



**US Army Corps
Of Engineers**
Wilmington District

PUBLIC NOTICE

Issue Date: August 13, 2008
Comment Deadline: September 12, 2008
Corps Action ID #: SAW-2007-02699-010

The Wilmington District, Corps of Engineers (Corps) has received an application from the Village of Bald Head Island, North Carolina seeking Department of the Army (DA) authorization to implement a designed beach restoration project intended to reduce erosion on the entirety of South Beach Shoreline, Bald Head Island, Brunswick County, North Carolina.

Specific plans and location information are described below and shown on the attached plans. This Public Notice and all attached plans are also available on the Wilmington District Web Site at www.saw.usace.army.mil/wetlands

Applicant: Attn: Calvin Peck
Village of Bald Head Island
P.O. Box 3009
Bald Head Island, North Carolina 28461-7000

AGENT (if applicable): Gregory Finch
Land Management Group, Inc
P.O. Box 2522
Wilmington, North Carolina 28402

Authority

The Corps will evaluate this application and decide whether to issue, conditionally issue, or deny the proposed work pursuant to applicable procedures of Section 404 of the Clean Water Act (33 USC 1344) and Section 10 of the River and Harbors Act.

Location

The project site, Bald Head Island, is located immediately eastward of the mouth of the Cape Fear River at the southern terminus of the Smith Island Complex at Cape Fear Point, Brunswick County North Carolina. Bald Head Island is the southernmost of three co-joined islands which form the Smith Island Complex located at the mouth of the Cape Fear River in eastern Brunswick County, North Carolina. The island includes Cape Fear, the southernmost of three major cape formations which dominate the North Carolina

coastal plain. An offshore depositional feature known as Frying Pan Shoals extends from the Cape Fear some 20 miles into the Atlantic Ocean. The island's east and south shorelines, or "East Beach" and "South Beach", front the Atlantic Ocean. The west shoreline or "West Beach" fronts the Cape Fear River Entrance. The island is accessible to the public by means of a passenger ferry which operates between Southport and the Bald Head Island marina. Latitude 33.85⁰N; Longitude 77.9899⁰W (NAD27).

Existing Site Conditions

Information provided by the applicant states that since about 1974, beach erosion experienced at Bald Head Island, NC has been severe along South Beach (most particularly the western portion) and selected segments of West Beach.

Sand placement activities at Bald Head Island since 1991 are summarized in Table 1.

Table 1. Beach Disposal Activities at Bald Head Island Since 1991.

| Year | Volume (Million Cubic Yards) |
|-------------|-------------------------------------|
| 1991 | 0.35 |
| 1996 | 0.70 |
| 1997 | 0.45 |
| 2001 | 1.58 |
| 2005 | 1.2 |
| 2006 | 47,800 cubic yards |
| 2007 | 1.1 |

A temporary sand-filled tube groin field was constructed by the applicant along the westernmost portion of South Beach. Construction began in March 1996, immediately following completion of a 1996 disposal project. Sixteen groins (sand-filled tubes) were constructed of geotextile material and filled with sand. These temporary groins were replaced by the applicant in 2005.

In 2007, the Corps placed approximately 1.1 million cubic yards (mcy) of sand along South Beach during maintenance dredging of the navigation channel adjacent to Bald Head Island. Placement of this material was accomplished in accordance with the Wilmington Harbor Sand Management Plan. According to the applicant, the Village of Bald Head Island does not expect to receive maintenance dredged sand from the navigation project until at least 2011.

Applicant's Stated Purpose

According to information provided by the applicant, the purpose of the proposed work is to ensure that South Beach in its entirety remains in an improved non-critically eroded

condition for a period of four years. The proposed borrow source is located within the most seaward portion of Jay Bird shoals, a large area of shoaled material located west and southwest of Bald Head Island. According to the applicant, the proposed project will provide for a more stable beachfront. The proposed project is for a one-time action of dredging and placement of beach fill material.

Project Description

Applicant's Plan of Action: According to information provided by the applicant, expected continued erosion over the next four (4) or more years on Bald Head Island will be addressed by implementing a beach restoration project intended to improve the entire South Beach shoreline. West Beach will likewise be included in the proposed nourishment program on an as-needed basis. The volume of sand placed for such a project should be sufficient to both address expected sediment losses, and ensure adequate improved beach widths along the entirety of the South Beach shorefront. Presently, the design volume is expected to be up to 2 mcy (as measured in-place for payment). The gross volume excavated will be 10% or more than the pay volume. Approximately 5% or less of the total volume would be placed on West Beach. According to the applicant, the project must be constructed no later than the winter of 2009/2010 – approximately two years prior to the next tentatively scheduled beach disposal operation. The proposed borrow source is located on the seaward most portion of Jay Bird Shoals.

Applicant's Preferred Sand Source – The applicant has proposed to use sediment within the Jay Bird Shoals for beach nourishment and proposes to excavate by cutter suction dredge and pump this material by submerged pipeline to the western end of Bald Head Island. The material will be distributed by pipe to either the West or South Beach shorelines. Within the project borrow site, two (2) clusters of magnetic anomalies and a federal tide gage structure will be avoided during construction. According to the applicant, all material proposed to be excavated meets the State of N.C. Beach Sediment Standards.

Excavation within the permitted borrow site would occur sequentially within three (3) designated sub-areas of work. The purpose of controlling the contractor's dredge pattern would be primarily to protect (i.e. conserve) the sand resource. General exclusion areas will likewise affect the manner by which various portions of the borrow area can be operationally accessed by dredge. The total proposed borrow area is 225.74 acres. The Exclusion Areas located total 15.4 acres. According to the applicant, it possible that sufficient volume of sand necessary to construct the proposed 2.0 mcy, beach fill project can be dredged from borrow site sub-areas 1 and 2 and the dredged area of Jay Bird Shoals would be limited to 158.4 acres, or less.

South Beach. – Along South Beach, proposed fill operations would be expected to begin westward of sand tube groin Number 1 located at/about baseline station 44+00. At that location, the fill template would be initiated as a taper and would extend to a full design section depending upon conditions within the groin field at the time of construction. The

easternmost limit of the 16 structure groin field is at Sta 116+00. Eastward of the existing groin field, hydraulic fill placement would continue as a full design section to approximately sta. 190+00 where it would again taper to the existing beach configuration. The total length of improved South Beach shoreline is approximately 16,200 ft. Assuming an average fill density (excluding tapers) of 100 cy/ft, results in a net fill volume estimate of 1.62 mcy (pay volume). The gross fill volume placed at this location (considering nearshore losses) would be 10-20% higher (i.e. about 1.86 mcy). Other volumetric losses would occur within the borrow area during the dredging process. Within the groin field, special consideration would be given to protection of sand tube structures to minimize damage by construction equipment utilized to place and grade the beach fill. In most instances, exposed portions of groins would be reburied. The South Beach construction berm would maintain an approximate average elevation of +8 ft. NGVD. A mild slope would be introduced into the berm (by grading) to reduce post-placement scarping and enhance post-construction turtle nesting activities. If dune erosion or benching occurs during construction, up to 5 cy of sand per ft. of shorefront would be mechanically moved and graded to repair the dune line. According to the applicant, any re-vegetation necessary for dune stabilization would be performed by the Village of Bald Head subsequent to beach fill placement and is not proposed in this project.

