

MEMORANDUM



olsen
associates, inc.
Coastal Engineering

TO: Holley Snider, NCDCM/DEQ
CC: Chris McCall; Charles Baldwin, Esq.
FROM: Erik J. Olsen, P.E. EJO
DATE: 30 March 2016
RE: Major Permit Application by Village of Bald Head Island
Four (4) Detached Rock Breakwaters; Cape Fear River Shoreline

Enclosed you will find revised DCM Permit Application Forms MP-1, MP-2, MP-4 and supplementary information required by same for the above referenced project. Please substitute this revised Application for that previously submitted. As you will see, the nature of the detached breakwater design is as discussed at our 24 March 2016 inter-agency meeting in Wilmington. Pursuant to comments received at that time, the project Narrative has been greatly expanded and an Alternatives Analysis included.

Our firm will serve as Permit Agent and Project Engineer. The Village of Bald Head Island, N.C. is the Applicant. As described herein, the subject site is classified as an *Estuarine Shoreline*. Pursuant to DCM requirements, a *Notice* to adjacent property owners is being sent by the Village via Certified Mail. A copy of the draft *Notice* and a list of Riparian owners is enclosed. We are also enclosing the \$400. Fee previously submitted (and returned) – to this revised Application.

We look forward to addressing any further questions or data requirements for this project as requested by the NCDCM/DEQ and/or the Wilmington District, USACOE. Thank you.

cc: C. Preziosi, LMG
H. Coates, DEQ
Tyler Crumbley, USACOE

Enc/

APPLICATION for Major Development Permit

(last revised 12/27/06)



North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information				
Business Name Olsen Associates, Inc.		Project Name (if applicable) Detached Breakwater Project		
Applicant 1: First Name Chris	MI	Last Name McCall		
Applicant 2: First Name	MI	Last Name		
<i>If additional applicants, please attach an additional page(s) with names listed.</i>				
Mailing Address Village of Bald Head Island		PO Box 3009	City Bald Head Island	State N.C.
ZIP 28461	Country U.S.	Phone No. 910 - 457 - 9100 ext. 1003		FAX No. 910 - 457 - 6206
Street Address (if different from above)		City	State	ZIP
Email cmccall@vbhi.org				

2. Agent/Contractor Information				
Business Name Olsen Associates, Inc.				
Agent/ Contractor 1: First Name Erik	MI J.	Last Name Olsen		
Agent/ Contractor 2: First Name	MI	Last Name		
Mailing Address 2618 Herschel Street		PO Box	City Jacksonville	State F.L.
ZIP 32204		Phone No. 1 904 - 387 - 6114 ext. 321		Phone No. 2 - - - - - ext.
FAX No. 904-384-7863		Contractor #		
Street Address (if different from above)		City	State	ZIP
Email				

<Form continues on back>

3. Project Location			
County (can be multiple) Brunswick	Street Address N/A		State Rd. #
Subdivision Name Row Boat Row	City Village of Bald Head Isld.	State N.C.	Zip 28461.
Phone No. 910 457 9700 ext. 1003	Lot No.(s) (if many, attach additional page with list) N/A		
a. In which NC river basin is the project located? Cape Fear	b. Name of body of water nearest to proposed project Cape Fear River		
c. Is the water body identified in (b) above, natural or manmade? <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Manmade <input type="checkbox"/> Unknown	d. Name the closest major water body to the proposed project site. Atlantic Ocean		
e. Is proposed work within city limits or planning jurisdiction? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. VBHI		

4. Site Description	
a. Total length of shoreline on the tract (ft.) 1,400	b. Size of entire tract (sq.ft.) N/A
c. Size of individual lot(s) N/A <i>(If many lot sizes, please attach additional page with a list)</i>	d. Approximate elevation of tract above NHW (normal high water) or NWL (normal water level) Varies <input type="checkbox"/> NHW or <input type="checkbox"/> NWL
e. Vegetation on tract Upland vegetated dune includes salt tolerant vegetation -- primarily Sea Oats. No aquatic species or wetlands are present.	
f. Man-made features and uses now on tract Four low profile groins, last reconstructed in 2012. Subject shoreline receives episodic placement of sand (from channel maintenance and sand bypass operations).	
g. Identify and describe the existing land uses adjacent to the proposed project site. Upland land uses are SFR. Adjacent to the subject shoreline (to the south) is the entrance channel to the BHI Marina. The subject shoreline has historically received episodic beach disposal.	
h. How does local government zone the tract? NA - Shorefront	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
j. Is the proposed activity part of an urban waterfront redevelopment proposal? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy. <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA If yes, by whom?	
l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	

<Form continues on next page>

m. (i) Are there wetlands on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
(ii) Are there coastal wetlands on the site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? <i>(Attach documentation, if available)</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
n. Describe existing wastewater treatment facilities. N/A	
o. Describe existing drinking water supply source. N/A	
p. Describe existing storm water management or treatment systems. N/A	

5. Activities and Impacts	
a. Will the project be for commercial, public, or private use?	<input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Public/Government <input type="checkbox"/> Private/Community
b. Give a brief description of purpose, use, and daily operations of the project when complete. The four (4) rock detached breakwaters will serve to address chronic shoreline erosion along the Row Boat Row shoreline. Four (4) existing low profile groins at that location do not adequately provide for satisfactory erosion control.	
c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored. Construction will consist of rock placement from a barge. Rocks will be placed by a crane or suitable equipped excavator from the deck of the barge.	
d. List all development activities you propose. None. Project is intended to protect existing upland SFR development and a vegetated duneline located seaward of the existing line of construction.	
e. Are the proposed activities maintenance of an existing project, new work, or both? New work.	
f. What is the approximate total disturbed land area resulting from the proposed project? 0.3A <input type="checkbox"/> Sq.Ft or <input checked="" type="checkbox"/> Acres	
g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	
h. Describe location and type of existing and proposed discharges to waters of the state. Rock and underlayment placement (only) below the MHWL -- seaward of a sandy shoreline.	
i. Will wastewater or stormwater be discharged into a wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA If yes, will this discharged water be of the same salinity as the receiving water? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	
j. Is there any mitigation proposed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA If yes, attach a mitigation proposal.	

<Form continues on back>

6. Additional Information

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) - (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

a. A project narrative See Attachment A

b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed. Attached - four (4) Sheets

c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site. Attached

d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties. NA

e. The appropriate application fee. Check or money order made payable to DENR. \$400 - Fee enclosed

f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.

