North Carolina
Coastal Federation
Working Together for a Healthy Coast

September 29, 2016

Colonel Kevin P. Landers, Sr., Commander
Wilmington District
U.S. Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403

RE: Permit Application by Figure Eight Homeowners Association for a Terminal Groin at Rich Inlet

Dear Colonel Landers,

I am writing to request that your agency return as incomplete and inaccurate the permit application recently submitted by the private non-profit entity called the Figure Eight Homeowners Association (HOA) asking for 404 and Section 10 permits to construct a terminal groin at Rich Inlet on dozens of private properties owned by other property owners. The application submitted does not comply with your regulations, application form instructions, and contains a signature that erroneously affirms property rights that the Association has never obtained or secured.

The federal code of regulations governing the processing of Department of Army Permits is found in Part 325.1(d)(8) of Section 33 CFR Ch. II (7-1-11 Edition). These rule states:

Signature on application. The application must be signed by the person who desires to undertake the proposed activity (i.e., the applicant) or by a duly authorized agent. When an agent represents the applicant, that information will be included in the space provided on the application or by a separate written statement. ***The signature of the applicant or the agent will be an affirmation that the applicant possesses or will possess the requisite property interest to undertake the activity proposed in the application****, except where the lands are under the control of the Corps of Engineers, in which cases the district engineer will coordinate the transfer of the real estate and the permit action.* ***An application may include the activity of more than one owner provided the character of the activity of each owner is similar and in the same general area and each owner submits a statement designating the same agent.***

The complete set of rules referred to above are attached to this letter.

Furthermore, your agency distributes for permit applicants instructions on how to complete a permit application. In those instructions, you state that a signature in Block 27 of the application: ***"…shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with any special conditions, mitigation, etc.)."***

Northeast Region
637 Harbor Road, P.O. Box 276
Wanchese, NC 27981
252.473.1607

Headquarters & Central Region
3609 N.C. 24 • Newport, NC 28570
252.393.8185
www.nccoast.org

Southeast Region
309 W. Salisbury Street
Wrightsville Beach, NC 28480
910.509.2838

Both the regulations and instructions governing permit applications also require a complete listing of "Adjoining Property Owners" in Block 25 of the permit application. Owners listed in this block should be those with property that "adjoins the waterbody or aquatic site where the work is being proposed so that they will be notified of the propose activity (usually by public notice)." This space is not for property owners that own the land where the actual proposed construction is proposed. These "owners" need to either sign in Block 27, or assign that right to the agent that they have designated to sign the permit application by submitting statements with the application from each actual property owner that designates the "same agent" as required by your regulations. I have attached a copy of the instructions for completing a permit application that is provided to applicants and the public on your agency's website.

There is simply no argument that the HOA possesses the property rights necessary to build the proposed terminal groin. Moreover, the HOA has not even received approval from its membership to pursue the proposed groin. It only recently submitted the proposal to the membership for a vote. Finally, the HOA has not obtained easements from the individuals who actually own the property where the groin would be built and therefore the HOA cannot ensure that it will possess the necessary property rights.

We have obtained the permit application and other files regarding the permit application through a Freedom of Information Act request that was recently submitted by the Southern Environmental Law Center. After reviewing this information, we have found that:

1. There is no registered agent for this project.
2. There are no statements by owners of the properties on which the project will be constructed that have "designated" an agent in accordance with your rules and application instructions.
3. The person who signed the application is neither the "owner" of vast majority of the land where the project would be constructed, nor a designated "agent." False representation of such status, as reflected in Block 27 instructions, is a federal crime.
4. There is an email in your files from at least one property owner clearly stating that he has not granted any property rights to the applicant that would allow them to apply for or construct this project. We know of other property owners that have stated they will not grant permission or property rights for the project as well.
5. It appears from figures and detailed narrative information in the permit application that the third party contractor hired to prepared and complete the Environmental Impact Statement (a process that is still on-going) also assisted in the preparation of this permit application. This in not consistent with the written agreement signed by this contractor to avoid any actual or potential conflicts of interests in regards to this project. This is an issue that will undoubtedly be explored further through discovery and testimony by all involved in this project should it become necessary to legally challenge the adequacy of the EIS once it becomes a final agency action.

Based on your rules, written permit application instructions, and the fact that property owners have informed your office that they do not intend to provide the property rights needed by the homeowners association to build this project, we ask that this permit application be returned to the applicant as incomplete and inaccurate. It clearly does not contained the information that is required by your agency.

Please do not hesitate to contact me if you have any questions regarding this request.

With best regards,

Todd Miller
Executive Director

Attachments:

1. Section 33 CFR Ch. II
2. Permit application Instructions
3. Permit application submitted by Figure Eight Homeowners Association

Copies Furnished:

Mickey Sugg, US Corps of Engineers
Derb Carter, Southern Environmental Law Center
Geoff Gisler, Southern Environmental Law Center
Paul Sclafani, Property Owner at Figure Eight Island
Braxton Davis, N.C. Division of Coastal Management & Division of Marine Fisheries
Pete Benjamin, U.S. Fish and Wildlife Service
Ken Riley, National Oceanic and Atmospheric Administration
Christopher Militscher, U.S. Environmental Protection Agency

material for the purpose of dumping it in ocean waters will be evaluated to determine whether the proposed dumping will unreasonably degrade or endanger human health, welfare, amenities, or the marine environment, ecological systems or economic potentialities. District engineers will apply the criteria established by the Administrator of EPA pursuant to section 102 of the Marine Protection, Research and Sanctuaries Act of 1972 in making this evaluation. (See 40 CFR parts 220–229) Where ocean dumping is determined to be necessary, the district engineer will, to the extent feasible, specify disposal sites using the recommendations of the Administrator pursuant to section 102(c) of the Act.

(c) *EPA review.* When the Regional Administrator, EPA, in accordance with 40 CFR 225.2(b), advises the district engineer, in writing, that the proposed dumping will comply with the criteria, the district engineer will complete his evaluation of the application under this part and 33 CFR parts 320 and 325. If, however, the Regional Administrator advises the district engineer, in writing, that the proposed dumping does not comply with the criteria, the district engineer will proceed as follows:

(1) The district engineer will determine whether there is an economically feasible alternative method or site available other than the proposed ocean disposal site. If there are other feasible alternative methods or sites available, the district engineer will evaluate them in accordance with 33 CFR parts 320, 322, 323, and 325 and this part, as appropriate.

(2) If the district engineer determines that there is no economically feasible alternative method or site available, and the proposed project is otherwise found to be not contrary to the public interest, he will so advise the Regional Administrator setting forth his reasons for such determination. If the Regional Administrator has not removed his objection within 15 days, the district engineer will submit a report of his determination to the Chief of Engineers for further coordination with the Administrator, EPA, and decision. The report forwarding the case will contain the analysis of whether there are other economically feasible methods or sites available to dispose of the dredged material.

(d) *Chief of Engineers review.* The Chief of Engineers shall evaluate the permit application and make a decision to deny the permit or recommend its issuance. If the decision of the Chief of Engineers is that ocean dumping at the proposed disposal site is required because of the unavailability of economically feasible alternatives, he shall so certify and request that the Secretary of the Army seek a waiver from the Administrator, EPA, of the criteria or of the critical site designation in accordance with 40 CFR 225.4.

PART 325—PROCESSING OF DEPARTMENT OF THE ARMY PERMITS

Sec.

AUTHORITY: 33 U.S.C. 401 *et seq.*; 33 U.S.C. 1344; 33 U.S.C. 1413.

SOURCE: 51 FR 41236, Nov. 13, 1986, unless otherwise noted.

§ 325.1 Applications for permits.

(a) *General.* The processing procedures of this part apply to any Department of the Army (DA) permit. Special procedures and additional information are contained in 33 CFR parts 320 through 324, 327 and part 330. This part is arranged in the basic timing sequence used by the Corps of Engineers in processing applications for DA permits.

(b) *Pre-application consultation for major applications.* The district staff

element having responsibility for administering, processing, and enforcing federal laws and regulations relating to the Corps of Engineers regulatory program shall be available to advise potential applicants of studies or other information foreseeably required for later federal action. The district engineer will establish local procedures and policies including appropriate publicity programs which will allow potential applicants to contact the district engineer or the regulatory staff element to request pre-application consultation. Upon receipt of such request, the district engineer will assure the conduct of an orderly process which may involve other staff elements and affected agencies (Federal, state, or local) and the public. This early process should be brief but thorough so that the potential applicant may begin to assess the viability of some of the more obvious potential alternatives in the application. The district engineer will endeavor, at this stage, to provide the potential applicant with all helpful information necessary in pursuing the application, including factors which the Corps must consider in its permit decision making process. Whenever the district engineer becomes aware of planning for work which may require a DA permit and which may involve the preparation of an environmental document, he shall contact the principals involved to advise them of the requirement for the permit(s) and the attendant public interest review including the development of an environmental document. Whenever a potential applicant indicates the intent to submit an application for work which may require the preparation of an environmental document, a single point of contact shall be designated within the district's regulatory staff to effectively coordinate the regulatory process, including the National Environmental Policy Act (NEPA) procedures and all attendant reviews, meetings, hearings, and other actions, including the scoping process if appropriate, leading to a decision by the district engineer. Effort devoted to this process should be commensurate with the likelihood of a permit application actually being submitted to the Corps. The regulatory staff coordinator shall maintain an open relationship with each potential applicant or his consultants so as to assure that the potential applicant is fully aware of the substance (both quantitative and qualitative) of the data required by the district engineer for use in preparing an environmental assessment or an environmental impact statement (EIS) in accordance with 33 CFR part 230, Appendix B.

(c) *Application form.* Applicants for all individual DA permits must use the standard application form (ENG Form 4345, OMB Approval No. OMB 49-R0420). Local variations of the application form for purposes of facilitating coordination with federal, state and local agencies may be used. The appropriate form may be obtained from the district office having jurisdiction over the waters in which the activity is proposed to be located. Certain activities have been authorized by general permits and do not require submission of an application form but may require a separate notification.

(d) *Content of application.* (1) The application must include a complete description of the proposed activity including necessary drawings, sketches, or plans sufficient for public notice (detailed engineering plans and specifications are not required); the location, purpose and need for the proposed activity; scheduling of the activity; the names and addresses of adjoining property owners; the location and dimensions of adjacent structures; and a list of authorizations required by other federal, interstate, state, or local agencies for the work, including all approvals received or denials already made. See §325.3 for information required to be in public notices. District and division engineers are not authorized to develop additional information forms but may request specific information on a case-by-case basis. (See §325.1(e)).

