

# Public Hearing: Figure “8” Island Shoreline Management Project

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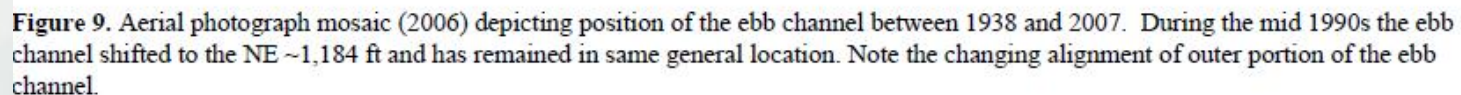
[http://www.saw.usace.army.mil/Missions/Regulatory  
PermitProgram/MajorProjects](http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/MajorProjects)



# Tools Used to Evaluate Alternatives

- Geomorphic analysis of Rich Inlet and adjacent shorelines (by Dr. William Cleary – Sub Appendix A in SEIS)
- Numerical Models:
  - ❖ Primary – Delft3D
  - ❖ Secondary - GENESIS

**(Dr. William Cleary Report – Sub Appendix A in SEIS)**





# Shoreline Transects

(Dr. William Cleary Report – Sub Appendix A in SEIS)

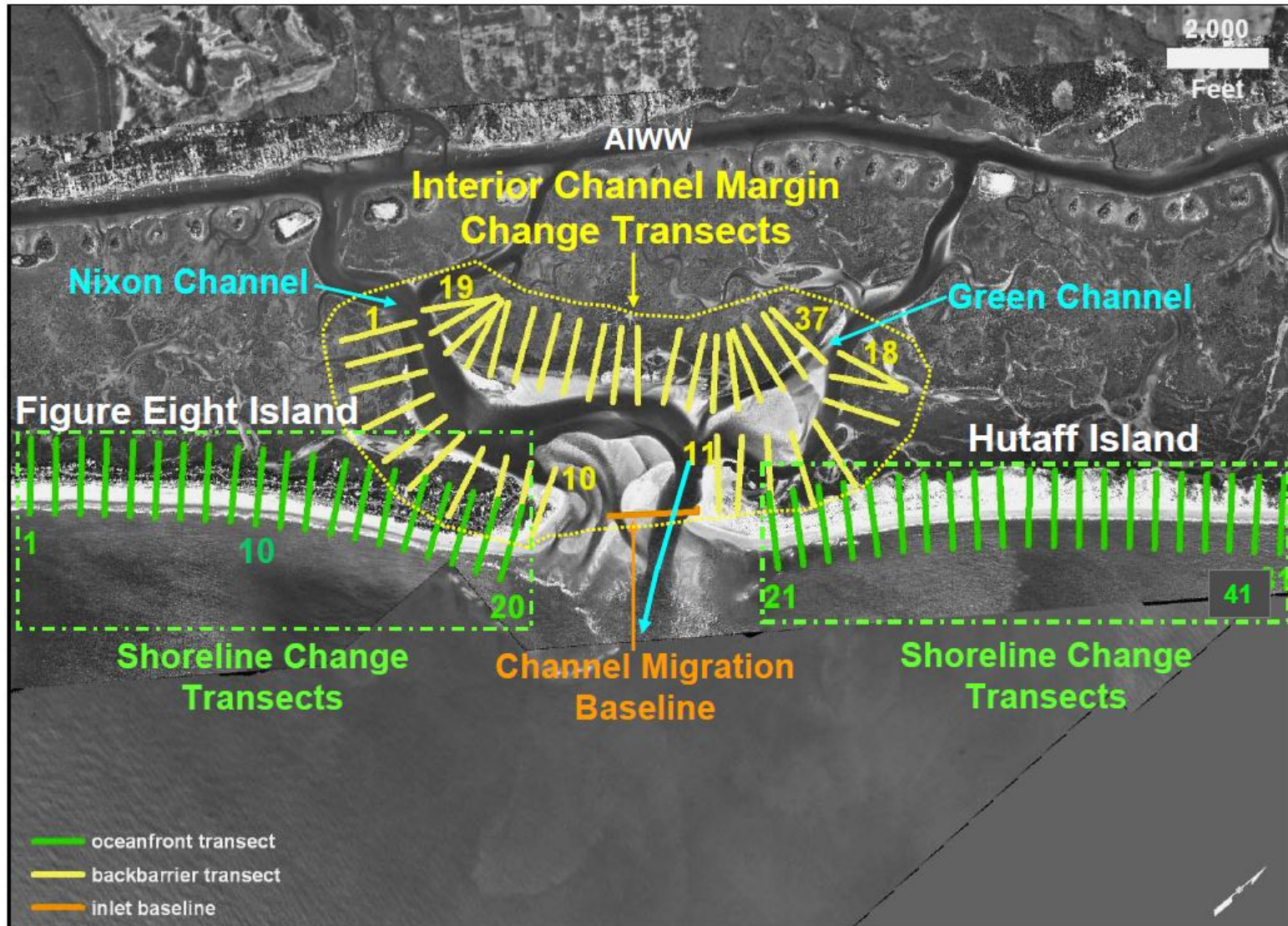
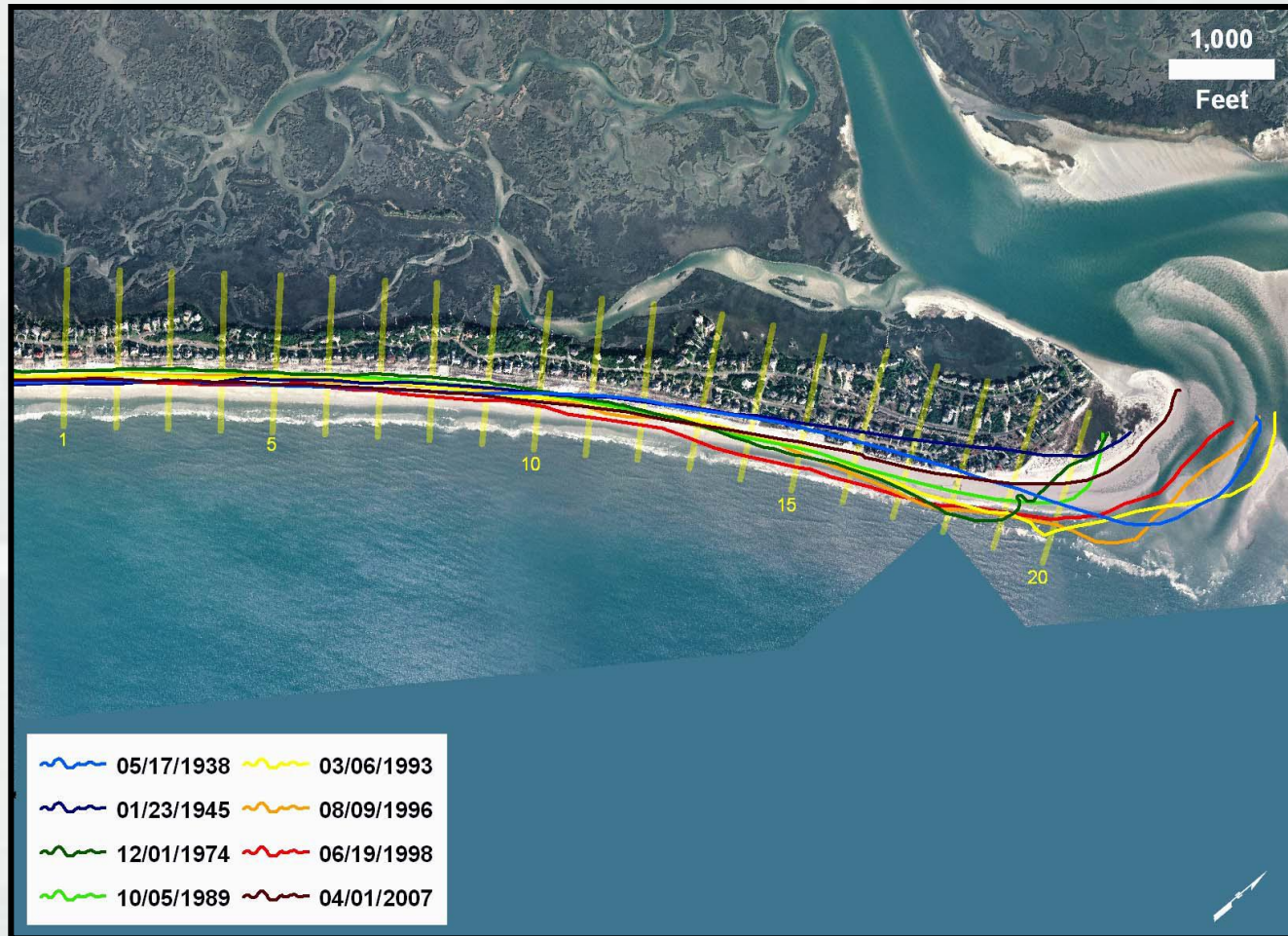