West Beach. According to the applicant, beach fill placement along West Beach would be dictated by shoreline conditions immediately prior to project bid. Due to deep nearshore beach profile slopes which extend into the Cape Fear River channel, a maximum alongshore fill placement density of 30 cy/ft. is proposed. The predicted limits of fill would nominally extend between sta. 12+00 and sta. 30+00 (see Figure 4). The total net volume to be placed is estimated at 54,000 cy, excluding tapers. The gross volume (i.e. about 67,500 cy) placed may potentially exceed that amount by 25% due to placement losses during construction. Additional fill losses would occur in the borrow site.

Project Impacts. The excavation of beach compatible materials from an offshore borrow area can alter the local wave height and direction via wave refraction and diffraction effects. A wave refraction/diffraction numerical modeling analysis was carried out for the proposed Bald Head Island borrow site located at the distal end of Jay Bird Shoals. The borrow site used in the analysis is located approximately 1.6 miles offshore of Oak Island and 0.8 miles offshore of Bald Head Island in the mouth of the Cape Fear River Entrance. Seabed elevations at the proposed offshore excavation site range from -4 ft to -21 ft NGVD. The numerical model STWAVE was used to evaluate refraction and diffraction effects for bathymetric conditions representing pre and post-excavation scenarios. According to the applicant, the modeling results indicate that no significant alteration of the wave climates along either the Bald Head Island or Oak Island shoreline were expected to occur as a direct result of borrow site excavation.

According to the applicant, the selection of the proposed Bald Head Island borrow site (end of Jay Bird Shoals) was based on the survey of the Cape Fear Entrance. The design depth of the proposed borrow site is such that substrate sediments exposed during project

construction would consist of sand material. Future sedimentary conditions would initially be influenced by slumping of excavation perimeter side slopes (i.e., sand); sand eroded from cultural resource buffer zones by waves and current and deposition from sediment transport along the marginal shoal feature. Quantification of infilling rates is difficult due to equilibration processes between cut and uncut portions of shoal during the first few years following dredging. Regardless of future sediment deposition rates, the probability of deposition of similar sandy material (in contrast to fines, organics, clays, etc.) is excellent and may result in rapid recovery of benthic communities and minimize long term Essential Fish Habitat (EFH) impacts.

The applicant proposes to continue physical monitoring of the West Beach and South Beach shorelines following construction. The potential effects of major storm events would likewise be evaluated. If required, the applicant has proposed to measure compaction of the hydraulically placed beach fill and till the un-vegetated portions of the berm as necessary, immediately prior to each subsequent sea turtle nesting season. Scarps along the beach foreshore greater than 18" in height would likewise be removed at that time.

The applicant also proposes to perform hydrographic surveys of the general borrow area (including exclusion areas) at the completion of dredging and every two (2) years thereafter for purposes of quantifying its physical recovery and plan form adjustment. All surveys would extend a minimum of 500 ft. beyond the original limits of borrow site.

Other Required Authorizations

This notice and all applicable application materials are being forwarded to the appropriate State agencies for review. The Corps will generally not make a final permit decision until the North Carolina Division of Water Quality (NCDWQ) issues, denies, or waives State certification required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice in the NCDWQ Central Office in Raleigh serves as application to the NCDWQ for certification. A waiver will be deemed to occur if the NCDWQ fails to act on this request for certification within sixty days of the date of the receipt of this notice in the NCDWQ Central Office. Additional information regarding the Clean Water Act certification may be reviewed at the NCDWQ Central Office, 401 Oversight and Express Permits Unit, 2321 Crabtree Boulevard, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for certification under Section 401 of the Clean Water Act should do so in writing delivered to the North Carolina Division of Water Quality (NCDWQ), Section 401 Oversight and Express Permits Unit, 2321 Crabtree Boulevard, Raleigh, North Carolina 27604-2260, Attention: Ms Cyndi Karoly by **September 5, 2008**.

The applicant has not provided to the Corps, a certification statement that his/her proposed activity complies with and will be conducted in a manner that is consistent with the approved North Carolina Coastal Zone Management Program. Pursuant to 33 CFR 325.2(b)(2), the Corps can not issue a permit for the proposed work until the applicant

submits such a certification to the Corps and the North Carolina Division of Coastal Management (NCDCM), and the NCDCM notifies the Corps that it concurs with the applicant's consistency certification.

Essential Fish Habitat

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The Corps has not made a determination if the proposed project will or will not adversely impact EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service.

Cultural Resources

The Corps has consulted the latest published version of the National Register of Historic Places and is not aware that any registered properties, or properties listed as being eligible for inclusion therein are located within the project area or will be affected by the proposed work. Presently, unknown archeological, scientific, prehistoric, or historical data may be located within the project area and/or could be affected by the proposed work. (Applicant has mentioned potential archaeological resources in borrow area).

Endangered Species

The Corps has reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on available information, the Corps has determined pursuant to the Endangered Species Act of 1973 (ESA), that the proposed project may affect federally listed endangered or threatened species or their formally designated critical habitat. According to the applicant, a Biological Assessment (BA) is being prepared and coordinated with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act of 1973, as amended. This assessment determined that the proposed action may affect but will not likely to adversely affect the piping plover and the seabeach amaranth. Due to timing of the project and precautions taken during its implementation, other federally listed endangered or threatened species should not be affected. Consultation under Section 7 of the ESA will be initiated and no permit will be issued until the consultation process is complete.

Evaluation

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects

thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving the discharge of dredged or fill materials in waters of the United States, the evaluation of the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

Commenting Information

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials, including any consolidated state viewpoint or written position of the Governor; Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing shall be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

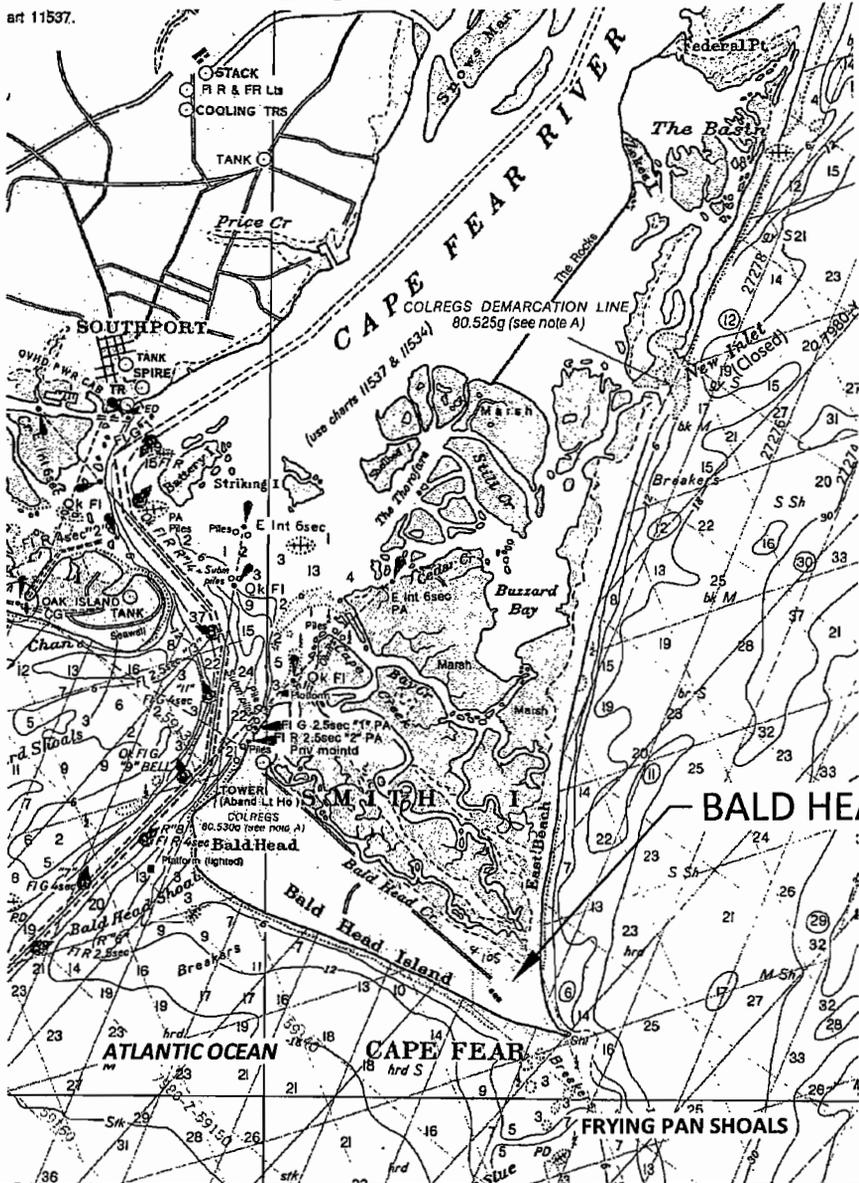
Written comments pertinent to the proposed work, as outlined above, will be received by the Corps of Engineers, Wilmington District, until 5pm, September 12, 2008. Comments should be submitted to Dave Timpy, Project Manager, P.O. Box 1890, Wilmington, NC 28402-1890. If you have questions, please contact Mr. Timpy at (910) 251-4634.

