

Storm Damage Reduction Project

Town of Duck, North Carolina



Coastal Planning & Engineering of North Carolina
February 19, 2015

Ken Willson
Julien Devisse



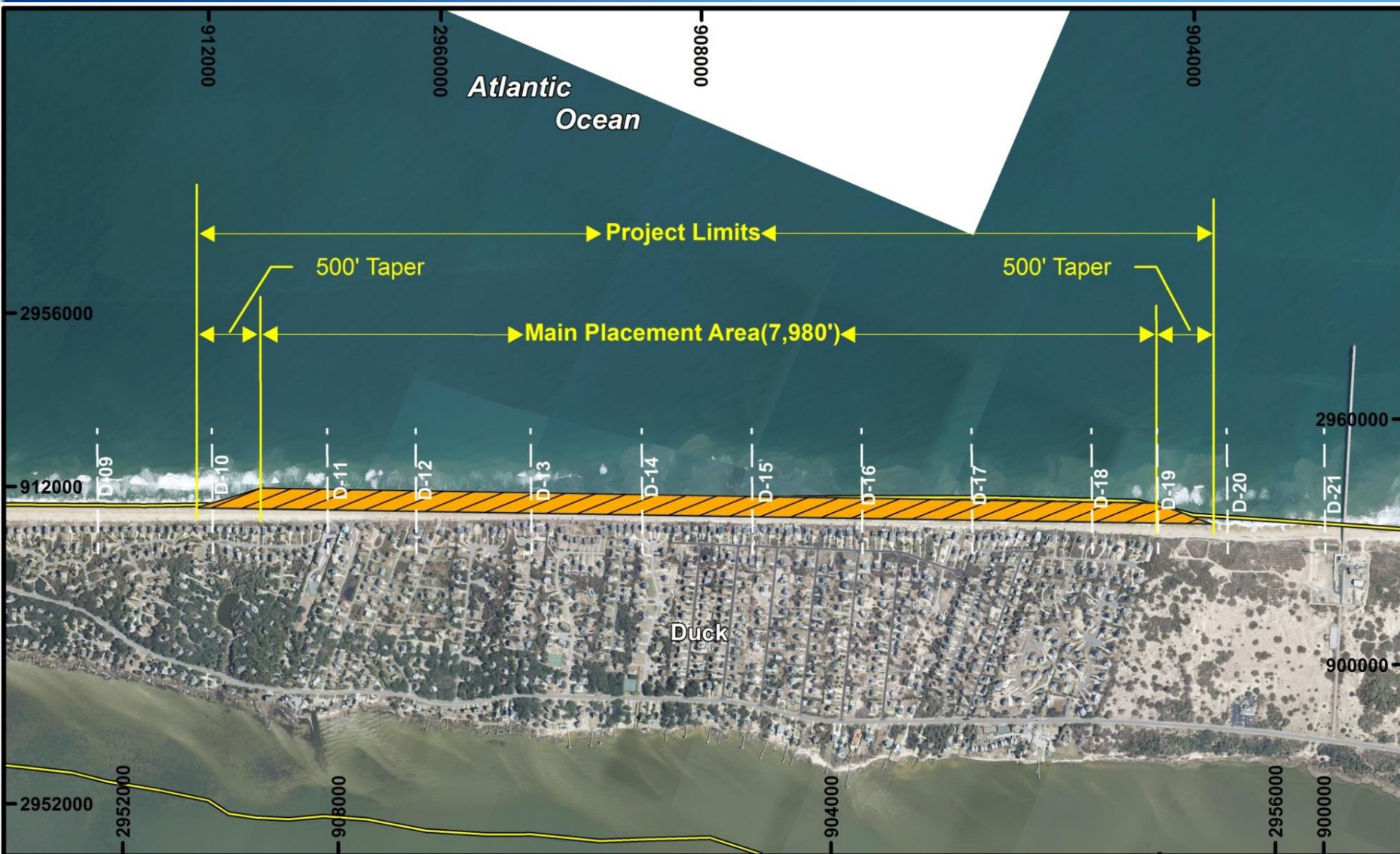
Notes:

1. Coordinates are in feet based on the North Carolina State Plane Coordinate System, North American Datum of 1983 (NAD 83).
2. Background image provided by ESRI imagery service.

