



Dare County Nourishment Project

Town of Kill Devil Hills



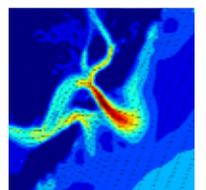
Julien Devisse, P.E. and Ken Willson

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

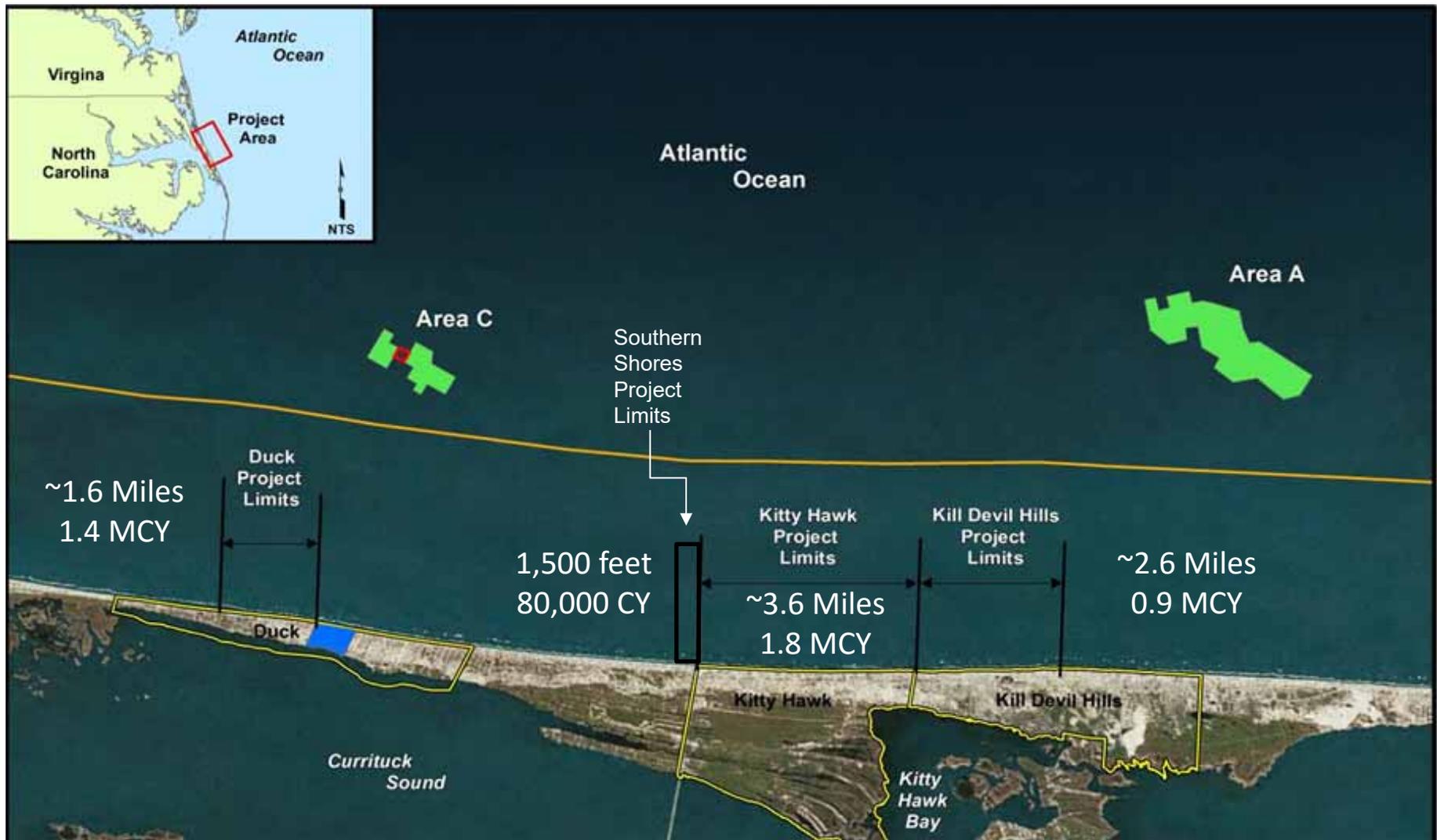
February 15, 2017



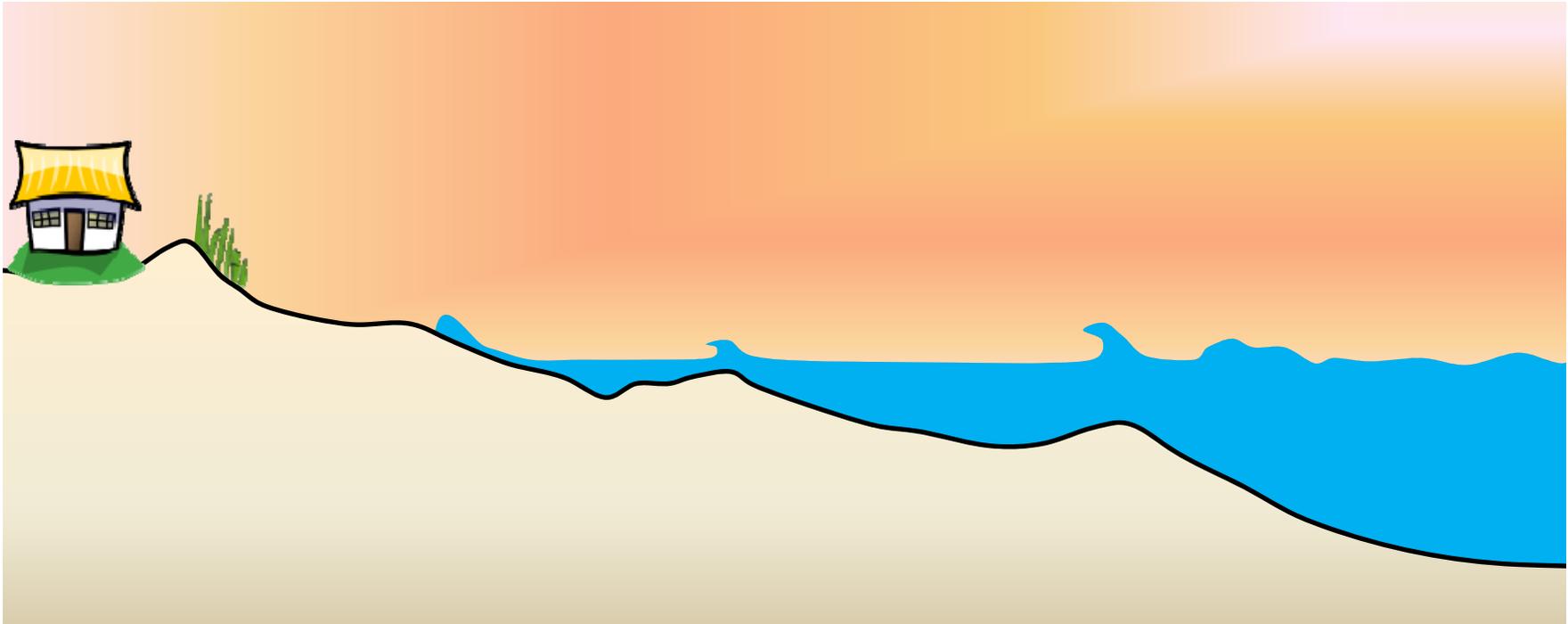
- Background
- Beach Fill Design/Construction Plans
- South Southern Shores Extension Project
- Borrow Area Design/Construction Plans
- Construction Photos
- Bid Items and Schedule
- Monitoring/Renourishment
- Questions