art 11537.



APPLICANT:
VILLAGE OF BALD HEAD ISLAND

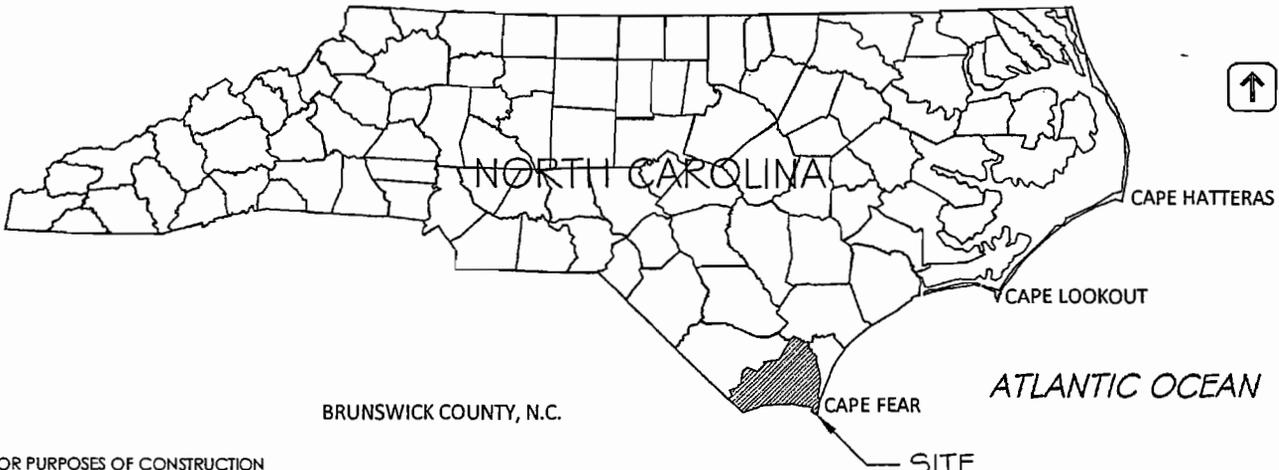
ENGINEER:
OLSEN ASSOCIATES, INC.
C-1468



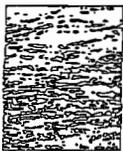
BALD HEAD ISLAND

DATUM: MLLW

NTS



NOT FOR PURPOSES OF CONSTRUCTION



olsen
associates, inc.
4438 Herschel Street
Jacksonville, FL. 32210
(904) 387-6114
C-1468

VILLAGE OF BALD HEAD ISLAND
BEACH RESTORATION PROJECT

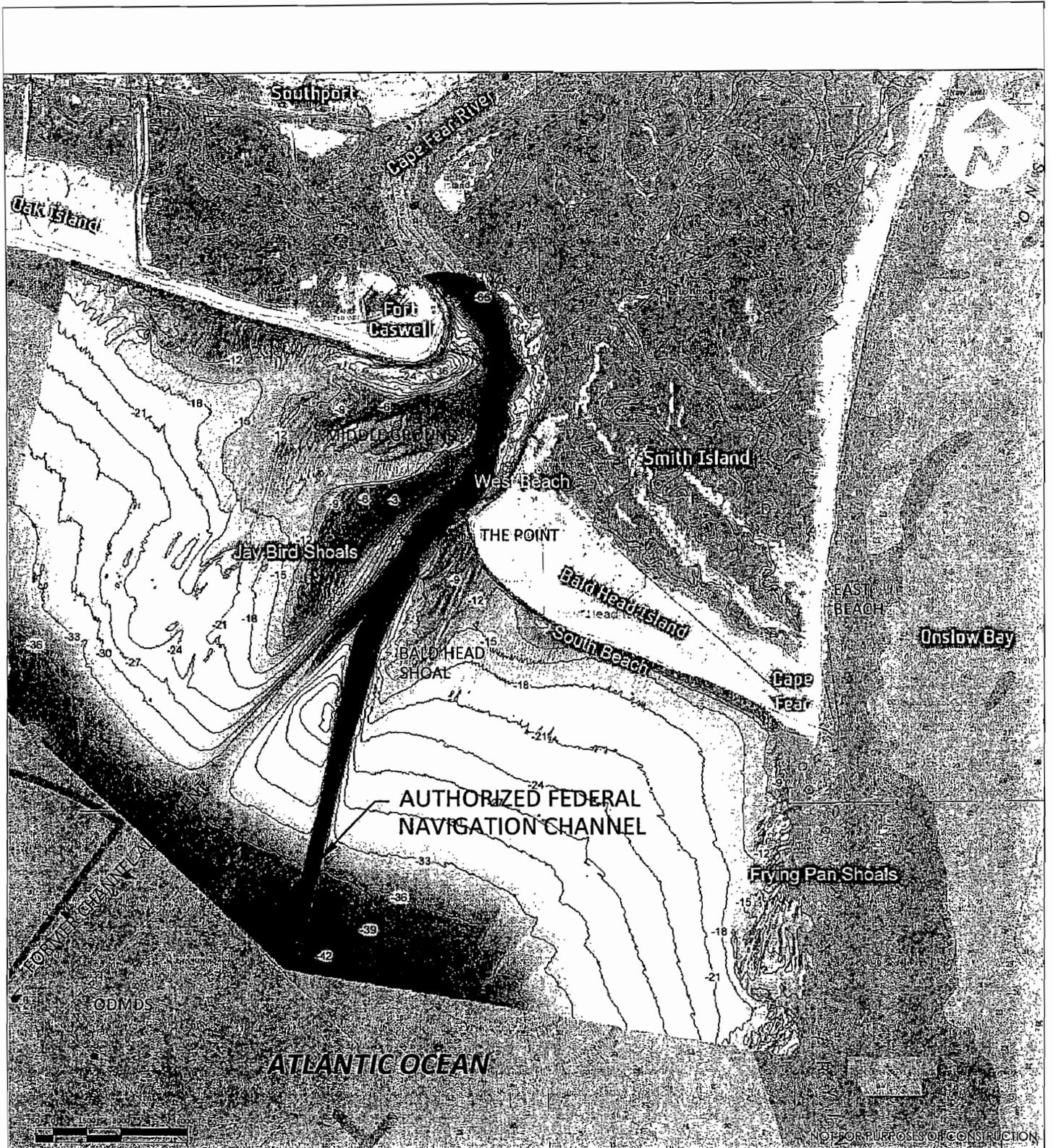
PROJECT LOCATION

DATE APPROVED REVISION

6/1/08

DRAWN BY:
ML

SHEET
1 of 11



2006 SURVEY-GEODYNAMICS, INC

2006 CONTOUR DATUM: NGVD 29
 NAUTICAL CHART DATUM: MLLW



olsen
 associates, inc.
 4438 Herschel Street
 Jacksonville, FL 32210
 (904) 387-6114
 C-1468