Legend:

- Three Nautical Mile Line
- Town Limits
- ✚ Preliminary Sand Source Areas
- ▨ No Dredge Zone



0 10,000 20,000 Feet

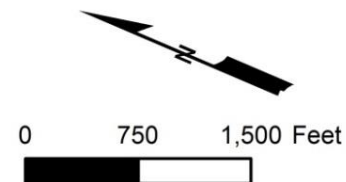


Notes:

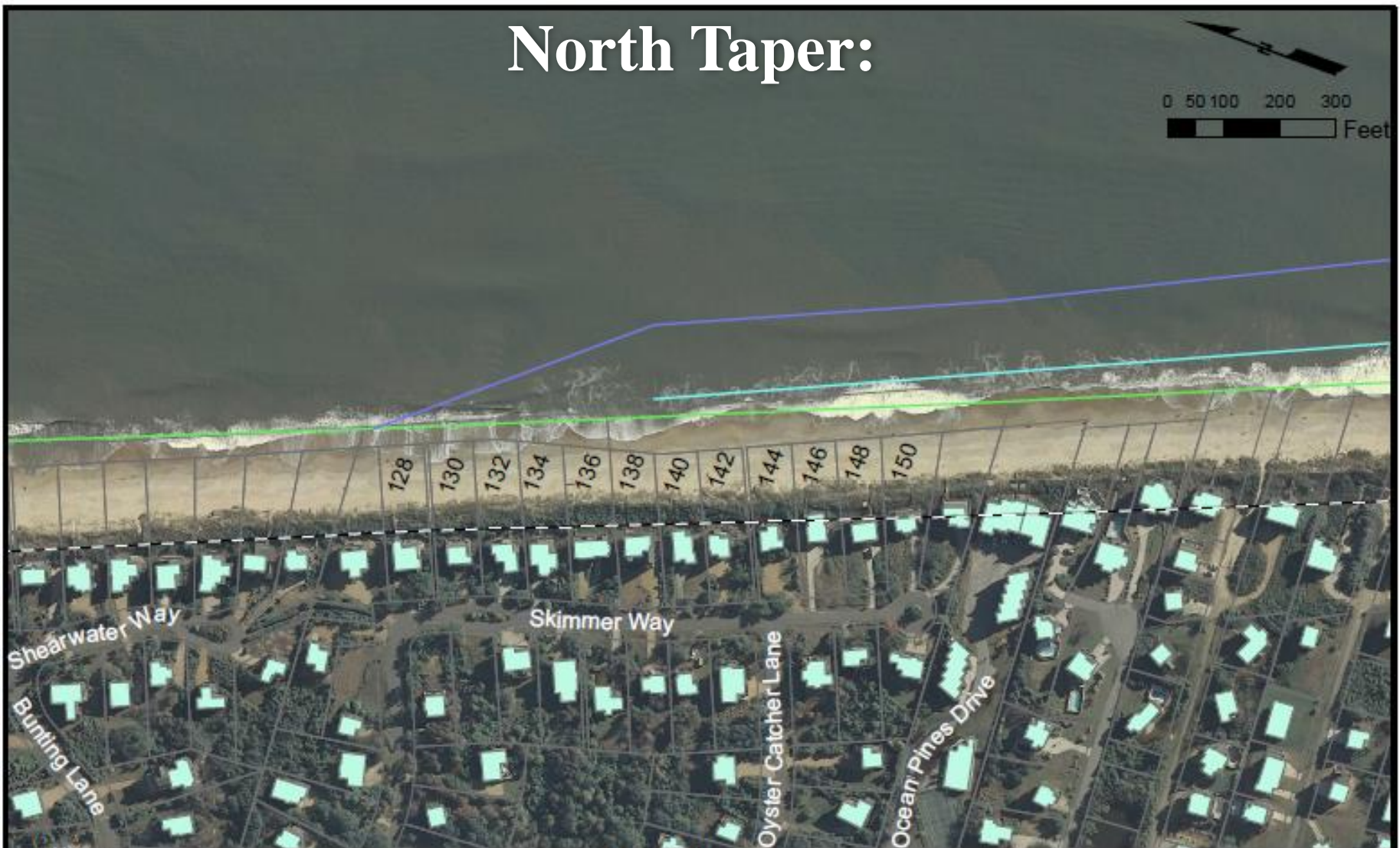
1. Coordinates are in feet based on the North Carolina State Plane Coordinate System, North American Datum of 1983 (NAD 83).
2. 2012 background imagery is from the NC One imagery service.