Name	See Attached	Phone No.
Address		
Name		Phone No.
Address		
Name		Phone No.
Address		

g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.

CAMA 208-86; SAW-1987-0057; VBHI; Dec 14/Jan 15
CAMA 139-10; SAW-2009-02334; VBHI; Dec 2015

h. Signed consultant or agent authorization form, if applicable. Agent authorization attached.

i. Wetland delineation, if necessary. NA

j. A signed AEC hazard notice for projects in oceanfront and inlet areas. (Must be signed by property owner) NA

k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act ENCL. NA

7. Certification and Permission to Enter on Land

I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date 29 MAR 2016 Print Name Chris McCall, Interim Village Manager

Signature 

- Please indicate application attachments pertaining to your proposed project.
- DCM MP-2 Excavation and Fill Information
 - DCM MP-3 Upland Development
 - DCM MP-4 Structures Information
 - DCM MP-5 Bridges and Culverts

PROJECT NARRATIVE

Applicant: Village of Bald Head Island, N.C.

Activity: Construction of four (4) detached low-profile rock breakwaters

Agent: Erik J. Olsen, P.E.; Olsen Associates, Inc.

Village Rep: Chris McCall, Village Manager

Location:

The project site is the 1,400 ft. of Cape Fear River facing shoreline located immediately northward of the stabilized entrance channel leading to the Bald Head Island Marina. The adjacent upland property (Row-Boat-Row) is presently fully developed with single family residences. Between the platted single family residence (SFR) lots and the MHW is a vegetated dune line and sandy beach. Buried in the landwardmost portion of the dune is a timber bulkhead built several decades ago at the inception of Bald Head Island's development. The subject shorefront is classified by the N.C. Department of Environmental Quality (DEQ) as an "*Estuarine Shoreline*".

Purpose and Need:

The purpose of the proposed project is to address chronic erosion along the Row-Boat-Row Estuarine shoreline and to protect single-family residences, public infrastructure, beach/dune resources and associated habitat.

The primary objective of the project is to structurally reduce shore normal directed wave energy and to complement an existing groinfield so as to reduce sand losses from the Row-Boat-Row shoreline – thereby reducing the need for high frequency sand placement. Conversely, it is highly desirable that the proposed solution be consonant with the Village's *Beach Management*

**ATTACHMENT A
CAMA MAJOR PERMIT
DETACHED BREAKWATER PROJECT**

Plan such that it addresses the synergistic precepts of both its Ocean and Estuarine shorelines in an environmentally sensitive and cost-effective manner.

Previous Activities:

In 1986, the island development company – Bald Head Island Ltd. – permitted and subsequently constructed a field of four (4) timber groins along the Row-Boat-Row 1,400 ft. of shorefront located northward of the entrance to the Bald Head Island Marina. Over the next 25 years, the four structures were repaired by Ltd. on an as-needed basis. The primary cause of long term timber groin degradation was marine borers.

In 2011, the Village of Bald Head Island permitted and subsequently replaced the seawardmost segment of each of the four (4) groins. Materials used for construction included vinyl sheet pile and PVC coated timber walers and piles. Permit Conditions (CAMA 2-95) necessitated that the groin elevations, lengths and locations remain unchanged. As originally designed, the groins are relatively low in elevation and spaced at greater than desired distances apart. Their resultant shore stabilization benefits are therefore limited.

The two marina entrance channel jetties located to the south of the Row-Boat-Row shorefront were originally constructed by Ltd, at lengths which over time failed to effectively control shoaling due to northerly directed littoral transport along West Beach. As a result, high frequency maintenance dredging of the navigation channel had been required in order to provide reasonably reliable ferry and barge access between the mainland and the island. To complement this activity, “advance dredging” of the shorefront immediately southward of the south jetty was likewise performed on a high frequency basis in an attempt to create a “sink” intended to intercept sand before it shoaled the channel. Recent records indicate that the construction of such a sand sink (and actual channel maintenance dredging) were performed on essentially a monthly basis during a six year period. The average monthly volume dredged was almost 1,500 cy per event. All sand dredged was placed on (i.e. or bypassed to) the Row-Boat-Row shorefront. This resulted in a relatively stable beach and dune system at that location through

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2014. The Village's monitoring photography documents that on many occasions in the recent past the subject groinfield was completely buried by excess disposal material.

In 2015, the Village of Bald Head Island formally assumed various marina entrance channel and shorefront maintenance responsibilities from the development company. In consideration of the undesirable frequency of channel dredging operations necessary to achieve safe and reliable public transport to and from the island, the Village both permitted (CAMA 208-86) and constructed rock jetty extensions at the ends of the two pre-existing marina entrance channel structures. The purpose of the extended jetties was to reduce chronic channel shoaling, as well as potential temporary closures associated with extreme storm events. Jetty extensions had been permitted for this purpose in the past by the development company – but were never constructed.

The Village sponsored jetty extension project was completed in early 2015. Subsequently, the entrance channel has to this date *not* required maintenance dredging. As a result, the Row-Boat-Row shorefront – no longer the recipient of high frequency (but indirectly beneficial) sand disposal from the channel or West Beach – has suffered erosion to the point that the stabilized dune line and beach have become highly recessional. For example, between March and August 2015, it is estimated that the groinfield lost sand at an estimated rate of 5,500 – 7,500 cy/yr. Although the Village is considering to “bypass” a limited quantity of sand from West Beach once or twice a year, it is clear that the low profile Row-Boat-Row groinfield is not capable of providing an acceptable level of shoreline stabilization at that location – given a greatly reduced frequency of sand disposal operations. In order to seek a reasonable balance between sand bypass activities and the protection of upland development, as well as to reduce the continuing chronic loss of beach and dune resources, additional stabilization measures or remedial actions are required seaward of, or along the Row-Boat-Row shorefront.

Alternate Actions Considered:

The alternate actions presently available to the Village of Bald Head Island relative to the future conditions of the Row-Boat-Row shorefront can be summarized as follows:

1. No Action – Essentially the Village would only bypass small quantities of sand from the marina entrance at times when channel maintenance was required. The documented performance of the 2015 jetty extensions intimate that such volumes may be negligible in the near future. As a result, both the beach and existing duneline would be expected to continue to recede. The net result will be beach and dune resource impacts as well as a significant loss of storm protection and increase vulnerability of the existing riverfront line of construction located along Row-Boat-Row.