VILLAGE OF BALD HEAD ISLAND
 BEACH RESTORATION PROJECT

SITE CONDITIONS

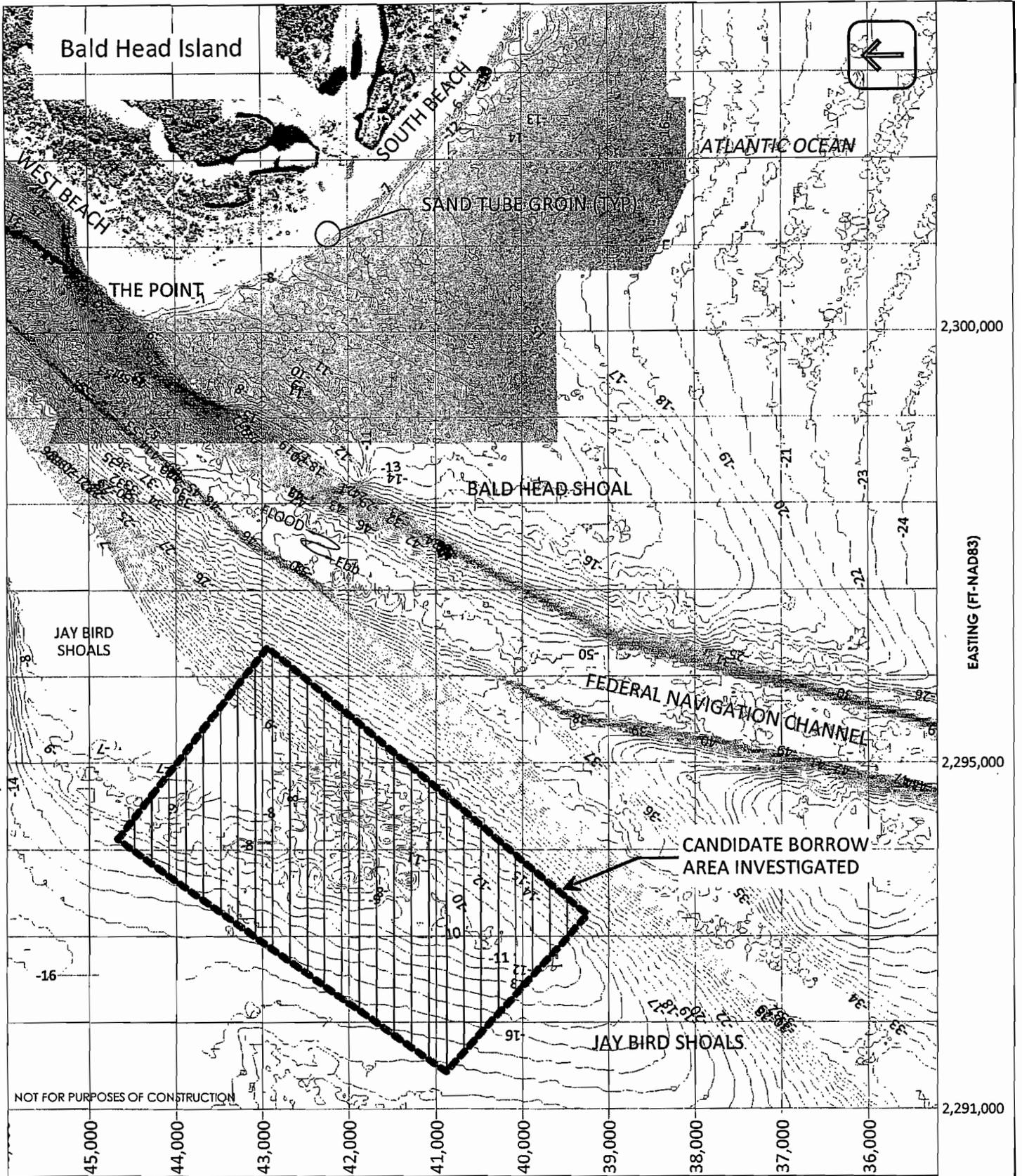
| DATE | APPROVED | REVISION |
|------|----------|----------|
| | | |

6/1/08

DRAWN BY:

ML

SHEET
 2 of 11



NOT FOR PURPOSES OF CONSTRUCTION

DATUM: NGVD 29

NORTHING (FT-NAD83)

SCALE: AS SHOWN



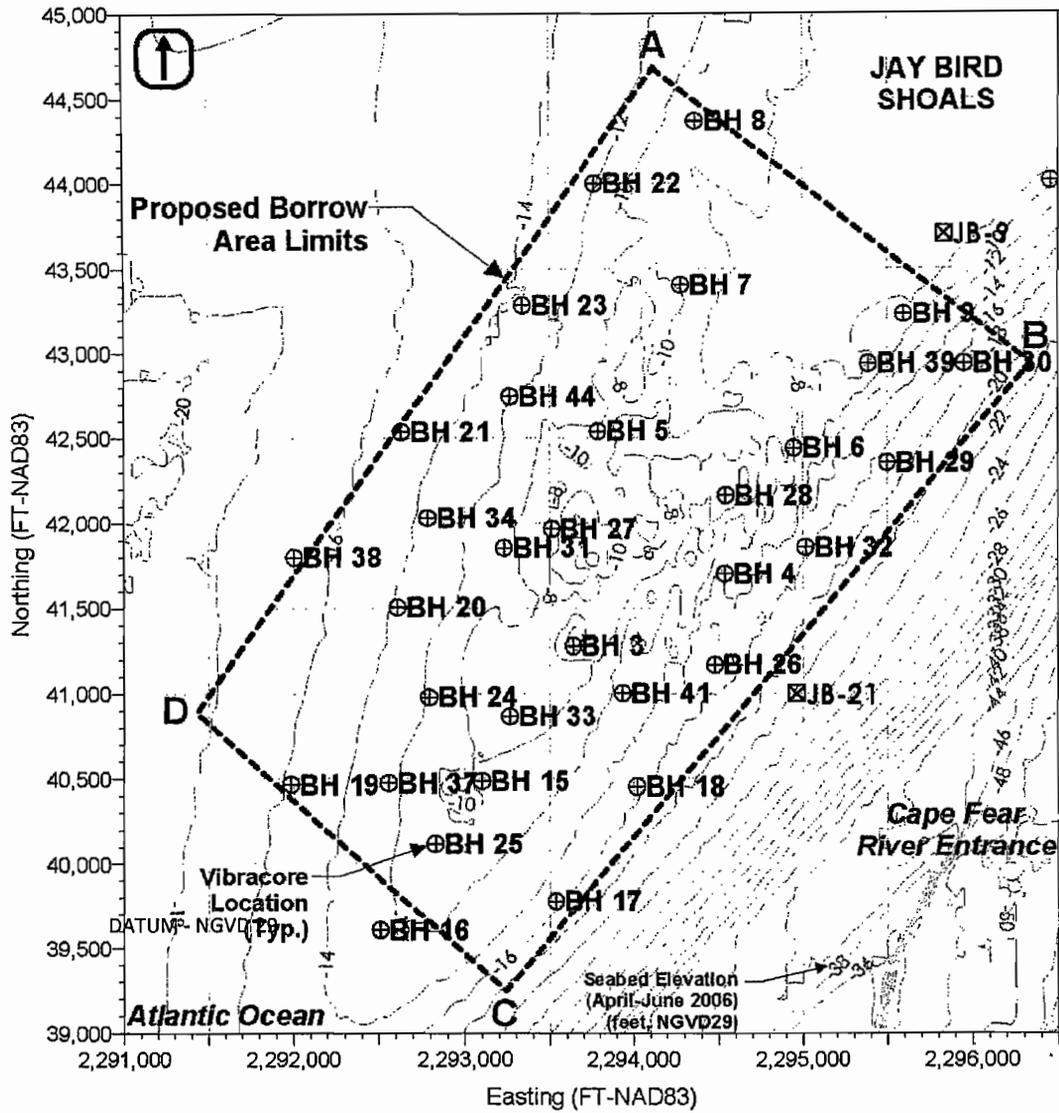
olsen
 associates, inc.
 4438 Herschel Street
 Jacksonville, FL 32210
 (904) 387-6114
 C-1468