(2) All activities which the applicant plans to undertake which are reasonably related to the same project and for which a DA permit would be required should be included in the same permit application. District engineers should reject, as incomplete, any permit application which fails to comply with this requirement. For example, a permit application for a marina will include dredging required for access as

well as any fill associated with construction of the marina.

(3) If the activity would involve dredging in navigable waters of the United States, the application must include a description of the type, composition and quantity of the material to be dredged, the method of dredging, and the site and plans for disposal of the dredged material.

(4) If the activity would include the discharge of dredged or fill material into the waters of the United States or the transportation of dredged material for the purpose of disposing of it in ocean waters the application must include the source of the material; the purpose of the discharge, a description of the type, composition and quantity of the material; the method of transportation and disposal of the material; and the location of the disposal site. Certification under section 401 of the Clean Water Act is required for such discharges into waters of the United States.

(5) If the activity would include the construction of a filled area or pile or float-supported platform the project description must include the use of, and specific structures to be erected on, the fill or platform.

(6) If the activity would involve the construction of an impoundment structure, the applicant may be required to demonstrate that the structure complies with established state dam safety criteria or that the structure has been designed by qualified persons and, in appropriate cases, independently reviewed (and modified as the review would indicate) by similiarly qualified persons. No specific design criteria are to be prescribed nor is an independent detailed engineering review to be made by the district engineer.

(7) For activities involving discharges of dredged or fill material into waters of the United States, the application must include a statement describing how impacts to waters of the United States are to be avoided and minimized. The application must also include either a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts. (See § 332.4(b)(1) of this chapter.)

(8) *Signature on application.* The application must be signed by the person who desires to undertake the proposed activity (*i.e.*, the applicant) or by a duly authorized agent. When the applicant is represented by an agent, that information will be included in the space provided on the application or by a separate written statement. The signature of the applicant or the agent will be an affirmation that the applicant possesses or will possess the requisite property interest to undertake the activity proposed in the application, except where the lands are under the control of the Corps of Engineers, in which cases the district engineer will coordinate the transfer of the real estate and the permit action. An application may include the activity of more than one owner provided the character of the activity of each owner is similar and in the same general area and each owner submits a statement designating the same agent.

(9) If the activity would involve the construction or placement of an artificial reef, as defined in 33 CFR 322.2(g), in the navigable waters of the United States or in the waters overlying the outer continental shelf, the application must include provisions for siting, constructing, monitoring, and managing the artificial reef.

(10) *Complete application.* An application will be determined to be complete when sufficient information is received to issue a public notice (See 33 CFR 325.1(d) and 325.3(a).) The issuance of a public notice will not be delayed to obtain information necessary to evaluate an application.

(e) *Additional information.* In addition to the information indicated in paragraph (d) of this section, the applicant will be required to furnish only such additional information as the district engineer deems essential to make a public interest determination including, where applicable, a determination of compliance with the section 404(b)(1) guidelines or ocean dumping criteria. Such additional information may include environmental data and information on alternate methods and sites as may be necessary for the preparation

of the required environmental documentation.

(f) *Fees.* Fees are required for permits under section 404 of the Clean Water Act, section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended, and sections 9 and 10 of the Rivers and Harbors Act of 1899. A fee of $100.00 will be charged when the planned or ultimate purpose of the project is commercial or industrial in nature and is in support of operations that charge for the production, distribution or sale of goods or services. A $10.00 fee will be charged for permit applications when the proposed work is non-commercial in nature and would provide personal benefits that have no connection with a commercial enterprise. The final decision as to the basis for a fee (commercial vs. non-commercial) shall be solely the responsibility of the district engineer. No fee will be charged if the applicant withdraws the application at any time prior to issuance of the permit or if the permit is denied. Collection of the fee will be deferred until the proposed activity has been determined to be not contrary to the public interest. Multiple fees are not to be charged if more than one law is applicable. Any modification significant enough to require publication of a public notice will also require a fee. No fee will be assessed when a permit is transferred from one property owner to another. No fees will be charged for time extensions, general permits or letters of permission. Agencies or instrumentalities of federal, state or local governments will not be required to pay any fee in connection with permits.

[51 FR 41236, Nov. 13, 1986, as amended at 73 FR 19670, Apr. 10, 2008]

§ 325.2 Processing of applications.

(a) *Standard procedures.* (1) When an application for a permit is received the district engineer shall immediately assign it a number for identification, acknowledge receipt thereof, and advise the applicant of the number assigned to it. He shall review the application for completeness, and if the application is incomplete, request from the applicant within 15 days of receipt of the application any additional information necessary for further processing.

(2) Within 15 days of receipt of an application the district engineer will either determine that the application is complete (see 33 CFR 325.1(d)(9) and issue a public notice as described in § 325.3 of this part, unless specifically exempted by other provisions of this regulation or that it is incomplete and notify the applicant of the information necessary for a complete application. The district engineer will issue a supplemental, revised, or corrected public notice if in his view there is a change in the application data that would affect the public's review of the proposal.

(3) The district engineer will consider all comments received in response to the public notice in his subsequent actions on the permit application. Receipt of the comments will be acknowledged, if appropriate, and they will be made a part of the administrative record of the application. Comments received as form letters or petitions may be acknowledged as a group to the person or organization responsible for the form letter or petition. If comments relate to matters within the special expertise of another federal agency, the district engineer may seek the advice of that agency. If the district engineer determines, based on comments received, that he must have the views of the applicant on a particular issue to make a public interest determination, the applicant will be given the opportunity to furnish his views on such issue to the district engineer (see § 325.2(d)(5)). At the earliest practicable time other substantive comments will be furnished to the applicant for his information and any views he may wish to offer. A summary of the comments, the actual letters or portions thereof, or representative comment letters may be furnished to the applicant. The applicant may voluntarily elect to contact objectors in an attempt to resolve objections but will not be required to do so. District engineers will ensure that all parties are informed that the Corps alone is responsible for reaching a decision on the merits of any application. The district engineer may also offer Corps regulatory staff to be present at meetings between applicants and objectors, where appropriate, to provide information on the process, to

Instructions for Preparing a Department of the Army Permit Application

Blocks 1 through 4. To be completed by Corps of Engineers.

Block 5. Applicant's Name. Enter the name and the E-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked Block 5.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant Telephone Number(s). Please provide the number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed, if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by applicant, if an agent is to be employed.

Block 12. Proposed Project Name or Title. Please provide name identifying the proposed project, e.g., Landmark Plaza, Burned Hills Subdivision, or Edsall Commercial Center.

Block 13. Name of Waterbody. Please provide the name of any stream, lake, marsh, or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Project Street Address. If the proposed project is located at a site having a street address (not a box number), please enter it here.

Block 15. Location of Proposed Project. Enter the latitude and longitude of where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

Block 16. Other Location Descriptions. If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality that the site is located in.

Block 17. Directions to the Site. Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide description of the proposed project location, such as lot numbers, tract numbers, or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known

Block 18. Nature of Activity. Describe the overall activity or project. Give appropriate dimensions of structures such as wing walls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

Block 19. Proposed Project Purpose. Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

Block 20. Reasons for Discharge. If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

Block 21. Types of Material Being Discharged and the Amount of Each Type in Cubic Yards. Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

Block 22. Surface Areas of Wetlands or Other Waters Filled. Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked Block 22.

Block 23. Description of Avoidance, Minimization, and Compensation. Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Also provide a brief description of how impacts to waters of the United States will be compensated for, or a brief statement explaining why compensatory mitigation should not be required for those impacts.

Block 24. Is Any Portion of the Work Already Complete? Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square feet). If the work was done under an existing Corps permit, identity the authorization, if possible.

Block 25. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site. List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

Information regarding adjacent landowners is usually available through the office of the tax assessor in the county or counties where the project is to be developed.

Block 26. Information about Approvals or Denials by Other Agencies. You may need the approval of other federal, state, or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

Block 27. Signature of Applicant or Agent. The application must be signed by the owner or other authorized party (agent). This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8½ x11 inch plain white paper (electronic media may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.**

Figure "8" Beach Homeowners' Association, Inc.
15 Bridge Road • Wilmington, North Carolina 28411
Telephone: (910) 686-0635 • Fax: (910) 686-1558
Web: www.figure8homeowners.com • Email: figure8homeowners@bizec.rr.com

June 9, 2016

Mr. Mickey Sugg
U.S. Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403

Re: **Figure Eight Island Terminal Groin**
Corps ID #SAW-2006-41158

Dear Mr. Sugg:

This letter is to provide some background and history regarding the application being submitted by the Figure "8" Beach Homeowners' Association Board of Directors for a terminal groin project on the northern end of Figure Eight Island. The project is a component of the long-range planning effort by the Association to maintain recreationally useful and environmentally healthy beaches for the entire Island. Chronic erosion issues exist on the north and south ends of the Island due to the influence of Mason Inlet on the south and Rich Inlet on the north.

On the south end the Association was part of a collaborative effort with New Hanover County and the property owners on the Shell Island portion of Wrightsville Beach to relocate Mason Inlet. The relocation solved the threat to Wrightsville Beach property caused by the inlet's migration and provided a much needed source of sand to nourish the ocean beach on the south end of Figure Eight. Consideration of that project began in 1996 and was finally completed with the relocation of Mason Inlet in 2002.

The northern end of Figure Eight was subject to several short-term significant erosion events in the early to mid-1980's. In the early 1990's, the Rich Inlet channel began moving north, and erosion increased along the northern ocean shoreline at Figure Eight. Owners of developed lots along the north end ocean shoreline began sandbagging their property due to the imminent threat of the loss of their houses to erosion. As a result of this chronic erosion, the Association undertook several beach nourishment projects on the north end and contracted with experts in erosion control and coastal processes to identify sources of sand and to determine the best long-term plan for maintenance of the north end ocean beach.

In 2006, the Association began the process of developing a specific long-term plan to address the chronic erosion problem by initiating a NEPA process to study various alternatives. In 2011, the North Carolina General Assembly amended the North Carolina Coastal Area Management Act to enable the construction of terminal groins provided certain conditions could be met. The Board of Directors of the Association then added a terminal groin as one of the alternatives to be considered, and selected the terminal groin as the preferred alternative for its shoreline protection project.

