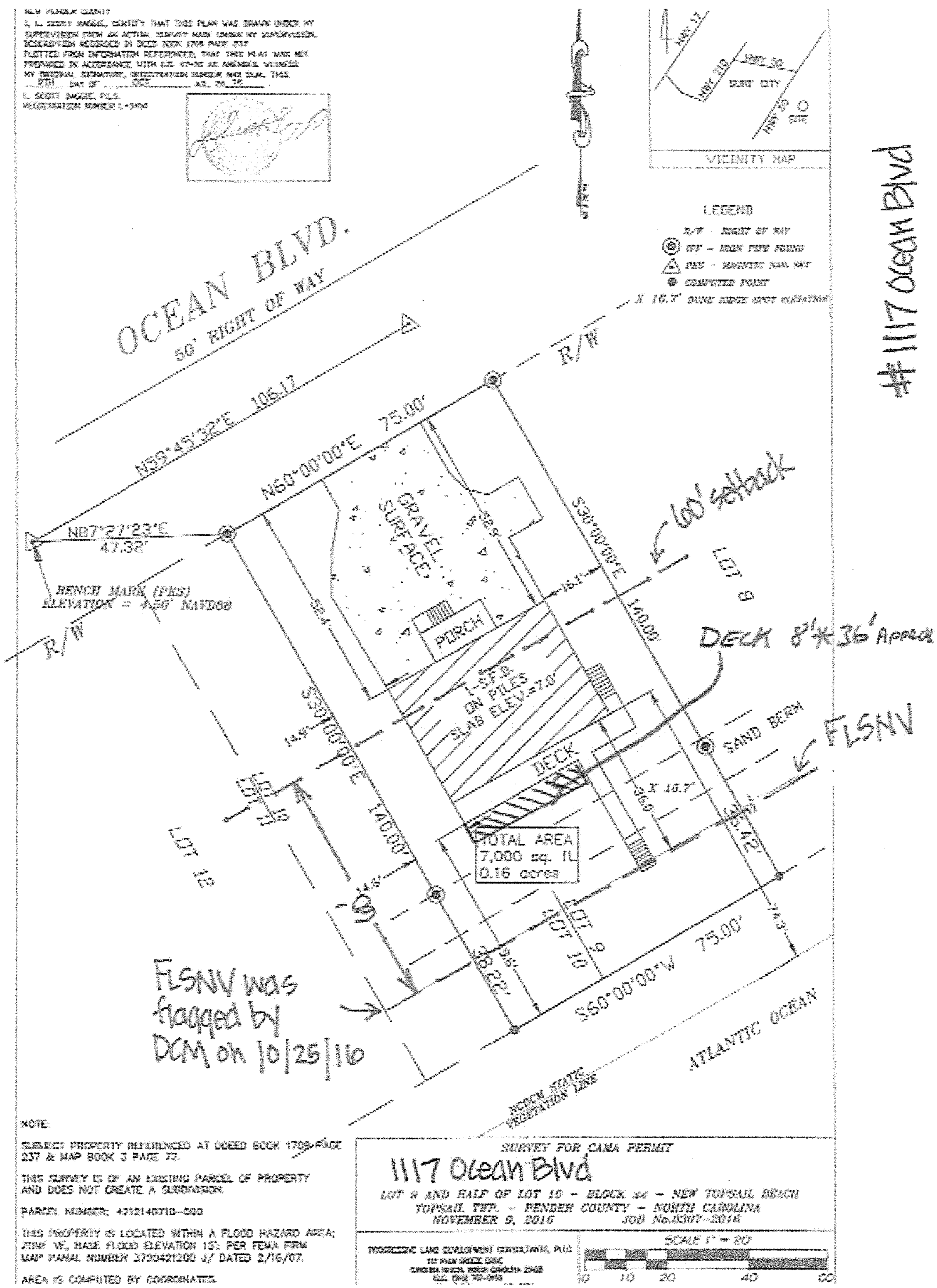
ACKNOWLEDGEMENTS:
I, the undersigned, acknowledge that the land owner is aware that the proposed development is planned for an area which may be susceptible to erosion and/or flooding. I acknowledge that the Local Permit Officer has explained to me the particular hazard problems associated with this lot. This explanation was accompanied by recommendations concerning stabilization and floodproofing techniques.