2. Modification of the Existing Groinfield – To raise the elevation of the existing four (4) low profile groins would necessitate both a CAMA Major Permit and their complete replacement. The groins were last upgraded in 2012 and are presently in excellent condition. Moreover, simply raising the groins would not provide suitable stabilization subsequent to a companion beach fill at that location. Much of the wave energy experienced along the project site occurs in a shore-normal direction. As a result, shore perpendicular structures are *not* highly effective in reducing sand losses – much of which given the proximity of very strong tidal currents – occurs back to the Cape Fear River.

Modifying the existing groins through the addition of rock T-heads, could result in a stabilized shorefront with a beneficial equilibrated configuration after a companion beach fill. Maintenance requirements along the residual shorefront would be minimal – and therefore conducive to a greatly reduced sand bypass operation – as currently being experienced. Neither T's nor L's added to the end of the groins within the Estuarine Zone are allowable however, under current State regulations. Hence, this option is not viable without a Variance from the CRC.

3. Increased Sand Bypass Operations – Increased sand bypass volumes at the existing marina entrance channel would necessitate high frequency “borrowing” of sand from the

**ATTACHMENT A
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DETACHED BREAKWATER PROJECT**

West Beach shoreline immediately south of the southerly rock jetty extension constructed in 2015. Presently, no sand is available from channel shoaling. To meet the recently experienced erosional needs of Row-Boat-Row, it is anticipated that sand bypass operations may need to occur every 60-days, mol (6 times per year). The continuation of this process would adversely impact other portions of West Beach to the south which are currently erosional and in need of a Winter of 2016 sand fill project. Additionally, the occurrence of high frequency fills along the Row-Boat-Row shoreline is not conducive to innertidal beach benthic recovery – and from an environmental impact perspective alone is therefore *not a normally preferred* alternative shore stabilization action.

4. Placement of Four (4) Detached Breakwaters – Similar to T-head groins, the placement of low profile detached rock groins along the affected shorefront can result in a beneficially equilibrated configuration – subsequent to a companion beach fill – which would be expected to require very little future maintenance. The net result desired, which includes both a sandy beach and stabilized dune formation, can be achieved through the designed placement of four small breakwaters *between* the existing low profile groins (unmodified from their current design). The use of such structures – in the manner proposed – is not prohibited within the Estuarine Zone. Rather, it is addressed as a feasible “engineered” solution.

5. Construction of a Rock Revetment – Armoring of the subject shoreline so as to protect upland development is an option available within the Estuarine Zone. Given the nature of the wave and storm energies the site experiences, a suitably designed rock revetment is feasible. The construction of such a stabilization structure would result in the eventual loss of any natural beach or dune formation, as well as related habitats, along the 1,400 ft shoreline under consideration. The “hardening” of this shorefront is *not* a preferred solution of the Applicant, given the opportunity to maintain a beach/dune system through the utilization of a more appropriate structural alternative – without sacrificing the protection of existing upland development.

Preferred Alternative - Detached Breakwaters:

Since a principal source of erosional stress along the Row-Boat-Row shorefront is wind and vessel induced wave activity, multiple shore parallel structures are warranted. Modifying the four (4) existing groins by increasing their elevation would not be highly successful in solving ongoing erosion, since much of the vessel related wave energy occurs in a shore-normal direction. Furthermore, the addition of T-heads to the existing low profile groins is prohibited by regulation.

Hence, several breakwaters capable of reducing (or intercepting) direct wave impacts are proposed. More specifically, the proposed plan is to construct four (4) detached low-profile rock breakwaters – each approximately 90 ft. in length along its crest (114 ft. overall including end slopes). Each detached breakwater would be constructed between two existing structures and sited *below the MHWL* in approximately 2 to 5 ft of water (MLW datum). As such, their deployment would *not* constitute a hardened shoreline.

Such a placement would initially combine the attributes of each of the two types of stabilization structure so as to reduce the rate of sediment transport from the eroding shoreline. Eventually, it is predicted that after detached breakwater construction and sand placement, the existing groins will become essentially quasi-buried and therefore only partially active. This will maximize benefits to the beach/dune system and at the same time greatly reduce the frequency of dredging operations associated with discrete Sand Bypass events. As such, the detached breakwater project is consonant with the Village's *Beach Management Plan* which addresses *both* its Ocean and Estuarine (River facing) shorelines. A fundamental precept of that Plan is to strategically enhance and protect beach and dune resources, in both an environmentally and cost-effective manner. As such, the detached breakwater project would reduce the future frequency of dredging operations and at the same time protect existing development located upland of an enhanced beach/dune system. The rock utilized to construct the breakwaters will create and maintain varying types of diverse shallow water habitat along the Estuarine shoreline.

**ATTACHMENT A
CAMA MAJOR PERMIT
DETACHED BREAKWATER PROJECT**

It is believed that the Applicant's preferred alternative represents the least environmentally damaging practicable solution to the erosion problem under consideration along the Row-Boat-Row shorefront.

Relationship To Federal Navigation Channel:

The proposed detached breakwaters would be located in -2 to -5 ft MLW water depths. The authorized depth of the federal navigation channel seaward of the structures is -44 ft MLW. The congressionally authorized channel is some 1,500 ft or more westward of the proposed structures. Hence, there are no predicted adverse impacts to the Wilmington Harbor Navigation Project associated with the proposed activity. Since a portion of the Row-Boat-Row ongoing shorefront sand losses occur directly to the Cape Fear River, the proposed detached breakwater project can be considered to be net beneficial to the federal navigation channel.