VILLAGE OF BALD HEAD ISLAND
 BEACH RESTORATION PROJECT

CANDIDATE JAY BIRD SHOALS SAND SOURCE

| DATE | APPROVED | REVISION |
|------|----------|----------|
| | | |

6/1/08
 DRAWN BY:
 ML
 SHEET
 3 of 11



| Control Point | X Coordinate | Y Coordinate |
|---------------|--------------|--------------|
| A | 2,294,120 | 44,680 |
| B | 2,296,340 | 42,940 |
| C | 2,293,240 | 39,250 |
| D | 2,291,430 | 40,890 |

SCALE: AS SHOWN

NOTE: DREDGE EXCLUSION AREAS NOT SHOWN

NOT FOR PURPOSES OF CONSTRUCTION

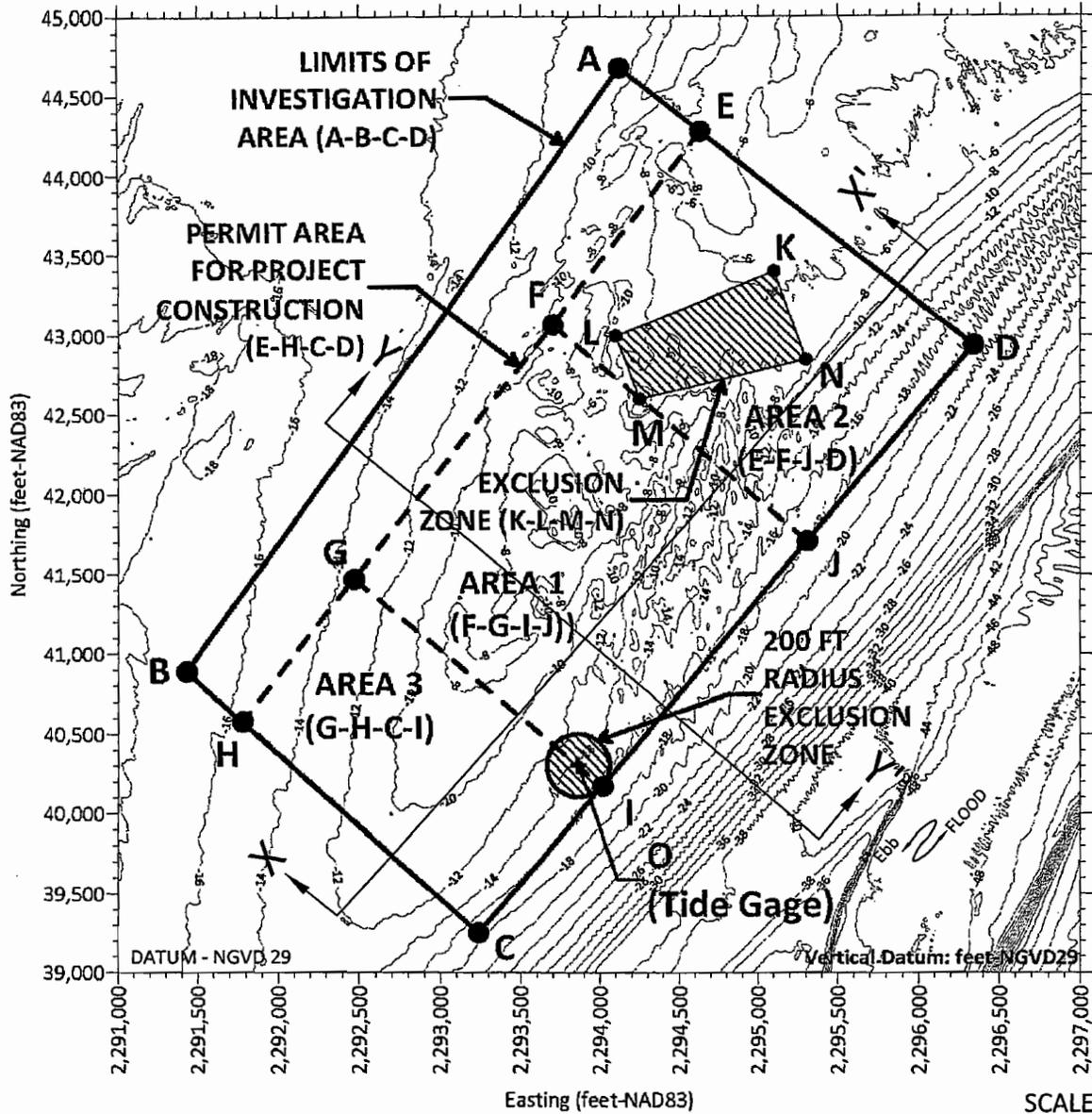


olsen
associates, inc.
4438 Herschel Street
Jacksonville, FL 32210
(904) 387-6114
C-1468

VILLAGE OF BALD HEAD ISLAND
BEACH RESTORATION PROJECT

JAY BIRD SHOAL BORING LOCATIONS

| DATE | APPROVED | REVISION |
|------------------|----------|----------|
| | | |
| 6/1/08 | | |
| DRAWN BY: ML | | |
| SHEET 4 of 11 | | |



SCALE: AS SHOWN

| Pt | E (feet-NAD83) | N (feet-NAD83) | Pt | E (feet-NAD83) | N (feet-NAD83) |
|-----------------------------------|----------------|----------------|-----------------------|----------------|----------------|
| Borrow Area Control Points | | | Exclusion Zone | | |
| A | 2,294,120 | 44,680 | K | 2,295,100 | 43,400 |
| B | 2,291,430 | 40,890 | L | 2,294,100 | 43,000 |
| C | 2,293,240 | 39,250 | M | 2,294,250 | 42,600 |
| D | 2,296,340 | 42,940 | N | 2,295,300 | 42,850 |
| E | 2,294,630 | 44,280 | Tide Gage | | |
| F | 2,293,700 | 43,070 | O | 2,293,863 | 40,303 |
| G | 2,292,470 | 41,470 | | | |
| H | 2,291,780 | 40,580 | | | |
| I | 2,294,020 | 40,170 | | | |
| J | 2,295,310 | 41,710 | | | |