Figure 2. Aerial mosaic (2006) depicting the ebb channel baseline position and the estuarine and oceanfront shoreline transect locations.

# Figure Eight Island 1938-2007 Shorelines

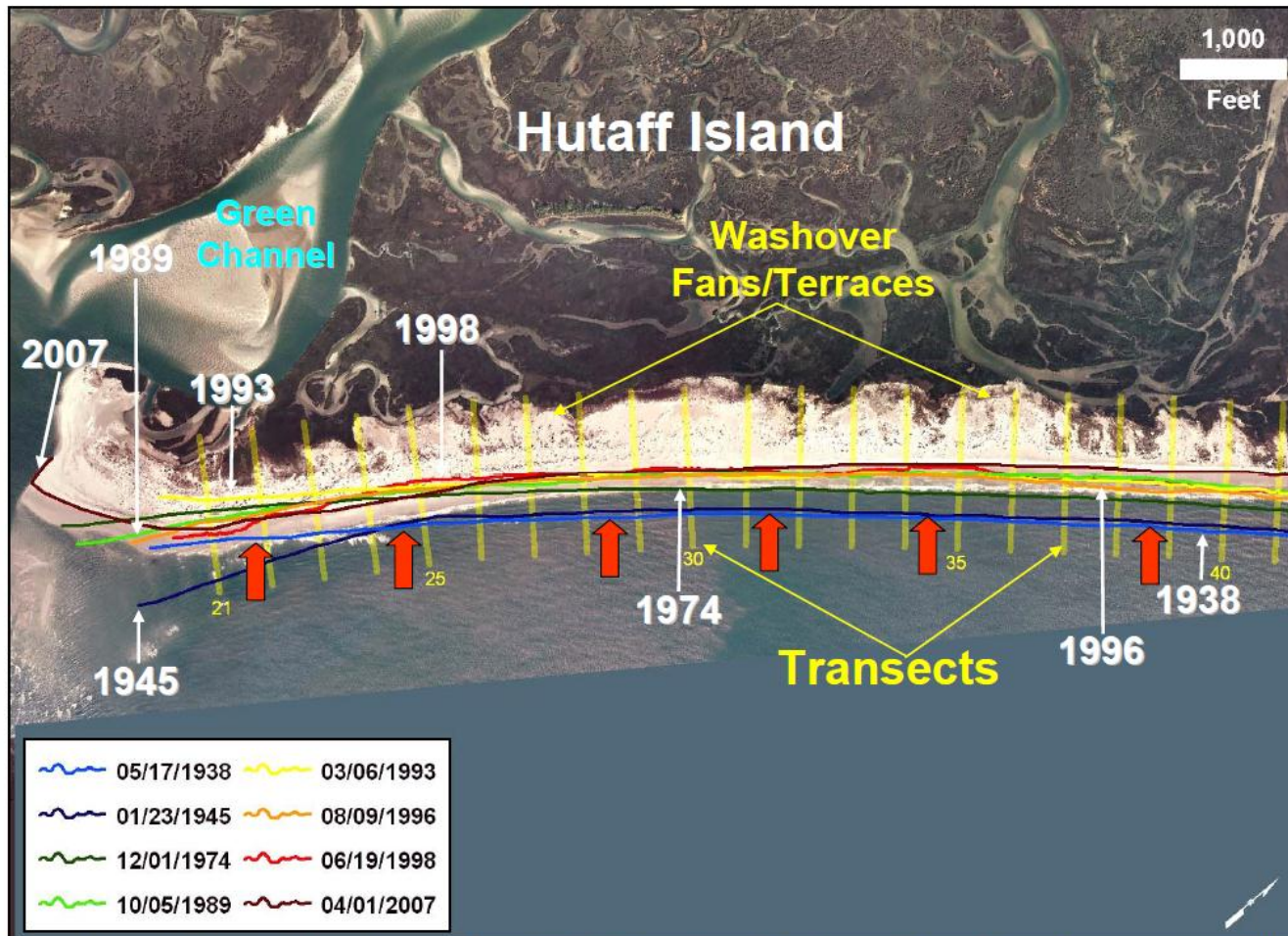
(Dr. William Cleary Report – Sub Appendix A in SEIS)