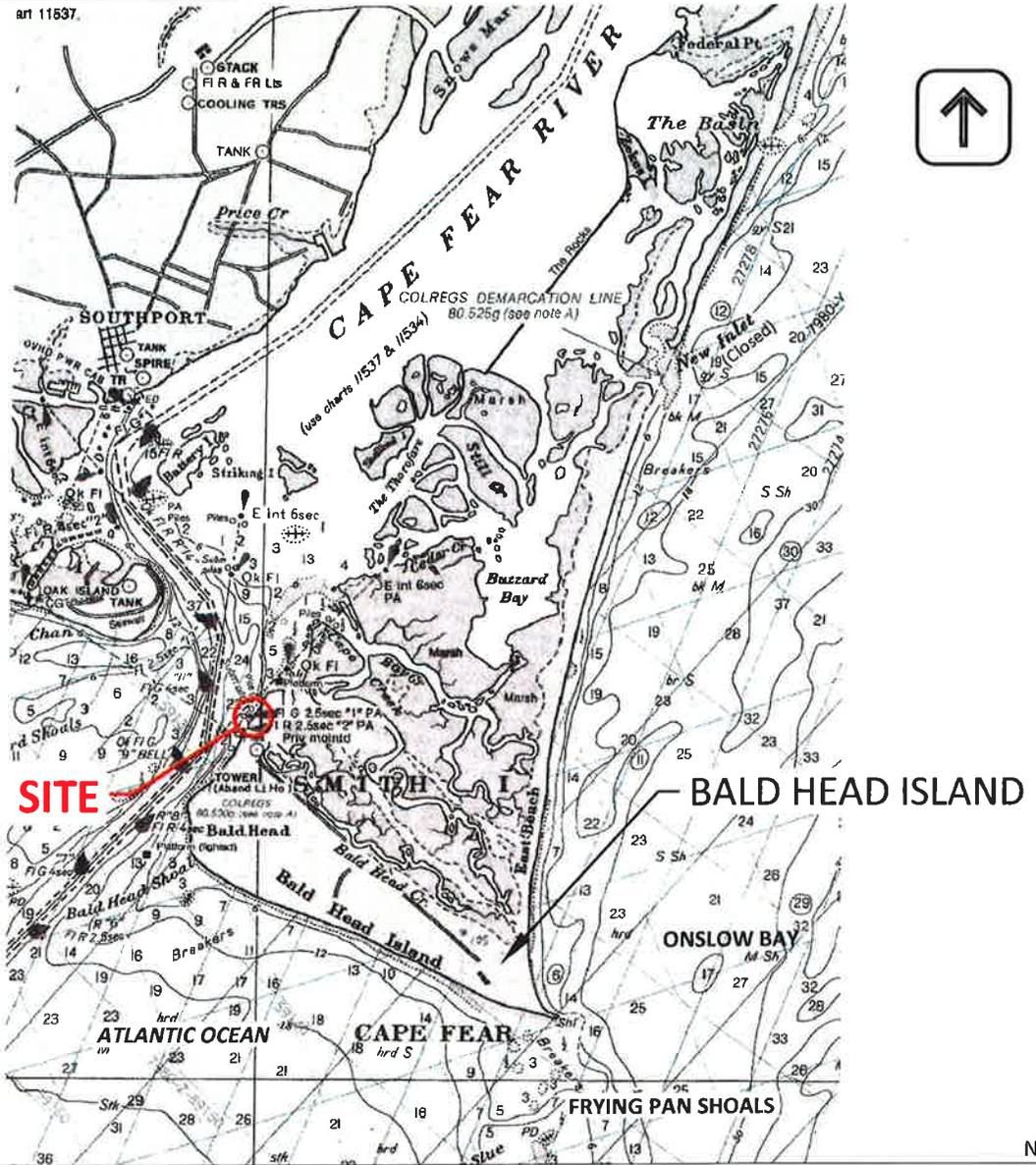
art 11537.



APPLICANT:
VILLAGE OF BALD HEAD ISLAND

ENGINEER:
OLSEN ASSOCIATES, INC.

AGENT:
ERIK J. OLSEN, P.E.



BALD HEAD ISLAND

DATUM: MLLW

NTS



NOT FOR PURPOSES OF CONSTRUCTION

NTS



olsen
associates, inc.
2618 Herschel Street
Jacksonville, FL 32204
(904) 387-6114
C-1468

VILLAGE OF BALD HEAD ISLAND
DETACHED BREAKWATER PROJECT

PROJECT SITE



DATE	APPROVED	REVISION
03/01/2016		
DRAWN BY:		
ML		
SHEET		
1 of 4		

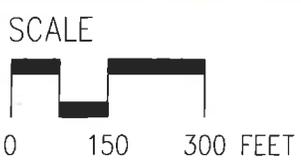
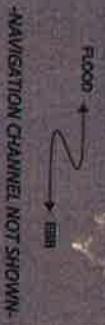


BALD HEAD CREEK



- NOTES:**
1. PHOTO DATE: NOV 2015;
 2. GROINFIELD SHORELINE IS A DISPOSAL AREA FOR THE EPISODIC PLACEMENT OF MARINA CHANNEL MAINTENANCE AND SAND BYPASSED FROM WEST BEACH (CAMA 2-95). CONTRACTORS EQUIPMENT AND OPERATIONS SHALL NOT IMPEDE OR AFFECT FERRY ACCESS TO MARINA.
 3. EXISTING LOW-PROFILE GROINS (G1-G4) RECONSTRUCTED IN 2012.