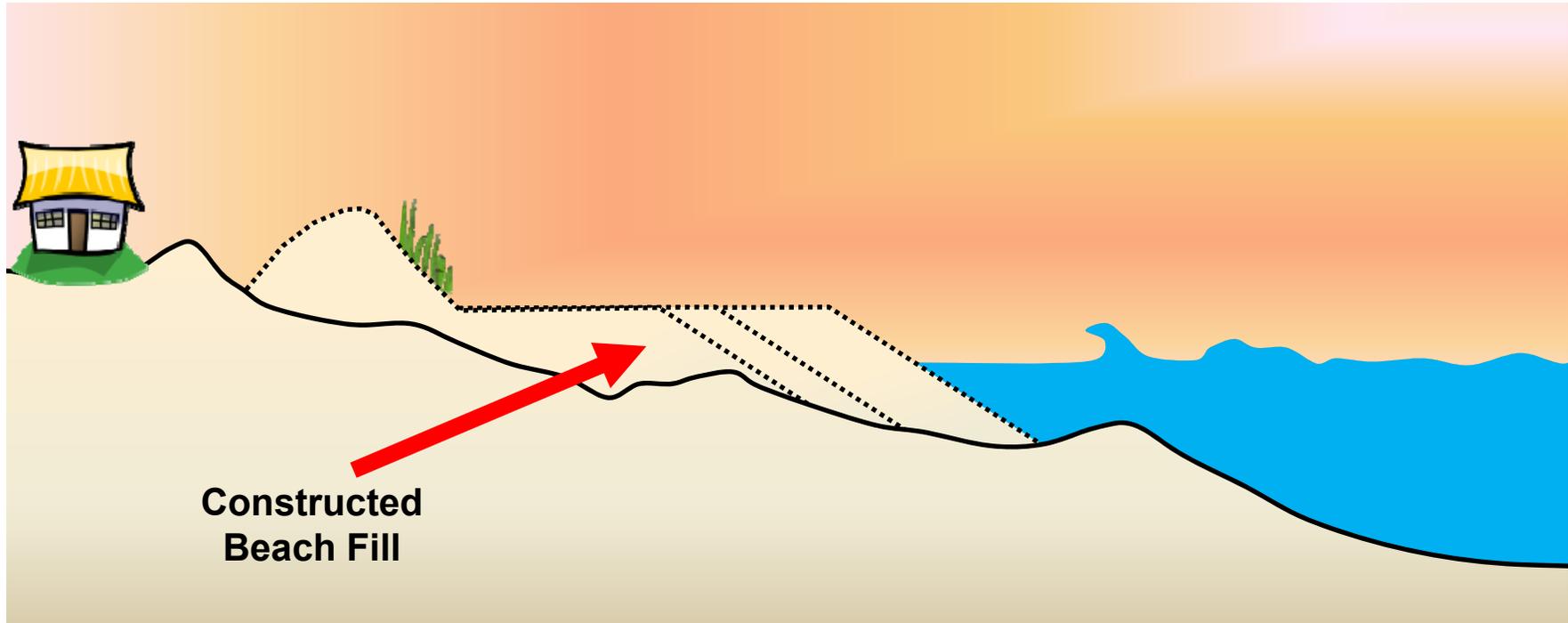
Background



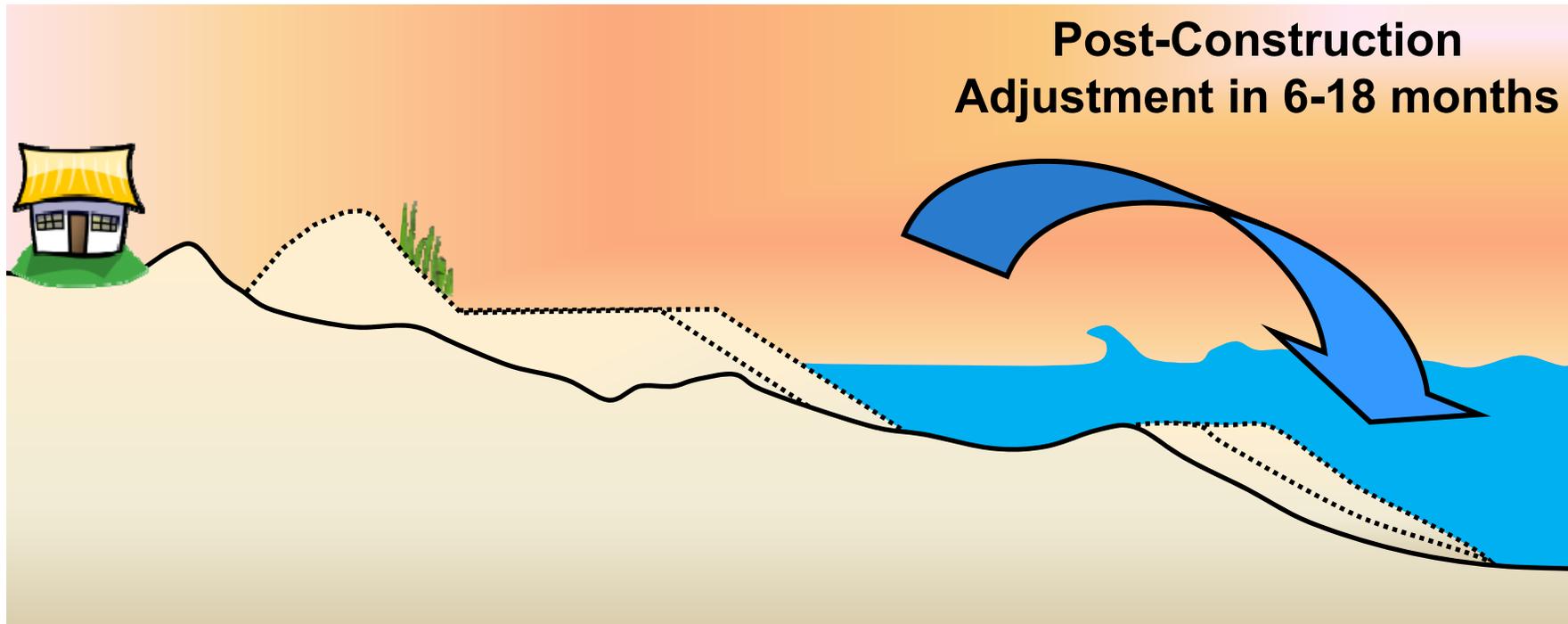
Approx. 8.3 miles and 4.1 MCY



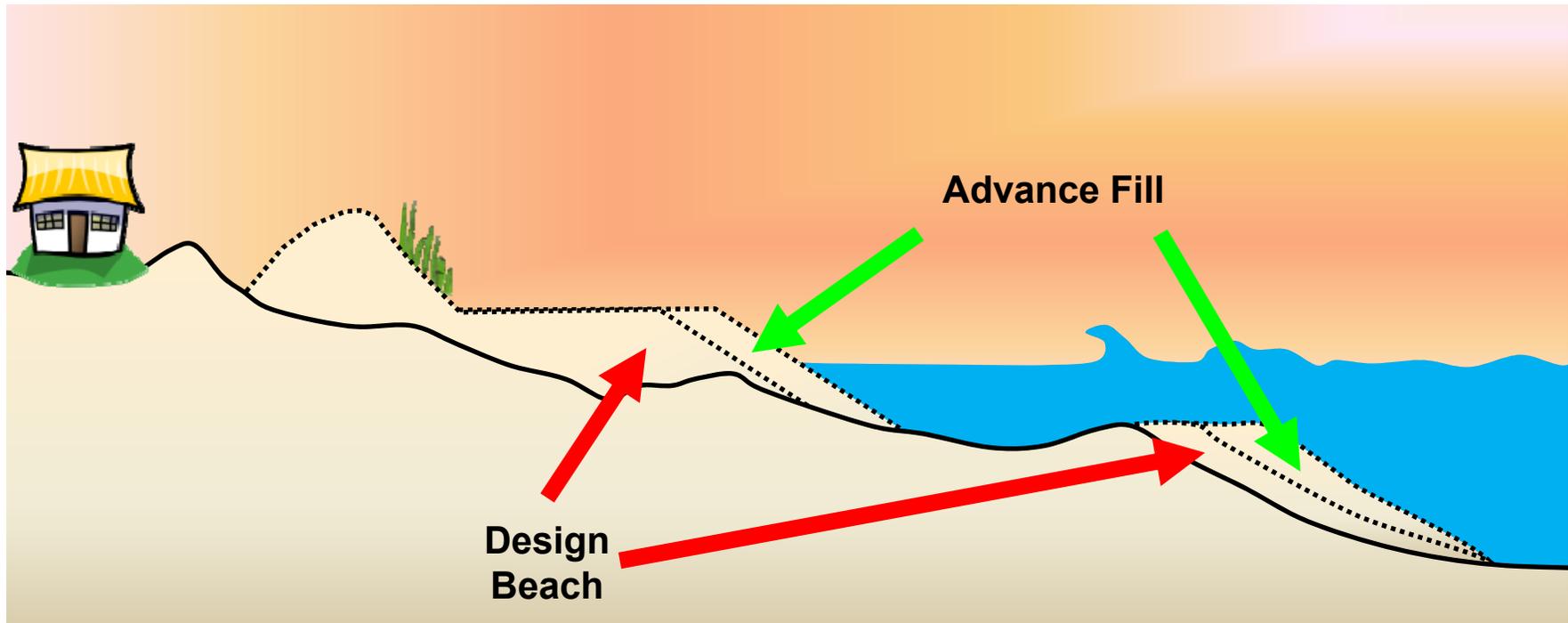
Pre-Project Conditions



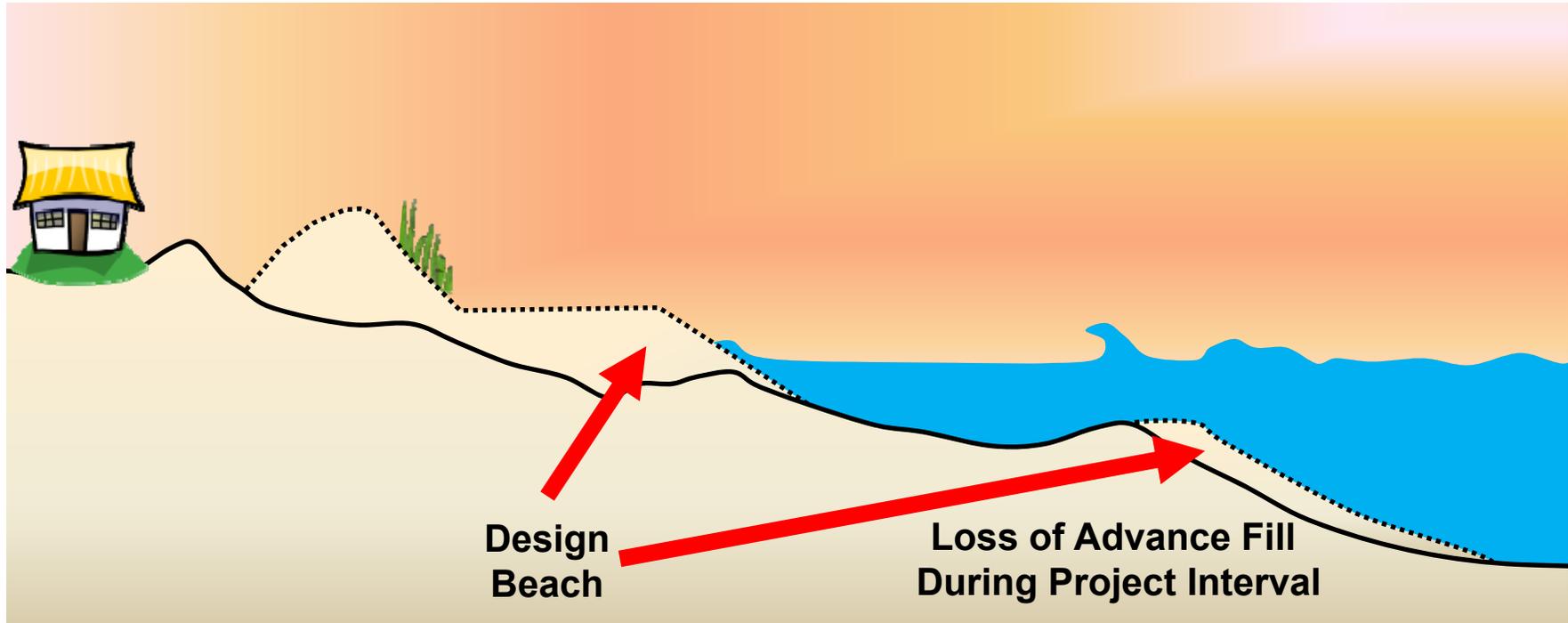
Initial Construction



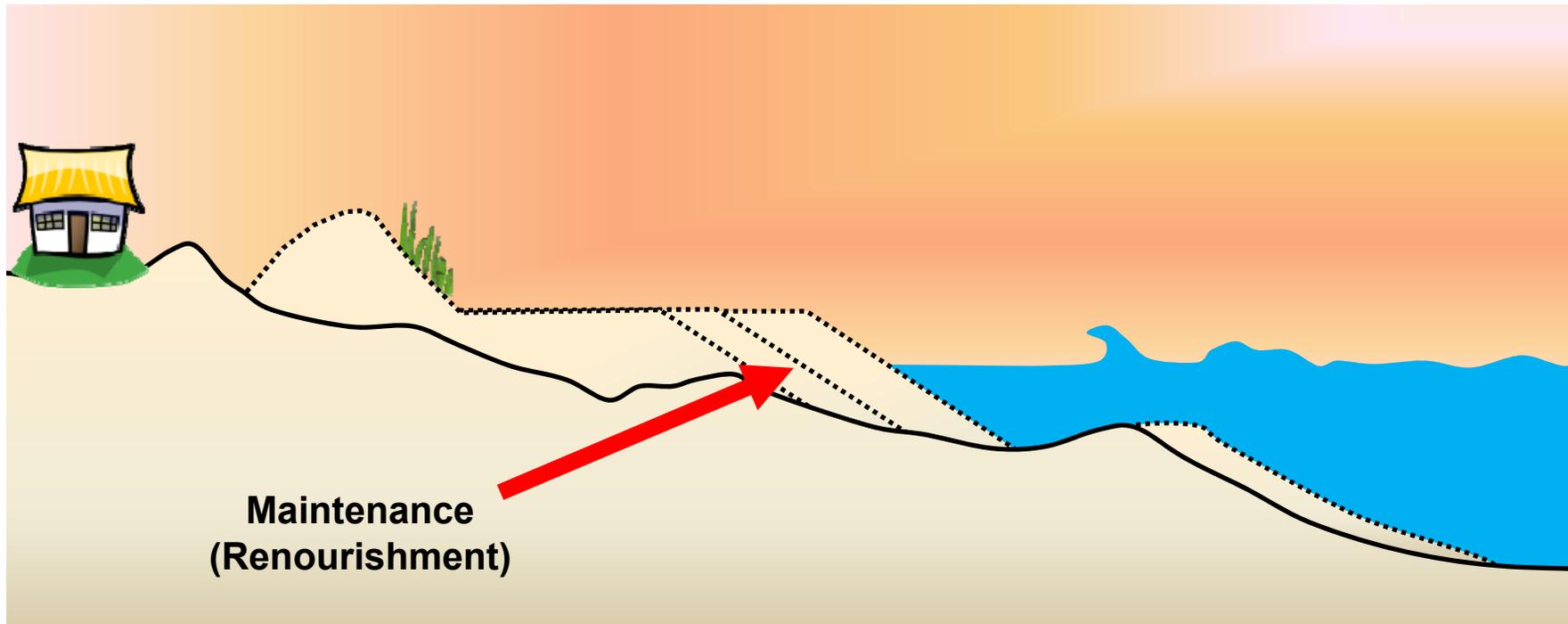
Equilibration of Beach Fill



Nourishment Interval



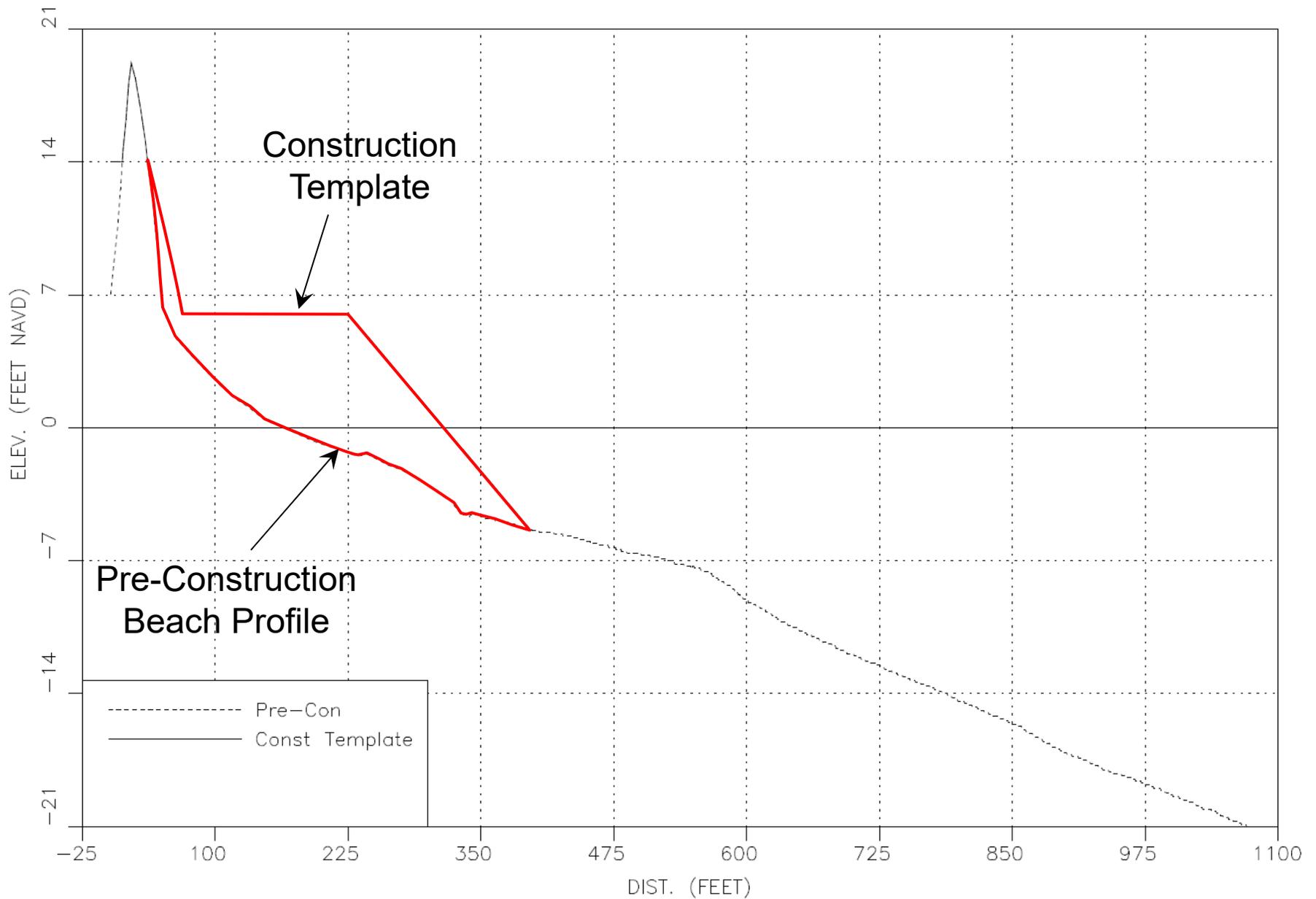
Nourishment Interval



Maintenance = Beach Renourishment

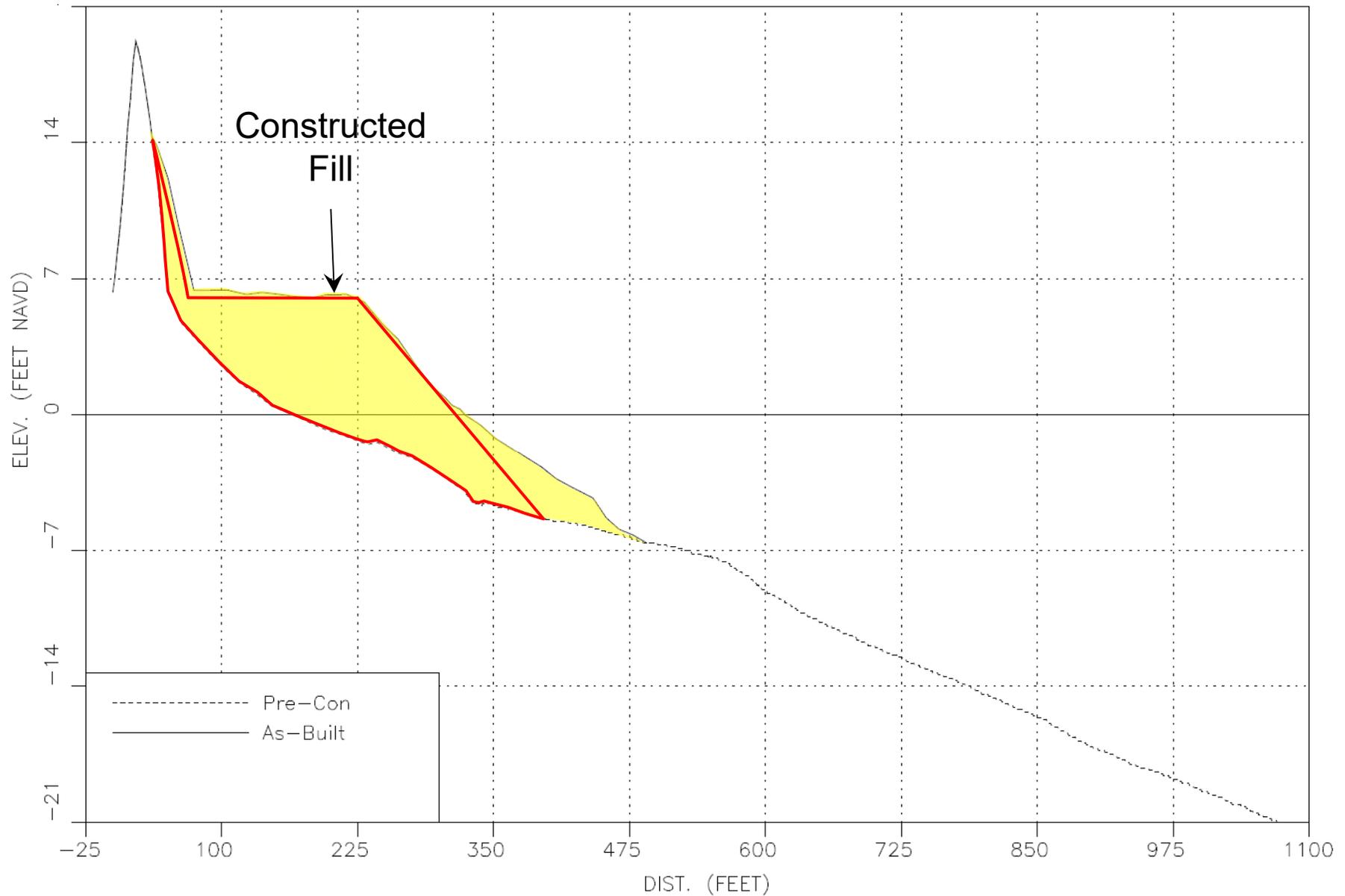


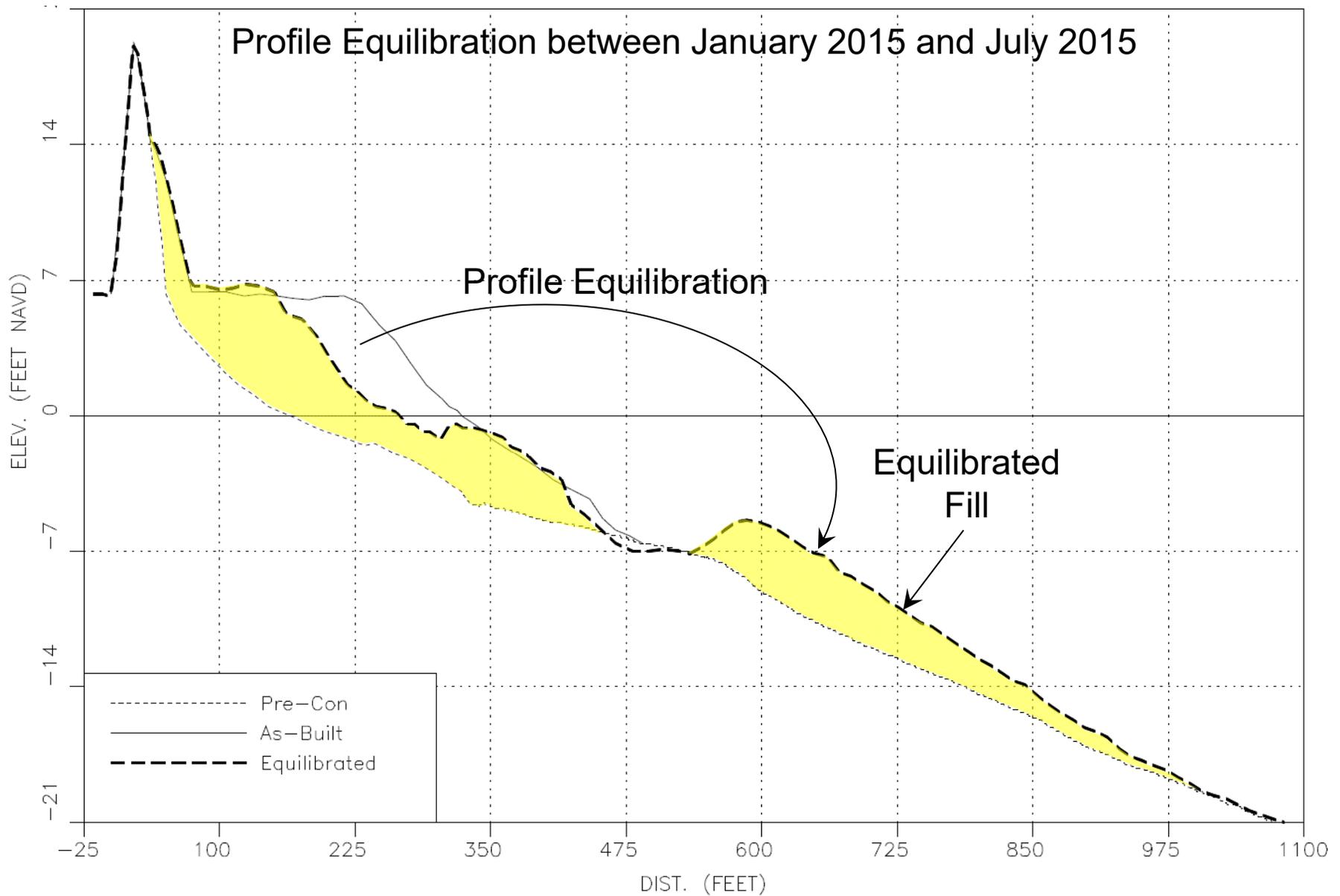
Profile Equilibration

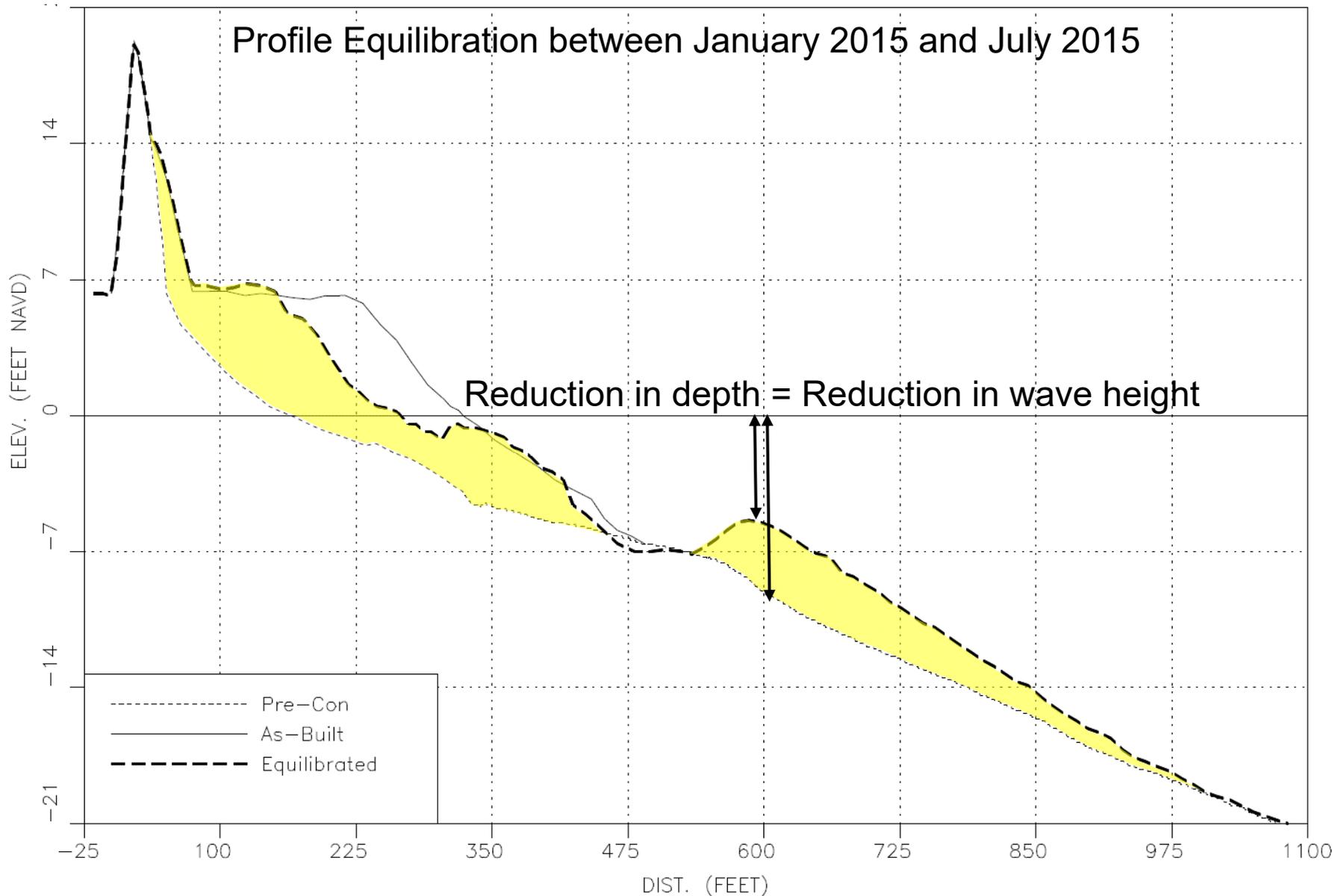




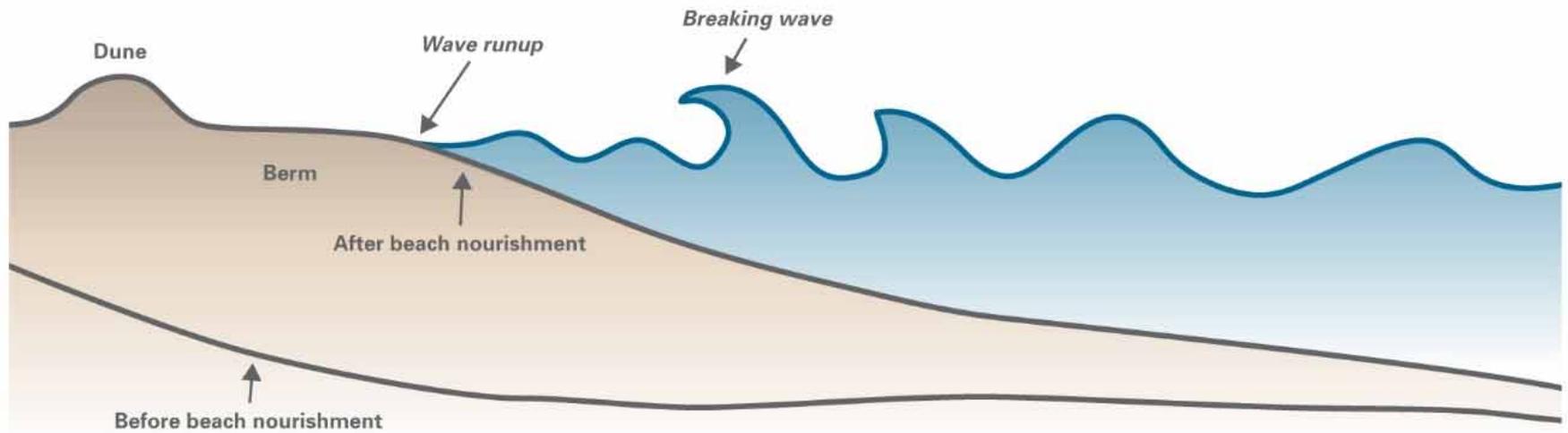
Profile Equilibration



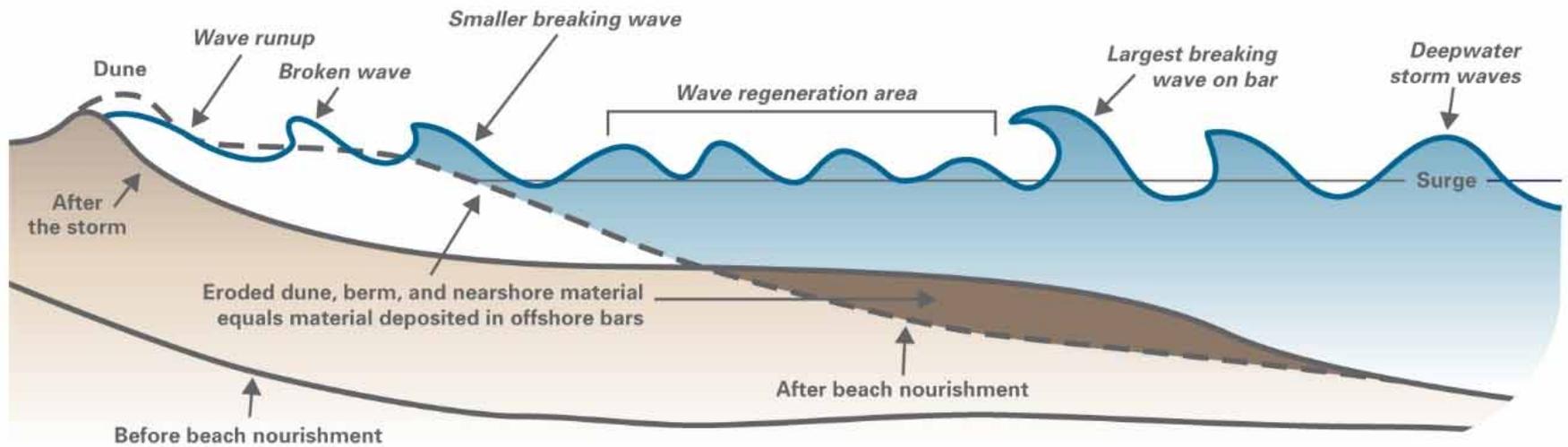




Wave Height Reduction