I furthermore certify that I am authorized to grant, and do in fact grant, permission to Division of Coastal Management staff, the Local Permit Officer and their agents to enter on the aforementioned lands in connection with evaluating information related to this permit application.

This the 22nd day of November, 2016

Kyle M. Brewer
Landowner or person authorized to act as his/her agent for purpose of filing a CAMA permit application

This the 22nd day of November, 20 16


#1117 Ocean Blvd
VICINITY MAP
LEGEND
R/W - RIGHT OF WAY
IPF - IRON PIPE FOUND
COMPUTED POINT
X 16.7' DUNE RIDGE SPOT ELEVATION
OCEAN BLVD.
50' RIGHT OF WAY
R/W
N59°45'32"E 106.17
N60°00'00"E 75.00'
N87°27'23"E
47.32'
BENCH MARK (PKS)
GRAVEL SURFACE
PORCH
ON PILES
SLAB ELEV.=7.0'
DECK
60' setback
LOT 8
DECK 8'x36' Approx
SAND BERM
FLSNV
S30°00'00"E
140.00'
LOT 12
LOT 11
LOT 9
LOT 10
X 16.7'
TOTAL AREA
7,000 sq. ft.
0.16 acres
S60°00'00"W 75.00'
FLSNV was flagged by DCM on 10/25/16
ATLANTIC OCEAN
NCDCM STATIC VEGETATION LINE
NOTE:
SUBJECT PROPERTY REFERENCED AT DEED BOOK 1709 PAGE 237 & MAP BOOK 3 PAGE 77.
THIS SURVEY IS OF AN EXISTING PARCEL OF PROPERTY AND DOES NOT CREATE A SUBDIVISION.
THIS PROPERTY IS LOCATED WITHIN A FLOOD HAZARD AREA; ZONE VE, BASE FLOOD ELEVATION 15'; PER FEMA FIRM MAP PANEL NUMBER 3720421200 J/ DATED 2/16/07.
AREA IS COMPUTED BY COORDINATES.
SURVEY FOR CAMA PERMIT
1117 Ocean Blvd
TOPSAIL TWP. - PENDER COUNTY - NORTH CAROLINA
NOVEMBER 9, 2016
SCALE 1" = 20'
0 10 20 40 60

Pender County Flood Mitigation Project (FMA)
Andrew Thexton
1117 Ocean Blvd, Topsail Beach

Base Flood Elevation: 15'

Lowest Adjacent Grade: 4.7'

Existing Finished Floor Elevation (FFE): 16.2'

Target Post Elevation Finished Floor Elevation (FFE): 19.0'

PIN: 4212-14-8718-0000
Owner: THEXTON ANDREW S et al
12766 RIVER RD
RICHMOND, VA 23238
Deed Ref: 4617/1348

Property Address: 1117 OCEAN BLVD
Description: L9 & N/E 1/2 L10 NEW TOPSAIL BCH PB 3/72 BLK 22

Sale Price: $496,000
Sale Date: 2016-04-01
Plat: 00030072
Account No: 970295
Township: TOPSAIL
Subdivision: NEW TOPSAIL BEACH
Tax Codes: G01 C54 R40

Acres: 0.24
Land Value: $445,500
Building Value: $67,528
Total value: $513,028
Deferred Value: $0
Exempt Amount:
PCL Class: R
Heated Sq Feet: 1408:

Pender County

1:663

0 0.005 0.01 0.02 mi

0 0.0075 0.015 0.03 km

1 inch = 55 feet

December 27, 2016

N W E S

AGENT AUTHORIZATION FOR CAMA PERMIT APPLICATION

Name of Property Owner Requesting Permit: ANDREW THEXTON

Mailing Address: 12766 RIVER RD
RICHMOND, VA 23238

Phone Number: 804 338-2569

Email Address: athexton@mindspring.com

I certify that I have authorized Kyle Brewer, Pender Co. Planning Director
Agent / Contractor

to act on my behalf, for the purpose of applying for and obtaining all CAMA permits necessary for the following proposed development: Elevation of my home through the Pender Co. Flood Mitigation Program

at my property located at _____,

in Pender County.