CAPE FEAR RIVER



NOT FOR PURPOSES OF CONSTRUCTION



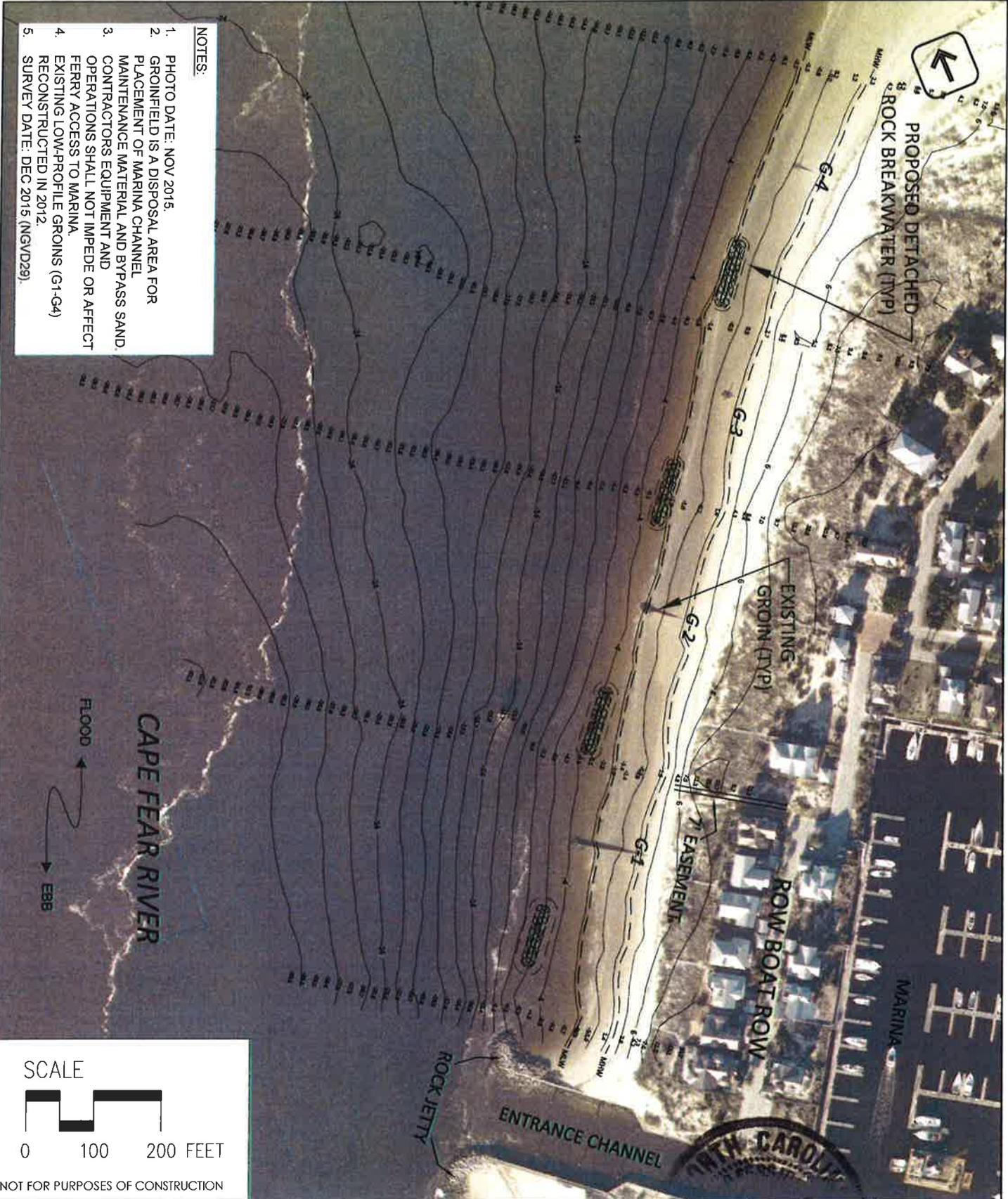
olsen
 associates, inc.
 2618 Herschel Street
 Jacksonville, FL 32204
 (904) 387-6114
 C-1468

VILLAGE OF BALD HEAD ISLAND
 DETACHED BREAKWATER PROJECT

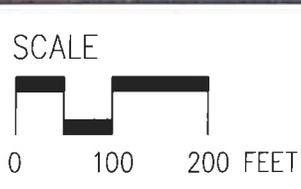
PROJECT LOCATION



03/01/2016
DRAWN BY: ML
SHEET 2 of 4



- NOTES:**
1. PHOTO DATE: NOV 2015.
 2. GROINFIELD IS A DISPOSAL AREA FOR PLACEMENT OF MARINA CHANNEL MAINTENANCE MATERIAL AND BYPASS SAND. CONTRACTORS EQUIPMENT AND OPERATIONS SHALL NOT IMPEDE OR AFFECT FERRY ACCESS TO MARINA.
 3. EXISTING LOW-PROFILE GROINS (G-1-G4) RECONSTRUCTED IN 2012.
 4. SURVEY DATE: DEC 2015 (NGVD29).



NOT FOR PURPOSES OF CONSTRUCTION



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2618 Herschel Street
Jacksonville, FL 32204
(904) 387-6114
C-1468