Legend:

-  Duck Placement Area
-  Town Limits



North Taper:



Notes:

1. Aerial photography provided by Dare County,
Date flown October 31, 2012.

Legend:

- | | |
|----------------------|----------------------------------|
| — MHW - Construction | - - HURRICANE ISABEL IMPACT LINE |
| — MHW - Design | ■ Building Footprints (Dare GIS) |
| — MHW - Existing | □ Dare County Parcels |

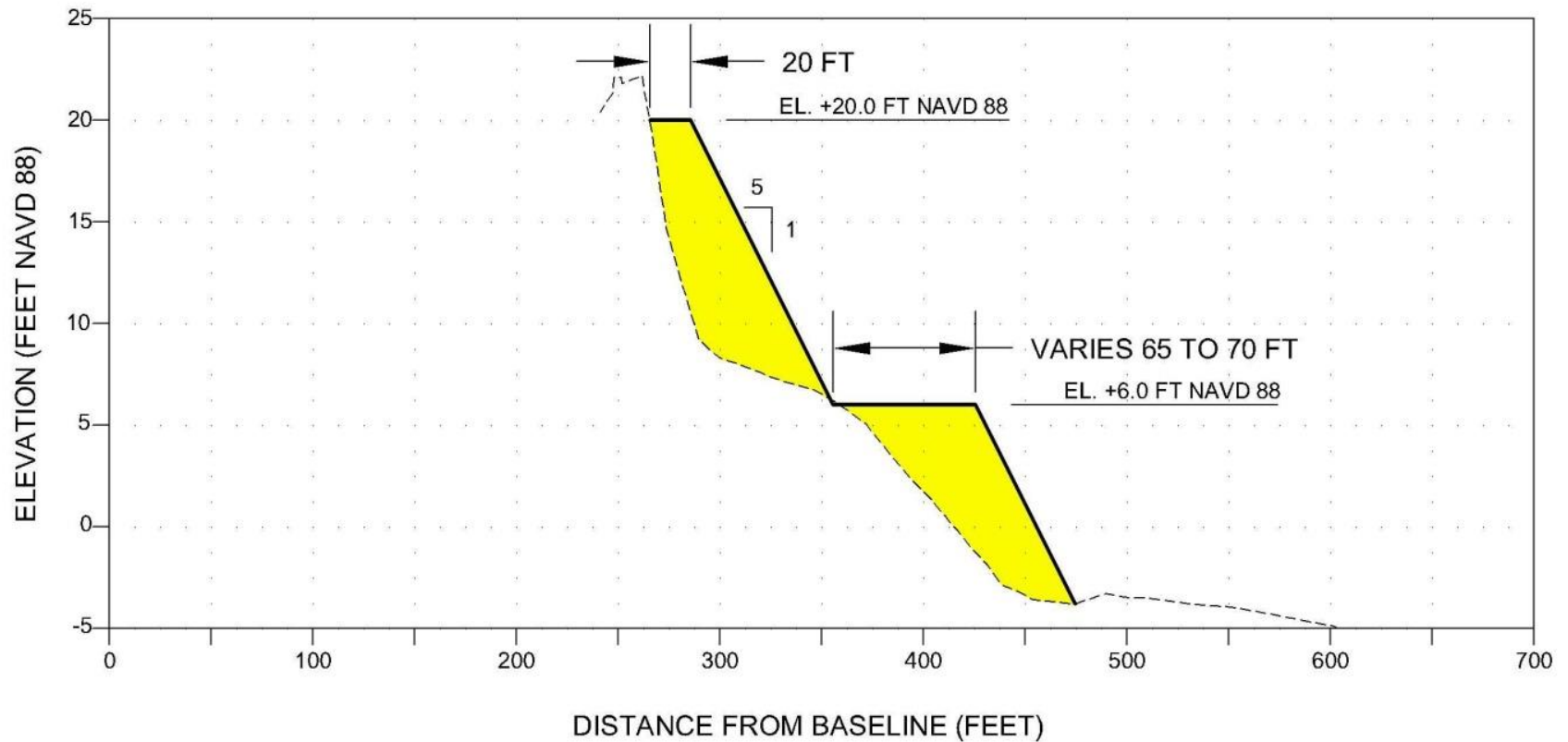
South Taper:



South Taper:



DESIGN TEMPLATE



VERTICAL GRAPHIC SCALE IN FT



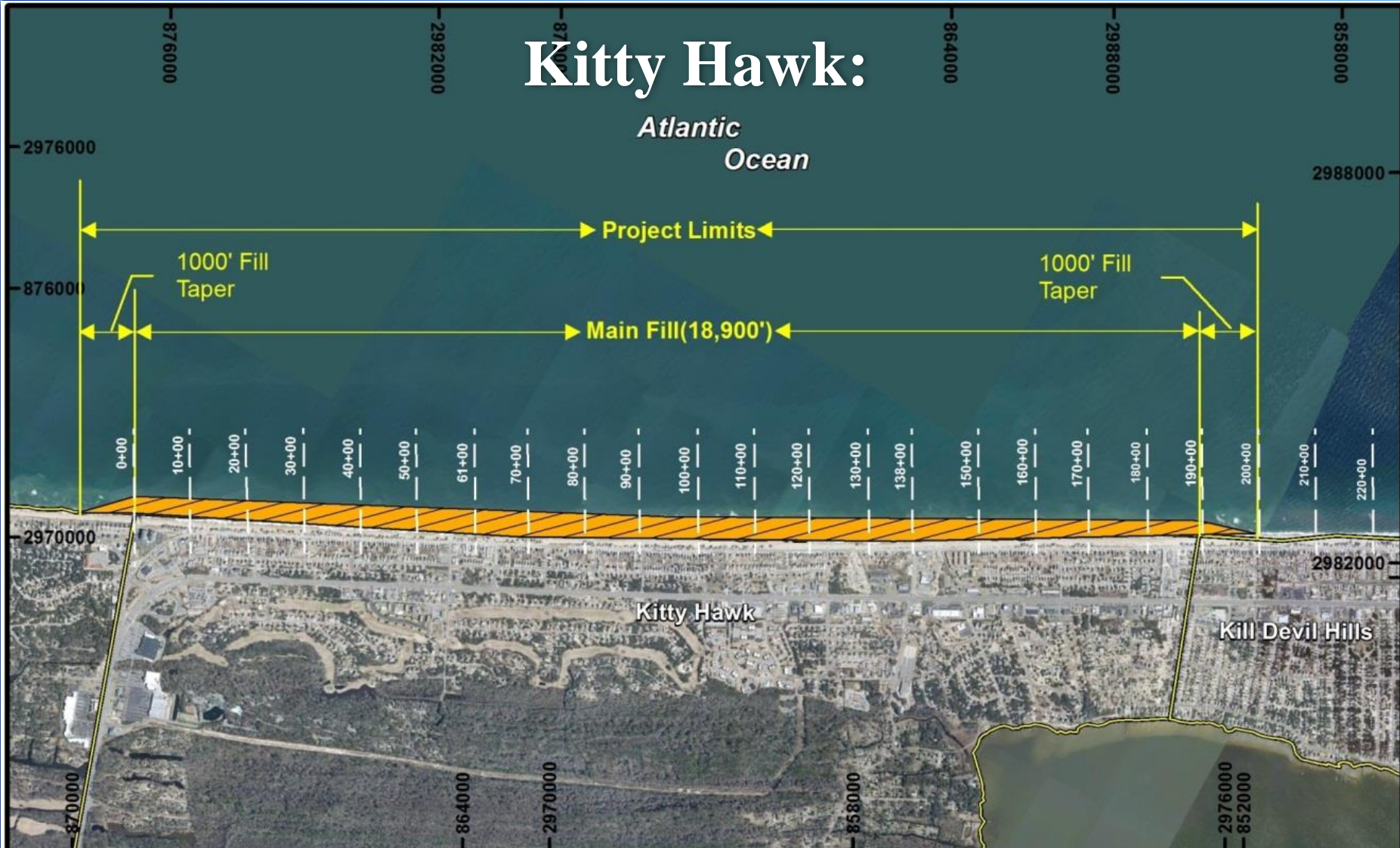
HORIZONTAL GRAPHIC SCALE IN FT

LEGEND:

- 2013 SURVEY
- FILL PROFILE

Kitty Hawk:

Atlantic
Ocean



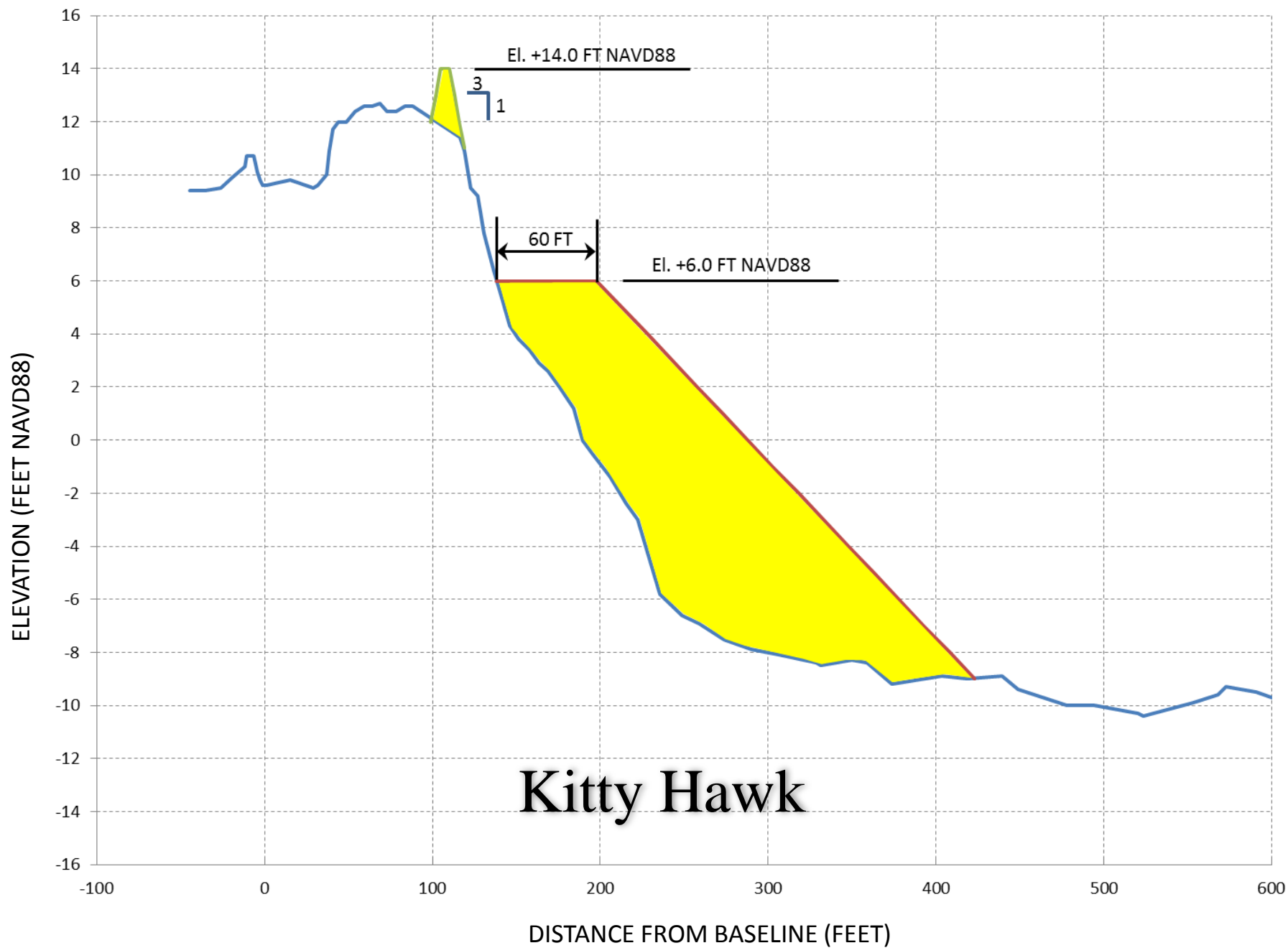
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Legend:

-  Kitty Hawk Fill
-  Town Limits

0 1,500 3,000 Feet



Kill Devil Hills:

Atlantic
Ocean




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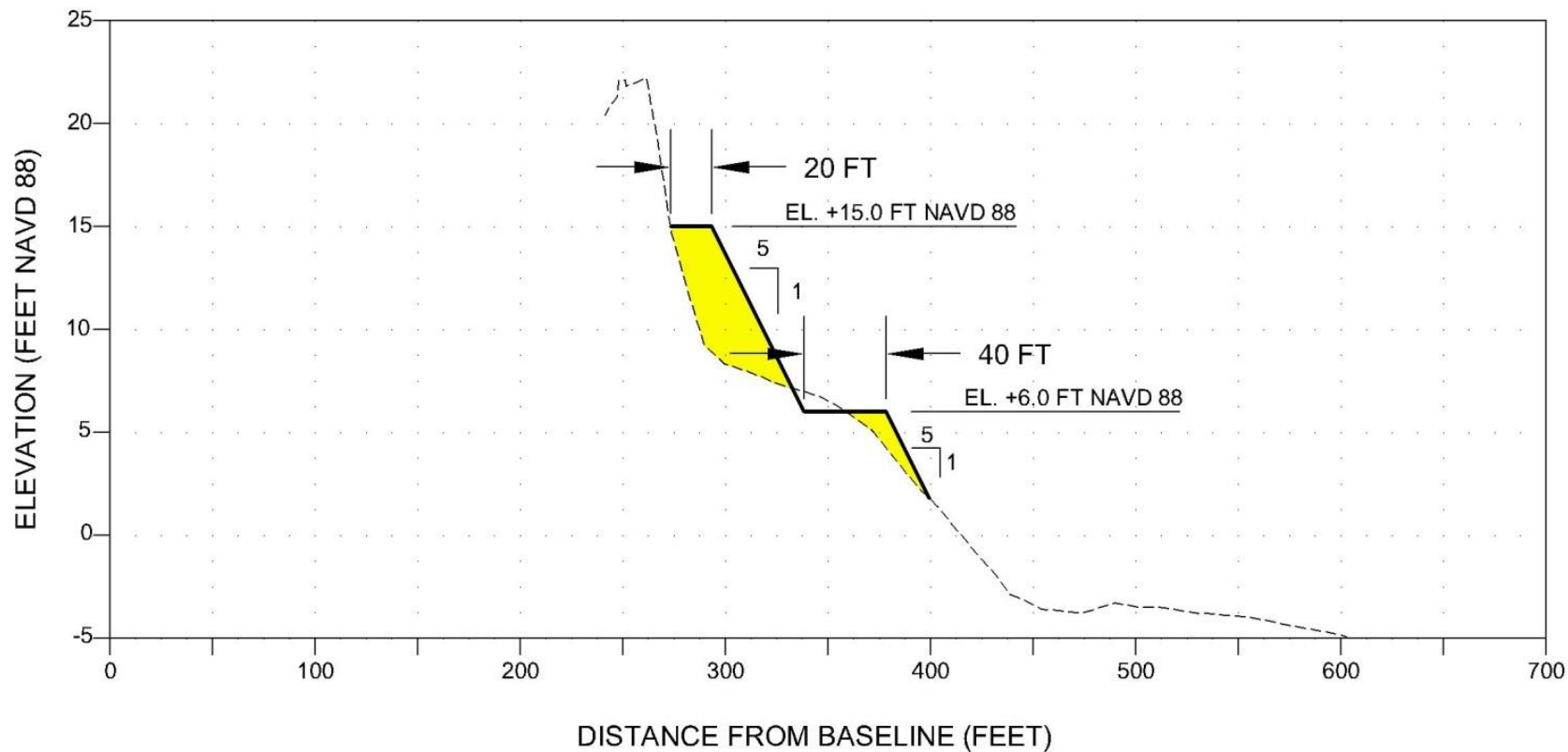
Legend:

-  Kill Devil Hills Placement Area
-  Town Limits

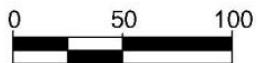
0 1,000 2,000 Feet



DESIGN TEMPLATE



VERTICAL GRAPHIC SCALE IN FT



HORIZONTAL GRAPHIC SCALE IN FT

Kill Devil Hills

LEGEND:

- 2013 SURVEY
- FILL PROFILE

Project Specifications

	Town of Duck	Town of Kitty Hawk	Town of Kill Devil Hills	TOTAL:
Total Volume (CY)	1,061,200	1,913,000	914,800	3,889,000
Project Length - Main Fill (Ft. / Miles)	7,980 / 1.45	18,900 / 3.58	12,588 / 2.38	39,468 / 7.48
Taper Length (N ft. / S ft.)	500 / 500	1000 / N/A	N/A / 1009	
Total Project Length (ft. / Miles) ¹	8980 / 1.7	19900 / 3.77	13597 / 2.58	42,477 / 8.23
Dune crest width (ft.)	20	N/A	20	
Dune crest elevation (ft. NAVD88)	+20.0	+14.0 ³	+15.0	
Seaward Dune Slope	1V:5H	1V:3H ³	1V:5H	
Width of Design Berm (ft.)	Variable (65 - 75)	60	40	
Elevation of Design Berm (ft.)	+6.0	+6.0	+6.0	

¹ - Total Project Length includes Main Fill length and tapers

² - Fill Density is calculated by dividing the total volume by the main fill length and 1/2 the total taper length

³ – Starter Dune constructed on upper portion of the profile



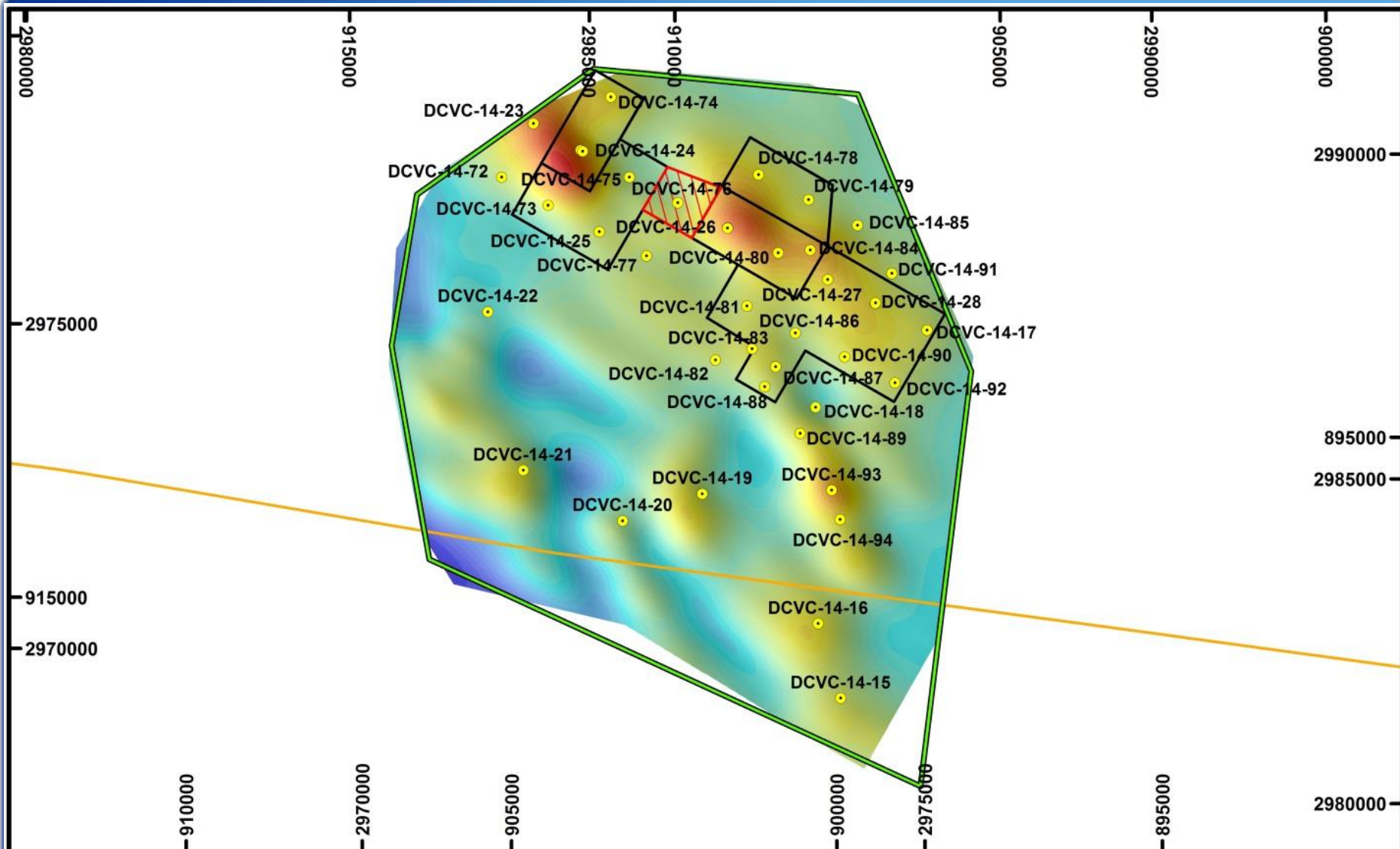
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- Town Limits
- Preliminary Sand Source Areas
- ▨ No Dredge Zone

