

# Southern Shores Shoreline Protection Project



CB&I / Coastal Planning & Engineering of North Carolina, Inc.  
January 31, 2017



# Pelican Watch September 8, 2016 (Post-Hermine)





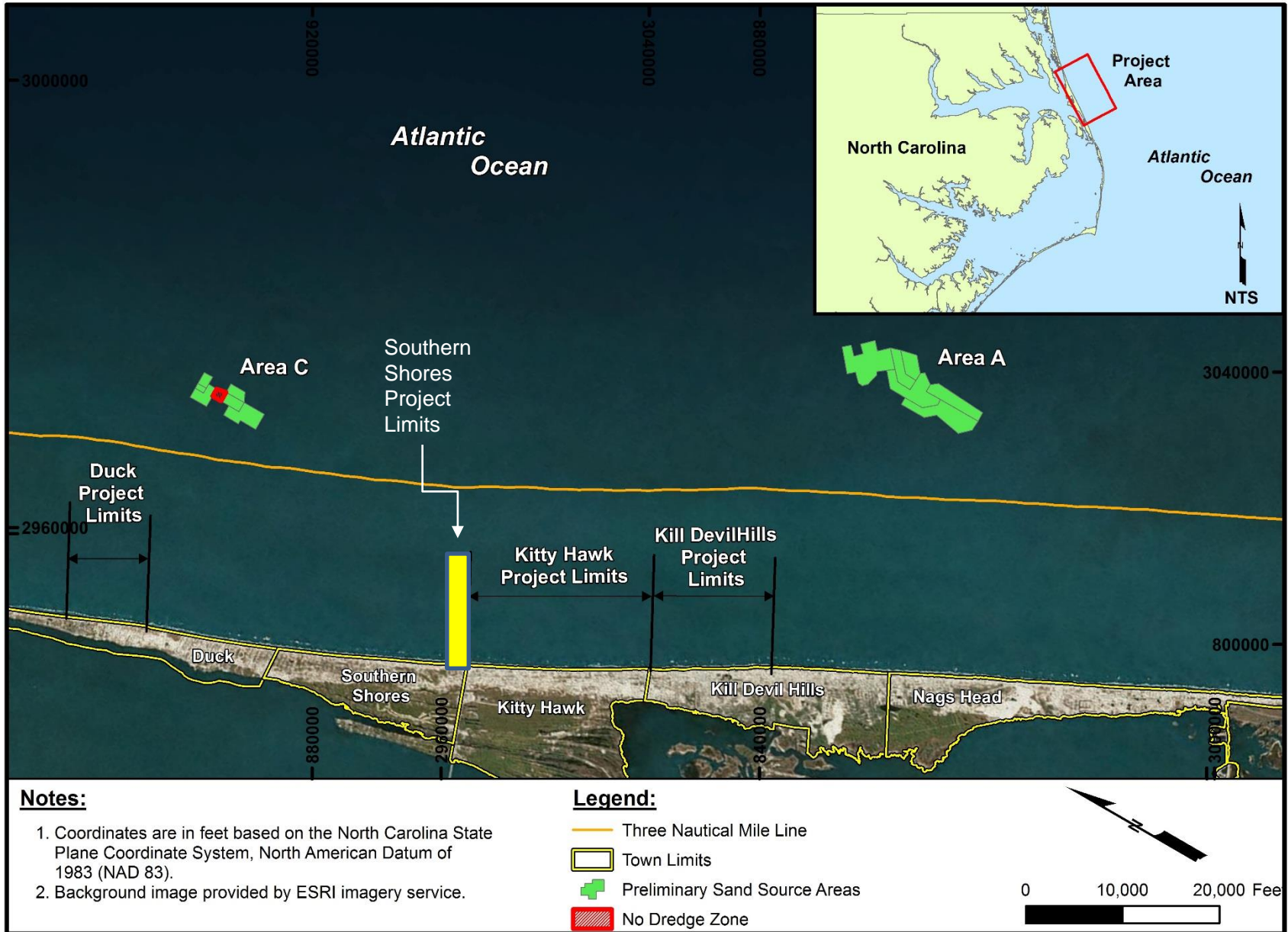
# Pelican Watch September 8, 2016 (Post-Hermine)



# Ocean View Loop October 4, 2016








# Town of Duck Fill Template (1.6 miles)

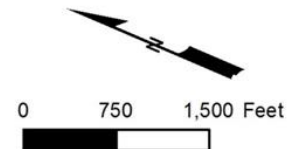


**Notes:**

1. Coordinates are in feet based on the North Carolina State Plane Coordinate System, North American Datum of 1983 (NAD 83).
2. 2012 Background imagery is from NCOne Map Imagery Service.