I furthermore certify that I am authorized to grant, and do in fact grant permission to Division of Coastal Management staff, the Local Permit Officer and their agents to enter on the aforementioned lands in connection with evaluating information related to this permit application.

Property Owner Information:

[signature]
Signature

ANDREW THEXTON
Print or Type Name

_____
Title

11 / 17 / 2016
Date

PROPERTY ADDRESS:
1117 OCEAN BLVD
TOPSAIL BEACH NC

This certification is valid through 1 / 31 / 2017

AEC HAZARD NOTICE

Project Is In An: ✓ Ocean Erodible Area ____ High Hazard Flood Area ____ Inlet Hazard Area

Property Owner: ANDREW THERTON

Property Address: 117 OCEAN BLVD TOPSAIL NC

Date Lot Was Platted: ____

This notice is intended to make you, the applicant, aware of the special risks and conditions associated with development in this area, which is subject to natural hazards such as storms, erosion and currents. The rules of the Coastal Resources Commission require that you receive an AEC Hazard Notice and acknowledge that notice in writing before a permit for development can be issued.

The Commission's rules on building standards, oceanfront setbacks and dune alterations are designed to minimize, but not eliminate, property loss from hazards. By granting permits, the Coastal Resources Commission does not guarantee the safety of the development and assumes no liability for future damage to the development. Permits issued in the Ocean Hazard Area of Environmental Concern include the condition that structures be relocated or dismantled if they become imminently threatened by changes in shoreline configuration. The structure(s) must be relocated or dismantled within two (2) years of becoming imminently threatened, and in any case upon its collapse or subsidence.

The best available information, as accepted by the Coastal Resources Commission, indicates that the annual long-term average ocean erosion rate for the area where your property is located is ____ feet per year.

The rate was established by careful analysis of aerial photographs of the coastline taken over the past 50 years.

Studies also indicate that the shoreline could move as much as ____ feet landward in a major storm.

The flood waters in a major storm are predicted to be about ____ feet deep in this area.

Preferred oceanfront protection measures are beach nourishment and relocation of threatened structures. Hard erosion control structures such as bulkheads, seawalls, revetments, groins, jetties and breakwaters are prohibited. Temporary sand bags may be authorized under certain conditions.

The applicant must acknowledge this information and requirements by signing this notice in the space below. Without the proper signature, the application will not be complete.

[signature] 11/21/16

Applicant Signature *Date*

SPECIAL NOTE: This hazard notice is required for development in areas subject to sudden and massive storms and erosion. Permits issued for development in this area expire on December 31 of the third year following the year in which the permit was issued. Shortly before work begins on the project site, the Local Permit Officer must be contacted to determine the vegetation line and setback distance at your site. If the property has seen little change since the time of permit issuance, and the proposed development can still meet the setback requirement, the LPO will inform you that you may begin work. Substantial progress on the project must be made within 60 days of this setback determination, or the setback must be remeasured. Also, the occurrence of a major shoreline change as the result of a storm within the 60-day period will necessitate remeasurement of the setback. It is important that you check with the LPO before the permit expires for official approval to continue the work after the permit has expired. Generally, if foundation pilings have been placed and substantial progress is continuing, permit renewal can be authorized. It is unlawful to continue work after permit expiration.

For more information, contact:

Jason Dail

Local Permit Officer

Address

Pender County | Topsail Beach

Locality

(910) 796-7221

Phone Number

Revised 2/07

Sent via Certified Mail - Nov 30, 2016

Receipts for Certified Mail (Staple Here)

11-30-16
Date

Wendall Wall
Adjacent Property Owner

1013 Jamaica Dr
Mailing Address

Key West FL 33040
City, State, Zip Code

Dear Adjacent Property:

This letter is to inform you that I, Andrew Thexton (Property Owner) have applied for a CAMA Minor Permit on my property at 1117 Ocean Blvd Topsail Beach (Property Address), in Pender County. As required by CAMA regulations, I have enclosed a copy of my permit application and project drawing(s) as notification of my proposed project. No action is required from you or you may sign and return the enclosed no objection form. If you have any questions or comments about my proposed project, please contact me at 910-259-1202 (Agent) (Applicant's Telephone), or by mail at the address listed below. If you wish to file written comments or objections with the Town of Emerald Isle CAMA Minor Permit Program, you may submit them to:

Jason Dail, DCM Field Rep
LPO, Town of Topsail Beach
NC DEQ / DCM
127 Cardinal Dr Ext.
Wilmington, NC 28405

Sincerely,

Andrew Thexton
Property Owner

12706 River Rd
Mailing Address

Richmond VA 23238
City, State, Zip Code

Authorized Agent for owner:
Kyle Brewer, Planning Director
Pender County
PO Box 1519
Burgaw, NC 28425
910-259-1202

File:
Pender County Flood Mitigation Program

Sent via Certified Mail - Nov 30, 2016

Receipts for Certified Mail (Staple Here)

11-30-16
Date

Sam Ennis
Adjacent Property Owner

636 Bayshore Dr
Mailing Address

Wilmington NC 28411
City, State, Zip Code

Dear Adjacent Property:

This letter is to inform you that I, Andrew Trexler (Property Owner) have applied for a CAMA Minor Permit on my property at 1117 Ocean Blvd Topsail Beach (Property Address), in Pender County. As required by CAMA regulations, I have enclosed a copy of my permit application and project drawing(s) as notification of my proposed project. No action is required from you or you may sign and return the enclosed no objection form. If you have any questions or comments about my proposed project, please contact me at 910-259-1202 (Applicant's Telephone) (Agent), or by mail at the address listed below. If you wish to file written comments or objections with the Town of Emerald Isle CAMA Minor Permit Program, you may submit them to:

Jason Dail, DCM Field Rep
LPO, Town of Topsail Beach
NC DEQ / DCM
127 Cardinal Dr Ext.
Wilmington, NC 28405

Sincerely,

Andrew Trexler
Property Owner

12766 River Rd
Mailing Address

Richmond, VA 23238
City, State, Zip Code

Authorized Agent for owner:
Kyle Brewer, Planning Director
Pender County
PO Box 1519
Burgaw, NC 28425
910-259-1202

File:
Pender County Flood Mitigation Program

PENDER COUNTY FLOOD MITIGATION ASSISTANCE PROGRAM (FMA)
ELEVATION/RETROFITTING INDIVIDUAL UNIT SCOPE OF WORK

Unit #	3TB	Parcel ID	4212-14-8718
Owner's Name(s)	Andrew Thexton	Telephone	(804) 338-2569 or N/A
Street Address	1117 Ocean Boulevard	City/State/Zip	Topsail Beach NC 28445

1. General: All Elevation/Retrofitting work for this unit must be performed in strict accordance with the applicable sections of the General Scope of Elevation Work, the Engineering General Notes & Standard Details, **Engineering Drawings #3TB-A/B/C**, and the 2012 NC Residential Building Code.

2. Elevation Height: The main structure is to be elevated from the **existing FFE of 16.2 feet NAVD** to a minimum **post-elevation FFE of 19.0 feet NAVD** (but no less than 16.0 feet). *Note: This unit has HVAC equipment in the crawlspace. The NC mechanical code requires that there be a minimum of one (1) foot of freeboard below mechanical equipment (which includes ducts). There is a supply/return duct in the crawlspace. The BFE is to be established ultimately based on this criterion.* Please note that the lowest portion of the entire living space (including all unheated storage and enclosed areas) is to elevated to the minimum FFE shown above. The lowest adjacent grade is **4.7 feet NAVD.**

3. Special Elevation Notes:

   A. *Siding to be Removed:* Remove and replace siding as needed for the installation of new straps connecting the existing floor framing to the new piles. Finish to match the existing. Remove and replace the belly board as needed for the new piling attachment.

   B. *Access #1.* Front (road side) - Raise the porch floor, roof, and stairway with the house. Add support posts as shown on attached drawings.

   C. *Access #2.* Rear (ocean side) - Raise the porch floor, roof, and stairway with the house. Add support posts as shown on attached drawings.

   D. *Access #3.* Detach the ocean side ocean access walkway from the deck.

   E. *Carport/Garage.* Saw cut the existing slab under the house as needed to allow for new pile placement.

4. Foundation Notes: Construct new timber pile/grade beam foundation as shown on **Engineering Drawings #3TB-B/C.**

5. Access Notes:

   A. *Access #1.* Front (road side) - Construct additional steps and platform as needed to extend the access to the ground and include railings, handrails, and pickets.