NOTE: DREDGE EXCLUSION AREAS SHOWN

NOT FOR PURPOSES OF CONSTRUCTION



olsen
associates, inc.
4438 Herschel Street
Jacksonville, FL 32210
(904) 387-6114
C-1468

VILLAGE OF BALD HEAD ISLAND
BEACH RESTORATION PROJECT

PROJECT BORROW SITE

| DATE | APPROVED | REVISION |
|-----------|----------|----------|
| | | |
| 6/1/08 | | |
| DRAWN BY: | | |
| ML | | |
| SHEET | | |
| 5 of 11 | | |

NOT FOR PURPOSES OF CONSTRUCTION



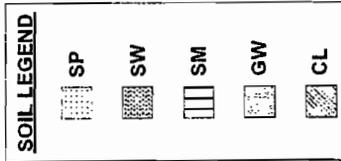
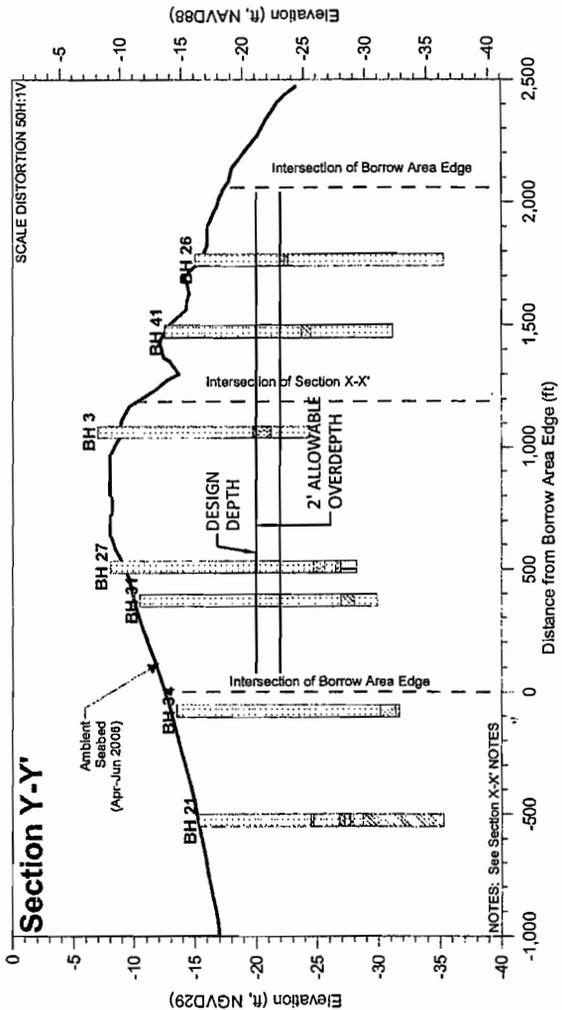
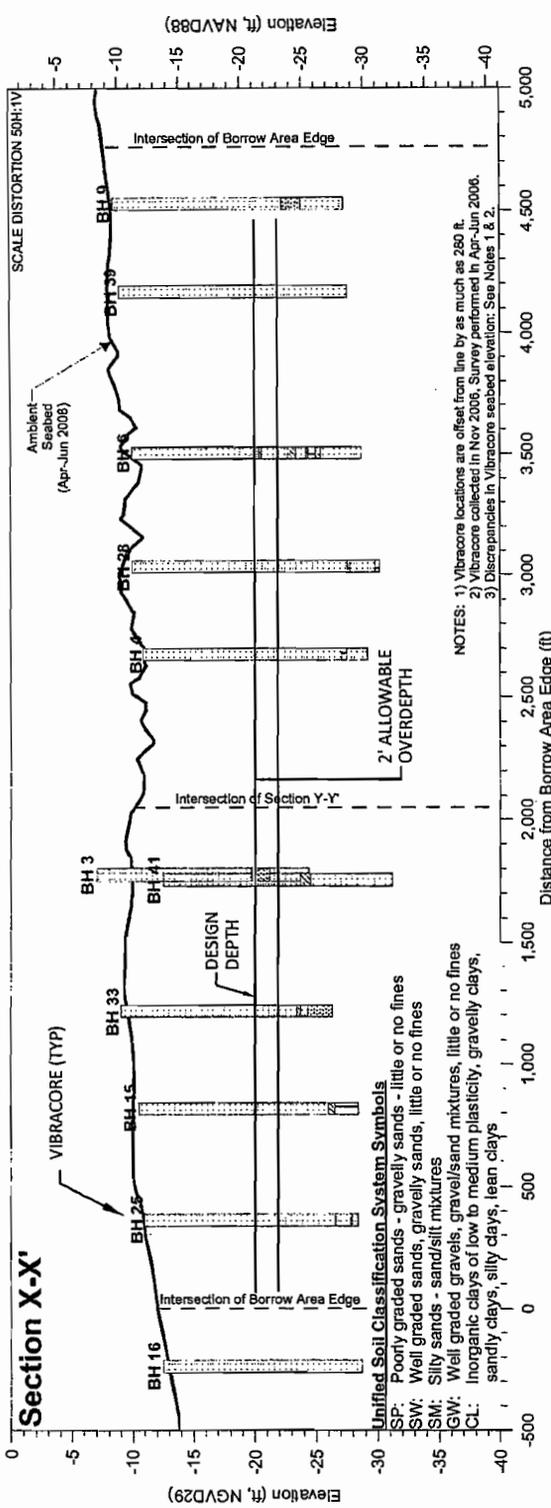
olsen
associates, inc.
4438 Herschel Street
Jacksonville, FL 32210
(904) 387-6114
C-1468

VILLAGE OF BALD HEAD ISLAND
BEACH RESTORATION PROJECT

BORROW SITE SECTIONS

| DATE | APPROVED | REVISION |
|------|----------|----------|
| | | |

6/1/08
DRAWN BY:
ML
SHEET
6 of 11

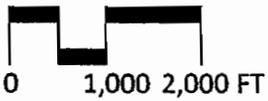


BORROW SITE
DESIGN DEPTH - 20FT NGVD
ALLOWABLE OVERDEPTH - 2FT

SCALES: AS SHOWN



SCALE



NOTE:

PROJECT BASELINE UTILIZED FOR ANNUAL BEACH MONITORING BY VILLAGE AND FEDERAL BEACH DISPOSAL PROJECT CONSTRUCTION BY WILMINGTON DISTRICT, USACO

EAST BEACH

BALD HEAD ISLAND

PROJECT BASELINE (STA 00+00)

SOUTH BEACH

LIMITS OF FILL ACTIVITIES, TYP.