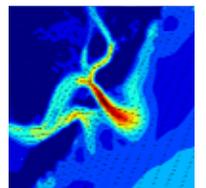


■ A nourished beach (pre-storm)



■ A nourished beach (post-storm)

- Background
- **Beach Fill Design/Construction Plans**
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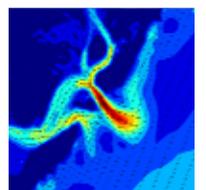




Slightly Different Scenario because of Low Dunes

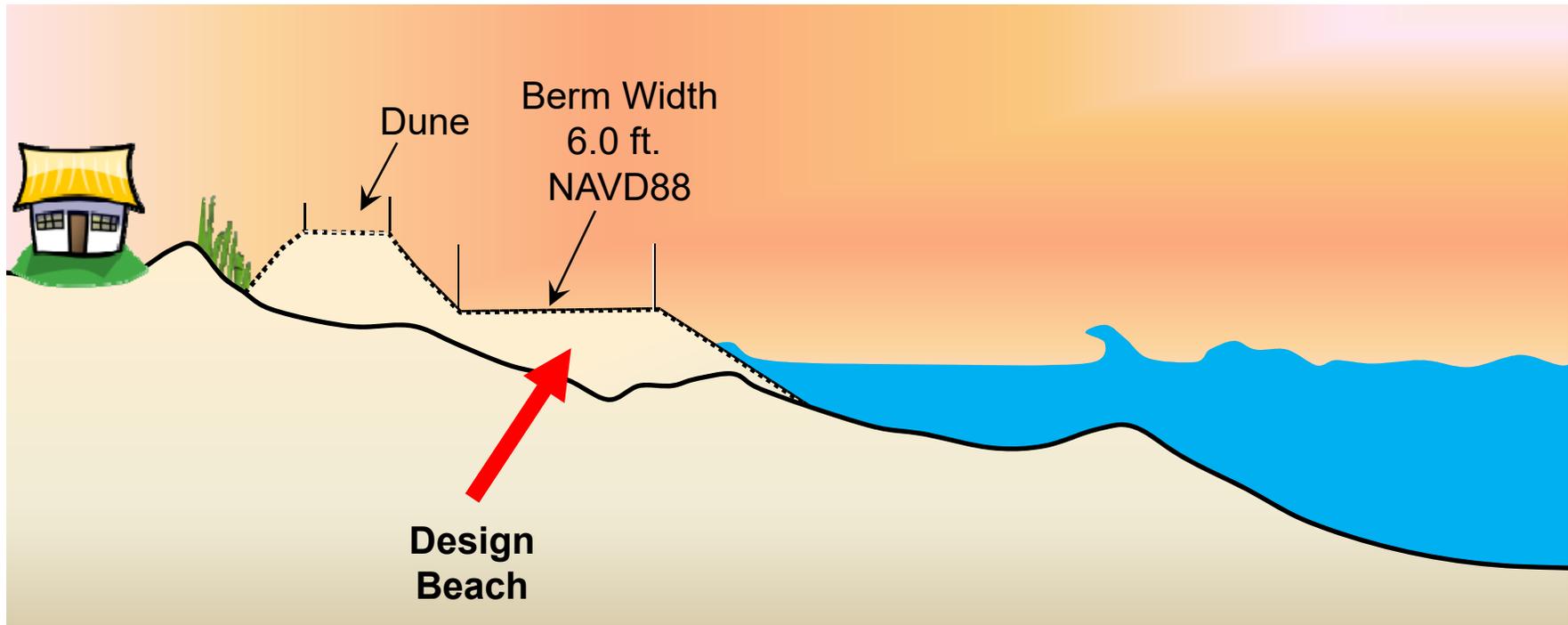


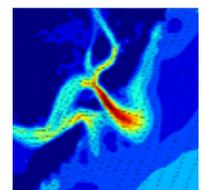
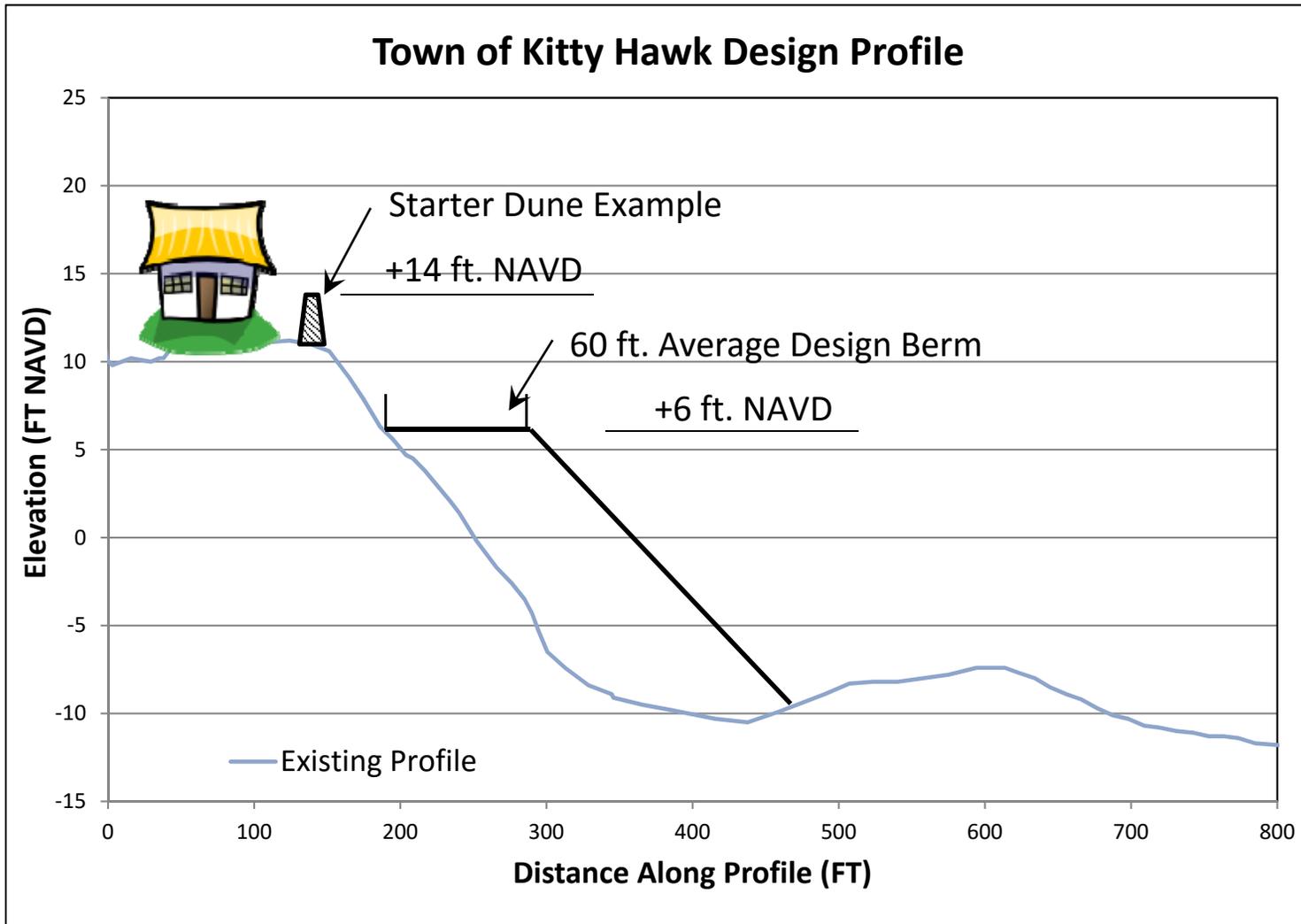
Kitty Hawk Shoreline



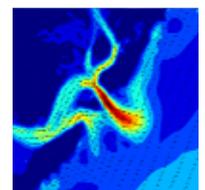


Storm Damage Reduction Project Design

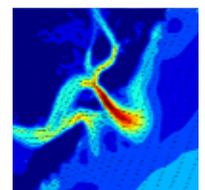




Kitty Hawk Berm and Dune



Starter Dune provides additional level of protection that can naturally build over time to increase protection.