   B. *Access #2.* Back (ocean side) - Construct additional steps and platform as needed to extend the access to the ground and include railings, handrails, and pickets.

   C. *Access #3.* Construct a set of steps from the ocean access walkway to the deck and include handrails and pickets.

6. Utility Retrofitting Notes:

   A. Construct a treated wood platform for the HVAC compressor unit at BFE +1 ft. elevation.

   B. *Electrical Retrofit Note:* Raise the meter base on the exterior wall by the front door to allow for access from the front porch.

7. Garage/Carport Post-Elevation Retrofit Notes:

   A. *Slab Restoration*: After elevation, add compacted fill and concrete as needed to restore the concrete slab.

   B. *Driveway/Sidewalk Restoration:* After elevation, restore the driveway to pre-elevation condition.

   C. Relocate existing receptacles and light switches in new ground level storage room (two light fixtures and two switches) to provide convenient access (at least one foot above BFE).

   D. *Miscellaneous Notes:*

      i. Construct a new 8'6" x 12' storage room with a dividing wall partition and two exterior doors. Construct with breakaway walls as shown on attached drawings.

      ii. Contractor is to minimize damage to existing dune vegetation. Dune vegetation exists on the ocean side of the 1st floor deck. To minimize damage to dune vegetation, provide sand fencing or barrier. If damaged, re-seed/plant as necessary for dune stabilization in accordance with the applicable provisions of AEC 15A NCAC 07H.0304 and the requirements of the Town of Topsail Beach. Conform to the requirements of the CAMA permit issued by Coastal Management and the Town of Topsail Beach.

Coastal Management
ENVIRONMENTAL QUALITY

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON DAVIS
Director

December 18, 2016

CERTIFIED MAIL – 7011 0110 0000 9947 1782
RETURN RECEIPT REQUESTED

Andrew Thexton
12766 River Road
Richmond, VA 23238

RE: DENIAL OF CAMA MINOR DEVELOPMENT
PERMITAPPLICATION NUMBER- TB16-16
PROJECT ADDRESS- 1117 Ocean Boulevard, Topsail Beach, NC

Dear Mr. Thexton:

After reviewing your application in conjunction with the development standards required by the Coastal Area Management Act (CAMA) and our locally adopted Land Use Plan and Ordinances, it is my determination that no permit may be granted for the project which you have proposed.

This decision is based on my findings that your request violates NCGS 113A-120(a)(8) which requires that all applications be denied which are inconsistent with CAMA guidelines. Specifically, the development for which you applied consisted of replacement of a structure within the minimum development setback (measured 60 feet from the First Line of Stable Natural Vegetation (FLSNV), or 30 times the shoreline erosion rate of 2 feet/year, whichever is greater).

Your proposal is inconsistent with 15A NCAC 07J .0210 (1), which states: ***"Replacement of structures damaged or destroyed by natural elements, fire or normal deterioration is considered development and requires CAMA permits. Replacement of structures shall be permitted if the replacements is consistent with CRC rules***", and with 15A NCAC 7H .0306(a)(5), which states that: ***"With the exception of those types of development defined in 15A NCAC 07H .0309, no development, including any portion of a building or structure, shall extend oceanward of the ocean hazard setback distance".***

Should you wish to appeal my decision to the Coastal Resource Commission or request a variance from the Commission, please contact me so I can provide you with the proper forms and any other information you may require. The Division of Coastal Management in Morehead City must receive appeal notices within twenty (20) days of the date of this letter in order to be considered.