During the many years that the erosion on the north end has been studied and the nearly 10 years that proposals have been developed to address the chronic erosion, the inlet channel has again moved to the south, so the urgency of the project has diminished. Nonetheless, history has shown us that the inlet channel will at some point move back to the north or other changes will occur that will result in erosion of the ocean beach on the north end of Figure Eight. The fact that it has taken almost ten years from the initiation of the NEPA process to get to this point shows that pursuit of a permit at this time is not premature or unnecessary.

The Board of Directors of the Association now wishes to pursue appropriate regulatory permits for its preferred alternative. We look forward to working with the Corps and other interested parties in addressing all issues needed to reach a conclusion to the permit process in a timely manner.

Sincerely,

FIGURE "8" BEACH HOMEOWNERS'
ASSOCIATION, INC.

By: 
David C. Kellam, Island Administrator

WAR\ENVIRON\R94-194-C08
KTW

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

OMB APPROVAL NO. 0710-0003
EXPIRES: 28 FEBRUARY 2013

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Middle - Last -	First - Middle - Last -
Company - Figure "8" Beach Homeowners' Association, Inc.	Company -
E-mail Address - david@figure8homeowners.com	E-mail Address -
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- 15 Bridge Road	Address-
City - Wilmington State - NC Zip - 28411 Country - US	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business (910) 686-0635 c. Fax (910) 686-1558	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ SIGNATURE OF APPLICANT _____ DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Figure Eight Island Shoreline Management Project

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Atlantic Ocean and Nixon Channel	Address
15. LOCATION OF PROJECT Latitude: °N 33 17' 25.95" Longitude: °W 77 43' 02.71"	City - Wilmington State- NC Zip- 28411

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality Wilmington, NC
Section - Township - Range -

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- See attached

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant. Applicant acknowledges that it will need to secure property rights and member approval before beginning construction.

Figure "8" Beach Homeowners Association
By: Dawn Kellow Island Admin. 6-9-16

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Department of Army Individual Permit Application
Additional Information

18. Nature of Activity

Activities associated with the proposed project include the following: construction of a terminal groin on the ocean side at the north end of the island, nourishment of the oceanfront and estuarine shorelines along the northern section of Figure Eight Island, dredging within Nixon Channel located on the back sound of the island, and maintenance dredging and renourishment, as needed, approximately every five (5) years, over a 30-year period (**Figure 1**). All construction activities are scheduled to occur between November 16 and March 31. The timing of the work is planned to occur outside of the sea turtle nesting season, the West Indian manatee summer occurrence in North Carolina, the piping plover (and other shorebirds) migratory and breeding seasons, and the seabeach amaranth flowering period. Construction will be performed on a 24-hour basis.

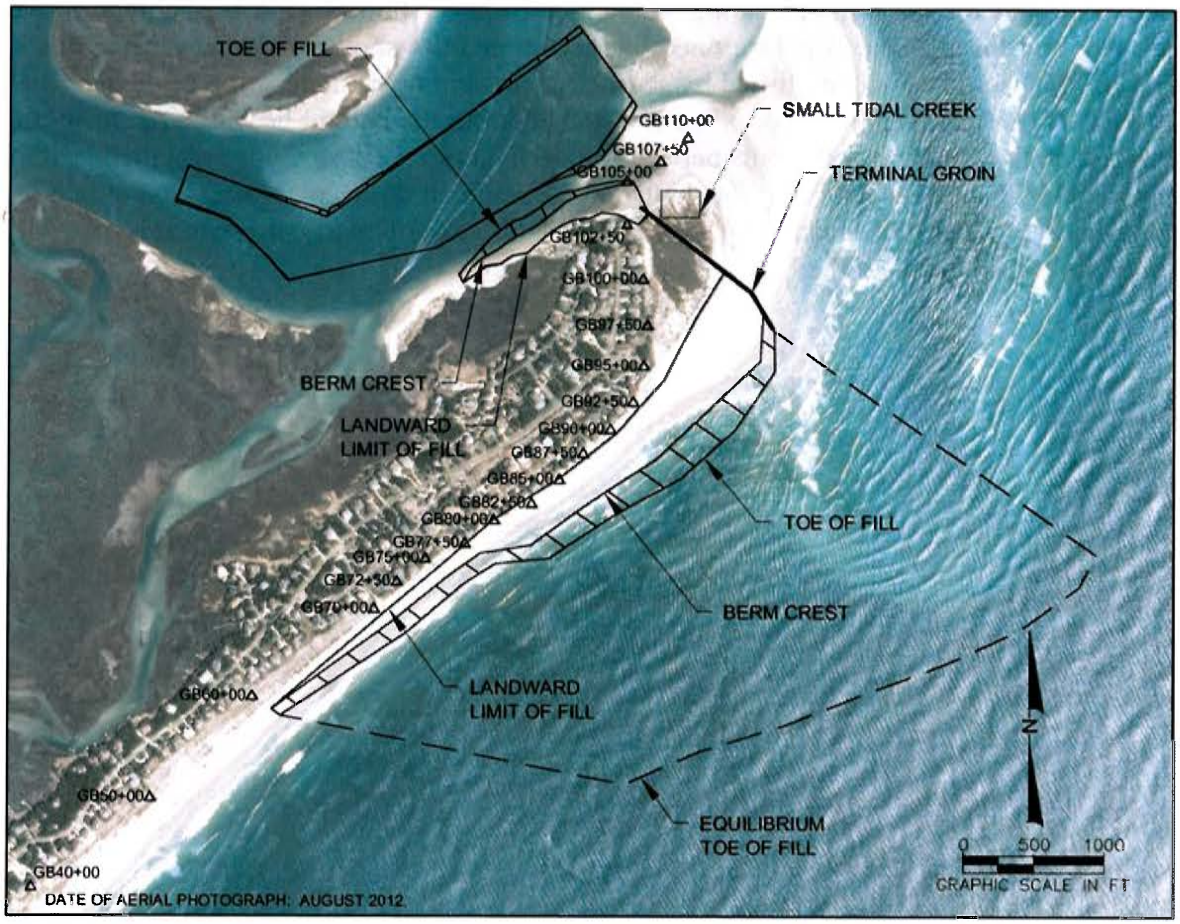

Figure 1. Plan view of beach fill, terminal groin, equilibration toe of fill, and navigation channel.

Terminal Groin Construction

Under the Applicant's Preferred Alternative, the total length of the terminal groin would be 1,500 linear feet. The seaward portion of the structure would be a rubble-mound design, and

would project 505 feet seaward of the 2007 mean high water (MHW) shoreline position. Using June 13, 2015 imagery of Rich Inlet, it is estimated that no portion of the rubble-mound section, or footprint, will be installed seaward of the MHW line. The landward 995 feet of the structure, or the shore anchorage section of the groin, would be constructed with either steel or concrete sheet pile. The top of this shore anchorage section would stop just below the elevation of the existing ground (**Figure**). In general, the top elevation of the sheet pile will vary from +0.5 feet NAVD, or approximately 6 inches below existing ground surface, for the first 200 feet on the landward end to +1.5 ft. NAVD over the remaining 795 feet. The sheet pile section will begin near the Nixon Channel shoreline and end near the position of the 2007 mean high water line. To account for possible scour around the landward end of the shore anchorage section, a 10-foot wide rubble scour protection apron would be installed along both sides of the landward most 100 feet of the anchorage section. The toe apron would be installed at a depth of approximately -2 ft. NAVD and would require the excavation of approximately 300 cubic yards. Material excavated for the toe apron would be used to bury the toe protection stone following placement. A profile along the centerline of the 1,500 ft. terminal groin and typical cross-section of the rubble-mound portion are shown in Figure 2.

The concept design for the terminal groin is intended to allow littoral sand transport to move over, around, and through the structure once the accretion fillet south of the terminal groin is constructed. This would be accomplished by setting the maximum crest elevation of the terminal groin to +6 feet NAVD, which is approximately equivalent to the natural beach berm elevation, and constructing the structure with voids between adjacent stones. These voids are anticipated to be no more than 6 inches but big enough to allow sediment to seep through the structure. Navigation aids to mark the location of the terminal groin, particularly its seaward end, will conform to the requirements of the US Coast Guard.