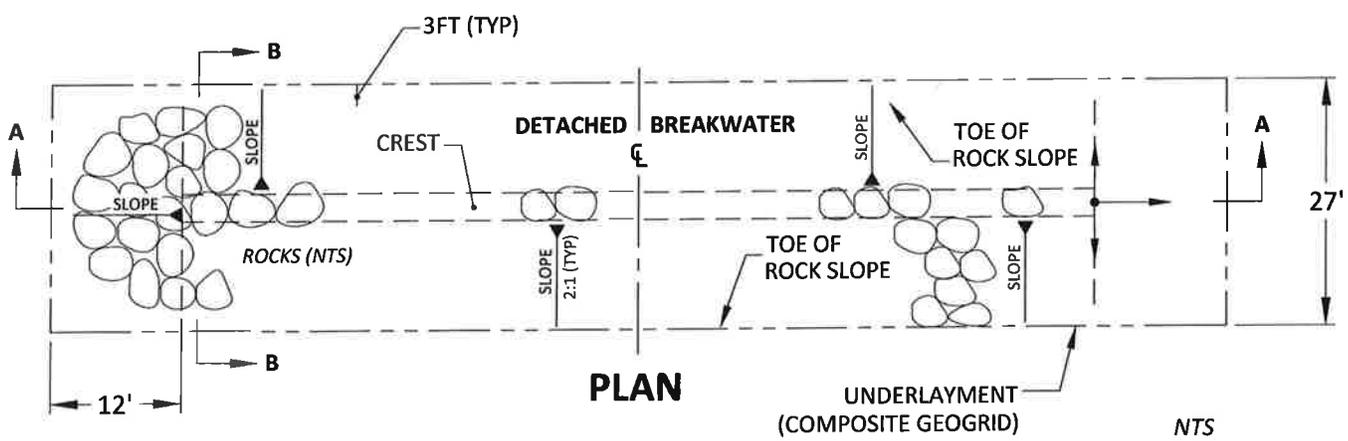
VILLAGE OF BALD HEAD ISLAND
DETACHED BREAKWATER PROJECT

PLAN OF IMPROVEMENT

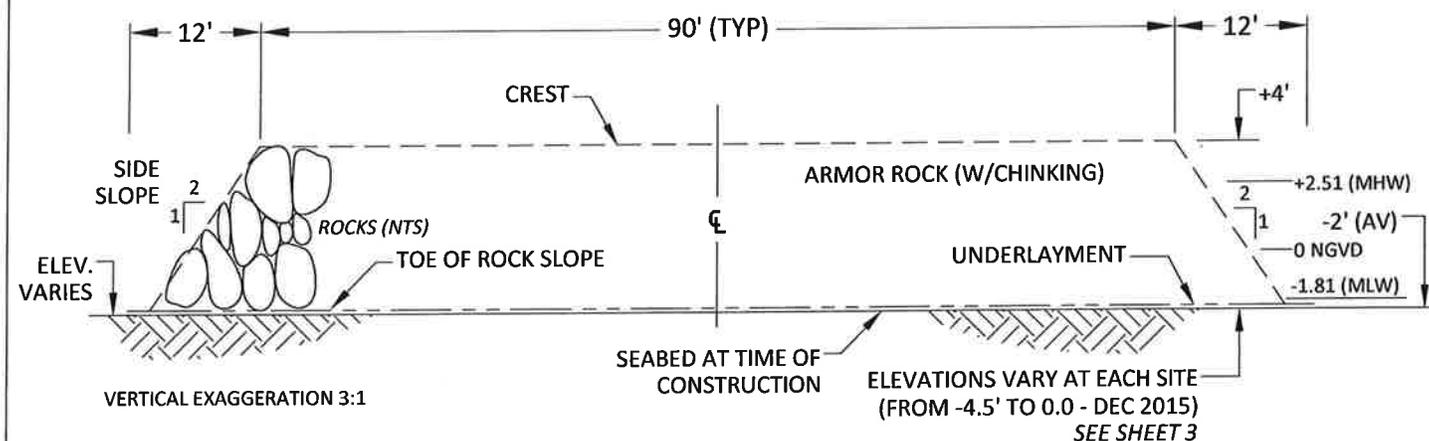


DATE	APPROVED	REVISION

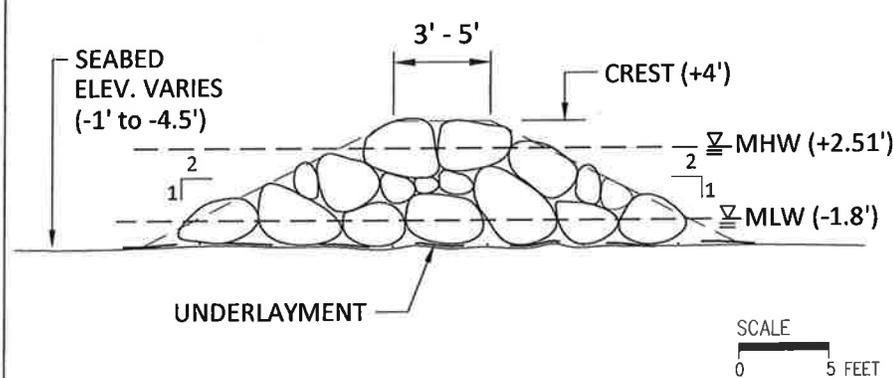
03/01/2016
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SHEET 3 of 4



PLAN



SECTION A-A



**SECTION B-B
LOW PROFILE BREAKWATER**

Tidal Datums for Bald Head Island, North Carolina	
Datum	Elevation (ft-NGVD 29)
Mean Higher High Water (MHHW)	+2.82
Mean High Water (MHW)	+2.51
NAVD 1988	+1.10
Mean Tide Level (MTL)	+0.35
NGVD 1929	0.00
Mean Low Water (MLW)	-1.81
Mean Lower Low Water (MLLW)	-1.98

NOT FOR PURPOSES OF CONSTRUCTION

VILLAGE OF BALD HEAD ISLAND
DETACHED BREAKWATER PROJECT

PROJECT LOCATION



03/01/2016
DRAWN BY:
ML
SHEET
4 of 4

OLSEN ASSOCIATES, INC.
2618 HERSCHEL STREET
JACKSONVILLE, FL 32204

COMMAND ASSET PROGRAM

2218

99-716/1023 10010

DATE 24 Feb 16

PAY TO THE ORDER OF NCDCM \$ 400⁰⁰/₁₀₀

Four Hundred and ⁰⁰/₁₀₀

DOLLARS

 Security Features Details on Back

WELLS FARGO ADVISORS

payable through
Wells Fargo Bank, N.A.

FOR VBHI-App - Detached Banknote Pg



⑈002218⑈ ⑆102307164⑆ 9980242426⑈

Form DCM MP-2

EXCAVATION and FILL

(Except for bridges and culverts)

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

Describe below the purpose of proposed excavation and/or fill activities. **All values should be given in feet.**

	Access Channel (NLW or NWL)	Canal	Boat Basin	Boat Ramp	Rock Groin	Rock Breakwater	Other (excluding shoreline stabilization)
Length						114'	Each
Width						27'	Each
Avg. Existing Depth					NA	NA	
Final Project Depth					NA	NA	

1. EXCAVATION

This section not applicable

- a. Amount of material to be excavated from below NHW or NWL in cubic yards. _____
- b. Type of material to be excavated. _____
- c. (i) Does the area to be excavated include coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
 CW _____ SAV _____ SB _____
 WL _____ None _____
- d. High-ground excavation in cubic yards. _____
- (ii) Describe the purpose of the excavation in these areas:

2. DISPOSAL OF EXCAVATED MATERIAL

This section not applicable

- a. Location of disposal area. _____
- b. Dimensions of disposal area. _____
- c. (i) Do you claim title to disposal area?
 Yes No NA
- d. (i) Will a disposal area be available for future maintenance?
 Yes No NA
- (ii) If no, attach a letter granting permission from the owner. _____
- (ii) If yes, where? _____
- e. (i) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
 CW _____ SAV _____ SB _____
 WL _____ None _____
- f. (i) Does the disposal include any area in the water?
 Yes No NA
- (ii) If yes, how much water area is affected? _____
- (ii) Describe the purpose of disposal in these areas:

3. SHORELINE STABILIZATION

(If development is a wood grain, use MP-4 - Structures)

This section not applicable

- a. Type of shoreline stabilization:
 Bulkhead Riprap Breakwater/Sill Other: _____
- b. Length: 114' Each
 Width 27'
- c. Average distance waterward of NHW or NWL:
100'
- d. Maximum distance waterward of NHW or NWL:
130'
- e. Type of stabilization material
Granite armor rock
- f. (i) Has there been shoreline erosion during preceding 12 months?
 Yes No NA
 (ii) If yes, state amount of erosion and source of erosion amount information.
5,500-7,500 cy; survey and photography
- g. Number of square feet of fill to be placed below water level
 Bulkhead backfill _____ Riprap _____
 Breakwater/Sill 13,400 Other _____
- h. Type of fill material.
N/A
- i. Source of fill material.
Upland quarry; typically at Raleigh, N.C.