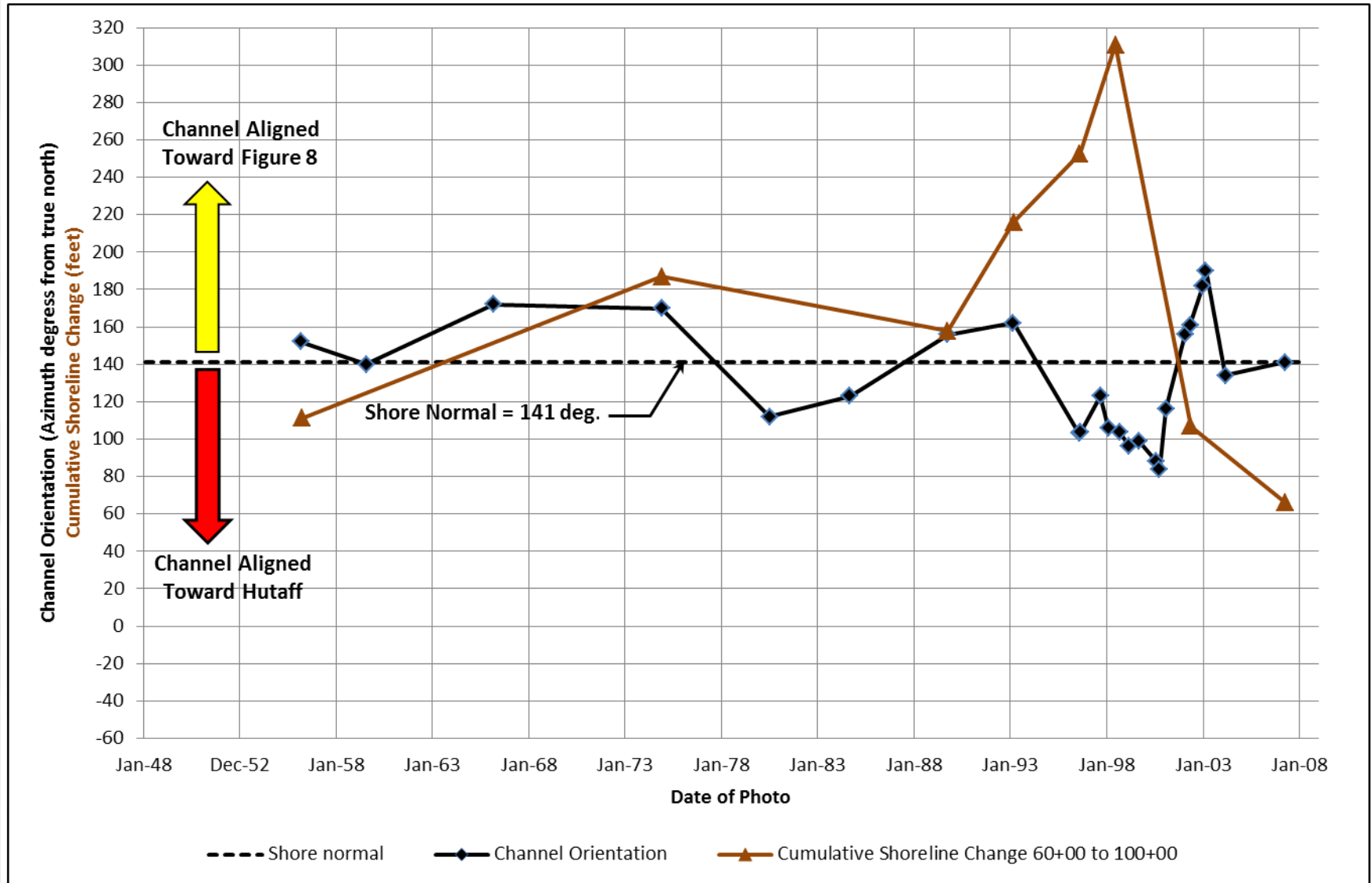
# Hutaff Island 1938-2007 Shorelines

(Dr. William Cleary Report – Sub Appendix A in SEIS)



**Figure 13.** Aerial photograph (2007) depicting selected (8) shoreline positions along HI since 1938 and transect locations (T21-41). The entirety of Hutaff Island is included within an IHA. For purposes of comparison and discussion this study has designated the Rich Inlet zone of influence to include the shoreline reach between Transect 21 and 30. Note that the relative positions of the 1938 and 1945 shorelines along the barrier. Also note the continuous retreat of the shoreline since 1938 north of T 26.