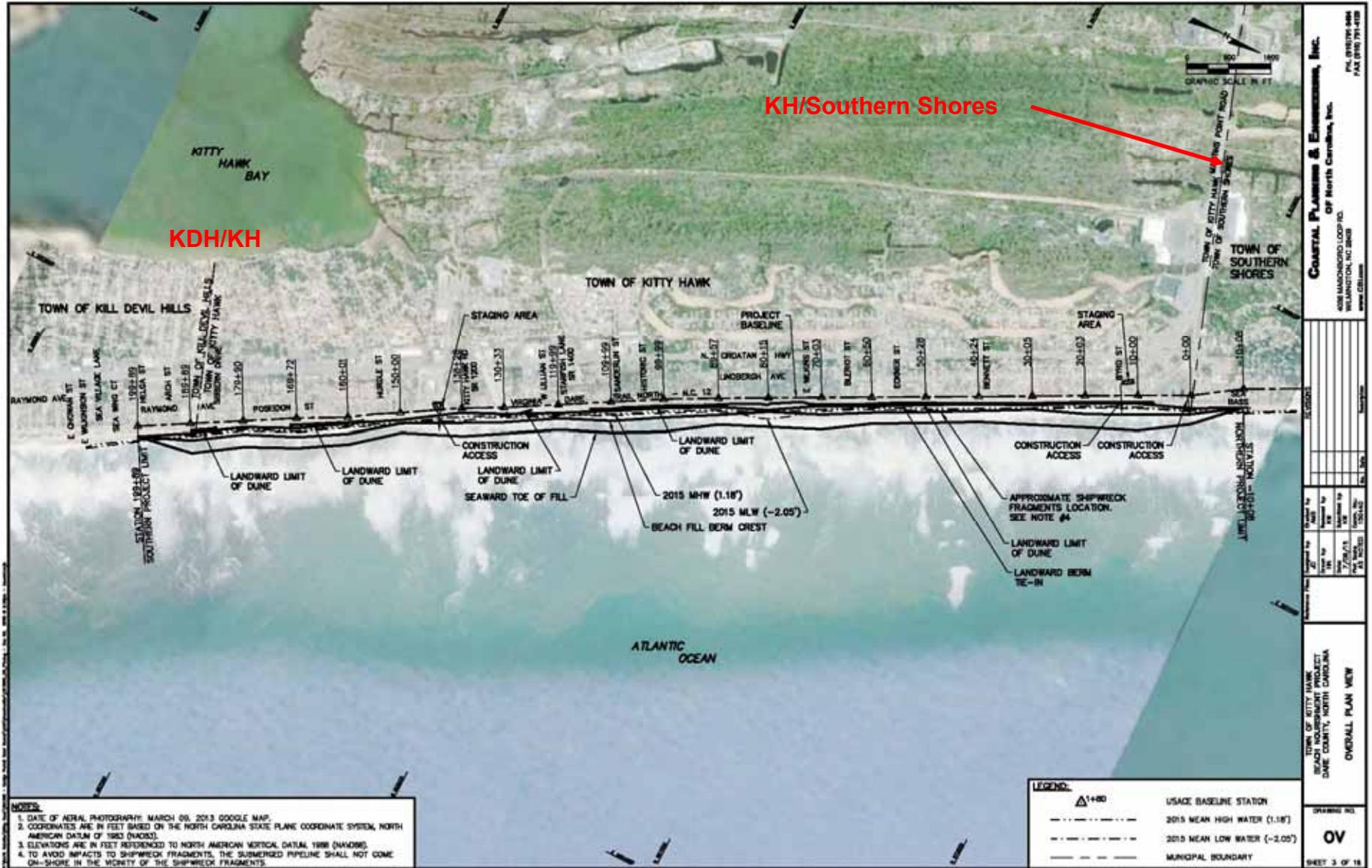
TOWN OF KITTY HAWK PAY PROFILES

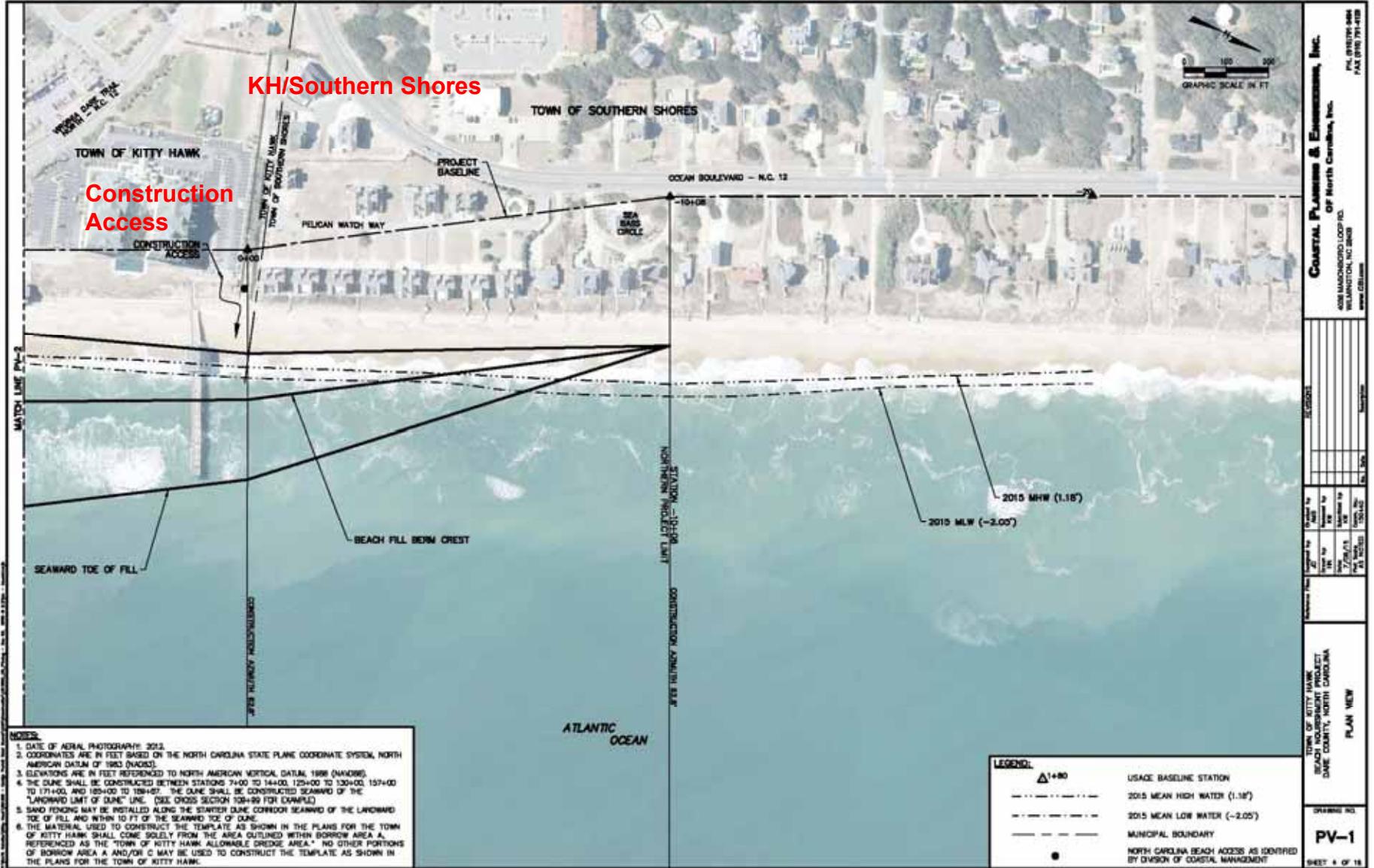
STATION	EASTING	NORTHING	AZ	DISTANCE TO NEXT
-10+00	2,971,167.48	871,973.14	62.6	106
-9+00	2,971,110.80	872,055.52	62.6	100
-8+00	2,971,054.12	872,137.91	62.6	100
-7+00	2,970,997.44	872,220.29	62.6	100
-6+00	2,970,940.77	872,302.68	62.6	100
-5+00	2,970,884.09	872,385.07	62.6	100
-4+00	2,970,827.41	872,467.45	62.6	100
-3+00	2,970,770.73	872,549.84	62.6	100
-2+00	2,970,714.05	872,632.23	62.6	100
-1+00	2,970,657.37	872,720.97	62.6	100
0+00	2,971,224.20	871,890.80	62.6	100
1+00	2,971,270.34	871,802.08	62.6	100
2+00	2,971,316.48	871,713.36	62.6	100
3+00	2,971,362.63	871,624.65	62.6	100
4+00	2,971,408.77	871,535.93	62.6	100
5+00	2,971,454.92	871,447.21	62.6	100
6+00	2,971,501.06	871,358.49	62.6	100
7+00	2,971,547.20	871,269.78	62.6	100
8+00	2,971,593.35	871,181.06	62.6	100
9+00	2,971,639.49	871,092.34	62.6	100
10+00	2,971,685.63	871,003.62	62.6	100
11+00	2,971,732.26	870,915.16	62.6	100
12+00	2,971,778.90	870,826.70	62.6	100
13+00	2,971,825.53	870,738.24	62.6	100
14+00	2,971,872.17	870,649.78	62.6	100
15+00	2,971,918.80	870,561.32	62.6	100
16+00	2,971,965.44	870,472.86	62.6	100
17+00	2,972,012.07	870,384.40	62.6	100
18+00	2,972,058.71	870,295.94	62.6	100
19+00	2,972,105.34	870,207.48	62.6	100
20+03	2,972,153.17	870,118.67	62.6	97
21+00	2,972,198.69	870,030.60	62.6	100
22+00	2,972,245.41	869,942.19	62.6	100
23+00	2,972,292.12	869,853.77	62.6	100
24+00	2,972,338.84	869,765.35	62.6	100
25+00	2,972,385.56	869,676.93	62.6	100
26+00	2,972,432.27	869,588.52	62.6	100
27+00	2,972,478.99	869,500.10	62.6	100
28+00	2,972,525.71	869,411.68	62.6	100
29+00	2,972,572.42	869,323.27	62.6	105
30+05	2,972,621.89	869,230.04	62.6	95
31+00	2,972,665.86	869,146.44	62.6	100
32+00	2,972,712.59	869,058.02	62.6	100
33+00	2,972,759.31	868,969.61	62.6	100
34+00	2,972,806.04	868,881.20	62.6	100
35+00	2,972,852.77	868,792.79	62.6	100
36+00	2,972,899.49	868,704.37	62.6	100
37+00	2,972,946.21	868,615.96	62.6	100
38+00	2,972,992.94	868,527.55	62.6	100
39+00	2,973,039.66	868,439.14	62.6	124
40+24	2,973,097.45	868,328.69	62.6	76
41+00	2,973,133.11	868,262.31	62.6	100
42+00	2,973,179.83	868,173.89	62.6	100
43+00	2,973,226.54	868,085.48	62.6	100
44+00	2,973,273.26	867,997.06	62.6	100
45+00	2,973,319.98	867,908.64	62.6	100
46+00	2,973,366.70	867,820.23	62.6	100
47+00	2,973,413.41	867,731.81	62.6	100
48+00	2,973,460.13	867,643.39	62.6	100
49+00	2,973,506.85	867,554.98	62.6	128
50+28	2,973,566.88	867,441.87	62.6	72