4. OTHER FILL ACTIVITIES

(Excluding Shoreline Stabilization)

This section not applicable

- a. (i) Will fill material be brought to the site? Yes No NA
 If yes,
 (ii) Amount of material to be placed in the water _____
 (iii) Dimensions of fill area _____
 (iv) Purpose of fill _____
- b. (i) Will fill material be placed in coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
 CW _____ SAV _____ SB _____
 WL _____ None _____
 (ii) Describe the purpose of the fill in these areas.

5. GENERAL

- a. How will excavated or fill material be kept on site and erosion controlled?
Fill consists of large granite armor rock forming a large stable mass (breakwater)
- b. What type of construction equipment will be used (e.g., dragline, backhoe, or hydraulic dredge)?
By crane from a barge.
- c. (i) Will navigational aids be required as a result of the project?
 Yes No NA
 (ii) If yes, explain what type and how they will be implemented.

- d. (i) Will wetlands be crossed in transporting equipment to project site? Yes No NA
 (ii) If yes, explain steps that will be taken to avoid or minimize environmental impacts.
Sandy shoreline. No wetlands involved.

Date
29 MAR 2016

Applicant Name
Village of Bald Head Island

Project Name
VBHI - Detached Breakwater Project

Applicant Signature


Form DCM MP-4

STRUCTURES

(Construction within Public Trust Areas)

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. DOCKING FACILITY/MARINA CHARACTERISTICS

This section not applicable

- a. (i) Is the docking facility/marina:
 Commercial Public/Government Private/Community
- b. (i) Will the facility be open to the general public?
 Yes No
- c. (i) Dock(s) and/or pier(s)
(ii) Number _____
(iii) Length _____
(iv) Width _____
(v) Floating Yes No
- d. (i) Are Finger Piers included? Yes No
If yes:
(ii) Number _____
(iii) Length _____
(iv) Width _____
(v) Floating Yes No
- e. (i) Are Platforms included? Yes No
If yes:
(ii) Number _____
(iii) Length _____
(iv) Width _____
(v) Floating Yes No
- f. (i) Are Boatlifts included? Yes No
If yes:
(ii) Number _____
(iii) Length _____
(iv) Width _____

Note: Roofed areas are calculated from dripline dimensions.

- g. (i) Number of slips proposed

- (ii) Number of slips existing

- h. Check all the types of services to be provided.
 Full service, including travel lift and/or rail, repair or maintenance service
 Dockage, fuel, and marine supplies
 Dockage ("wet slips") only, number of slips: _____
 Dry storage; number of boats: _____
 Boat ramp(s); number of boat ramps: _____
 Other, please describe:

- i. Check the proposed type of siting:
 Land cut and access channel
 Open water; dredging for basin and/or channel
 Open water; no dredging required
 Other; please describe:

- j. Describe the typical boats to be served (e.g., open runabout, charter boats, sail boats, mixed types).

- k. Typical boat length: _____
- l. (i) Will the facility be open to the general public?
 Yes No
- m. (i) Will the facility have tie pilings?
 Yes No
(ii) If yes number of tie pilings?

2. DOCKING FACILITY/MARINA OPERATIONS

This section not applicable

a. Check each of the following sanitary facilities that will be included in the proposed project.

Office Toilets

Toilets for patrons; Number: _____; Location: _____

Showers

Boatholding tank pumpout; Give type and location: _____

b. Describe treatment type and disposal location for all sanitary wastewater.

c. Describe the disposal of solid waste, fish offal and trash.

d. How will overboard discharge of sewage from boats be controlled?

e. (i) Give the location and number of "No Sewage Discharge" signs proposed.

(ii) Give the location and number of "Pumpout Available" signs proposed.

f. Describe the special design, if applicable, for containing industrial type pollutants, such as paint, sandblasting waste and petroleum products.

g. Where will residue from vessel maintenance be disposed of?

h. Give the number of channel markers and "No Wake" signs proposed. _____

i. Give the location of fuel-handling facilities, and describe the safety measures planned to protect area water quality.

j. What will be the marina policy on overnight and live-aboard dockage?

k. Describe design measures that promote boat basin flushing?

l. If this project is an expansion of an existing marina, what types of services are currently provided?

Form DCM MP-4 (Structures, Page 3 of 4)

- m. Is the marina/docking facility proposed within a primary or secondary nursery area?
Yes No
- n. Is the marina/docking facility proposed within or adjacent to any shellfish harvesting area?
Yes No
- o. Is the marina/docking facility proposed within or adjacent to coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? .If any boxes are checked, provide the number of square feet affected.
CW _____ SAV _____ SB _____
WL _____ None

- p. Is the proposed marina/docking facility located within or within close proximity to any shellfish leases? Yes No
If yes, give the name and address of the leaseholder(s), and give the proximity to the lease.

3. BOATHOUSE (including covered lifts) This section not applicable

- a. (i) Is the boathouse structure(s):
Commercial Public/Government Private/Community
- (ii) Number _____
- (iii) Length _____
- (iv) Width _____

Note: Roofed areas are calculated from dripline dimensions.

4. GROIN (e.g., wood, sheetpile, etc. If a rock groin, use MP-2, Excavation and Fill.) This section not applicable

- a. (i) Number _____
- (ii) Length _____
- (iii) Width _____

5. BREAKWATER (e.g., wood, sheetpile, etc.) This section not applicable

- a. Length 4@114 ' b. Average distance from NHW, NWL, or wetlands
100 '
- c. Maximum distance beyond NHW, NWL or wetlands
130 '

6. MOORING PILINGS and BUOYS This section not applicable

- a. Is the structure(s):
Commercial Public/Government Private/Community
- b. Number _____
- c. Distance to be placed beyond shoreline _____
Note: This should be measured from marsh edge, if present.
- d. Description of buoy (color, inscription, size, anchor, etc.)

- e. Arc of the swing _____

7. GENERAL

a. Proximity of structure(s) to adjacent riparian property lines

N/A - Beach owned by Village.

b. Proximity of structure(s) to adjacent docking facilities.

N/A

Note: For buoy or mooring piling, use arc of swing including length of vessel.

c. Width of water body

1.5 mi.

d. Water depth at waterward end of structure at NLW or NWL

-2 ft. MLW

e. (i) Will navigational aids be required as a result of the project?

Yes No NA

(ii) If yes, explain what type and how they will be implemented.

8. OTHER

This section not applicable

a. Give complete description:

Project consists of four (4) detached rock breakwaters to be constructed below the MHWL (as of Dec 15). All work will be performed from the deck of a barge.