# Channel Orientation versus Shoreline Change Northern 4,000 feet Figure Eight Island

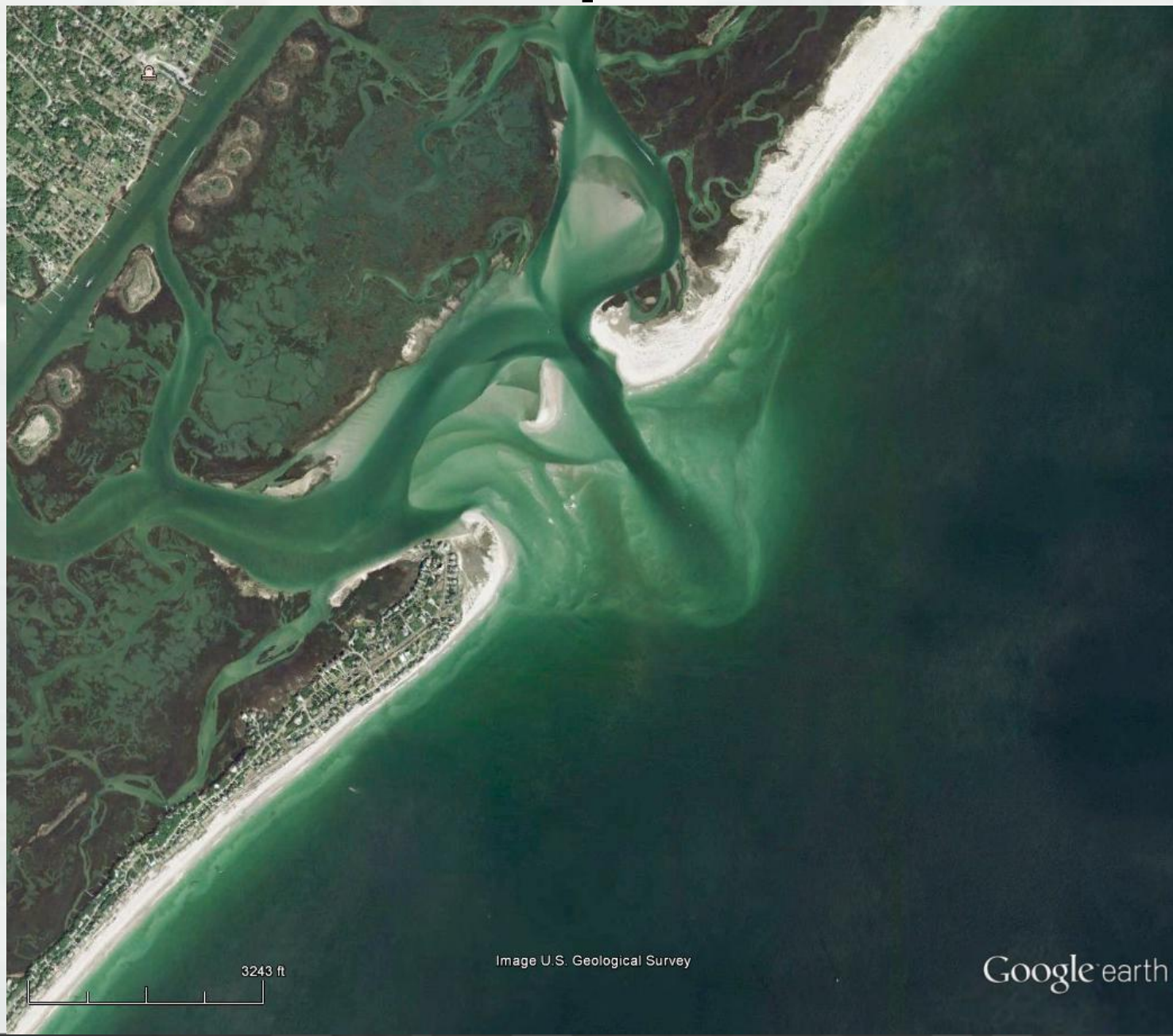


# Maximum Recession at North End





# Rich Inlet September 2007



3243 ft

Image U.S. Geological Survey

Google earth