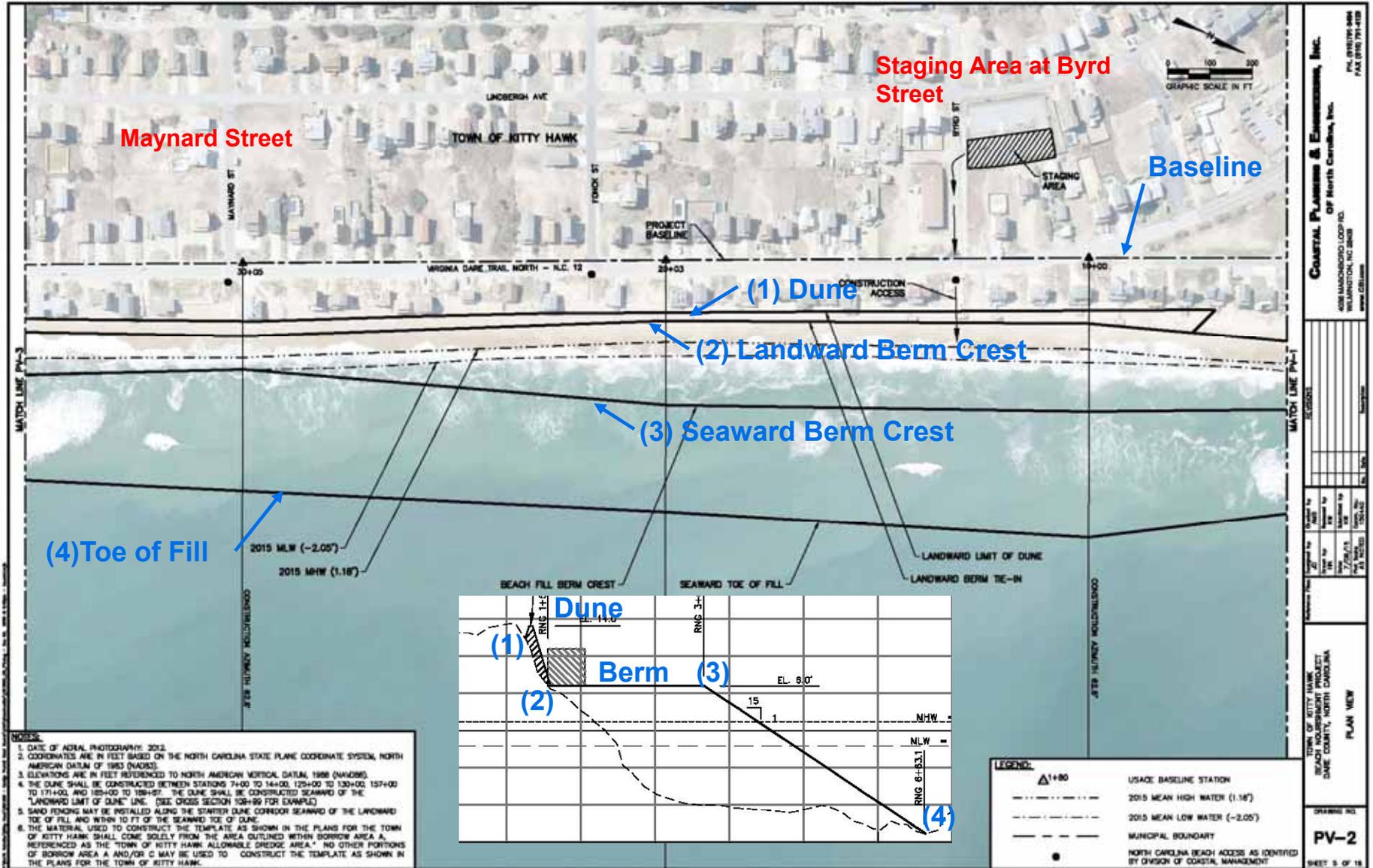
STATION	EASTING	NORTHING	AZ	DISTANCE TO NEXT
51+00	2,973,600.28	867,378.14	62.6	100
52+00	2,973,647.00	867,289.73	62.6	100
53+00	2,973,693.72	867,201.31	62.6	100
54+00	2,973,740.44	867,112.90	62.6	100
55+00	2,973,787.16	867,024.48	62.6	100
56+00	2,973,833.88	866,936.06	62.6	100
57+00	2,973,880.60	866,847.65	62.6	100
58+00	2,973,927.32	866,759.23	62.6	100
59+00	2,973,974.04	866,670.82	62.6	150
60+50	2,974,044.04	866,536.35	62.6	150
62+00	2,974,114.17	866,405.56	62.6	100
63+00	2,974,160.88	866,317.14	62.6	100
64+00	2,974,207.59	866,228.72	62.6	100
65+00	2,974,254.30	866,140.30	62.6	100
66+00	2,974,301.01	866,051.88	62.6	100
67+00	2,974,347.72	865,963.45	62.6	100
68+00	2,974,394.44	865,875.03	62.6	100
69+00	2,974,441.15	865,786.61	62.6	103
70+03	2,974,489.14	865,695.84	62.6	97
71+00	2,974,534.55	865,609.77	62.6	100
72+00	2,974,581.27	865,521.36	62.6	100
73+00	2,974,627.99	865,432.94	62.6	100
74+00	2,974,674.71	865,344.52	62.6	100
75+00	2,974,721.42	865,256.11	62.6	100
76+00	2,974,768.14	865,167.69	62.6	100
77+00	2,974,814.86	865,079.27	62.6	100
78+00	2,974,861.58	864,990.86	62.6	100
79+00	2,974,908.29	864,902.44	62.6	115
80+15	2,974,952.02	864,800.83	62.6	85
81+00	2,975,001.73	864,725.61	62.6	100
82+00	2,975,048.44	864,637.19	62.6	100
83+00	2,975,095.16	864,548.77	62.6	100
84+00	2,975,141.87	864,460.35	62.6	100
85+00	2,975,188.59	864,371.94	62.6	100
86+00	2,975,235.30	864,283.52	62.6	100
87+00	2,975,282.02	864,195.10	62.6	100
88+00	2,975,328.73	864,106.68	62.6	157
89+57	2,975,401.91	863,968.19	62.6	43
90+00	2,975,422.63	863,930.10	61.5	100
91+00	2,975,470.41	863,842.25	61.5	100
92+00	2,975,516.20	863,754.41	61.5	100
93+00	2,975,565.99	863,666.57	61.5	100
94+00	2,975,613.77	863,578.72	61.5	100
95+00	2,975,661.56	863,490.88	61.5	100
96+00	2,975,709.35	863,403.04	61.5	100
97+00	2,975,757.13	863,315.19	61.5	100
98+00	2,975,804.92	863,227.35	61.5	100
99+00	2,975,852.71	863,139.51	61.5	98
99+99	2,975,900.20	863,052.18	61.5	101
101+00	2,975,951.11	862,965.42	61.5	100
102+00	2,976,001.72	862,879.17	61.5	100
103+00	2,976,052.32	862,792.92	61.5	100
104+00	2,976,102.92	862,706.67	61.5	100
105+00	2,976,153.52	862,620.41	61.5	100
106+00	2,976,204.13	862,534.16	61.5	100
107+00	2,976,254.73	862,447.91	61.5	100
108+00	2,976,305.33	862,361.66	61.5	100
109+00	2,976,355.93	862,275.41	61.5	98
109+99	2,976,406.09	862,189.91	61.5	101
111+00	2,976,457.14	862,102.90	59.6	100
112+00	2,976,507.74	862,016.65	59.6	100

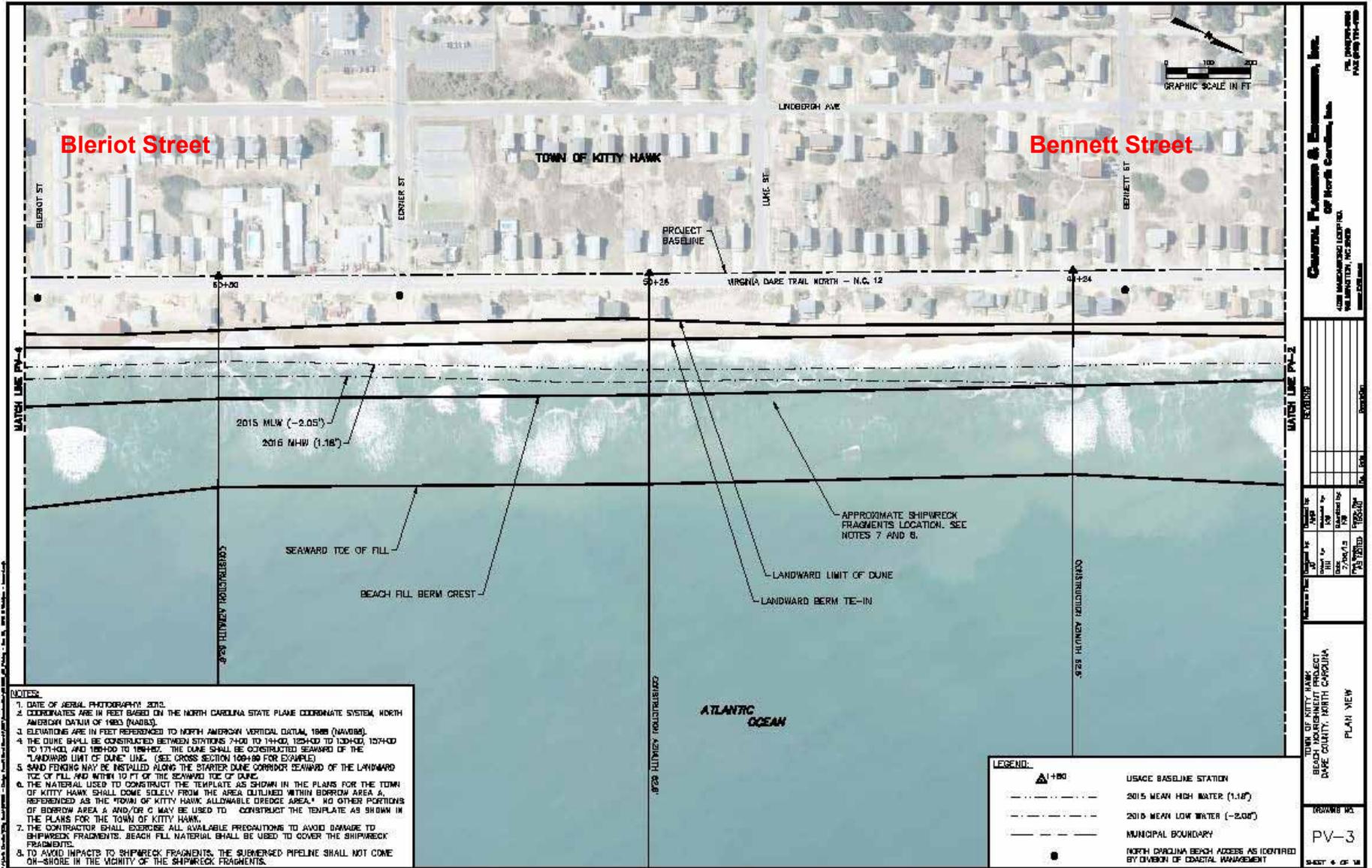
STATION	EASTING	NORTHING	AZ	DISTANCE TO NEXT
113+00	2,976,558.34	861,930.39	59.6	100
114+00	2,976,608.94	861,844.14	59.6	100
115+00	2,976,659.54	861,757.89	59.6	100
116+00	2,976,710.14	861,671.63	59.6	100
117+00	2,976,760.73	861,585.38	59.6	100
118+00	2,976,811.33	861,499.13	59.6	100
119+00	2,976,861.93	861,412.87	59.6	99
119+99	2,976,911.94	861,327.71	59.6	101
121+00	2,976,963.14	861,240.37	59.6	100
122+00	2,977,013.75	861,154.12	59.6	100
123+00	2,977,064.35	861,067.87	59.6	100
124+00	2,977,114.96	860,981.62	59.6	100
125+00	2,977,165.57	860,895.37	59.6	100
126+00	2,977,216.17	860,809.12	59.6	100
127+00	2,977,266.78	860,722.87	59.6	100
128+00	2,977,317.39	860,636.62	59.6	100
129+00	2,977,367.99	860,550.37	59.6	133
130+33	2,977,435.12	860,435.98	59.6	67
131+00	2,977,456.99	860,376.63	59.6	100
132+00	2,977,514.30	860,288.53	59.6	100
133+00	2,977,561.61	860,200.43	59.6	100
134+00	2,977,608.93	860,112.33	59.6	100
135+00	2,977,656.24	860,024.23	59.6	100
136+00	2,977,703.55	859,936.13	59.6	100
137+00	2,977,750.86	859,848.03	59.6	128
138+28	2,977,811.33	859,735.48	59.6	72
139+00	2,977,849.46	859,674.13	59.6	100
140+00	2,977,902.27	859,589.21	59.6	100
141+00	2,977,955.08	859,504.29	59.6	100
142+00	2,978,007.89	859,419.37	59.6	100
143+00	2,978,060.69	859,334.45	59.6	100
144+00	2,978,113.50	859,249.54	59.6	100
145+00	2,978,166.31	859,164.62	59.6	100
146+00	2,978,219.12	859,079.70	59.6	100
147+00	2,978,271.93	858,994.78	59.6	100
148+00	2,978,324.73	858,909.86	59.6	100
149+00	2,978,377.54	858,824.94	59.6	100
150+00	2,978,430.26	858,740.05	59.6	100
151+00	2,978,480.96	858,655.77	59.6	100
152+00	2,978,531.57	858,567.52	59.6	100
153+00	2,978,582.18	858,481.27	59.6	100
154+00	2,978,632.79	858,395.03	59.6	100
155+00	2,978,683.40	858,308.78	59.6	100
156+00	2,978,733.99	858,222.27	59.6	100
157+00	2,978,784.58	858,135.77	59.6	100
158+00	2,978,835.17	858,049.27	59.6	100
159+00	2,978,885.76	857,962.77	59.6	101
160+01	2,978,936.59	857,895.27	59.6	98
161+00	2,979,011.50	857,808.30	59.6	100
162+00	2,979,060.95	857,720.28	59.6	100
163+00	2,979,108.40	857,632.25	59.6	100
164+00	2,979,155.85	857,544.23	59.6	100
165+00	2,979,203.31	857,456.21	59.6	100
166+00	2,979,250.80	857,368.20	59.6	100
167+00	2,979,298.29	857,280.20	59.6	100
168+00	2,979,345.78	857,192.20	59.6	100
169+00	2,979,393.27	857,104.19	59.6	72
169+72	2,979,427.86	857,040.44	59.6	128
171+00	2,979,492.28	856,930.45	59.6	100
172+00	2,979,542.92	856,844.22	59.6	100
173+00	2,979,593.56	856,758.00	59.6	100

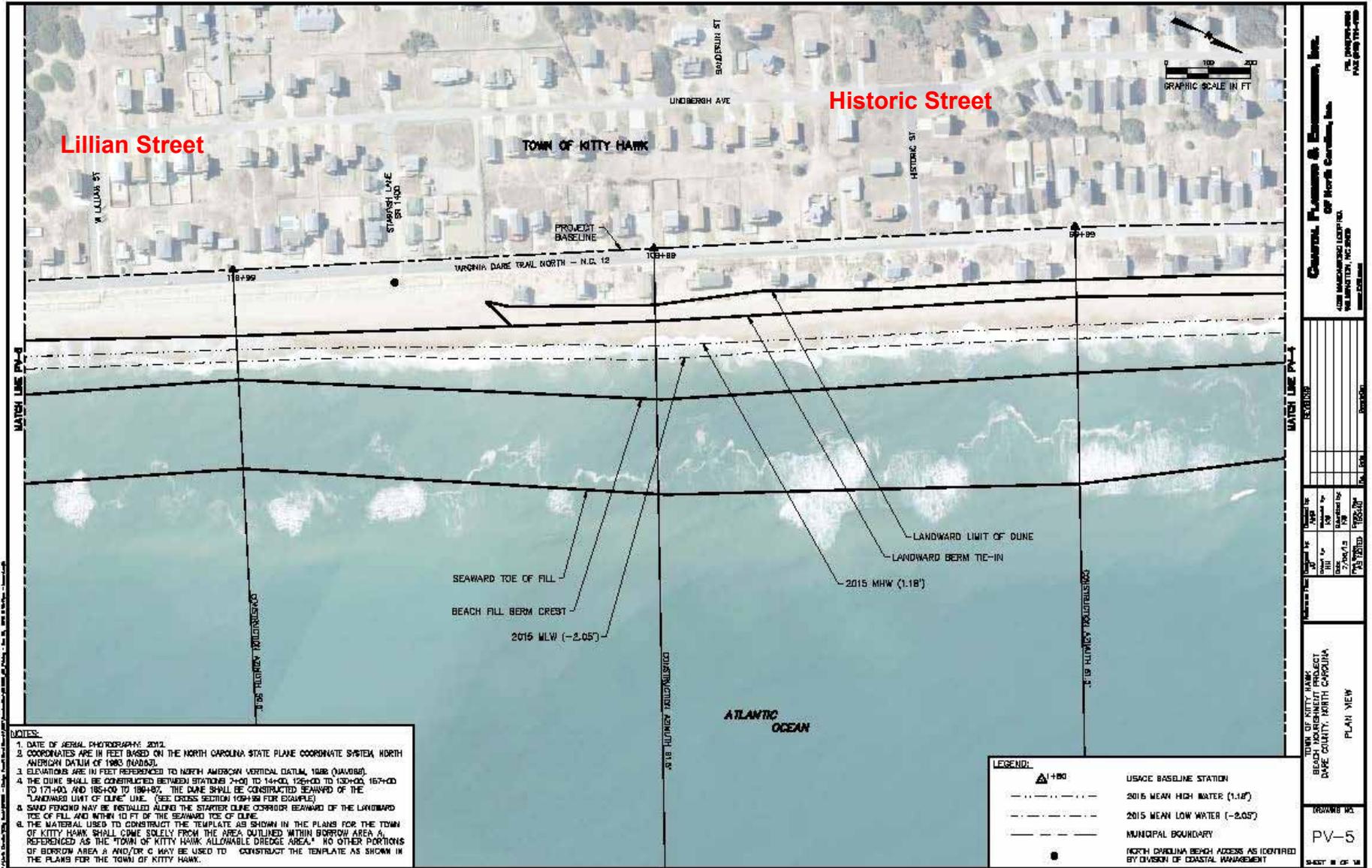
STATION	EASTING	NORTHING	AZ	DISTANCE TO NEXT
174+00	2,979,644.21	856,671.77	59.6	100
175+00	2,979,694.84	85		