The purpose of the project is shore stabilization of an eroding shoreline adversely affected by both wind and vessel generated waves. The latter includes wave impacts resulting from high frequency barge and ferry transits through the adjacent navigational channel.

Date

29 MAR 2016

Project Name

VBHI - Detached Breakwater Project

Applicant Name

Village of Bald Head Island

Applicant Signature



AGENT AUTHORIZATION FOR CAMA PERMIT APPLICATION

Name of Property Owner Applying for Permit: VILLAGE OF BALD HEAD ISLAND

Mailing address: P.O. BOX 3009

BALD HEAD ISLAND NC 28461

Phone Number: 910 - 457 - 9700

I certify that I have authorized ERIK OLSEN, OLSEN & ASSOCIATES
Agent / Contractor

to act on my behalf, for the purpose of applying and obtaining all CAMA permits
necessary for the proposed development of DETACHED BREAKWATER STRUCTURES
AS DESIGNED IN THE SITE PLAN BY OLSEN & ASSOCIATES

at my property located at ROW BOAT ROW SHORELINE

in BRUNSWICK County.

This certification is valid through 12 FEB 2017
Date

(Property Owner Information)


Signature

CHRIS MCCALL
Print or Type Name

INTERIM VILLAGE MANAGER
Title

12 FEB 2016
Date

910. 457. 9700
Phone Number

c-mccall@villagebhi.org
Email Address

Certified Mail – Return Receipt Requested – EXAMPLE

Date

Name of Adjacent Riparian Property Owner
Mailing Address
City, State, Zip

Dear <Name of Adjacent Riparian Property Owner(s)>:

The Village of Bald Head Island is applying for a CAMA Major permit to construct four (4) detached rock breakwaters, to be located seaward of the Row-Boat-Row shoreline fronting the Cape Fear River in Brunswick County, N.C. The specifics of the proposed work are in the enclosed application forms and drawings.

As an adjacent riparian property owner to the aforementioned project, I am required to notify you of the development in order to give you the opportunity to comment on the project. Please review the attached permit application, drawings and detailed narrative addressing justification.

Should you have any objections to this proposal, please send your written comments to Ms. Debbie Wilson, NCDEQ-Wilmington District Office, 127 Cardinal Drive Ext., Wilmington, NC 28405, within 30 days of your receipt of this notice. Such comments will be considered by the Department in reaching a final decision on the application. No comment within 30 days of your receipt of this notice will be considered as no objection. If you have any questions on this project, please call me at 910-457-9700, or e-mail me at cmcall@villagebhi.org.

Sincerely,

Chris McCall, Village Manager

Enclosures

ENCL

Erik Olsen

From: Chris McCall <cmccall@villagebhi.org>
Sent: Tuesday, February 16, 2016 1:07 PM
To: eolsen@olsen-associates.com
Subject: RE: Detached Breakwater App.-- VBHI Items
Attachments: RBR_RiparianAdjacentParcels 16 FEB 2016.xlsx

Erik,

Here is the adjacent riparian properties in excel (attached)... they are the parcels highlighted in the GIS aerial below (outlined in red)... note the large parcel at the end going around the back side is a large tract owned by BHI Limited... it is the remainder of what was once a single parcel that has been divided up throughout the years to create what is currently present.



1/2

Riparian Owner List - March 2016

ParcelNumbr	Name1	Address1	Address2	City	State	ZipCode
2601B051	SAYRE J ANDREW JR ETUX WENDY WILMOT		PO BOX 3259	BALD HEAD ISLAND	NC	28461
2601B055	COSTA DANIEL L ET MARGARET		41 FISHER ST	EAST PROVIDENCE	RI	02914
2601B081	HENDRICKSON DENNIS J ET JEAN A		103 STANDING ROCK RD	CHAPEL HILL	NC	27516
2601B052	TURKS HEAD LLC		2266 W LANE AVENUE	COLUMBUS	OH	43221
2601B070	206 ROW BOAT ROW LLC		4465 3RD STREET NW	HICKORY	NC	28601
2601B071	WRAY DAVID B		PO BOX 1164	BLOWING ROCK	NC	28605
2601B072	COWHER WILLIAM L ETALS TRUSTEES		SUITE 700-N 7950 JONES BRANCH DR	MCLEAN	VA	22107
2601B077	DAVID G PHILLIP ET ANN		821 INLET VIEW DRIVE	WILMINGTON	NC	28409
2601B046	BURTON JAMES G AND MELODE H		8519 DARGAN LANE	WAXHAW	NC	28173
2601B045	SCHNOG ALFRED & ANITA M		PO BOX 3305	BALD HEAD ISLAND	NC	28461
2601B047	BURTON JAMES G ETALS		3203 BANYAN WAY	WAXHAW	NC	28173
2601B048	CRABTREE GLENN ET MARGARET		90 WHITE PINE DR	MONTOURSVILLE	PA	17754
2601B049	JASKE JOHN B & PAMELA JASKE TRUSTEE		20019 SPRINGHILL LANE	RAPIDAN	VA	22733
2601B050	BROWN KEVIN D ETUX AMY BENNIS		1 MORNINGSIDE CIRCLE	BRONXVILLE	NY	10708
2601B075	EBS HOLDINGS LLC		PO BOX 595	WRIGHTSVILLE BCH	NC	28480
2601B076	BONICA JAMES P ET PATRICIA L		218 ROW BOAT ROW	BALD HEAD ISLAND	NC	28461
2601B053	1 ROW BOAT ROW LLC		621 SUGARBERRY ROAD	CHAPEL HILL	NC	27514
2601B054	1 ROW BOAT ROW LLC		621 SUGARBERRY RD	CHAPEL HILL	NC	27514
2601B067	NORTON ALAN H ET LISA L		101 TURNBURY PLACE	ELON	NC	27244
2601B068	STEPHALS PROPERTIES LLC		1014 GLEN ANGUS DR	BEL AIR	MD	21015
2601B073	THOMAS PHILIP R ET JOAN H		1125 EAST MOREHEAD	CHARLOTTE	NC	28204
2601B074	SCHLOSSER PAMELA R ET VIR THOMAS J		7883 ENCHANTED CIR	MONCLOVA	OH	43542
2601B069	BLANTON ANTHONY ETUX		501 SAINT MARYS WALK	ROCKY MOUNT	NC	27804
26000005	BALD HEAD ISLAND LIMITED LLC		PO BOX 3069	BALD HEAD ISLAND	NC	28461