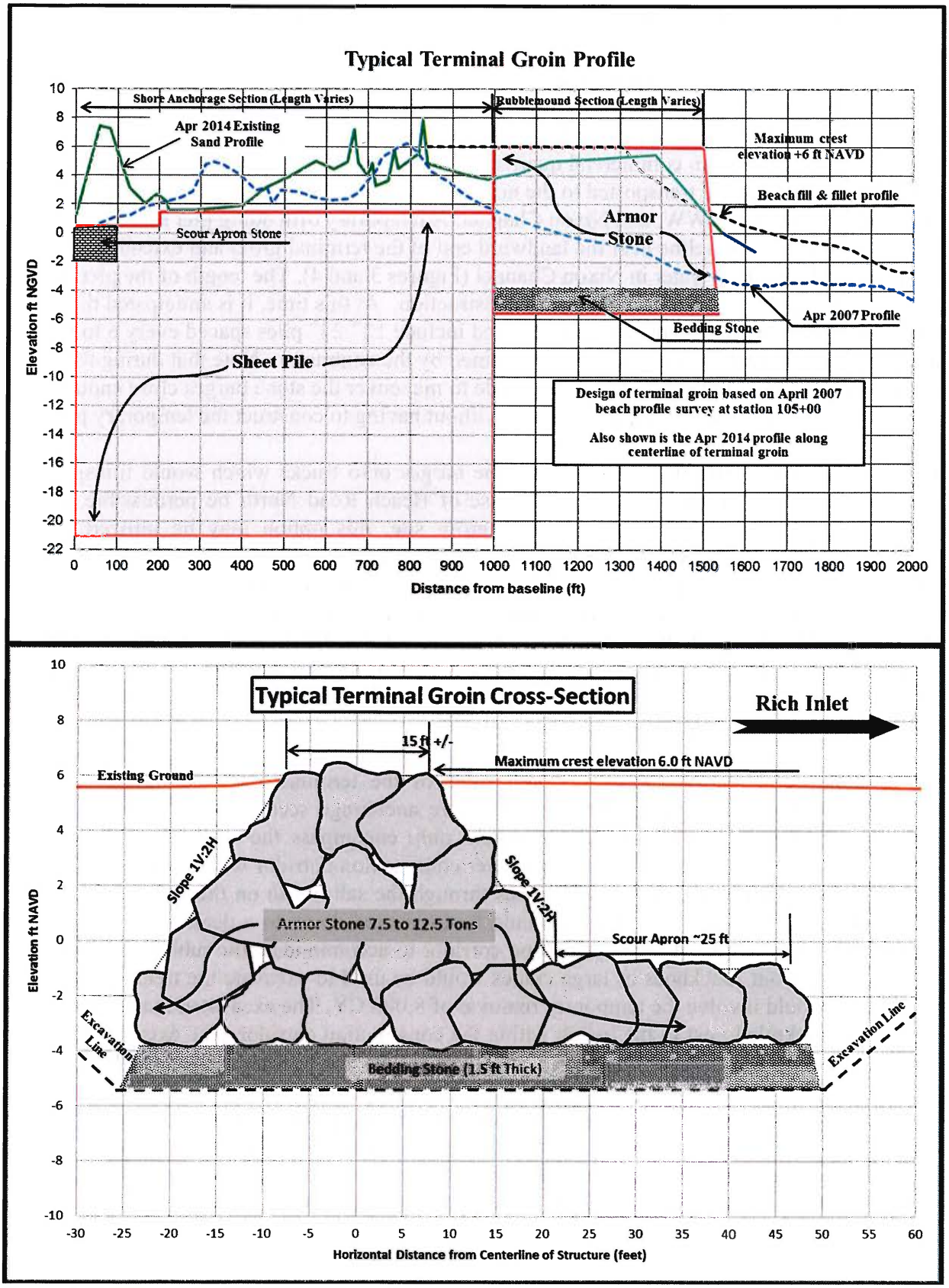

Figure 2. Typical profile and cross-section of the terminal groin.

The exact method used to construct the terminal groin would be left to the discretion of the construction contractor; however, the contractor would have to abide by defined construction corridors, approved access locations, staging areas, permitted construction timeframes, and other restrictions that would limit adverse environmental impacts directly associated with the construction activity as defined below. The stone required to construct the terminal groin would be transported via rail from commercial quarries to Wilmington Harbor, where it would be offloaded onto barges and transported to the north end of Figure Eight Island via the Cape Fear River, Snows Cut, the AIWW, and Nixon Channel. A temporary offloading pier may be constructed from the shoreline near the landward end of the terminal groin and extend northwestward into deep water in Nixon Channel (Figures 3 and 4). The length of the pier would be determined by the depth of water prior to construction. At this time, it is anticipated that the width of the pier would be approximately 20' and include 12"-24" piles spaced every 6 to twelve feet, however, the final design would be determined by the contractor. Note that during the time of actual construction, the contractor may be able to maneuver the stone barges close enough to shore to offload the stone directly to the shore without having to construct the temporary pier.

The stone would be offloaded directly from the barges onto trucks which would transport the stone to the terminal groin site. Should the use of Beach Road North be permissible, and/or practical, to transport stone to the terminal groin site, this option may be utilized by the contractor as well. Placement of the stone would require the temporary excavation of 13,400 cubic yards of material to create an 82-foot wide trench along the entire length of the rubble-mound portion of the structure. The excavated material would be used to back-fill the trench and bury most of the rubble-mound structure. Total time for construction of the terminal groin is estimated at approximately three months. The sheet pile for the landward portion of the terminal groin would be transported by truck directly from the offloading site to the staging area and driven into place with typical pile driving equipment.

A construction corridor of 100 ft. on both sides of the terminal groin centerline would be established in all areas except portions of the shore anchorage section where the width of the corridor would be reduced to 50 ft., and would only encompass the southeastern side of the centerline of the structure (**Figure**). This narrower construction corridor would apply to about 300 feet of the shore anchorage section that passes through the salt marsh on the north end of Figure Eight Island. A 75 to 80-ft wide trench would be excavated down to a depth of -5.5 ft. NAVD along the seaward portion of the construction corridor to accommodate the rubble-mound section of the terminal groin. Backhoes or large cranes would be used to excavate the trench. Excavation of the trench would involve the temporary removal of 8,000 CY. The excavated material would be temporarily stockpiled next to the trench within the construction corridor. The excavated material will be replaced around and on top of the terminal groin during the final construction stages.

A 1.5-foot thick foundation blanket consisting of stones ranging in size from 4 inches to 12 inches would be spread over the bottom of the trench. The foundation blanket could be replaced by a stoned-filled articulated mattress once the construction moves into open waters. This would be followed by the placement of armor stone directly on top of the foundation blanket in the form of a trapezoidal mound with side slopes of 1V:2H. The size of the armor stone used for the rubble-mound portion of the structure would range from 7.5 tons to 12.5 tons.

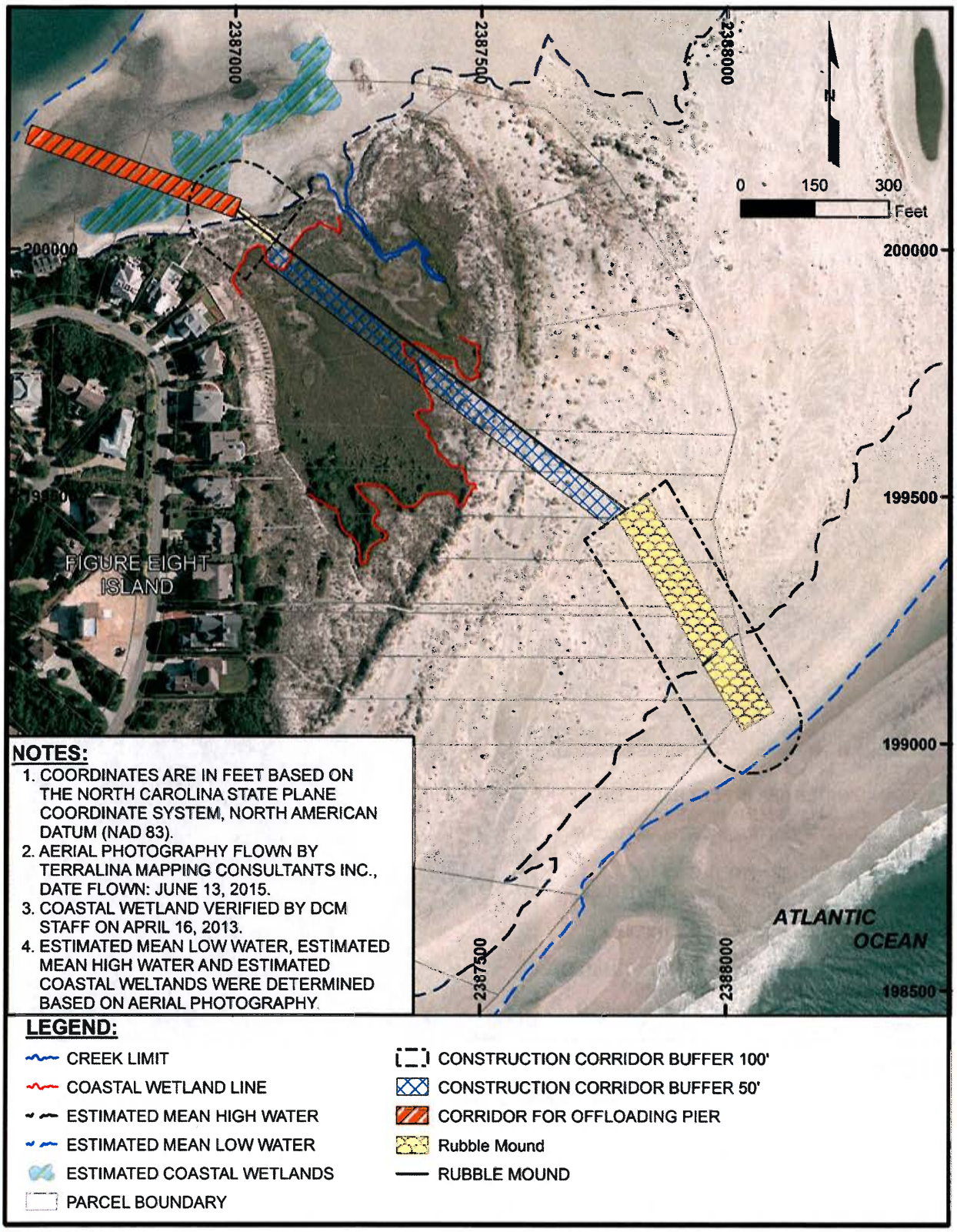

Figure 3. Centerline of the terminal groin, construction corridor, and offloading pier.