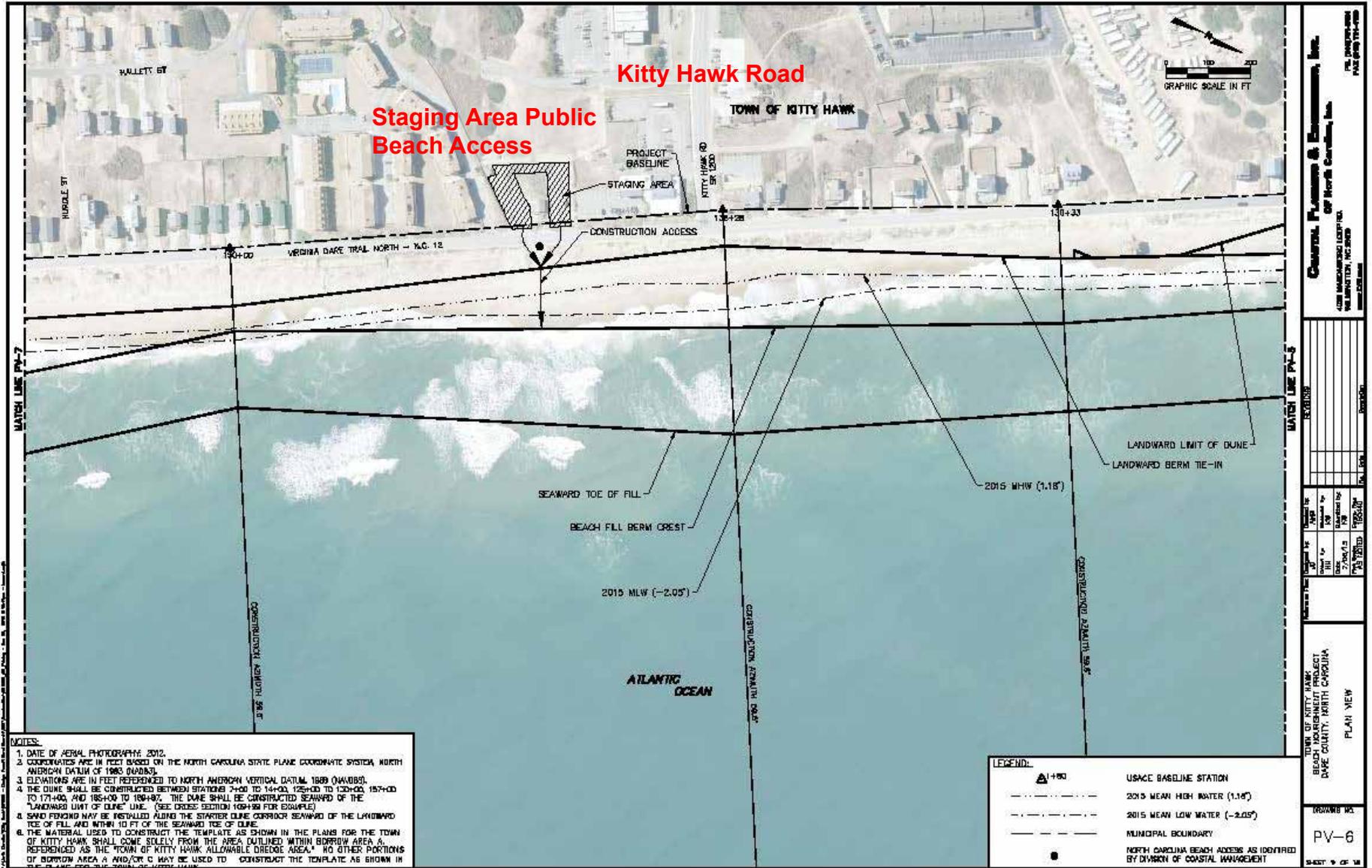


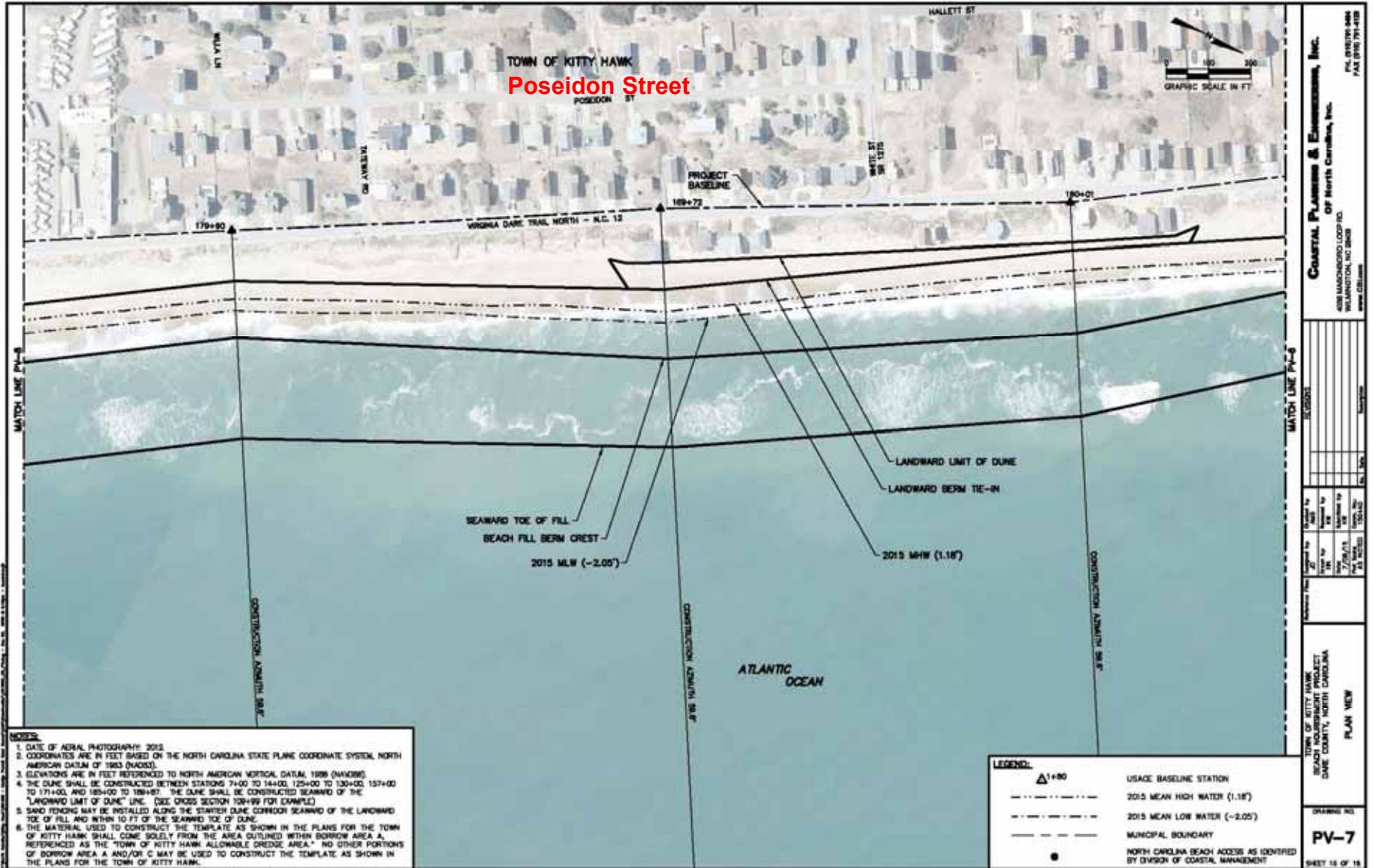


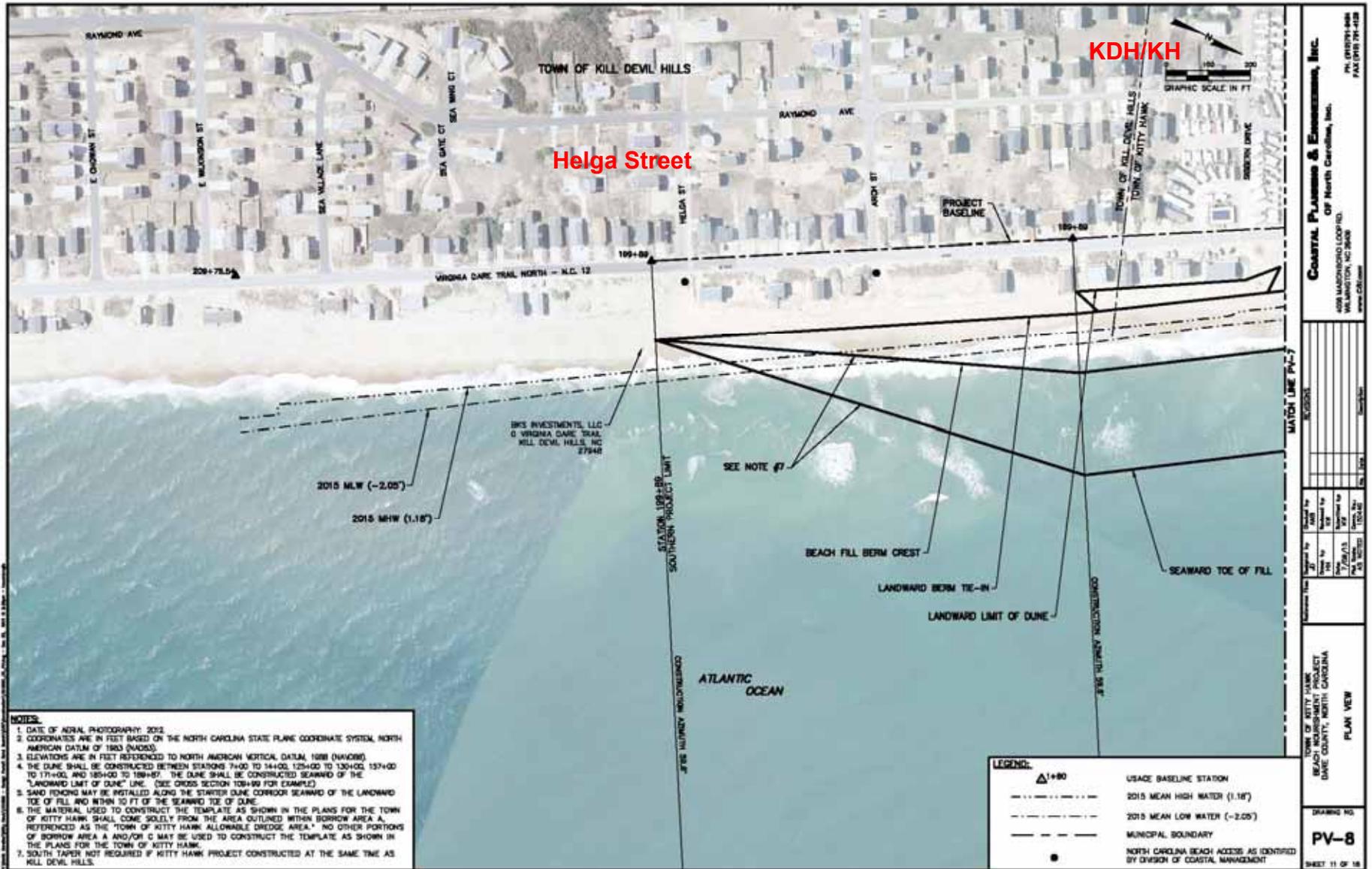


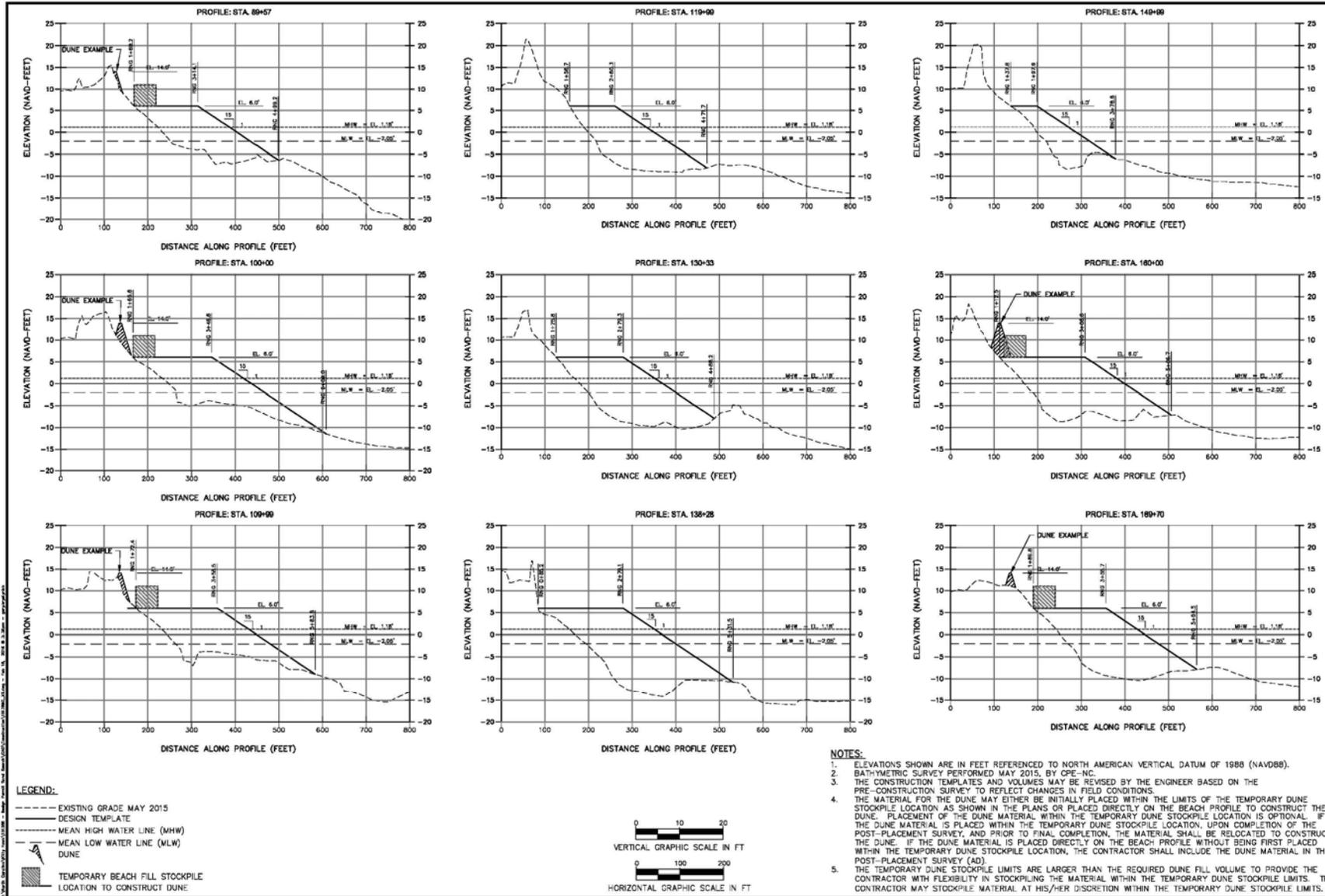












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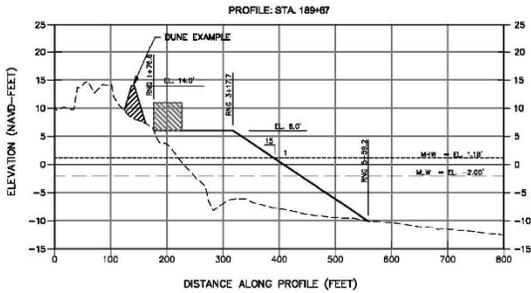
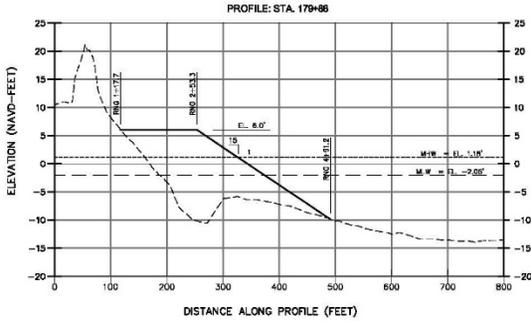
Project No.	170004	Sheet No.	204
Scale	AS SHOWN	Date	7/20/15
Drawn by	HW	Checked by	HW
Designed by	HW	Reviewed by	HW
Author	HW	Approved by	HW

**TOWN OF KITTY HAWK
BEACH FILL PROJECT
DARE COUNTY, NORTH CAROLINA**

BEACH FILL PROFILES

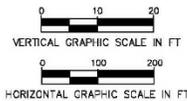
DRAWING NO. **XS-2**

SHEET 13 OF 18



LEGEND:

- EXISTING GRADE MAY 2015
- DESIGN TEMPLATE
- MEAN HIGH WATER LINE (MHW)
- .-.- MEAN LOW WATER LINE (MLW)
- ▲ DUNE
- ▨ TEMPORARY BEACH FILL STOCKPILE LOCATION TO CONSTRUCT DUNE



NOTES:

1. ELEVATIONS SHOWN ARE IN FEET REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. BATHYMETRIC SURVEY PERFORMED MAY 2015, BY CPE-NC.
3. THE CONSTRUCTION TEMPLATES AND VOLUMES MAY BE REVISED BY THE ENGINEER BASED ON THE PRE-CONSTRUCTION SURVEY TO REFLECT CHANGES IN FIELD CONDITIONS.
4. THE MATERIAL FOR THE DUNE MAY EITHER BE INITIALLY PLACED WITHIN THE LIMITS OF THE TEMPORARY DUNE STOCKPILE LOCATION AS SHOWN IN THE PLANS OR PLACED DIRECTLY ON THE BEACH PROFILE TO CONSTRUCT THE DUNE. PLACEMENT OF THE DUNE MATERIAL WITHIN THE TEMPORARY DUNE STOCKPILE LOCATION IS OPTIONAL. IF THE DUNE MATERIAL IS PLACED WITHIN THE TEMPORARY DUNE STOCKPILE LOCATION, UPON COMPLETION OF THE POST-PLACEMENT SURVEY, AND PRIOR TO FINAL COMPLETION, THE MATERIAL SHALL BE RELOCATED TO CONSTRUCT THE DUNE. IF THE DUNE MATERIAL IS PLACED DIRECTLY ON THE BEACH PROFILE WITHOUT BEING FIRST PLACED WITHIN THE TEMPORARY DUNE STOCKPILE LOCATION, THE CONTRACTOR SHALL INCLUDE THE DUNE MATERIAL IN THE POST-PLACEMENT SURVEY (AD).
5. THE TEMPORARY DUNE STOCKPILE LIMITS ARE LARGER THAN THE REQUIRED DUNE FILL VOLUME TO PROVIDE THE CONTRACTOR WITH FLEXIBILITY IN STOCKPILING THE MATERIAL WITHIN THE TEMPORARY DUNE STOCKPILE LIMITS. THE CONTRACTOR MAY STOCKPILE MATERIAL AT HIS/HER DISCRETION WITHIN THE TEMPORARY DUNE STOCKPILE LIMITS.