# Rich Inlet October 2010





# Rich Inlet January 2013

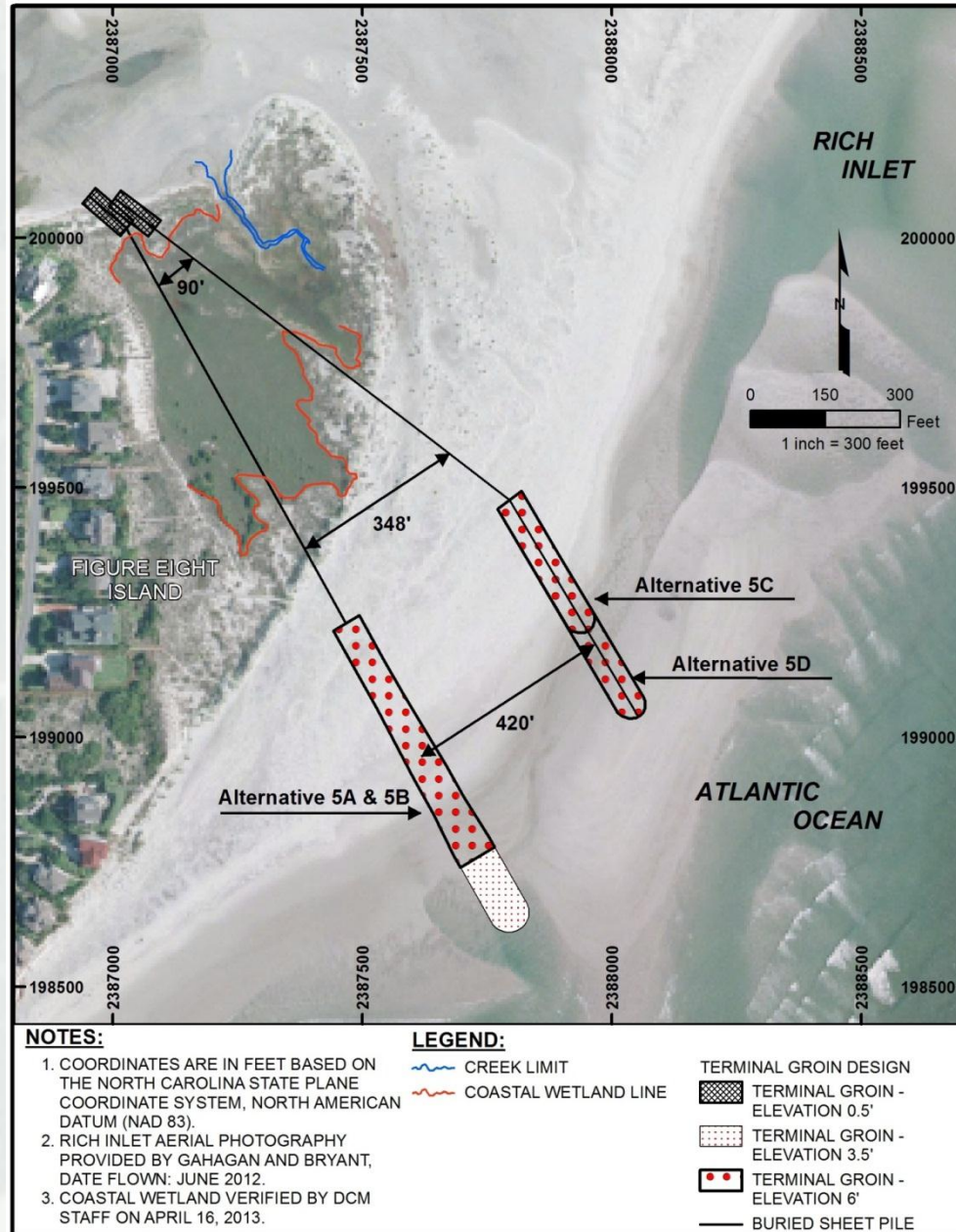


# Rich Inlet October 2014



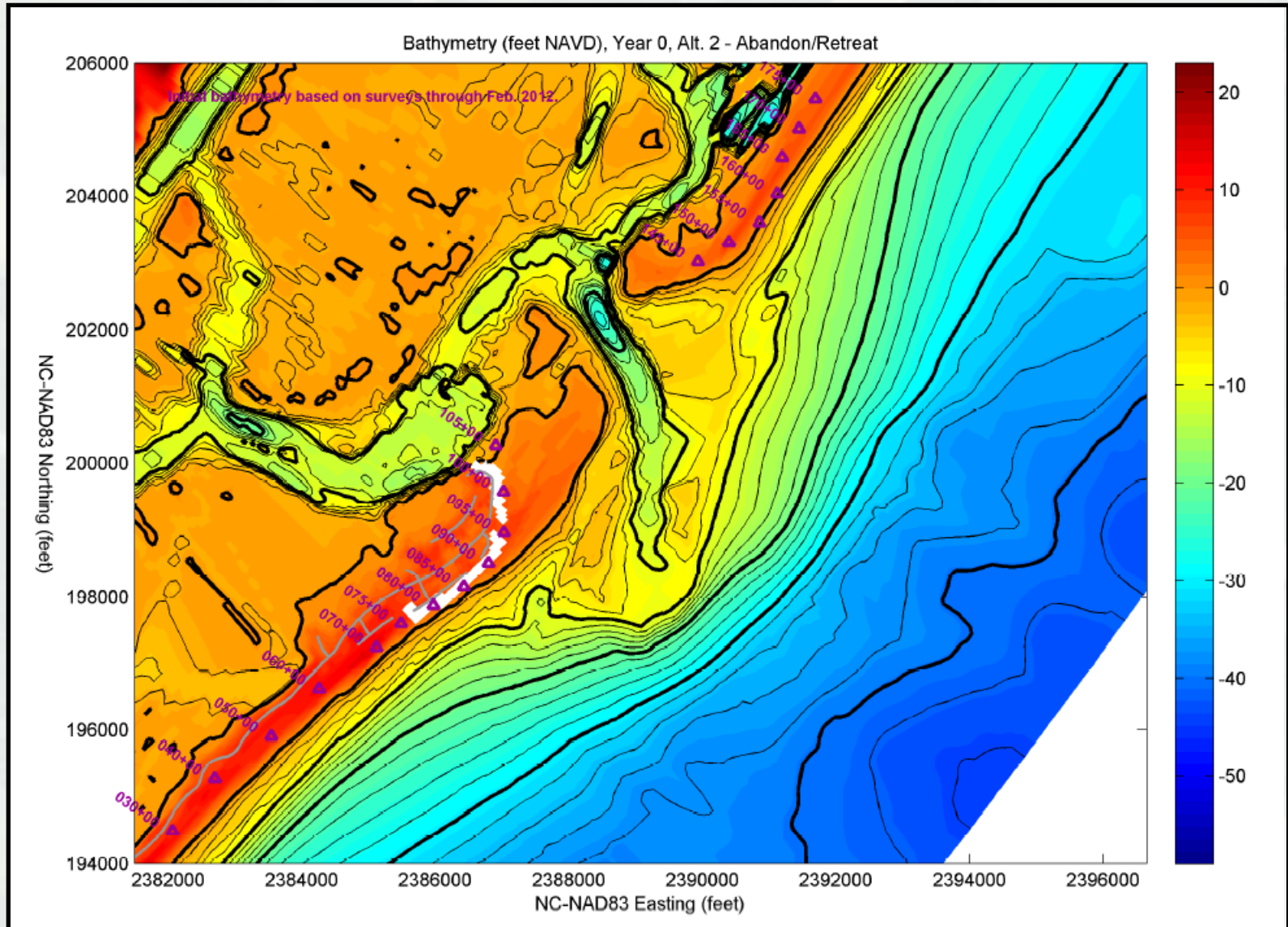


# Terminal Groin Alternatives Evaluated



# Alternative 2 – No New Action

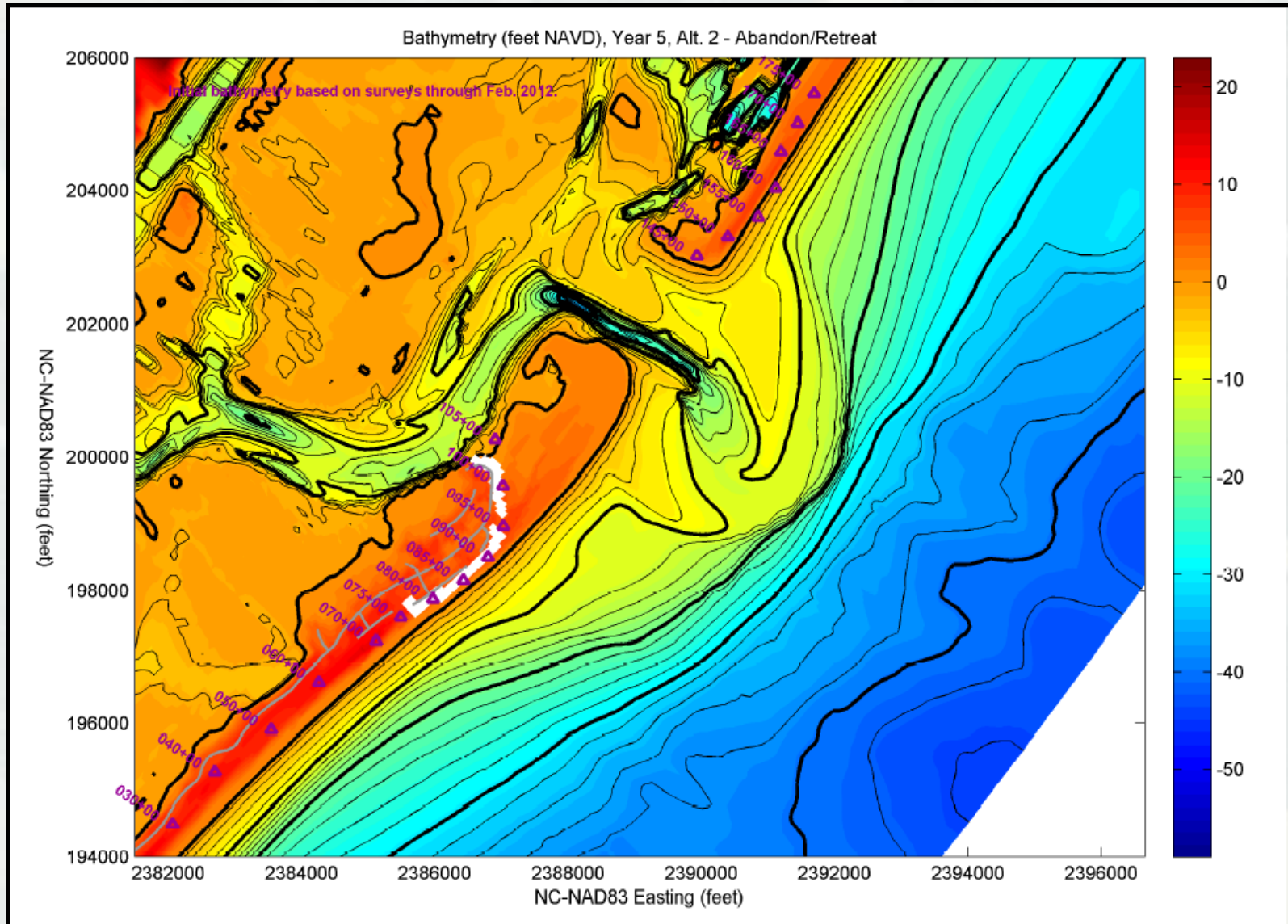