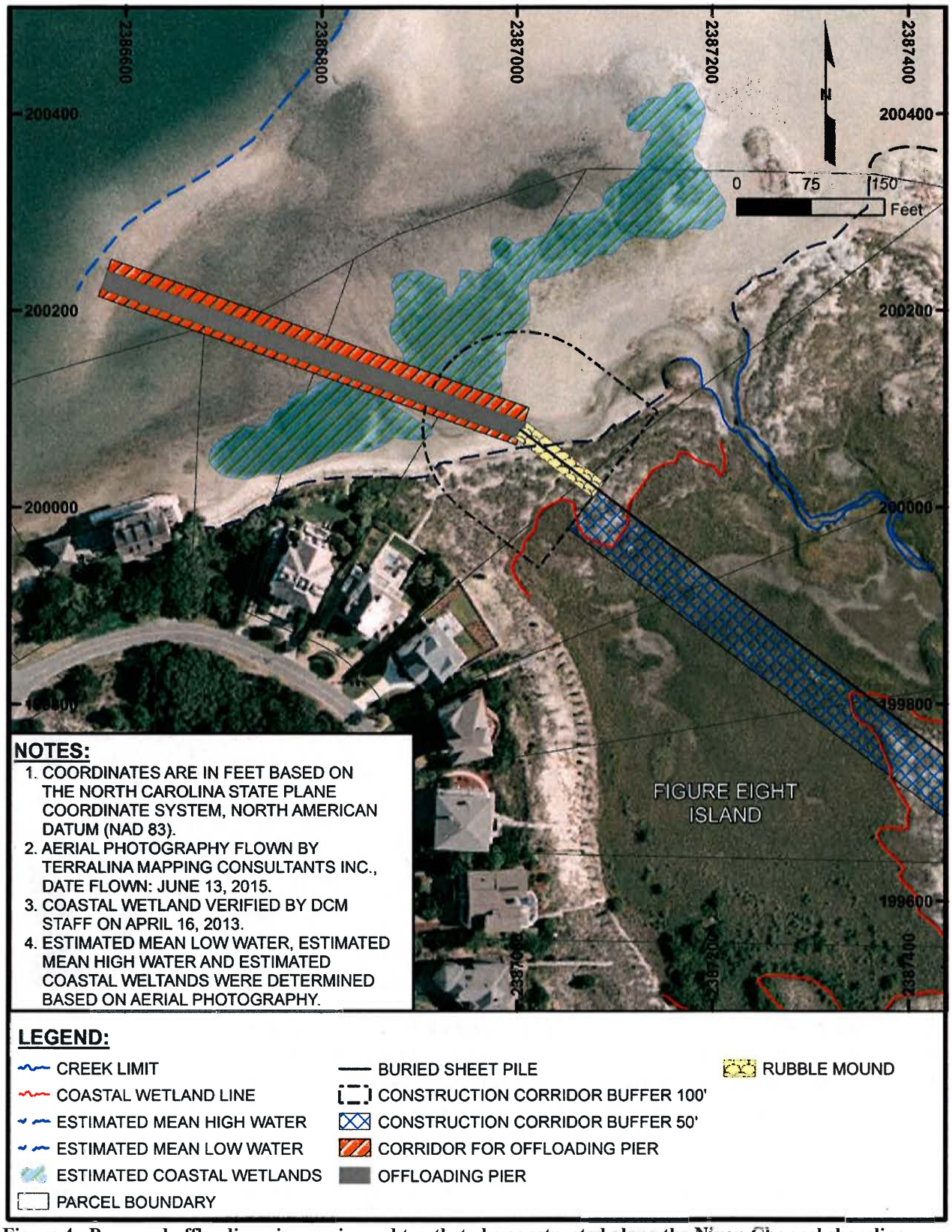

Figure 4. Proposed offloading pier, groin, and trestle to be constructed along the Nixon Channel shoreline.

For the section of the rubble mound portion of the groin that would be constructed on dry land, trucks would carry the stone over land to the crane while staying within the construction corridor, as shown in Figure 3. Once the groin projects into the water, the stones would be delivered to the crane by trucks traveling along the top of the groin or, if conditions allowed, delivery of the stones via barge may be possible. As another option, the construction contractor could elect to construct a temporary trestle adjacent to the terminal groin and place the stone directly from the trucks (Figures 5 and 6). Should this trestle be required, the trestle would be constructed in similar fashion to the offloading pier, as described above. This would include a 20' wide structure constructed on either side of the groin and include pile spacing approximately 6 to 12' apart. The length of the trestle would be determined by the existing grand and shoreline conditions at the time of construction, however, it would not extend beyond the oceanfront terminus of the groin. Following construction, the trestle would be removed. The construction corridor would be restored to pre-construction conditions as much as possible by grading any disturbed land and replanting with native vegetation.

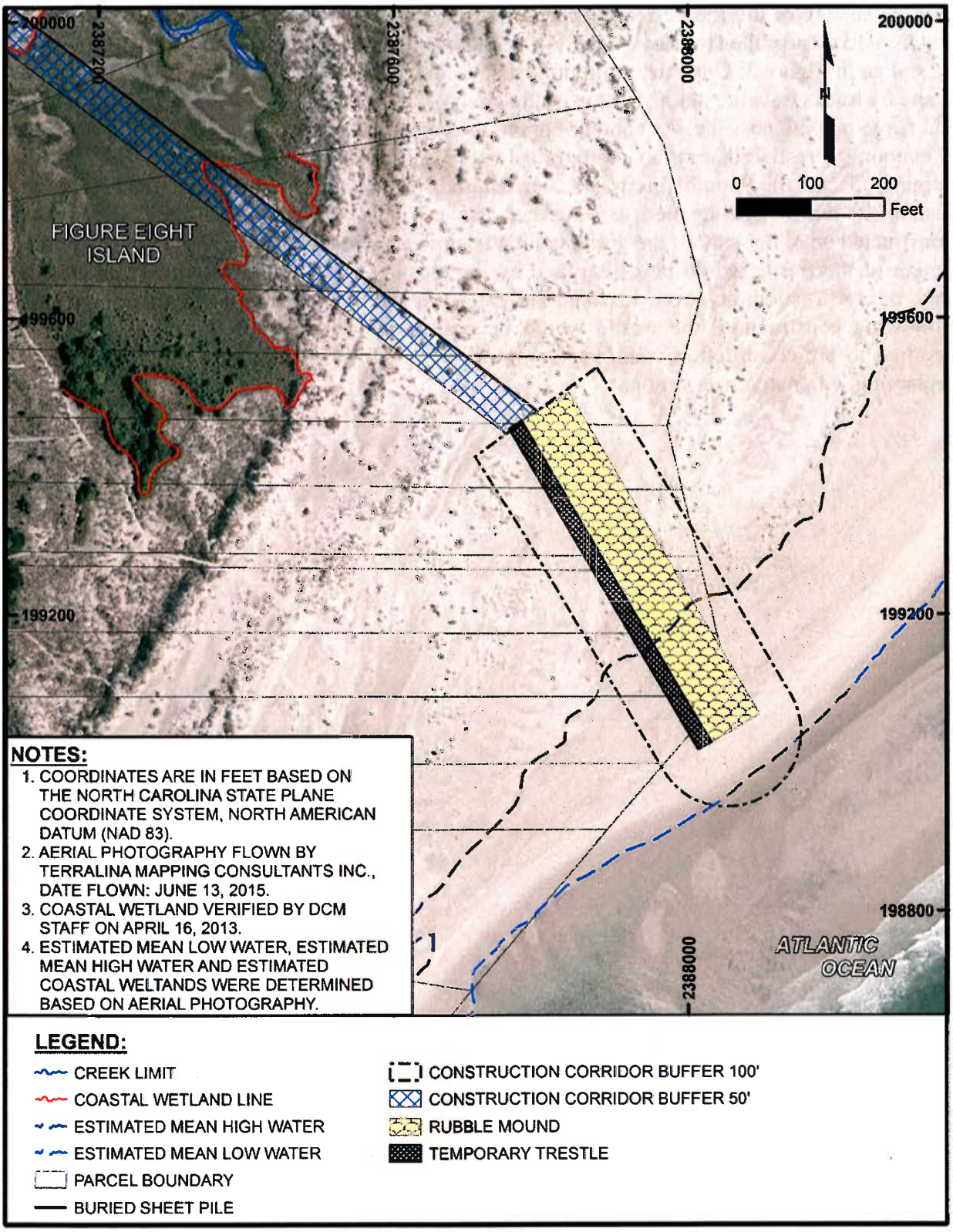

Figure 5. Proposed temporary construction trestle.

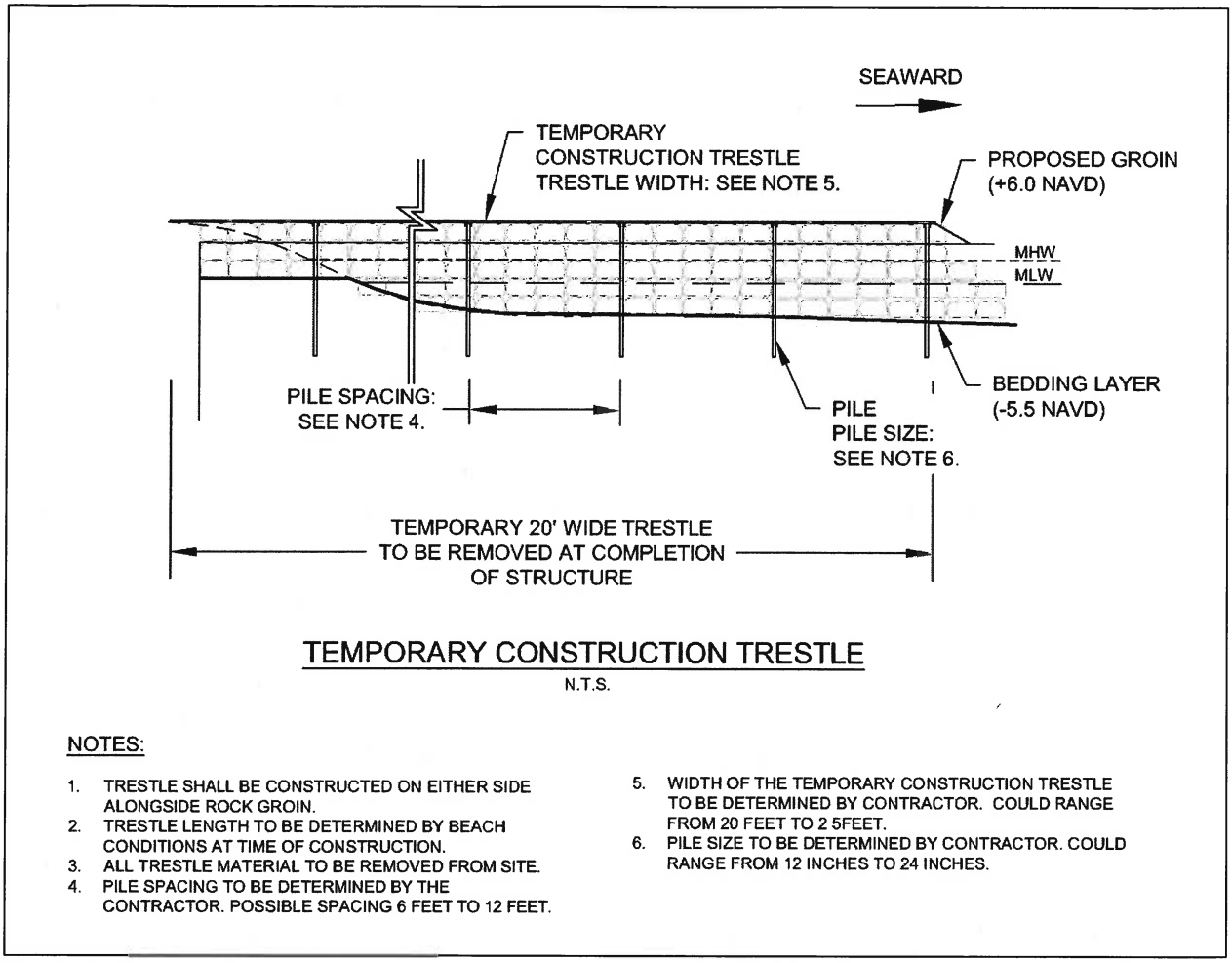

Figure 6. Cross section schematic of proposed temporary construction trestle.