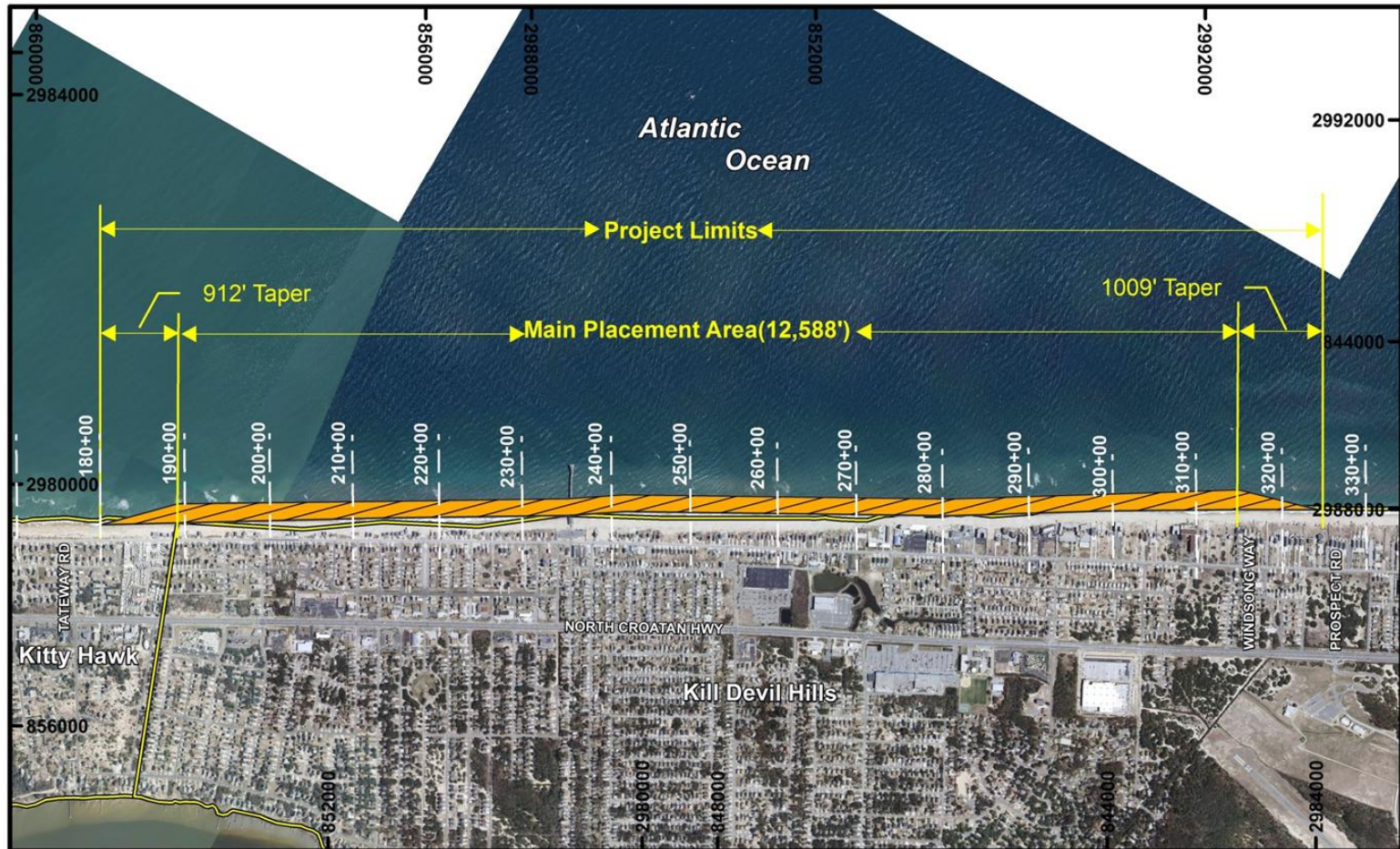
**Legend:**

 Beach Placement





# Town of Kill Devil Hills Fill Template (2.74 miles)

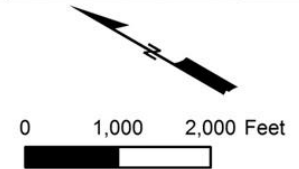


**Notes:**

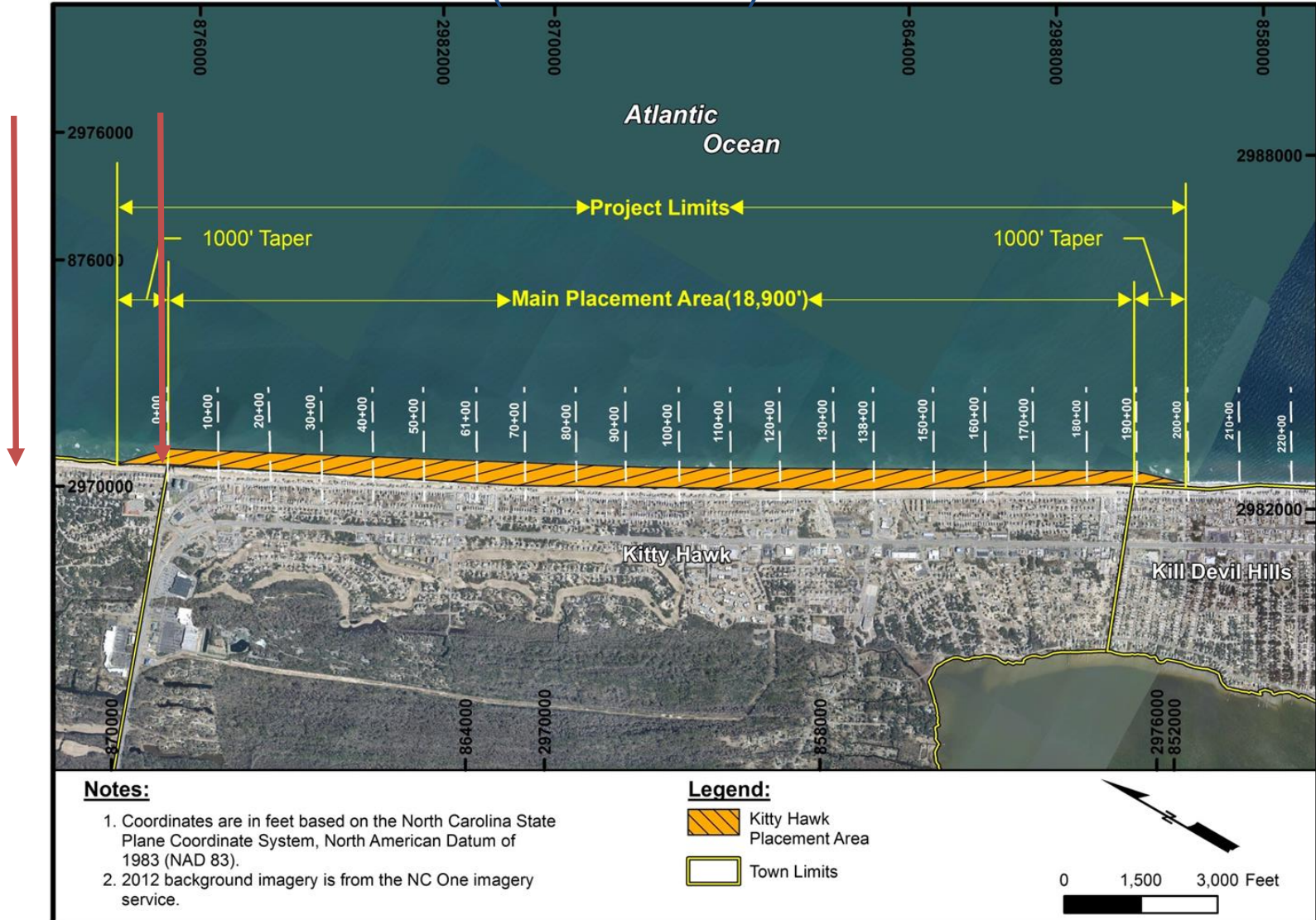
1. Coordinates are in feet based on the North Carolina State Plane Coordinate System, North American Datum of 1983 (NAD 83).
2. 2012 background imagery is from the NC One imagery service.