Coastal Planning & Engineering, Inc.
OF North Carolina, Inc.

4208 HANCOCK ROAD, RD.
WILMINGTON, NC 28409
www.CPE.com

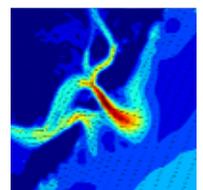
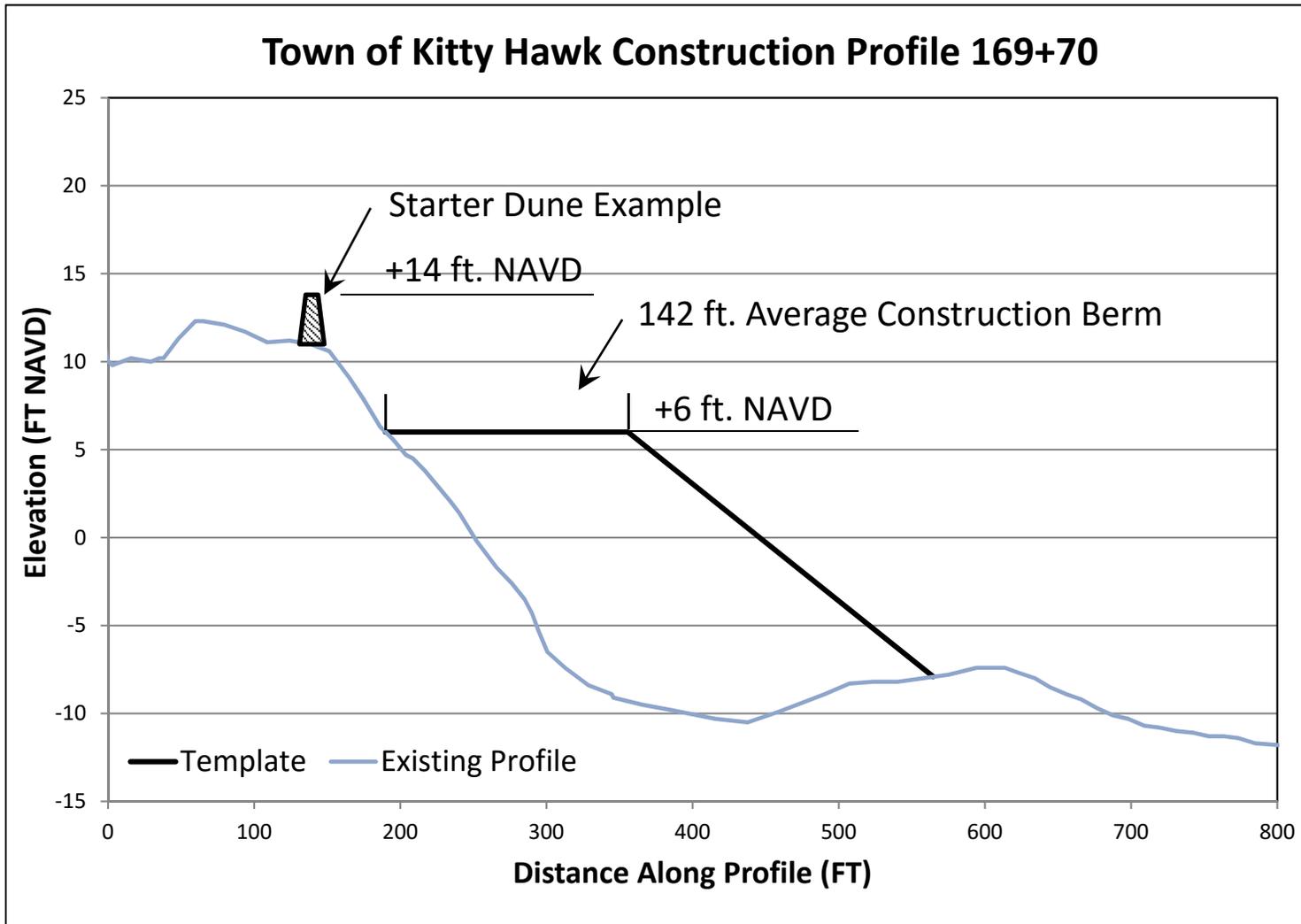
PH. (910) 791-9444
FAX (910) 791-4129

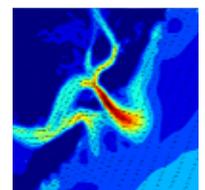
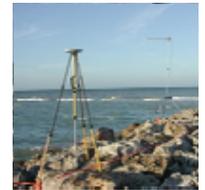
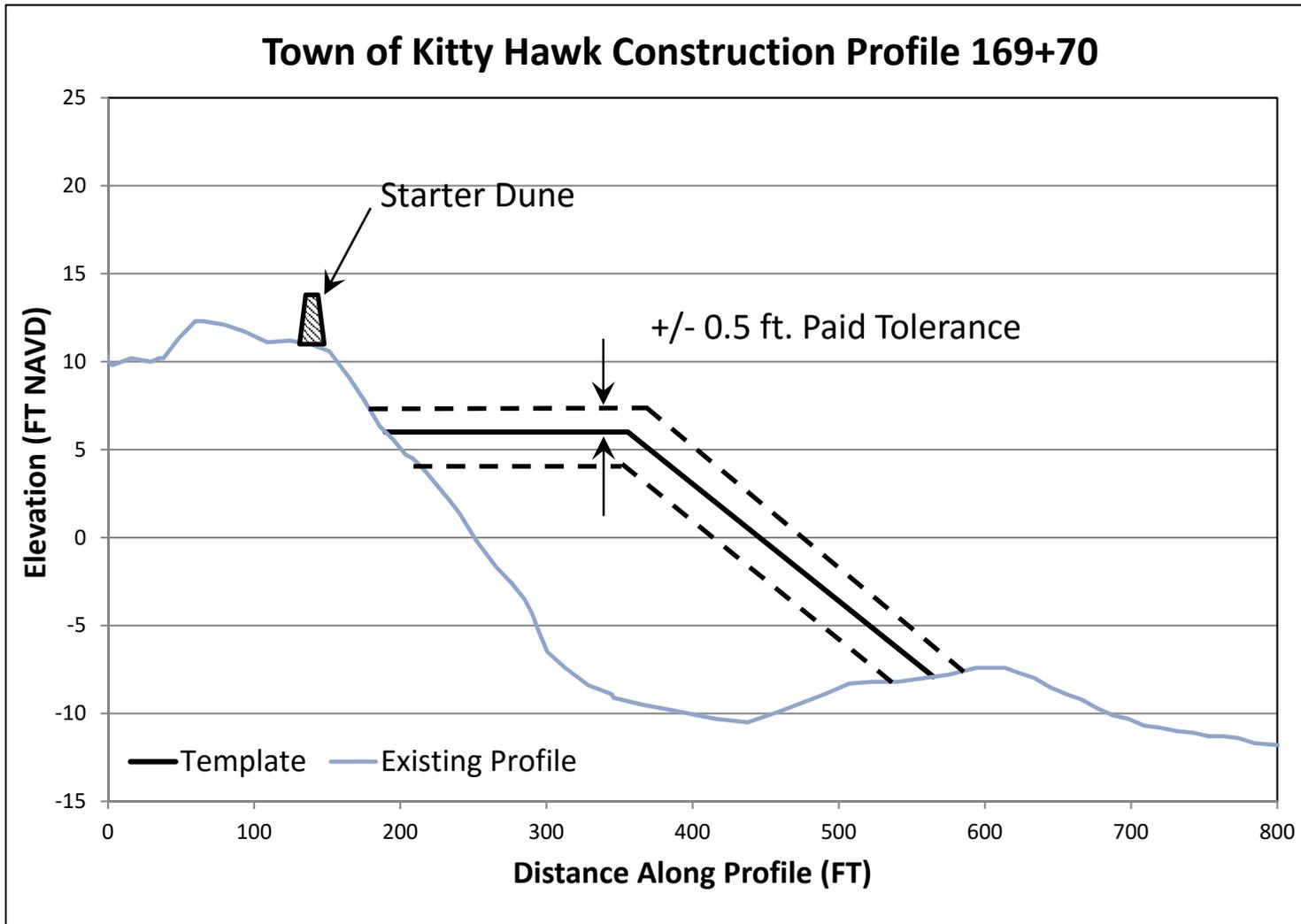
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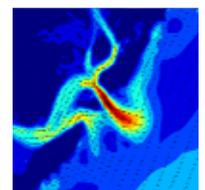
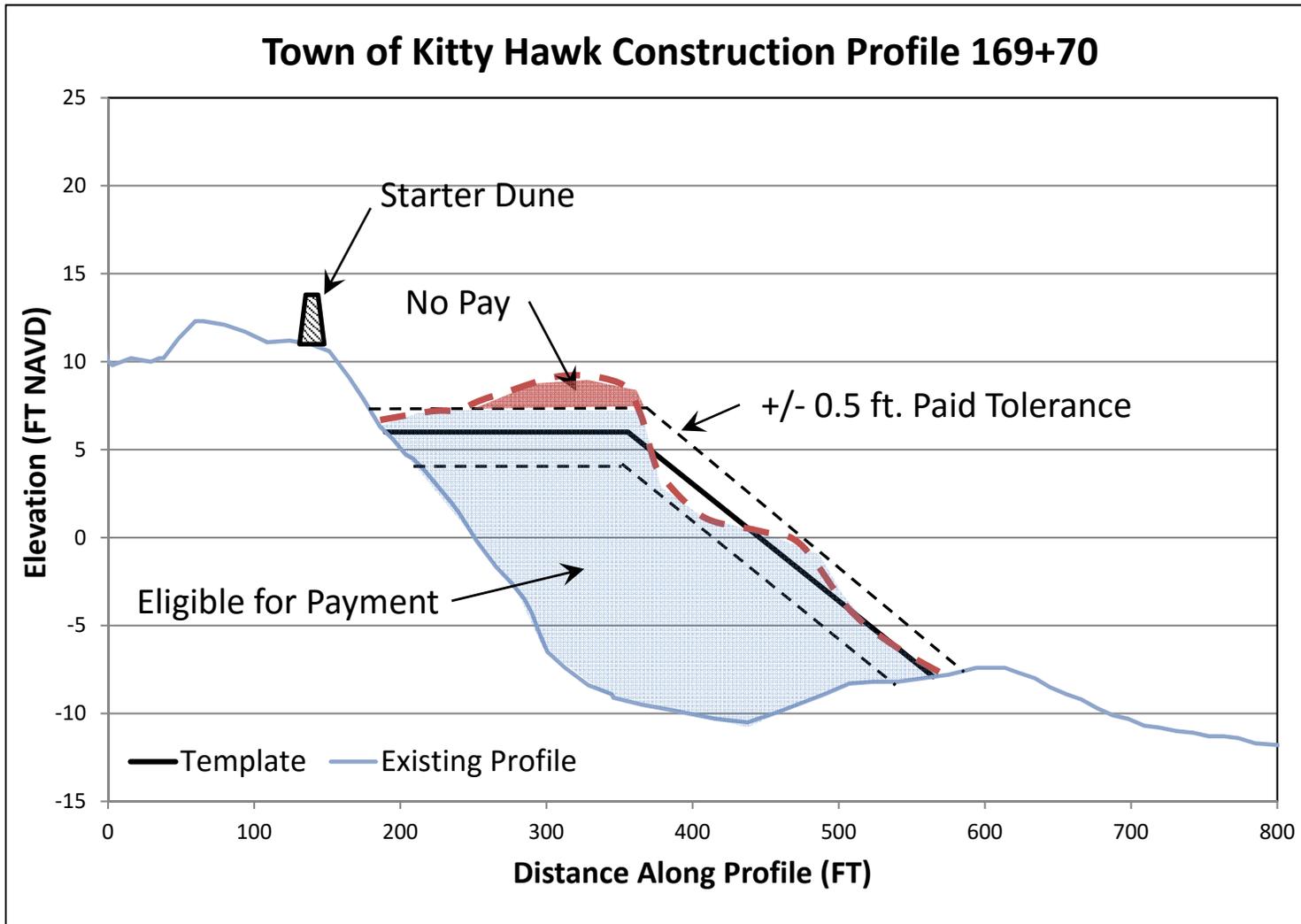
**TOWN OF KITTY HAWK
BEACH, NORTH CAROLINA
DARE COUNTY, NORTH CAROLINA
BEACH FILL PROFILES**

DRAWING NO.
XS-3

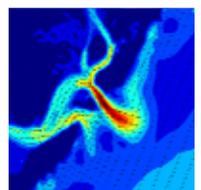
SHEET 14 OF 18





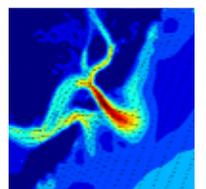


- Background
- Beach Fill Design/Construction Plans
- **South Southern Shores Extension Project**
- Borrow Area Design/Construction Plans
- Construction Photos
- Bid Items and Schedule
- Monitoring/Renourishment
- Questions