Beach Nourishment

In addition to the construction of the terminal groin, several areas of the shoreline would be nourished with material dredged from a previously permitted navigation channel within Nixon Channel. In order to protect a portion of Beach Road North along with seven (7) lots, three (3) of which contain homes, beach fill will be placed along 1,400 ft. of the Nixon Channel shoreline just south of Rich Inlet. The material will be tapered to terminate prior to the tidal creek which drains the marsh area on the north end of the island. In addition, material will be placed along 4,500 ft. of ocean shoreline, extending from baseline station 60+00 to the terminal groin which would be positioned near baseline station 105+00 (**Figure 1**). This fill would serve to several roads and protect many homes and lots located along the oceanfront shoreline. The fill distribution, placement volumes (in cubic yards/linear foot) and berm widths (in feet) are provided in Table 1. The beach fill would be constructed to an elevation of +6.0 ft. NAVD. The total volume of sand placed along the ocean shoreline would be 237,500 cubic yards. The Nixon Channel portion would require 57,000 cubic yards bringing the total volume to 294,500 cubic yards.

Table 1. Beach Fill Placement Volumes and Design Berm Widths. Units for volumes are cubic yards per linear foot (cy/lf).

Shoreline Segment (Baseline Stations)	Placement Volume (cy/lf)	Design Berm Width (ft.)
60+00 to 70+00 (transition	0 to 20	0 to 17.2
70+00 to 77+50	20	17.2
77+50 to 80+00 (transition)	20 to 80	17.2 to 69.0
80+00 to 105+00	80	69.0

Dredging Operation The material to construct the beach fill would be derived from a previously permitted navigation channel in Nixon Channel. The borrow site is located in the back sound of Figure Eight Island near Nixon Channel's confluence with the flood tide delta of Rich Inlet. This borrow site feature is approximately 25 acres with depths varying from approximately -5' to -9' below MLW feet. The volume of material needed to construct the beach fill along the ocean shoreline would be 237,500 cy with 57,000 cy needed along the Nixon Channel shoreline resulting in a total beach fill volume of 294,500 cy. Plans are to dredge the substrate to a depth of -9 ft. MLW using a 16-inch to 18-inch cutter-suction pipeline dredge. This type of dredge uses a rotating cutter assembly at the end of a ladder arm to excavate bottom material, which is then drawn into the suction arm and pumped to the shoreline; and is similar to that typically used to perform routine maintenance in the AIWW. Material from Nixon Channel would be transported to the beach via pipeline, which would be routed along the upland area on the north end of the island located just south of the salt marsh area (between the marsh community and row of homes). This is the route typically used for transport of material during the past oceanfront nourishment events. The dredging footprint has been utilized several times over the last 22 years as a sand source for nourishing Figure Eight Island. Over the past 10 years alone, three (3) nourishment events along the north end of the island were constructed using over 830,000 cubic yards of material from the navigation channel within Nixon Channel. Based on past dredging operations within this navigation channel and the anticipated shoaling rates indicated by the Delft3D simulations, the volume of material available at this location would satisfy the volumetric requirements for the project.

30-Year Shoreline Maintenance

Periodic renourishment of the beach footprint, both the oceanfront and Nixon Channel shorelines, would be accomplished approximately every five years over a 30-year period via maintenance dredging of the designated 25-acre borrow site. The Delft3D model simulations indicated an average rate of volume loss from the beach fill placed between station 60+00 and the terminal groin (105+00) of 58,000 cy/years for the 2006 conditions and 45,000 cy/year for the 2012 conditions. South of station 60+00 the beach remained stable to slightly accretionary under both conditions. Assuming periodic nourishment would be accomplished every 5 years, the five year nourishment requirement for this project would be 290,000 cy given the 2006 conditions and 225,000 cy for the 2012 condition. Periodic nourishment of the Nixon Channel beach fill would also require 30,000 cy every five years resulting in a total 5 year nourishment

requirement of 320,000 cy for the 2006 condition and 255,000 cy for the 2012 condition. Material for periodic nourishment of the beach fills would come from maintenance of the previously permitted area in Nixon Channel.

19. Project Purpose

The main concern of residents and owners at Figure Eight Island are economic and use losses resulting from damages to infrastructure and to structures and their contents due to hurricane and storm activity and the loss of recreational beachfront land due to the ongoing shoreline erosion along portions of the ocean and estuarine shoreline. Current shoreline management strategies have not been successful in providing the long-term shoreline protection that the Figure "8" Beach HOA seeks. With a total tax value of property within the limits of Figure Eight Island of approximately $907,352,900 (based on the most recent available data from the tax reappraisal in 2012), the Figure "8" Beach HOA sees the need for an improved shoreline protection plan. This valuation includes the valuation of 489 residential structures and property along with 74 vacant lots.

The purpose and needs of the Figure Eight Island Inlet and Shoreline Management Project are as follows:

- Reduce or mitigate erosion along 3.77 km (2.34 mi) of Figure Eight Island oceanfront shoreline south of Rich Inlet and 427 m (1,400 feet) of backbarrier shoreline on Figure Eight Island along Nixon Channel;
- Provide reasonable short-term protection to residential structures in response to any unpredicted shoreline change within the next five years;
- Provide long-term protection to Figure Eight Island homes and infrastructure over the next 30 years;
- Acquire compatible beach material in compliance with the North Carolina State Sediment Criteria for shore protection project;
- Maintain navigation conditions within Rich Inlet and Nixon Channel;
- Balance the needs of the human environment with the protection of existing natural resources;
- Maintain existing recreational resources; and
- Maintain the tax value of the homes and infrastructure on Figure Eight Island.

21. Type of Material Being Discharged and the Amount of Each Type in Cubic Yards

Approximately 237,500 cubic yards of sandy material will be placed along the east end of Figure Eight Island's oceanfront shoreline with an additional 57,000 along the Nixon Channel shoreline. The North Carolina Coastal Resources Commission (CRC) adopted State Sediment Criteria Rule language (15A NCAC 07H .0312) for fill material aimed at preventing the disposal of incompatible material on the beach. The rule limits the amount of material by weight in the navigation channel with a diameter equal to or greater than 4.76 mm and less than 76 mm (gravel), between 4.76 mm and 2.0 mm (granular), and less than 0.0625 mm (fine) to no more than 5% above that which exists on the native beach. Due to the fact that several beach nourishment operations have taken place along the north end of Figure Eight Island since 1980, it was requested by the North Carolina Division of Coastal Management (NCDCM) that native beach samples be collected on both Figure Eight Island and Hutaff Island to establish a "native" value. The results of the characterization of both Figure Eight and Hutaff Island are shown below in Table 2. Vibracores obtained within the proposed navigation channel within Nixon Channel revealed that the material will comply within the newly adopted State Sediment Criteria Rule Language (Table 2).

Analysis of core samples taken from the Nixon Channel navigation channel indicate the sand source for nourishment would have an average grain size of 0.22 mm and a silt content of 1.25%. Investigations of native beach material along Figure Eight Island found an average native grain size of 0.18 mm and a silt content of 1.04% (Table 2). Because native surficial sediments are re-suspended during naturally occurring periods of high wave energy, the impacts of project-related, short-term increases in turbidity are difficult to assess.

Table 2. Characteristics of the Native Beach Material.

	% Silt	% Carbonate	% Granular	% Gravel	Mean Grain Size (mm)
State Standard Allowance [1]	*5% above native*	*15% above native*	*5% above native*	*5% above native*	*n/a*
Figure Eight Native Beach	1.04	6.0	0.26	0.05	0.18
Limit (based on State Standards)	*6.04*	*21.0*	*5.26*	*5.05*	*n/a*
Hutaff Island Native Beach [2]	1.0	9.9	1.15	0.33	0.21
Limit (based on State Standards)	*6.0*	*24.9*	*6.15*	*5.33*	*n/a*
Nixon Channel Navigation channel	1.25	8.12	0.77	0.52	0.22

[1] Allowances above native beach material.
[2] Characteristics of the native beach material on Hutaff Island adopted as representative of the native beach material on Figure Eight Island.

22. Surface Area in Acres of Wetlands or Other Waters Filled

As shown in Figure 3 above, approximately 0.2 acres of wetland vegetation (*Spartina alterniflora*) currently exists within the footprint of the proposed fill area along the Nixon

Channel shoreline (Figure 1). This stand of wetland vegetation was first established in 2009 and has grown since that time. The actions associated with the proposed project will smother the existing wetland vegetation.

In addition, approximately 0.34 acres of wetlands will be directly impacted through the construction of the sheet pile portion of the terminal groin structure. During construction of the terminal groin at Figure Eight Island, an approximate 300-foot by 50-foot (or 0.34 acre) salt marsh area located within the designated working corridor on the northern tip of Figure Eight Island will be temporarily impacted by the use of heavy machinery. Impacts include using the corridor as a travelway for transporting equipment and materials and with the direct installation of sheet pilings for the groin structure. These activities are expected to affect this salt marsh community in the following manner: damaging or removing coastal vegetation, compacting the marsh substrate, and disrupting the surface circulation flow of water. Several measures will be taken to reduce these impacts to the salt marsh: 1) Activity will be limited to the 50 foot width included in the construction corridor at this location, 2) Logging mats or other surface type mats will be utilized to reduce the compaction of the substrate, and 3) The entire length of the sheet pile will be greater than 0.5 feet below grade (or, below the ground-level) over the area that spans salt marsh habitat. As a result, the sheet pile will not disrupt surface flow. Although damage or removal of vegetation is anticipated, impacted salt marsh plant communities are expected to, and known to, revegetate quickly. The salt marsh habitat in this area is primarily comprised of *Spartina patens* (salt meadow cordgrass) and *Salicornia virginica* (glasswort) unlike much of the *Spartina alterniflora* (smooth cordgrass) dominated salt marsh located behind the inlet complex. The possible construction of the offloading dock or pier to be used for transporting building material, such as the rock and possible sheet piling, onto the site will constructed in a manner to minimize any direct impacts to the ephemeral salt marsh near the anchor section along Nixon Channel shoreline. The placement will avoid these resources if possible and will be elevated to reduce any potential impact from shading.

23. Description of Avoidance, Minimization, and Compensation

The following describes actions and measures incorporated into the design of the proposed project to avoid and/or minimize direct, indirect, and cumulative effects to the resources found within the Permit Area and the species that utilize them.