Respectfully yours,

Jason Dail, LPO
127 Cardinal Drive
Wilmington, NC 28405

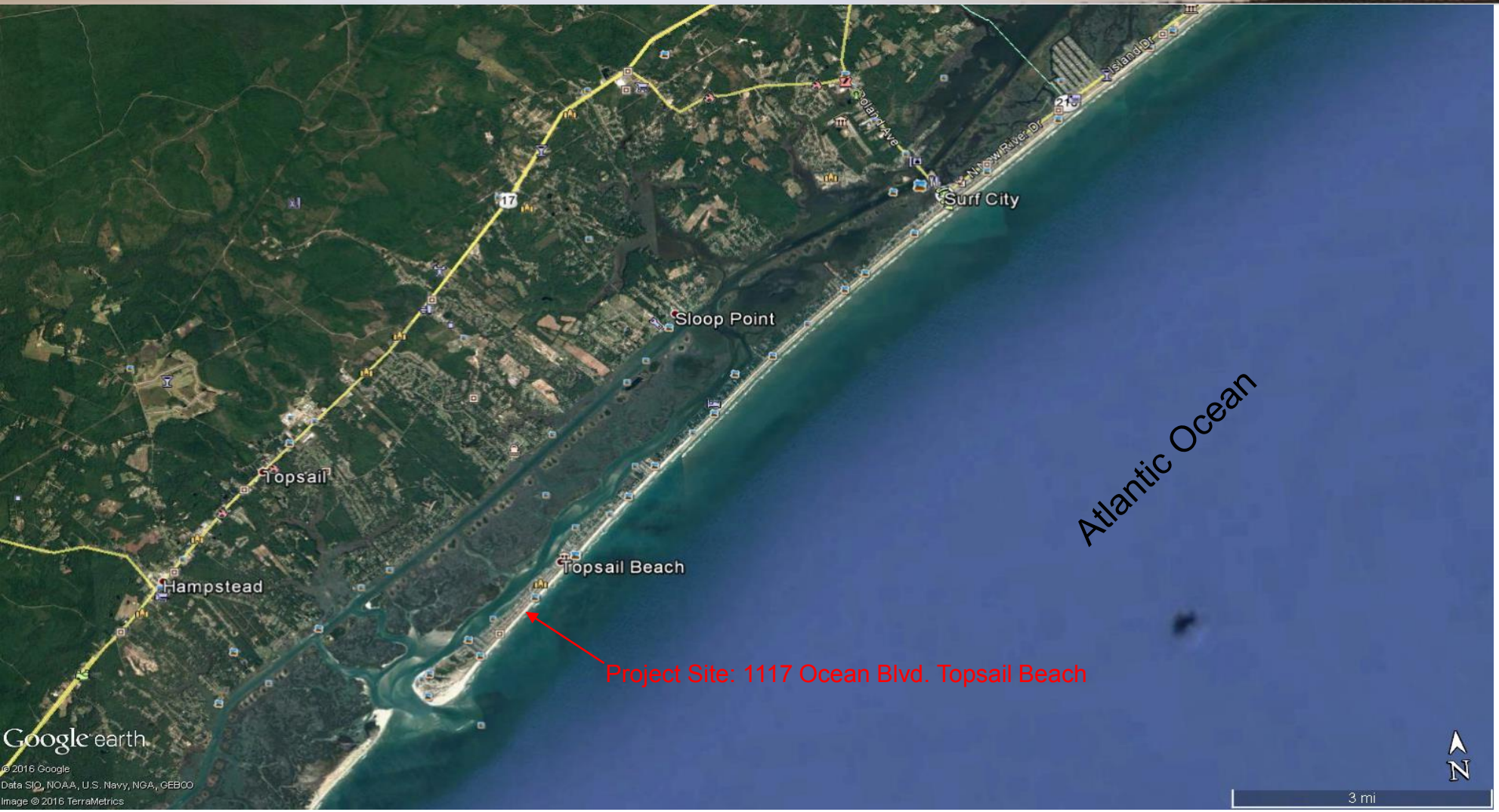
cc: Kyle Brewer, Agent, Planning Director for Pender County, PO Box 519, Burgaw, NC 28425

Nothing Compares
NORTH CAROLINA

Andrew & Deborah Thexton Variance Request
1117 Ocean Blvd., Topsail Beach, Pender County
February 8, 2017