**Legend:**

- Kill Devil Hills Placement Area
- Town Limits



# Town of Kitty Hawk Fill Template (3.97 miles)





# Kitty Hawk Taper Section into Southern Shores



- NOTES:**
- DATE OF AERIAL PHOTOGRAPHY: 2012.
  - COORDINATES ARE IN FEET BASED ON THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83).
  - ELEVATIONS ARE IN FEET REFERENCED TO NORTH AMERICAN VERTICAL DATUM, 1988 (NAV88).
  - THE DUNE SHALL BE CONSTRUCTED BETWEEN STATIONS 7+00 TO 14+00, 125+00 TO 130+00, 157+00 TO 171+00, AND 185+00 TO 188+87. THE DUNE SHALL BE CONSTRUCTED SEAWARD OF THE LANDWARD LIMIT OF DUNE LINE. (SEE CROSS SECTION 1004/99 FOR EXAMPLE)
  - SAND FENCING MAY BE INSTALLED ALONG THE STARTER DUNE CORRIDOR SEAWARD OF THE LANDWARD TOE OF FILL AND WITHIN 10 FT OF THE SEAWARD TOE OF DUNE.
  - THE MATERIAL USED TO CONSTRUCT THE TEMPLATE AS SHOWN IN THE PLANS FOR THE TOWN OF KITTY HAWK SHALL COME SOLELY FROM THE AREA OUTLINED WITHIN BORROW AREA A, REFERENCED AS THE "TOWN OF KITTY HAWK ALLOWABLE DREDGE AREA." NO OTHER PORTIONS OF BORROW AREA A AND/OR C MAY BE USED TO CONSTRUCT THE TEMPLATE AS SHOWN IN THE PLANS FOR THE TOWN OF KITTY HAWK.

**LEGEND:**

- $\Delta$ +80 USACE BASELINE STATION
- 2015 MEAN HIGH WATER (1.18')
- 2015 MEAN LOW WATER (-2.05')
- MUNICIPAL BOUNDARY
- NORTH CAROLINA BEACH ACCESS AS IDENTIFIED BY DIVISION OF COASTAL MANAGEMENT

**COASTAL PLANNING & ENGINEERING, Inc.**  
 OF North Carolina, Inc.  
 4028 MASONBORO LODGE RD.  
 WILMINGTON, NC 28409  
 TEL: (910) 841-4228  
 FAX: (910) 841-4228  
 www.CPE.com