Construction Schedule

In order to protect certain threatened and endangered species and other bird and fish species that utilize Rich Inlet complex and the ocean shorelines of Hutaff and Figure Eight Islands, all construction activities are scheduled to occur between November 16 and March 31. The timing of construction activities was specifically scheduled to occur outside of the sea turtle nesting season, the West Indian manatee summer occurrence in North Carolina, the piping plover (and other shorebirds) migratory and breeding seasons, the seabeach amaranth flowering period, and when most biological activities are at their lowest. Working during this time frame is expected to minimize any potential adverse impacts to offshore, nearshore, intertidal, and beach biological resources to the maximum extent possible.

Also, the construction of the rubble mound portion of the terminal groin as well as the sand placement and dredge operations will be conducted outside of primary invertebrate production and recruitment periods (spring and fall) which will limit impacts to amphipods, polychaetes, crabs and clams.

Construction work during the November 16-March 31 time frame will occur at the lowest peak of public use. Both residential and visitor use on Figure Eight Island are at its minimal and boater use within Rich Inlet and the surrounding waters being much less infrequent than the warm weather seasons. With public presence on both islands and in adjacent waters at its lowest, impacts to navigational and recreational uses are anticipated to be non-appreciable. This would also reduce any public safety concerns.

Terminal Groin Structure

The Applicant's Preferred Alternative includes a combination of both the rubble mound and sheet pile design. The structure's anchor is being constructed in a manner to reduce any impacts to the salt marsh community located in the northern spit of Figure Eight Island. For the 995-foot long sheet piled anchor section, the sheets will be driven in a manner that the tops will be approximately 0.5 feet below the surface elevation of the coastal wetlands area. Leaving this 0.5 foot space is expected to provide continued tidal exchange and not interrupt normal flow patterns. Additionally, the rubble scour protection apron for the anchor was minimized to a width of 10 feet in order to reduce impacts to the coastal wetlands community while still supporting the integrity of the structure. For the seaward 505-foot section of the groin, a rubble mound design was selected over sheet piles. This will provide some spacing in the structure to allow some sediment to migrate through and not eliminate sediment bypass into the inlet. The rubble design is also expected to provide habitat for sessile benthic organisms as well as crustaceans and fin fish, increasing beneficial use to the marine environment more than that of sheet piles.

During the construction of the groin, a construction corridor varying in width from 50 feet to 200 feet will be established around the footprint of the structure and all construction activity will be required to remain within the corridor. This will ensure that the environmental impacts will be kept to a minimum within the construction area. As stated in Chapter 5, a portion of the shore anchorage component of the terminal groin will be constructed within an area of high marsh habitat. In order to minimize temporary direct impacts to these resources, the orientation of the groin will be designed such that it will span the shortest distance through the wetlands totaling 303 feet (Figure 3) and the construction corridor will be reduced to 50 feet. In addition, the construction corridor for this portion of the groin will be located to the south of the creek that meanders from Nixon Channel into the wetland such that tidal exchange will continue. Furthermore, the top of the sheet pile structure will be installed below grade which will also allow for the continuation of proper tidal exchange. Finally, the location for the unloading of the rubble mound material from the barge will be situated along the Nixon Channel shoreline in an area containing minimal vegetation.

Beach Fill along Nixon Channel Shoreline

For the proposed project, as originally planned, the initial placement of 57,000 cubic yards of material encompassed a length of 1,800 linear feet along the Nixon Channel shoreline terminating near the end of the Figure Eight Island spit. With this design, material would have covered the mouth of the small tidal creek that feeds the salt marsh community, eventually choking off the tidal influence. The shoreline footprint was modified and shortened the length of placement to 1,400 linear feet in order to avoid impacting the tidal finger and indirectly affecting the marsh community located in this area.

Dredge Type

A hydraulic cutterhead is proposed for dredging the proposed navigation channel within Nixon Channel. A cutterhead dredge uses a rotating cutter assembly at the end of a ladder arm to excavate bottom material, which is then drawn into the suction arm and pumped to the shoreline. On the beach, pipelines will transport the sediment to the designated beach fill area. Bulldozers will be used to construct seaward shore parallel dikes to contain the material on the beach, and to shape the beach to the appropriate construction cross-section template. During construction, the contractor will utilize surveying techniques for compliance with the designed berm width, height, and slope.

Compared to similar types of dredging methodologies, a cutterhead dredge creates minimal disturbance to the seafloor resulting in lower sedimentation and turbidity levels. Anchor (2003) conducted a literature review of suspended sediments from dredging activities. This report concluded that the use of a hydraulic dredge (i.e., cutter suction) limits the possibilities for resuspension of sediment to the point of extraction. Also, since the sediment is suctioned into the dredge head, the sediment cannot directly enter into the middle or upper water column.

No incidences of sea turtle takes from a hydraulic dredge have been identified during the research and development of this document. Therefore, the use and methods involved with this type of machinery reduces or eliminates the likelihood of an incidental take.

Dredge Positioning

DREDGEPAK® or similar navigation and positioning software will be used by the contractor to accurately track the dredge location. The software will provide real-time dredge positioning and digging functions to allow color display of dredge shape, physical feature data as found in background Computer Aided Design (CAD) charts and color contour matrix files from hydrographic data collection software described above on a Cathode Ray Tube (CRT) display. The software shall also provide a display of theoretical volume quantities removed during actual dredging operations.

Dredge anchors shall not be placed any further than 61 m (200 ft) from the edge of the areas to be dredged. The dredge contractor will be required to verify the location of the anchors with real time positioning each and every time the anchors are relocated.

Sediment Compatibility

Beach nourishment projects may indirectly impact sea turtles by influencing the quality of the nesting habitat and may disrupt reproduction and foraging grounds. Incompatibility of nourishment material within the nesting habitat can potentially affect nesting females' ability to successfully nest (Lutcavage et al., 1997). If the nourishment sand is dissimilar from the native sand, results can include changes in sand compaction, beach moisture content, sand color, sand grain size and shape, and sand grain mineral content, all of which may alter sea turtle nesting behavior (Crain et al., 1995). Nest site selection and digging behavior of the female can be altered or deterred, if she finds the beach unsuitable. Additionally, escarpments may develop on nourished beaches, and can prevent sea turtles from accessing the dry beach and cause the female to return to the water without nesting. Unable to reach preferable nesting sites, females may also choose to deposit nests in unfavorable areas seaward of the escarpment, making them vulnerable to wash-out (Crain et al., 1995).

These negative impacts can be lessened by ensuring beach fill is compatible with the native beach receiving the fill. The North Carolina Coastal Resources Commission adopted the State Sediment Criteria Rule Language (15A NCAC 07H .0312) for borrow material aimed at preventing the disposal of incompatible material on the beach. The native material on Figure Eight Island contains an average gravel content of 0.05% and an average granular content of 0.26%; the upper limit of gravel and granular that could be placed on the beach is 5.05% and 5.26%, respectively (Table 6.1). Based on a native silt average of 1.04% at Figure Eight Island, the allowable silt content of material to be placed on the beach is 6.04% (Table 6.1). Based on a native calcium carbonate percentage of 6.0%, the allowable calcium carbonate % of material to be placed on the beach would be limited to 21.0% (Table 1 above). The rule language has been adhered to during the planning and development of the Figure Eight Island Shoreline Management Project, which reduces the potential for negative effects of beach nourishment.

As noted above, the Sediment Criteria Rule provides beneficial guidelines for both grain size and percent weigh of calcium carbonate (NCDCM, 2007) which is intended to minimize compaction which could otherwise impact nesting sea turtles and bentic macroinfauna populations. Aside from these beneficial guidelines, other important characteristics such as organic content, heavy mineral content, and color are not addressed. These aspects of the beach fill will be considered during nourishment construction to reduce the effects of compaction and unsuitable material. A monitoring program will be developed that will ensure the material is compatible in composition and nature to the native material. See the section entitled "Construction Observations" below for more detail regarding this monitoring program which will be designed to ensure that only compatible material will be placed on the oceanfront and Nixon Channel shorelines. This quality management protocol is likely to reduce any potential direct, indirect, and/or cumulative impacts to fish and bird resources by shortening the recovery time of the benthic community food source. It is also expected to benefit sea turtle nest construction and incubation of the eggs and to not interrupt any of their nesting habits.

Pipeline Observations

In order to minimize impacts on wintering piping plover, the pipeline alignment will be designed to avoid potential piping plover wintering habitat. The alignment will be coordinated with, and

approved by, the USACE and NC DCM. As-built positions of the pipeline will be recorded using GPS technology and included in the final construction observation report.

In order to avoid impacts associated with the transport of fill material to the disposal sites, the Figure "8" Beach HOA will negotiate with the dredging contractor to monitor and assess the pipeline during construction. This will serve to avoid leaking of sediment material from the pipeline couplings, other equipment, or other pipeline leaks that may result in sediment plumes, siltation and/or elevated turbidity levels. The Figure "8" Beach HOA, along with their Engineer, will coordinate with the dredgers and have in place a mechanism to cease dredge and fill activities in the event that a substantial leak is detected (leaks resulting in turbidity that exceed state water quality standards for sedimentation). Operations may resume upon appropriate repair of affected couplings or other equipment.

Monitoring Initiatives Construction Techniques

Construction Observations

Several initiatives will be undertaken by Figure "8" Beach HOA, the Engineer, or his duly authorized representative to monitor construction practices. Construction observation and contract administration will be periodically performed during periods of active construction. Most observations will be during daylight hours; however, random nighttime observations may be conducted. The Figure "8" Beach HOA, the Engineer, or his duly authorized representative will provide onsite observation by an individual with training or experience in beach nourishment and construction observation and testing, and that is knowledgeable of the project design and permit conditions. The project manager, a coastal engineer, will coordinate with the field observer. Multiple daily observations of the pumpout location will be made by the Figure "8" Beach HOA, the Engineer, or his duly authorized representative for QA/QC of the material being placed on the beach. Information pertaining to the quality of the material will periodically be submitted to the USACE and NC DCM for verification. If incompatible material is placed on the beach, the USACE and NC DCM will be contacted immediately to determine appropriate actions.