## Delft3D Model - Initial Condition





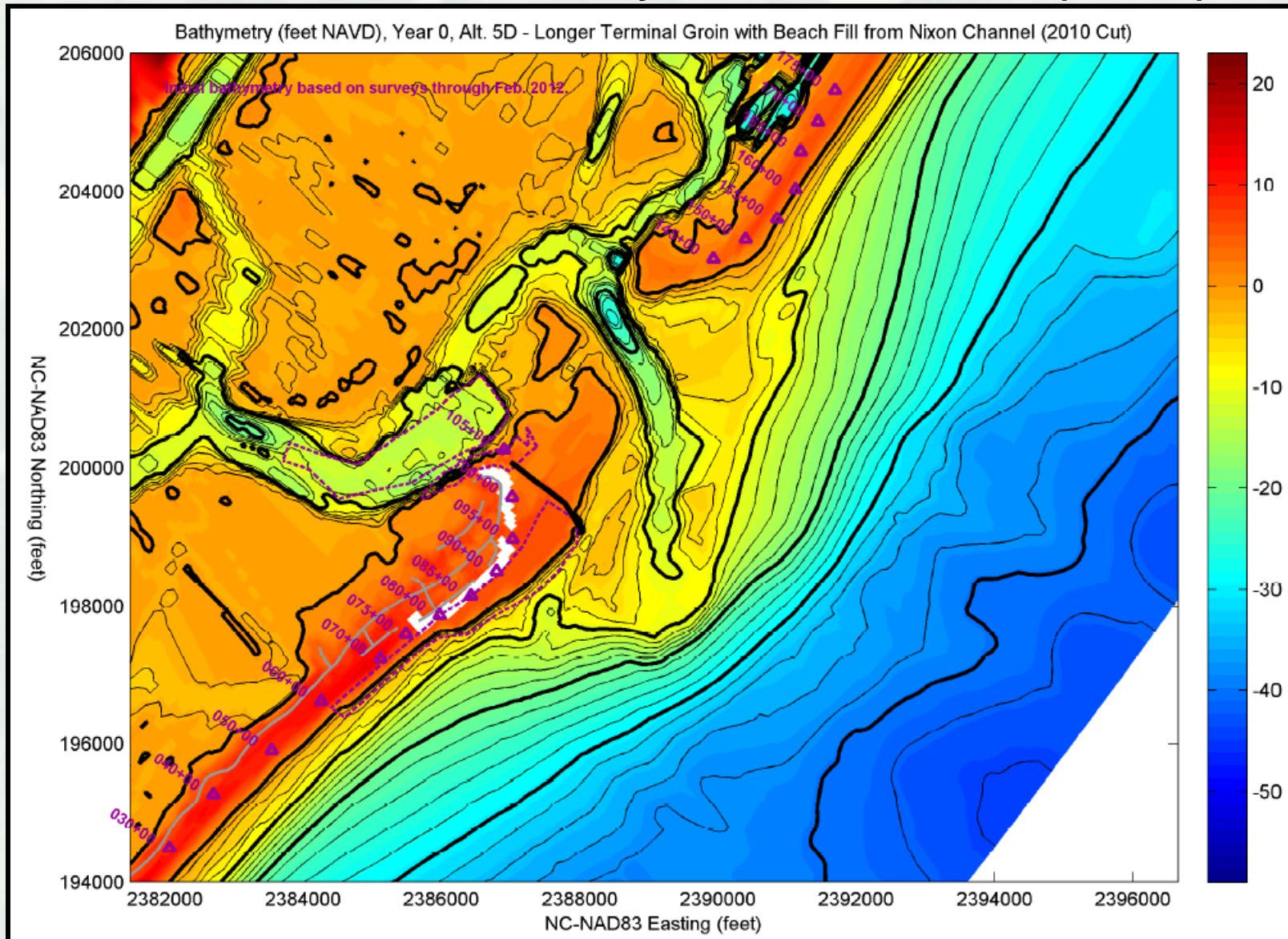
# Alternative 2 – No New Action

## Delft3D Model - After 5-year Simulation



# Alternative 5D

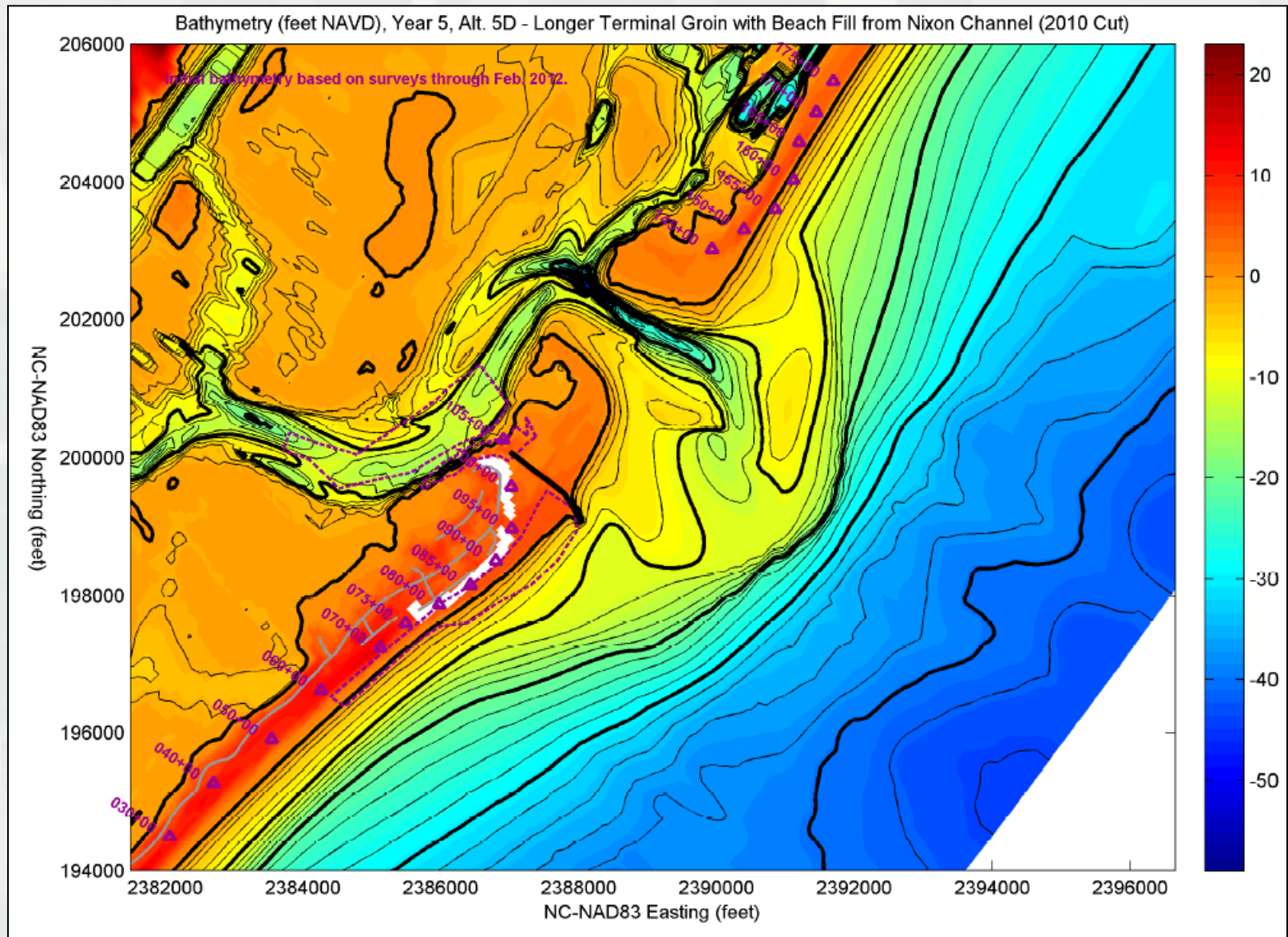
## Delft3D Model - Immediately after Construction (Year 0)