ATLANTIC OCEAN

WEST BEACH

THE POINT

NOTE: LIMITS OF FILL INCLUDE TAPERS

CAPE FEAR RIVER
NOT FOR PURPOSES OF CONSTRUCTION

October 2006 Photography

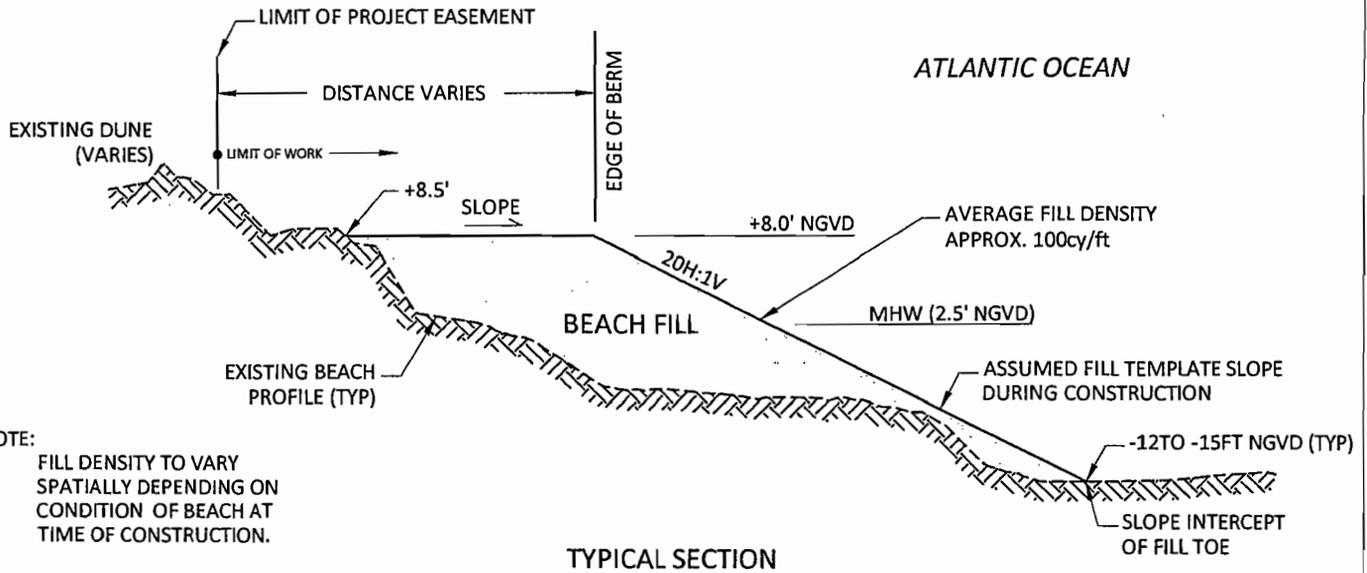


olsen
associates, inc.
4438 Herschel Street
Jacksonville, FL 32210
(904) 387-6114
C-1468

VILLAGE OF BALD HEAD ISLAND
BEACH RESTORATION PROJECT
**PROJECT BASELINE
AND LIMITS OF WORK**

| DATE | APPROVED | REVISION |
|------------------|----------|----------|
| | | 6/1/08 |
| DRAWN BY: ML | | |
| SHEET 7 of 11 | | |

SOUTH BEACH



NOTE:
FILL DENSITY TO VARY SPATIALLY DEPENDING ON CONDITION OF BEACH AT TIME OF CONSTRUCTION.

TYPICAL SECTION

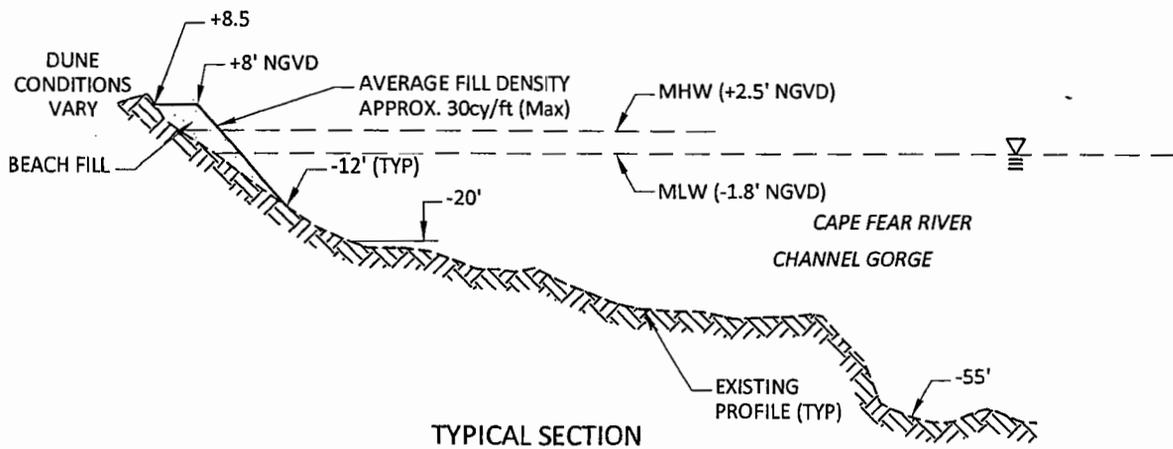
NTS

DATUM: NGVD 29

LOCAL TIDAL DATUMS (FT)

- MHHW +2.8
- MHW +2.5
- NAVD +1.1
- NGVD(29) 0.0
- MLW -1.8
- MLLW -2.0

WEST BEACH



TYPICAL SECTION

NTS

DATUM: NGVD 29

NOT FOR PURPOSES OF CONSTRUCTION



olsen
associates, inc.
4438 Herschel Street
Jacksonville, FL 32210
(904) 387-6114
C-1468

VILLAGE OF BALD HEAD ISLAND
BEACH RESTORATION PROJECT

TYPICAL FILL SECTIONS

| DATE | APPROVED | REVISION |
|------|----------|----------|
| | | |

6/1/08

DRAWN BY:

ML

SHEET

8 of 11



CAPE FEAR RIVER



REF. SHEETS 9-11

NOTE:
LIMITS OF UPLAND FILL AND SEAWARD TOE WILL VARY DEPENDING ON BEACH CONDITIONS AT THE TIME OF CONSTRUCTION.

MATCHLINE A

THE POINT

WEST BEACH

FILL BERM

SLOPE



October



olsen
associates, inc.
4438 Herschel Street
Jacksonville, FL 32210
(904) 387-6114
C-1468