Department of Environmental Quality

Thexton Variance Request



Department of Environmental Quality

Thexton Variance Request

Department of Environmental Quality

Thexton Variance Request

Department of Environmental Quality

Thexton Variance Request

Department of Environmental Quality

Thexton Variance Request

View of Petitioner's property looking East

Photo taken by DCM Staff 1/19/17

Thexton Variance Request

View of Petitioner's property looking West

Photo taken by DCM Staff 1/19/17

Thexton Variance Request

View of Petitioner's property looking North

Photo taken by DCM Staff 1/19/17

Thexton Variance Request

View of Petitioner's property looking South

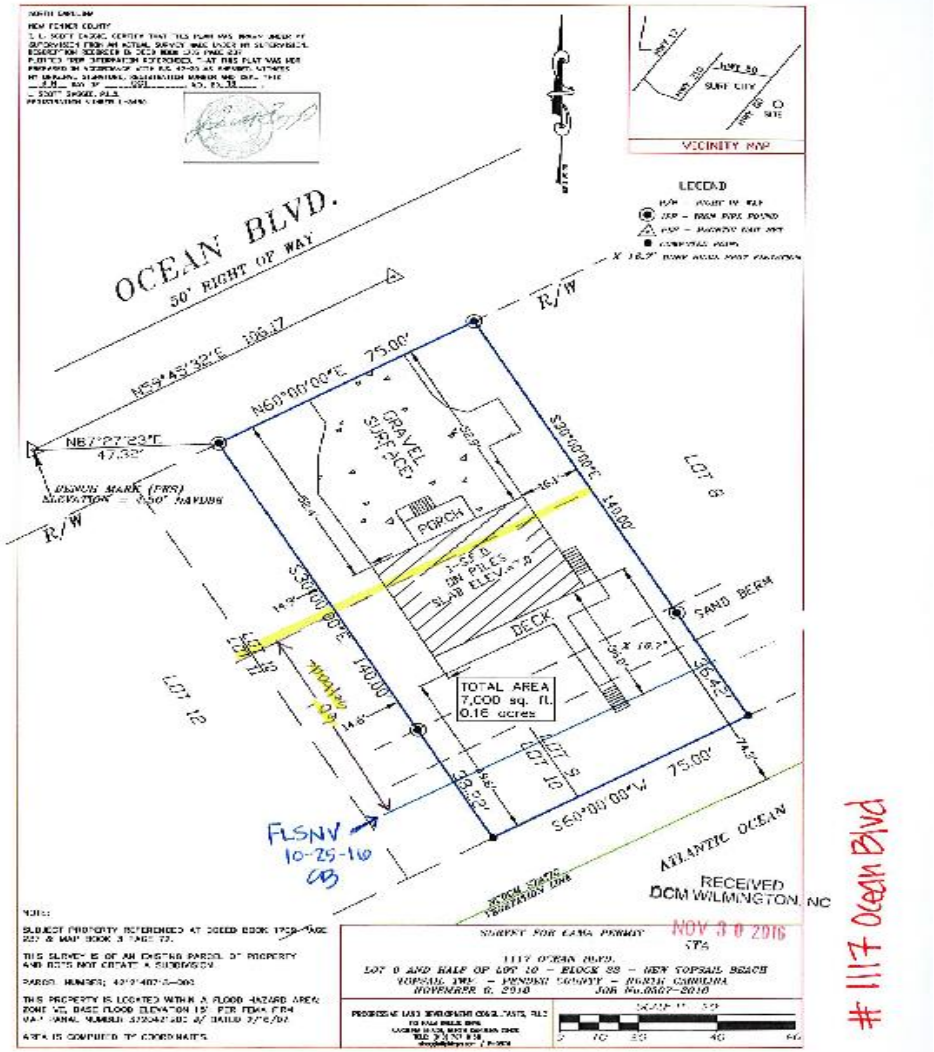
Photo taken by DCM Staff 1/19/17

Thexton Variance Request

View of Petitioner’s Property looking Southwest

Photo taken by DCM Staff 1/19/16

Thexton Variance Request



FLSNV
10-25-16
CB

1117 Ocean Blvd

Thexton Variance Request

VARIANCE CRITERIA 15A NCAC 07J.0703 (f)

-to grant a variance, the Commission must affirmatively find each of the following factors listed in G.S. 113A-120.1(a).

(A) that unnecessary hardships would result from strict application of the development rules, standards, or orders issued by the Commission;

(B) that such hardships result from conditions peculiar to the petitioner's property such as the location, size, or topography of the property;

(C) that such hardships did not result from actions taken by the petitioner; and

(D) that the requested variance is consistent with the spirit, purpose and intent of the Commission's rules, standards or orders; will secure the public safety and welfare; and will preserve substantial justice.