Material Color

The Figure "8" Beach HOA, the Engineer, or their duly authorized representative, will collect a representative sub-surface (6 in below grade) grab sediment sample from each 100-ft long (along the shoreline) section of the constructed beach to visually assess grain size, wet Munsell color, granular, gravel, and silt content. Each sample will be archived with the date, time, and location of the sample. Samples will be collected during beach observations. The sample will be visually compared to the acceptable sand criteria (Table 6.1). If determined necessary by the Engineer, or his duly authorized representative, quantitative assessments of the sand will be conducted for grain size, wet Munsell color, and content of gravel, granular and silt. A record of these sand evaluations will be provided within the Engineer's daily inspection reports and submitted to USACE and NC DCM for verification.

Escarpments

Visual surveys of escarpments will be made along the beach fill area immediately after completion of construction. Escarpments in the newly placed beach fill that exceed 18 inches for

greater than 100 ft shall be graded to match adjacent grades on the beach. The decision for escarpment removal will be determined upon consultation with USACE and NC DCM. Removal of any escarpments during the sea turtle hatching season (May 1 through November 15) shall be coordinated with the North Carolina Wildlife Resources Commission (NCWRC), USFWS, and the USACE – Wilmington District.

Water Quality
The inlet, nearshore and offshore water columns are classified as SA and High Quality Water (HQW) under the North Carolina State water quality standards. This classification requires that work within the water column shall not cause turbidity levels to exceed 25 NTU or background (ambient) conditions that are above 25 NTU.

Dredge and fill operations are expected to temporarily elevate turbidity levels in the water column at the navigation channel and fill sites. Higher turbidity levels are likely to be found in the discharge zone (nearshore swash zone) during periods of active construction. The use of a cutter suction dredge will minimize the area of disturbance in the excavation area since this type of dredge involves suction for the extraction of sediment.
Turbidity monitoring during construction will be managed by the contractor. The contractor will be responsible for notifying the construction engineer in the event that turbidity levels exceed the State water quality standards.

25. Addresses of Adjoining Property Owners, Lessees, Etc. Whose Property Adjoins the Waterbody
The following list of owner names and addresses represent the parcels that are located adjacent to the proposed project including the oceanfront beach fill, the Nixon Channel beach fill, and the terminal groin.

324 BEACH ROAD NORTH
Mr. Dalton D. Ruffin
2841 Galsworthy Drive
Winston Salem, North Carolina 27106

326 BEACH ROAD NORTH
Mr. John L. Lewis, IV
4752 Sherwood Farm
Charlottesville, Virginia 22902

328 BEACH ROAD NORTH
Mr. Evangelos P. Proimos
509 Country Day Road
Goldsboro NC 27530

330 BEACH ROAD NORTH
Mr. Jesse S. Capel
333 E. Chestnut Street
Troy, North Carolina 27371

332 BEACH ROAD NORTH
The Nancy C. Gregg Family LLC
c/o Mrs. N. Elizabeth Gregg
355 W. Martin Luther King Blvd
Charlotte NC 28202

334 BEACH ROAD NORTH
Mr. H. Worth Burke, Jr.
3385 Del Monte Drive
Houston, Texas 77019

1 Surf Court
Mr. and Mrs. Dennis R. Hendrix
6938 Meadowcreek Drive
Dallas, Texas 75254

2 Surf Court
John R. Mann
2403 Reynolds Drive
Winston-Salem, NC 27104

3 Surf Court
David L. Lewis
102 Bastille Court
Cary, NC 27511

4 Surf Court
4 Surf Court Partnership
George P. Ramsey, Jr.
1720 Lexington Drive
Lynchburg, VA 24503

5 Surf Court
Mr. Paul J. Taubman
c/o Ayco Co. Pers Acctg
PO Box 425
Sarasota Springs, NY 12866

6 Surf Court
Thomas E. Capps
4300 Sulgrave Road
Richmond, VA 23221

7 Surf Court
Thomas E. Capps
4300 Sulgrave Road
Richmond, VA 23221

8 Surf Court
Mrs. Carolyn H. Parsons
2 Blue Gill Cove
Greensboro, NC 27455

9 Surf Court
Demill Limited Partnership
c/o Scott E. Smith
110 Stratford Drive
Chapel Hill NC 27516

10 Surf Court
10 Surf Court, LLC
C/O Steven Cherok
9505 Heydon Hall Circle
Charlotte, North Carolina 28210

11 Surf Court
Mr. J. Larry Sorsby
3 Westbury Place
Colts Neck, NJ 07722

4 Comber
Mr. Glenn W. Hodges
1929 Lunar Lane
Wilmington, NC 28405

5 Comber
Robert R. Plybon
5116 Hedrick Drive
Greensboro, NC 27410

6 Comber
Mrs. Jasie S. Barringer
1620 Fairfax Road
Greensboro NC 27407

7 Comber
Kim G. Poineau
8509 Overbrook Road
Fairfax, VA 22031

8 Comber
Phillip M. Murphy, Jr.
97 MacLeod Pond Road
Glenmoore, PA 19343

9 Comber
Nine Comber Rd, LLC
c/o Hamilton E. Withers
115 Mackenan Drive
Cary, NC 27511

10 Comber
Steven P. Cherok
9505 Haydon Hall Circle
Charlotte, NC 28210

11 Comber
Mrs. Carol J. Farbolin

14920 E. Bluff Road
Alpharetta GA 30004

12 Comber
J. Gregory Nelson
319 Stoneybrook Road
Rocky Mount, NC 27804

13 Comber
V. Parker Overton
3933 Mobleys Bridge Road
Grimesland NC 27837

14 Comber
Irene T. & William Cagney
403 Silver Creek Trail
Chapel Hill, NC 27514

15 Comber
Mr. William T. Courtney
303 Lindon Ridge
Cincinnati, Ohio 45215

16 Comber
Figure 8 Point LLC
C/o David A. Urben
2628 Grant Avenue
Raleigh, NC 27608

17 Comber
JP Morgan Chase Bank NA
Victoria H. Grimm
7301 Baymeadows Way
Jacksonville, FL 32256

3 Inlet Hook
Mr. and Mrs. George P. King
3 Inlet Hook
Wilmington, North Carolina 28411

4 Inlet Hook
Ralph C. Taylor, Jr.
4 Inlet Hook
Wilmington, NC 28411

5 Inlet Hook
5 Inlet Hook NCR, LLC
Ralph C. Taylor, Jr.
Wilmington, NC 28411

6 Inlet Hook
Dr. Ted M. Reese
365 E. 75th St.
Indianapolis, Indiana 46240

7 Inlet Hook
Sanddollar Ventures, LLC
Mr. Michael D. Hobbs, Jr.
2 Harris Glen
Atlanta, GA 30327

8 Inlet Hook
Mr. and Mrs. William O. Conn
1300 Cross Beam Drive
Charlotte, NC 28217

9 Inlet Hook
Inlet Hook Holdings, LLC
Brian A. O'Leary
2343 Roswell Ave Unit 4-E
Charlotte, NC 28207

10 Inlet Hook
Aiden Properties, LLC
Albert C. Cooper
PO Box 262
Maynardville, TN 37807

552 BEACH ROAD NORTH
Mr. William H. Cameron
Five Star Group, LLC
PO Box 3649
Wilmington, North Carolina 28406

550 BEACH ROAD NORTH
Mr. Stephen C. Carlson
Carlson North End, LLC
12 Charleston Square
Greensboro, North Carolina 27408

Mr. Carl I. Carlson III
Carlson North End, LLC
105 E. Bay Street
Charleston, South Carolina 29401

548 BEACH ROAD NORTH
Ms. MaryLynn King
8209-A Market Street #283
Wilmington, North Carolina 28411

546 & 544 BEACH ROAD NORTH
Mr. Thomas S. Kenan, III
PO Box 4150
Chapel Hill, North Carolina 27515

542 BEACH ROAD NORTH
Mrs. Anne D. Carlson
12 Charleston Square
Greensboro, North Carolina 27408

Mr. and Mrs. Eric R. Calhoun
1704 St. Andrews Road
Greensboro, North Carolina 27408

540 BEACH ROAD NORTH
Mr. Jeffrey L. Davis
277 North Front Street
Wilmington, North Carolina 27401

538 BEACH ROAD NORTH
Mr. Sidney W. Hinton
2308 Wakefield Plantation Drive
Raleigh, North Carolina 27614

536 BEACH ROAD NORTH
Mr. and Mrs. David A. Sammons
6505 Wilshire Drive
Fuquay Varina, North Carolina 27526

534 BEACH ROAD NORTH
Mrs. Carmen Y. Denby
534 Beach Road North
Wilmington, North Carolina 28411

532 BEACH ROAD NORTH
Mrs. Barbara L. Ferguson, RN, Phd, Trustee
Barbara L. Ferguson QPRT
755 Museum Drive
Charlotte, North Carolina 28207

530 BEACH ROAD NORTH
Mrs. Darrow M. Stockdale
Figure Eight Fish House, LLC
209 Elmwood Drive
Greensboro, NC 27408

Mrs. Marie M. Sartin
Figure Eight Fish House, LLC
1905 Lafayette Ave.
Greensboro, North Carolina 27408

Mr. David W. Morrisette
Figure Eight Fish House, LLC
3510 Black Ridge Road
Floyd, VA 24091

Mr. William F. Morrisette Jr.
Morrisette Paper Company, Inc.
1813 Dalton Road
Greensboro, North Carolina 27408

528 BEACH ROAD NORTH

Mr. and Mrs. Alan D. Goldenberg
528 Beach Road North
Wilmington, North Carolina 28411

or depending on the time of the year:

350 South Collier Blvd, Apt 1206
Marco Island, Florida 34145

526 BEACH ROAD NORTH
Mrs. Vicki B. Maitre, Trustee
Vicki B. Maitre Revocable Trust
PO Box 401
Johnson, Vermont 05656

Mr. and Mrs. Rich Williams
2356 Ocean Point Drive
Wilmington, North Carolina 28405

524 BEACH ROAD NORTH
Mr. and Mrs. Marshall C. Rogers
1520 Holbrook Court
Albemarle, North Carolina 28001

522 BEACH ROAD NORTH
Mr. and Mrs. R. Frederick McCoy
R. Frederick McCoy Revocable Trust
PO Box 17239
Chapel Hill, North Carolina 27516

520 BEACH ROAD NORTH

Mr. Paul J. Sclafani
and Ms. Ellen M. Waters
520 Beach Road North
Wilmington, NC 28411

or other address depending on time of year:

19 Lenox Hill Drive,
Spring, Texas 77382

518 BEACH ROAD NORTH
Mr. and Mrs. Christopher M. Veno
1750 North Valley Road
Malvern, PA 19355