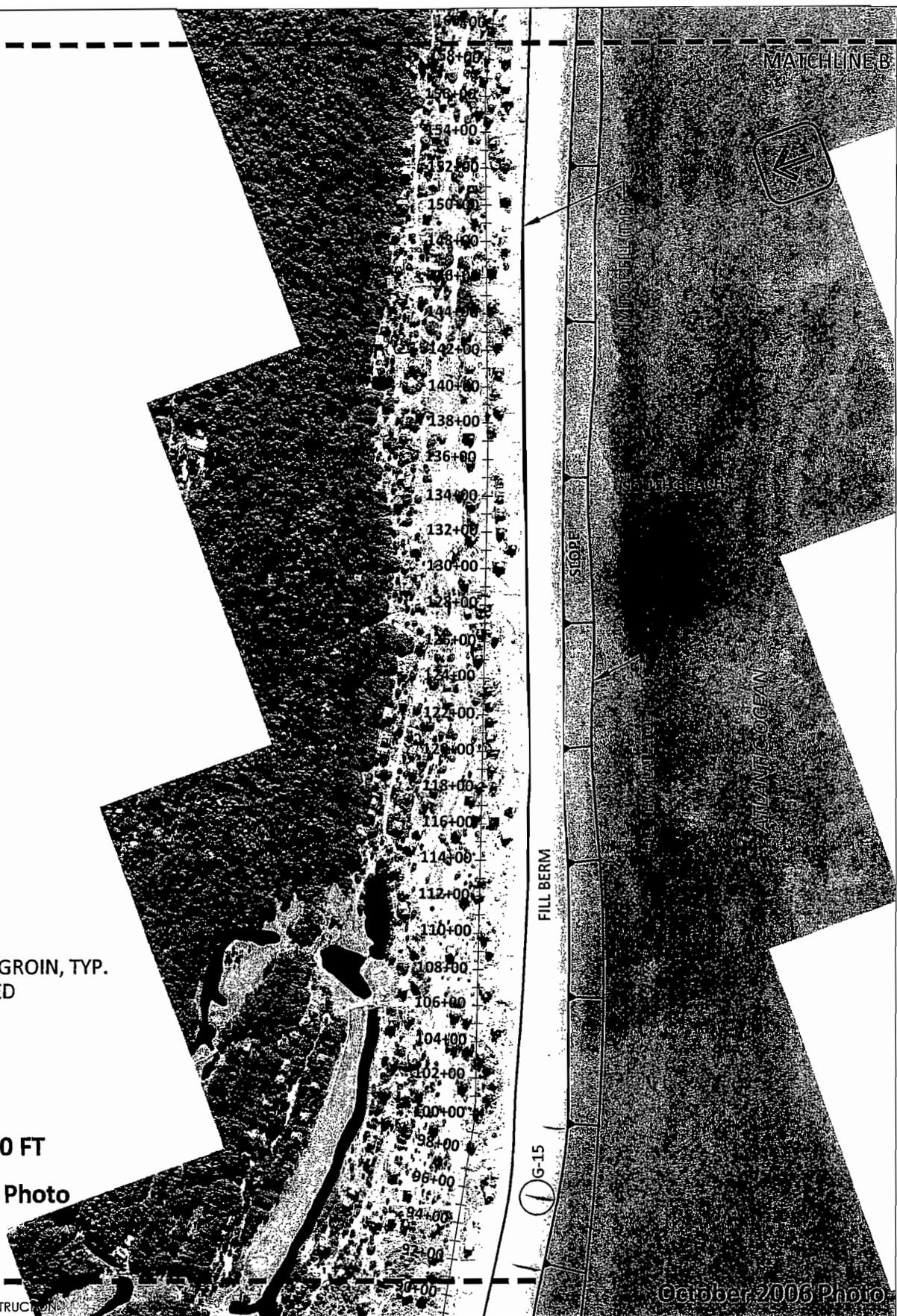
VILLAGE OF BALD HEAD ISLAND
BEACH RESTORATION PROJECT

BEACH FILL PLAN

| DATE | APPROVED | REVISION |
|-----------|----------|----------|
| 6/1/08 | | |
| DRAWN BY: | | |
| WAH | | |
| SHEET | | |
| 9 of 11 | | |

MATCHLINE B

MATCHLINE B



G-15-SAND TUBE GROIN, TYP.
TO BE BURIED

SCALE



0 400 800 FT

October 2006 Photo

MATCHLINE A

NOT FOR PURPOSES OF CONSTRUCTION

October 2006 Photo



olsen
 associates, inc.
 4438 Herschel Street
 Jacksonville, FL 32210
 (904) 387-6114
 C-1468

VILLAGE OF BALD HEAD ISLAND
 BEACH RESTORATION PROJECT

BEACH FILL PLAN

| DATE | APPROVED | REVISION |
|-------------------|----------|----------|
| | | |
| 6/1/08 | | |
| DRAWN BY: WAH | | |
| SHEET 10 of 11 | | |



ONSLow BAY

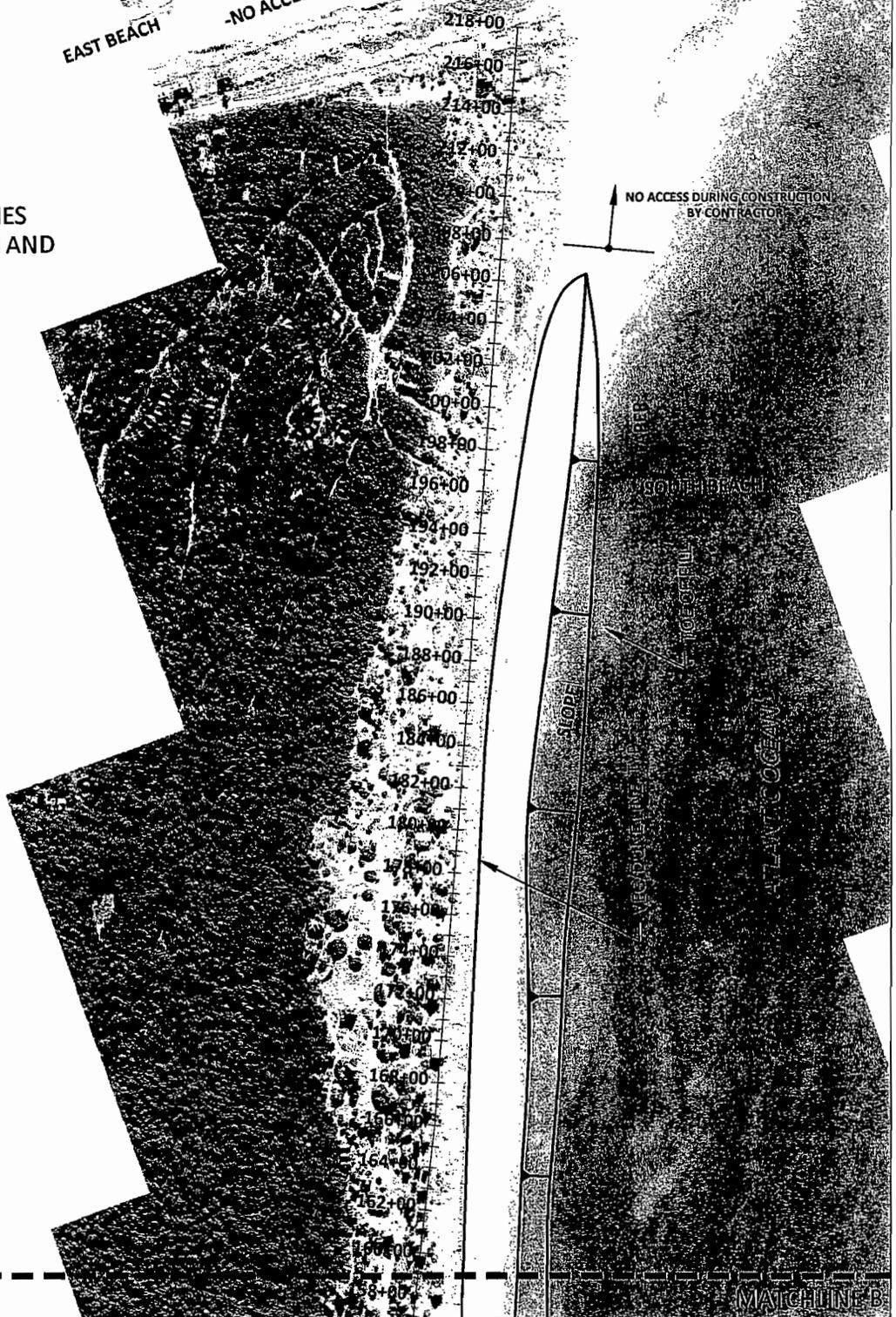
CAPE FEAR

EAST BEACH

-NO ACCESS BY CONTRACTOR-

NO ACCESS DURING CONSTRUCTION BY CONTRACTOR

NOTE:
ALL CONSTRUCTION ACTIVITIES
CONFINED TO SOUTH BEACH AND
WEST BEACH



SCALE



October 2006 Photo

MATCHLINE B

NOT FOR PURPOSES OF CONSTRUCTION



olsen
associates, inc.
4438 Herschel Street
Jacksonville, FL 32210
(904) 387-6114
C-1468

VILLAGE OF BALD HEAD ISLAND
BEACH RESTORATION PROJECT

BEACH FILL PLAN

DATE APPROVED REVISION

6/1/08

DRAWN BY:
WAH

SHEET
11 of 11