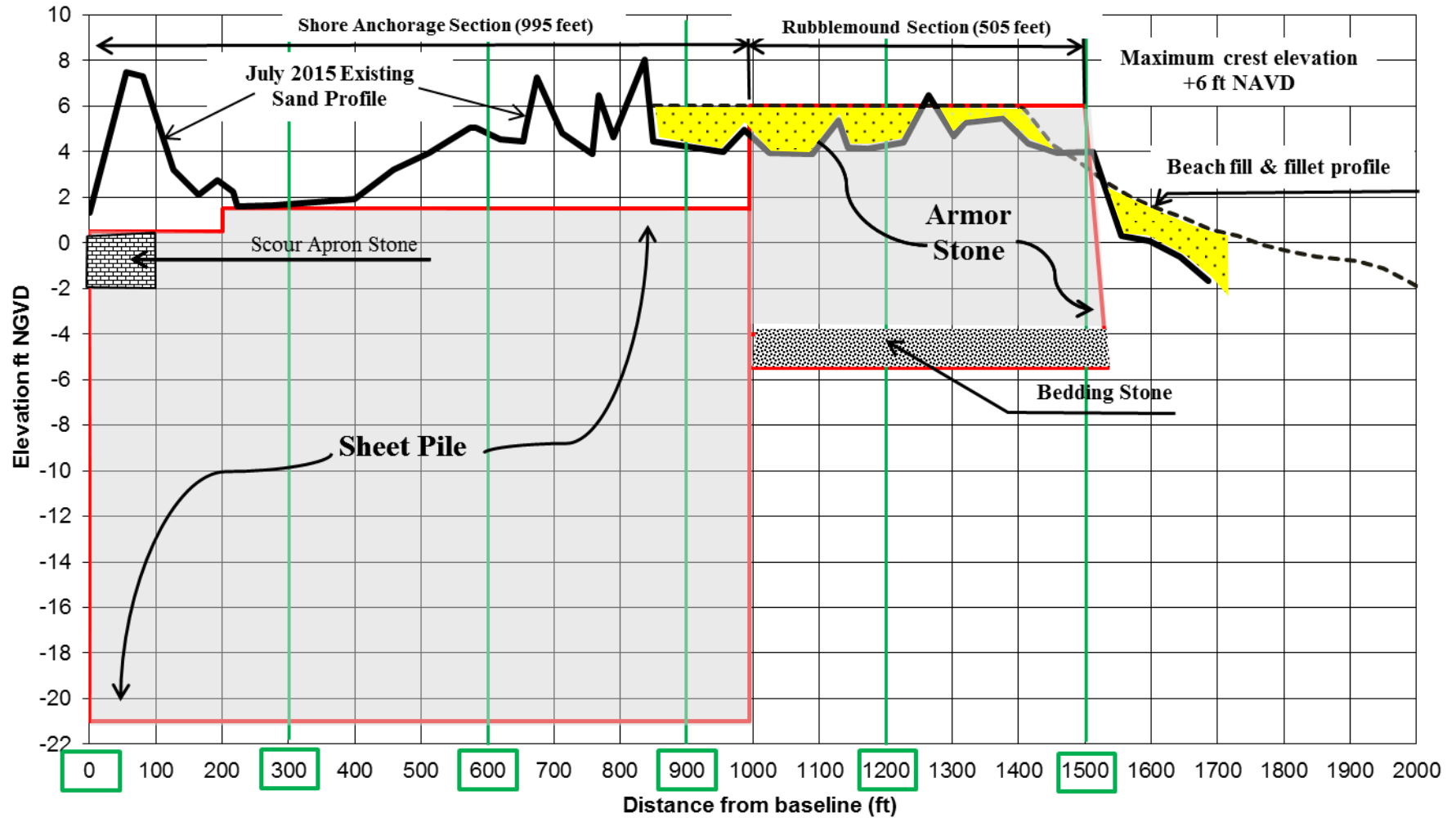


# Alternative 5D

## Delft3D Model - 5-Years after Construction

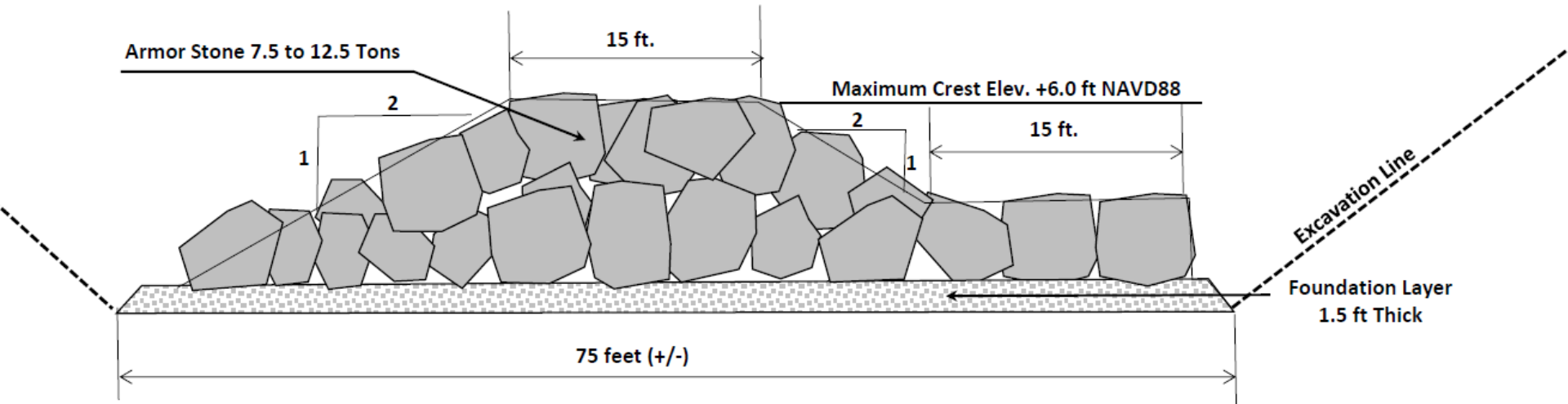


## Terminal Groin Profile





## Typical Cross-Section Rubblemound Portion of Terminal Groin




# Construction Methodology

## Bald Head Island Example







**Temp Offloading Pier**

This aerial photograph captures a coastal construction project. A long, narrow pier, composed of large, light-colored rocks, extends from a sandy beach into the ocean. The pier is supported by a dark, textured foundation mat. To the left of the pier, an orange conveyor system is visible, with a small orange vehicle positioned near its base. In the background, a temporary offloading pier is visible, marked by an arrow. The beach is wide and sandy, with some construction equipment