PROJECT NO.	
DATE	
SCALE	
BY	
CHECKED BY	
DATE	
PROJECT NO.	
DATE	
SCALE	
BY	
CHECKED BY	
DATE	

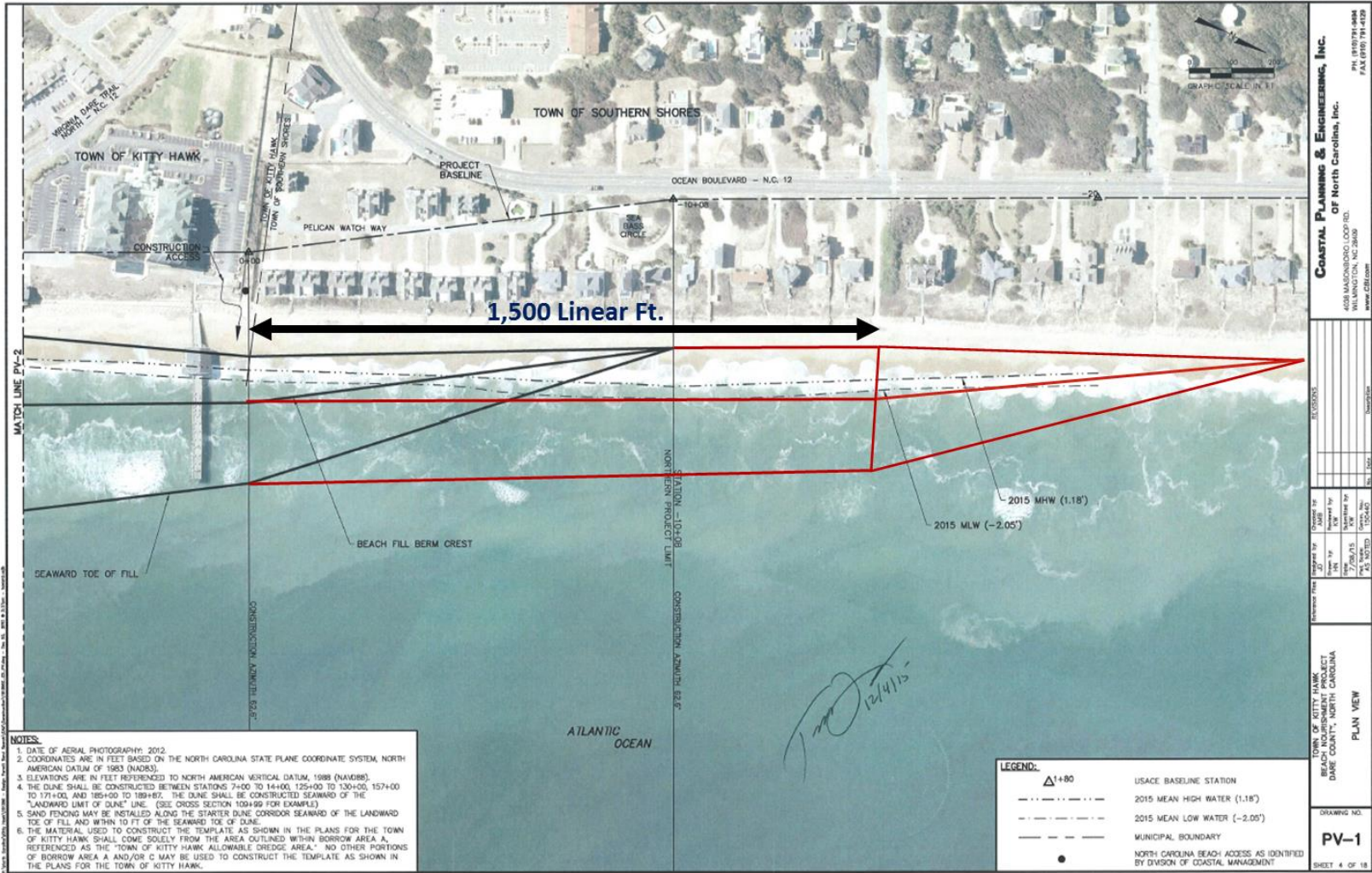
TOWN OF KITTY HAWK  
 BEACH ACCESS  
 DARE COUNTY, NORTH CAROLINA

PLAN VIEW

DRAWING NO.  
**PV-11**

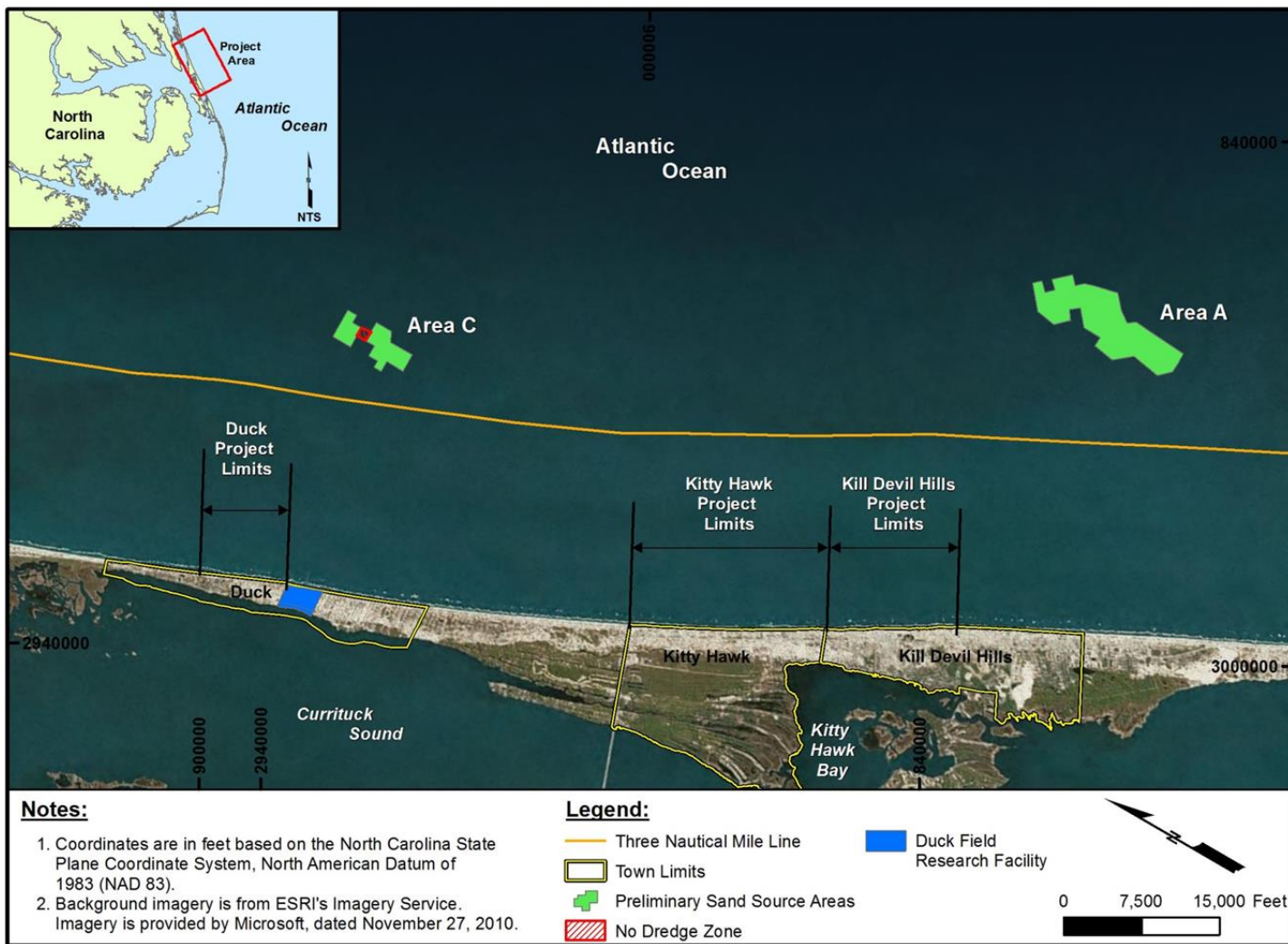
SHEET 4 OF 18

# Southern Shores Fill Limits

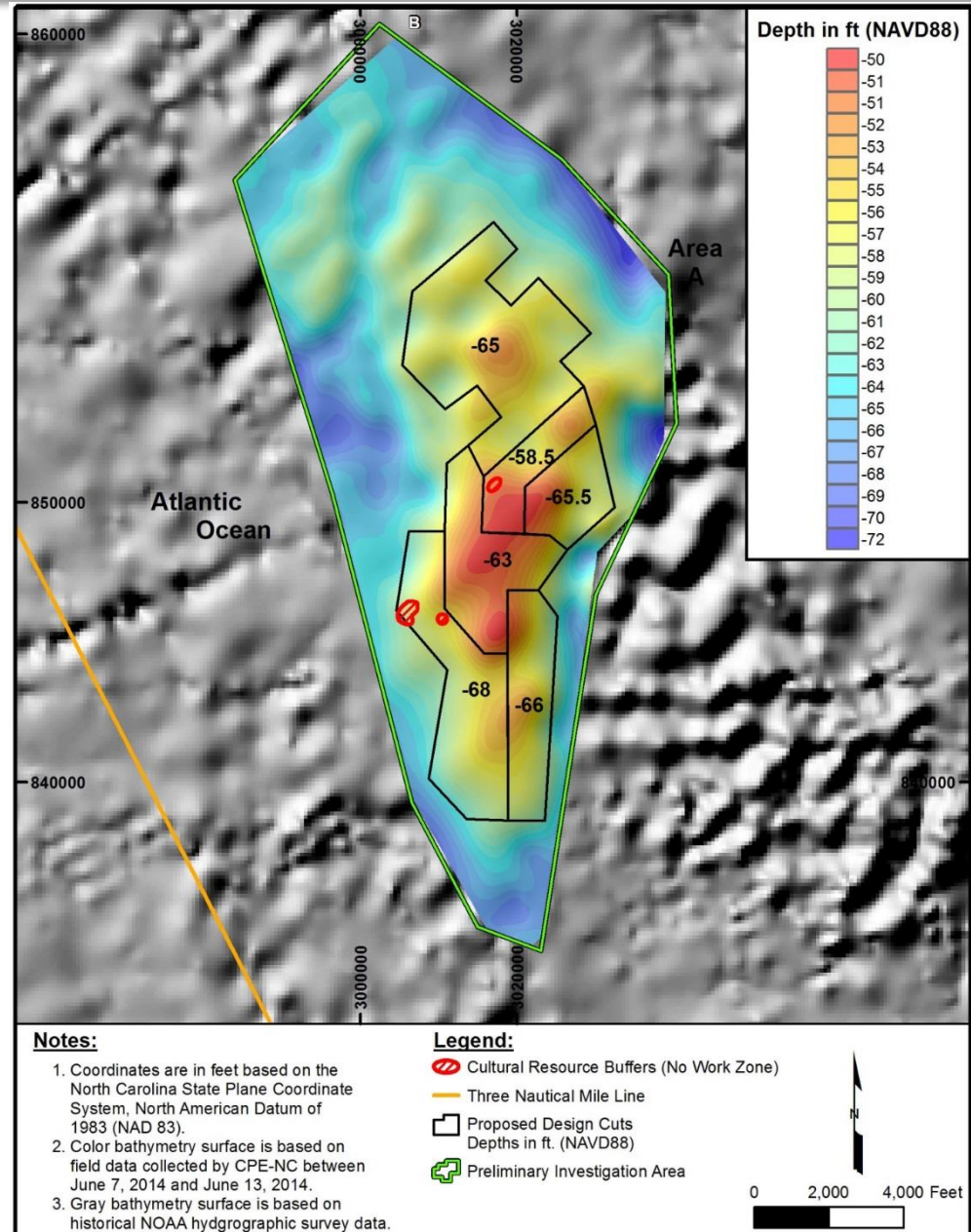




# Permitted Borrow Areas for Kitty Hawk, Kill Devil Hills, and Duck



# Borrow Area A with Preliminary Max. Design Cuts



Potential volume of Beach quality material = 17.05 million cy



Parameter	Duck	Kitty Hawk	Kill Devil Hills	Southern Shores*	Total
Length of Fill	8,415 lf (1.6 mi.)	20,970 lf (3.97 mi)	14,464 lf (2.74 mi)	2,500 lf (0.47 mi)	46,349 lf (8.78 mi)
Fill Volume (cy)	1,180,000	1,765,000	840,000	80,000	3,885,000
Construction Volume (cy)	1,180,000	1,765,000	840,000	80,000	4,638,000
Dredged Volume (cy)*	1,699,200	2,118,000	1,008,000	96,000	4,922,200
BEOM Lease (cy)					4,825,000

\*Represents an additional 20% in volume to account for dredging losses

**The Southern Shores component increases the total fill length of the forthcoming “Three Town Project” by ~3% the total fill volume by ~2%**