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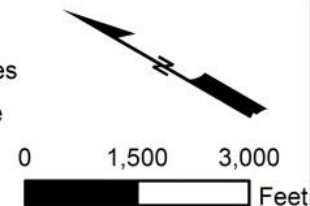


Notes:

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2. Color bathymetry surface is based on field data collected by CPE-NC between June 7, 2014 and June 13, 2013.

Legend:

-  Preliminary Investigation Area
-  Preliminary Design Cuts
-  No Dredge Zone
-  2014 CPE-NC Vibracores
-  Three Nautical Mile Line



Pre-Construction Phase:

- Development of Project Plans and Specifications (Bidding Documents)
 - Design Surveys (Beach Profiles)
 - Borrow Area Refinement
- Bidding Coordination, Bid Assessment, Contract Negotiations
- Project Management – Additional Meetings (3-Towns Meetings, Individual Town Meetings)
- Pre-Construction Coordination – Award to Start Construction

MOA / MOU

- Payment and Roles and Responsibility for Pre-Construction Services Contract
- Payment and Roles and Responsibility for Construction (Dredge Contract)
- Payment for Construction Services (Engineer Contract)
- Roles and Responsibility for BOEM Lease

Staging and Access:



2015/02/15

Staging and Access:



2015/02/15

Staging and Access:



2015/02/15

Staging and Access:



What to Expect During Construction:



2015/01/27

What to Expect During Construction:



2015/01/27

What to Expect During Construction:



2015/01/27

What to Expect During Construction:



2015/01/29

What to Expect During Construction:



2015/01/29

CONSTRUCTION OBSERVATIONS

- 24 hour on call at Site
- Multiple site visits per day
- Sediment monitoring and sampling
- Dredge Compliance
- Daily Reports
- Coordination with Contractor
- Review Pay Requests
- Handle Change Orders
- Project Completion Report

Schedule

Task Name	Projected Completion
1.3 – Offshore Sand Search	Completed
Final Report	Pending
2 – Engineering Analysis	Completed
Final Reports	Pending
3 – Environmental Documentation	
Submit Final BA and EFH to USACE and BOEM	01/08/14
USACE Formal Consultation USFWS	July 15, 2015
USACE and BOEM Consultation with NMFS	10/31/2015
Release Draft EA and Submit DOA Permit Application	
Duck	12/9/2014
Kitty Hawk	2/28/15
Kill Devil Hills	1/30/15
3.3.3 - Submit CAMA Applications	March 2015
3.3.5 - BOEM Lease Agreement Issued	1/1/2016
4.5 - Open Bids	Anytime After 1/1/2016

Storm Damage Reduction Project Town of Duck, North Carolina



Questions?

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