and materials scattered around. The ocean is a deep blue, and the sky is clear with a few clouds. A residential area with houses is visible on the right side of the image.

**Foundation Mat**

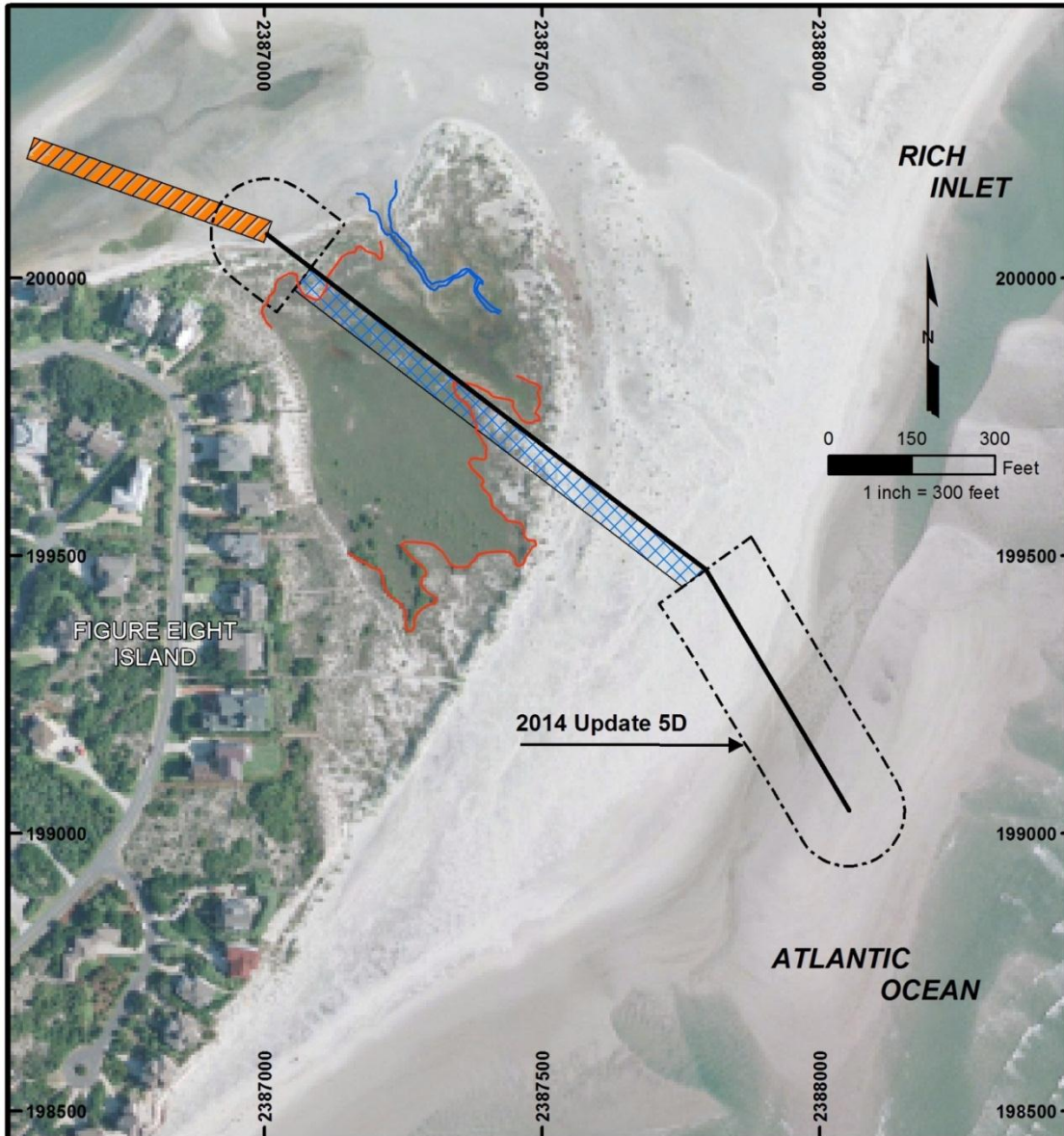
**Approximately 60 – 70 feet**





Completed  
Section





# Figure Eight Island Terminal Groin Construction Corridor

## NOTES:

1. COORDINATES ARE IN FEET BASED ON THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAD 83).
2. RICH INLET AERIAL PHOTOGRAPHY PROVIDED BY GAHAGAN AND BRYANT, DATE FLOWN: JUNE 2012.
3. COASTAL WETLAND VERIFIED BY DCM STAFF ON APRIL 16, 2013.

## LEGEND:

- CREEK LIMIT
- COASTAL WETLAND LINE

- TERMINAL GROIN DESIGN**
- CONSTRUCTION CORRIDOR BUFFER 100'
- CONSTRUCTION CORRIDOR BUFFER 50'
- CORRIDOR FOR OFFLOADING PIER
- BURIED SHEET PILE

# COMMENTS