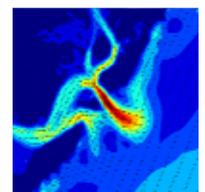
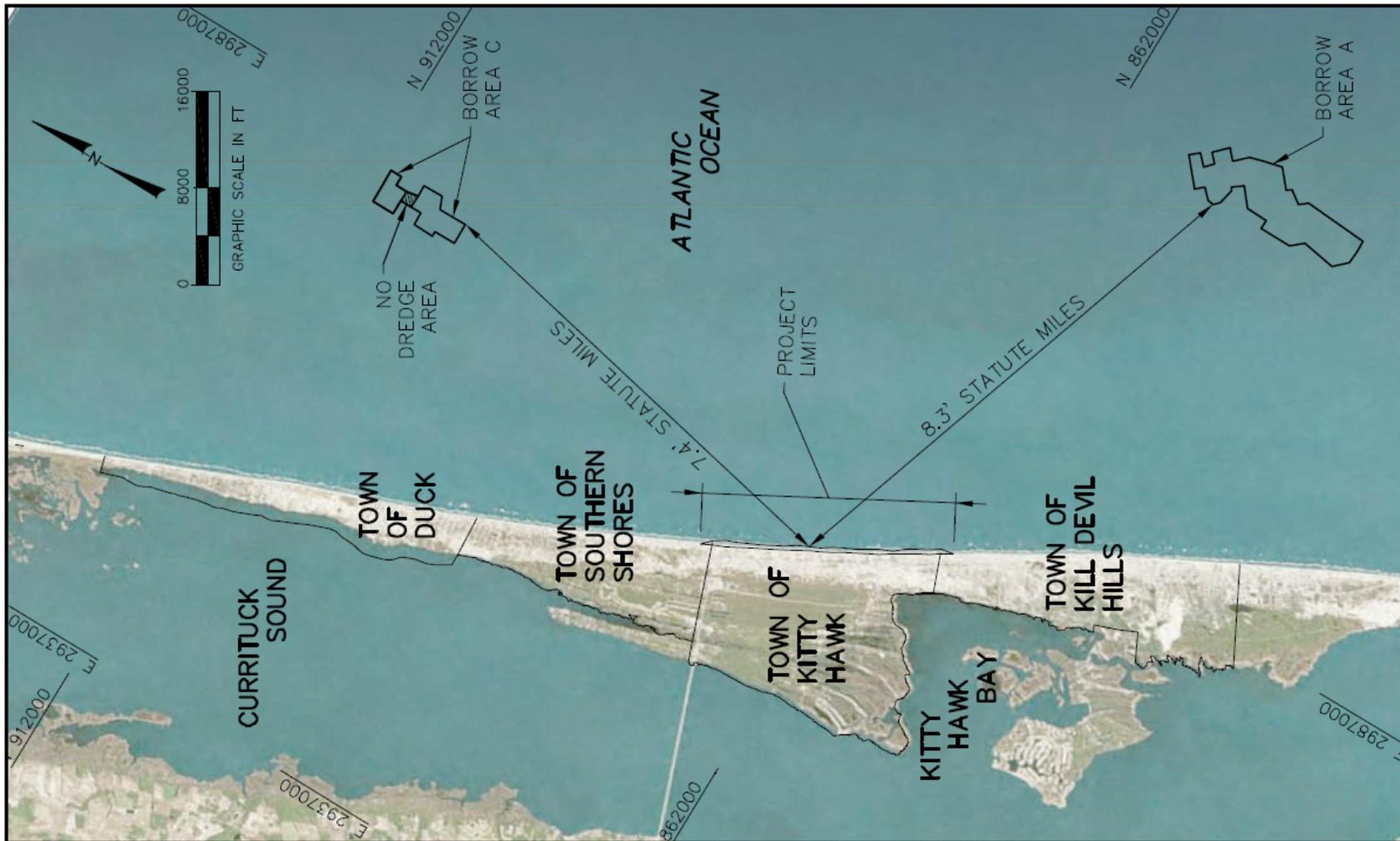


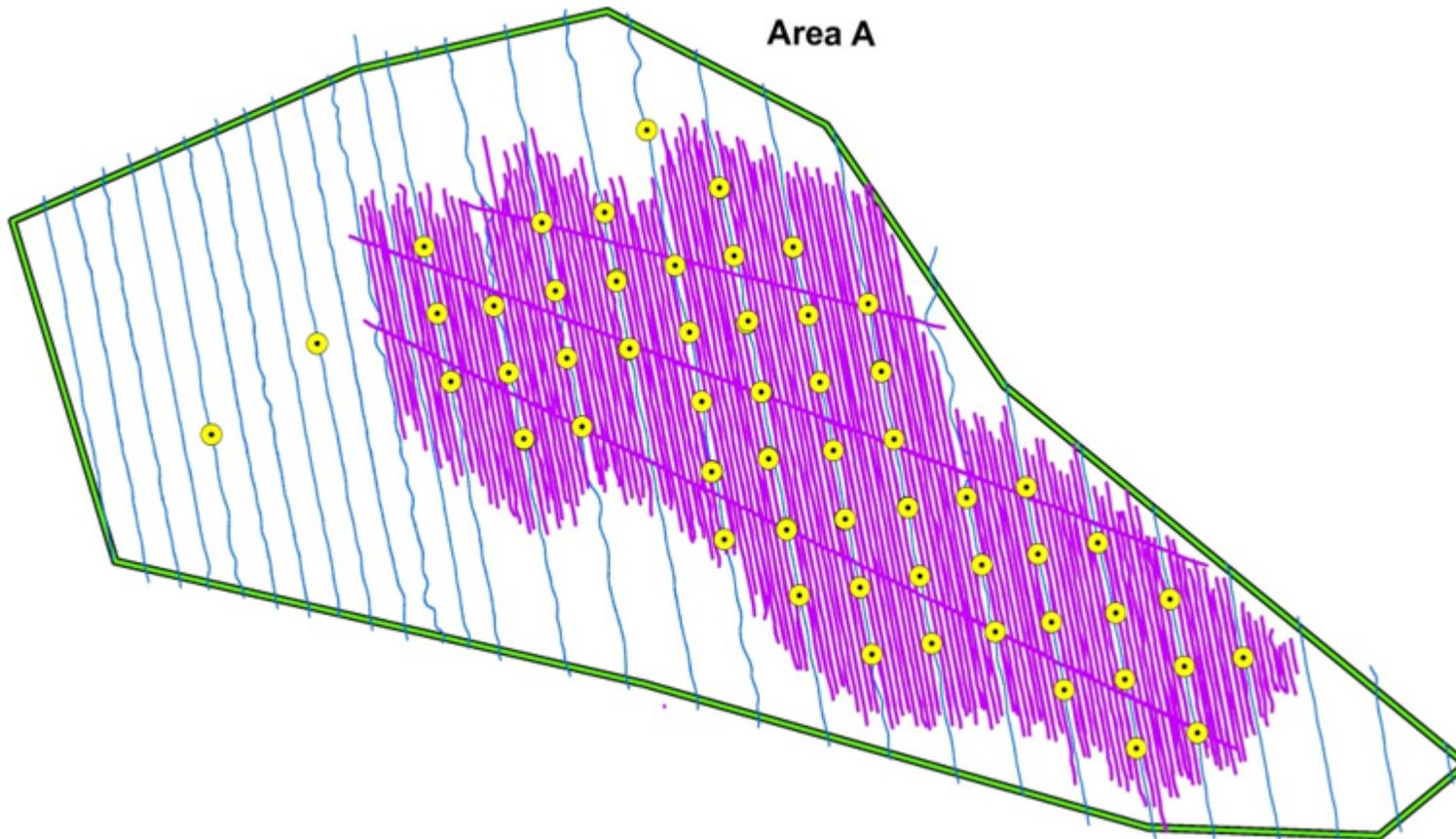


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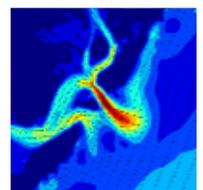


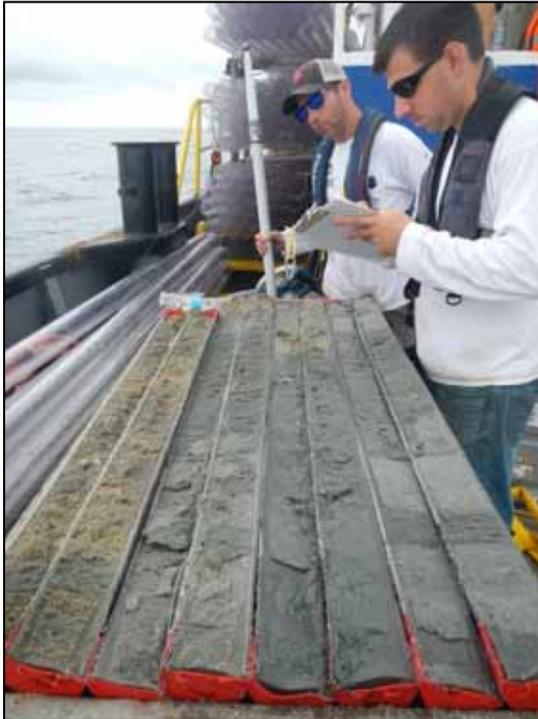
Borrow Areas



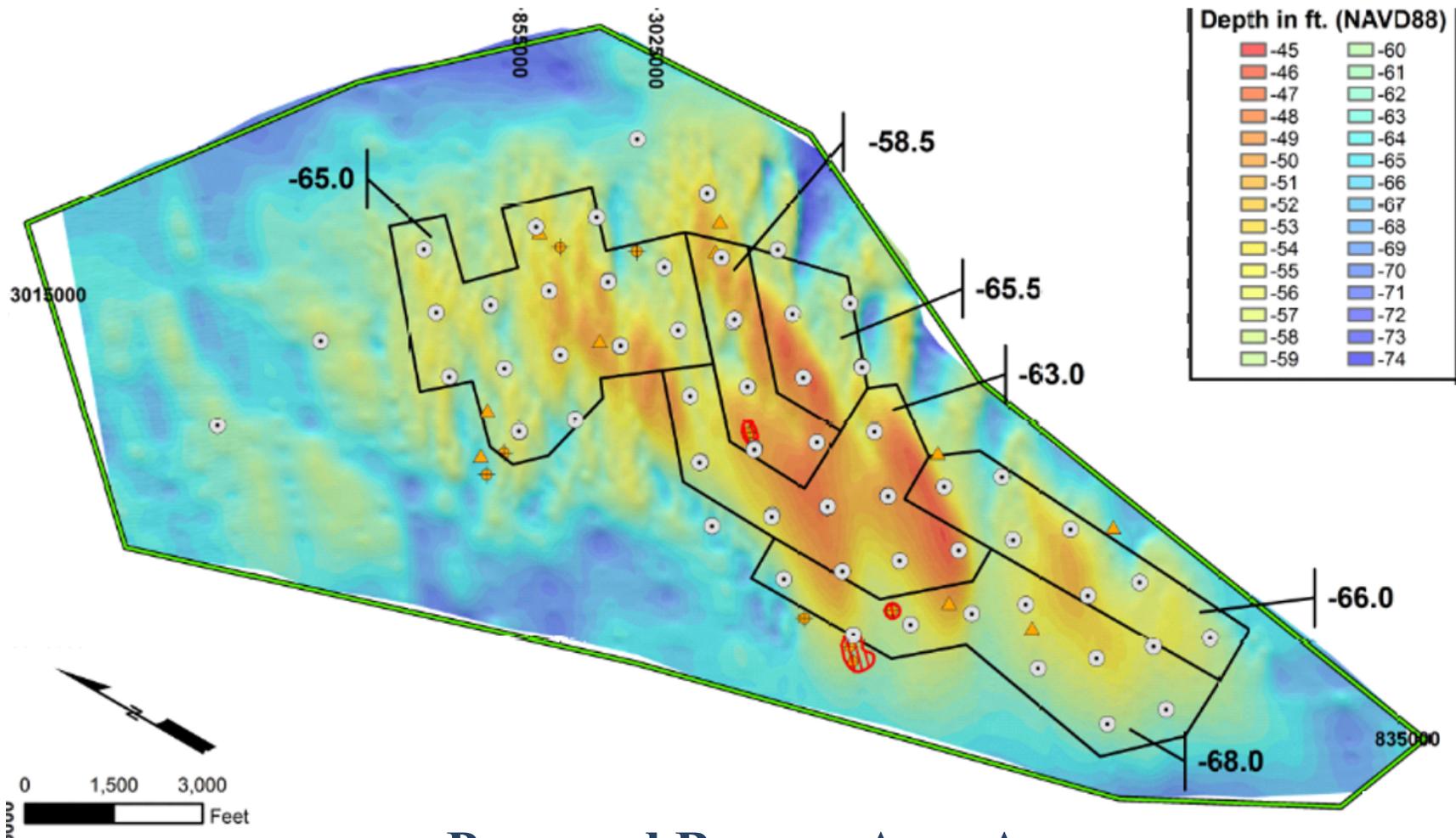


Locations of geophysical tracklines surveyed and vibracores collected during Phase II and III.

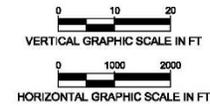
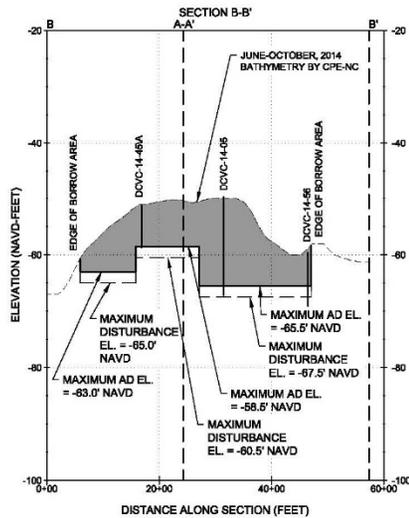
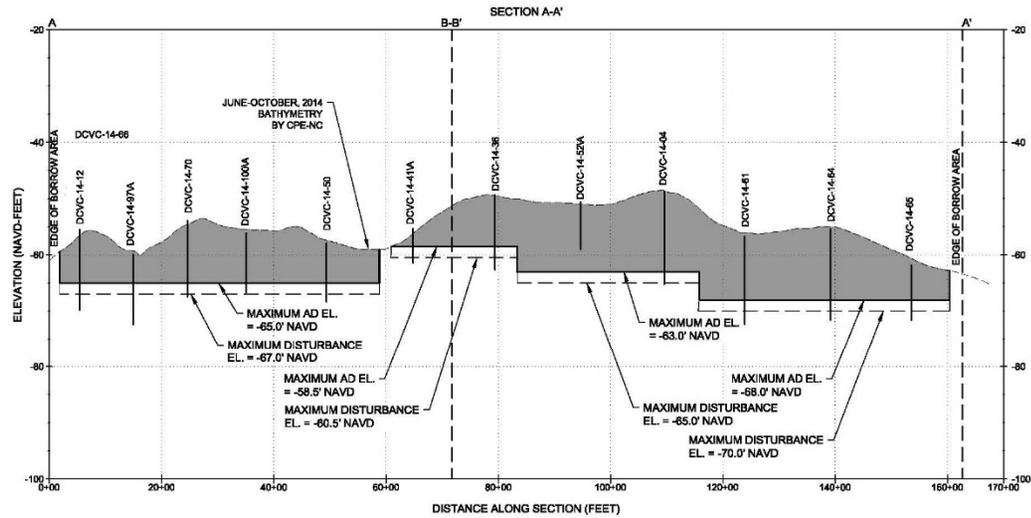




- Vibracore Analysis
 - Grain Size, Sorting, Silt %, Munsell Color, Shell Hash, Carbonate %



Proposed Borrow Area A
Proposed Design Area = 1,246 Acres
Proposed Design Volume = 17,806,000 cy



NOTES:

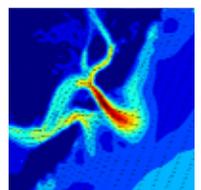
1. ELEVATIONS ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1985 (NAVD88).
2. BATHYMETRIC SURVEY PERFORMED JUNE-OCTOBER, 2014, BY CPE-NC.
3. THE MAXIMUM AFTER DREDGE (AD) ELEVATIONS SHOWN ARE THE MAXIMUM DEPTHS ALLOWED WITHIN THE BORROW AREA PER THE PERMITS AND BASED ON THE AD SURVEY.
4. 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. SEE TECHNICAL PROVISION 8.

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 408 MARLBORO LOOP, RD.
 WILMINGTON, NC 28409
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 FAX: (910) 791-4129

REV	DATE	BY	CHECKED BY	DESCRIPTION

DRAWING NO. **XS-1**
 SHEET 16 OF 19

- Background
- Beach Fill Design/Construction Plans
- South Southern Shores Extension Project
- Borrow Area Design/Construction Plans
- **Construction Photos**
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- Questions





Construction Photos - Fill Area Overview



(C) 2014 Photos from the Air - All Rights Reserved



Construction Photos - Fill Area Overview















Construction Photos – Hold Harmless In Place









Construction Photos – Lighting Shields

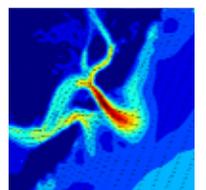




Construction Photos – Lighting Shields



- Background
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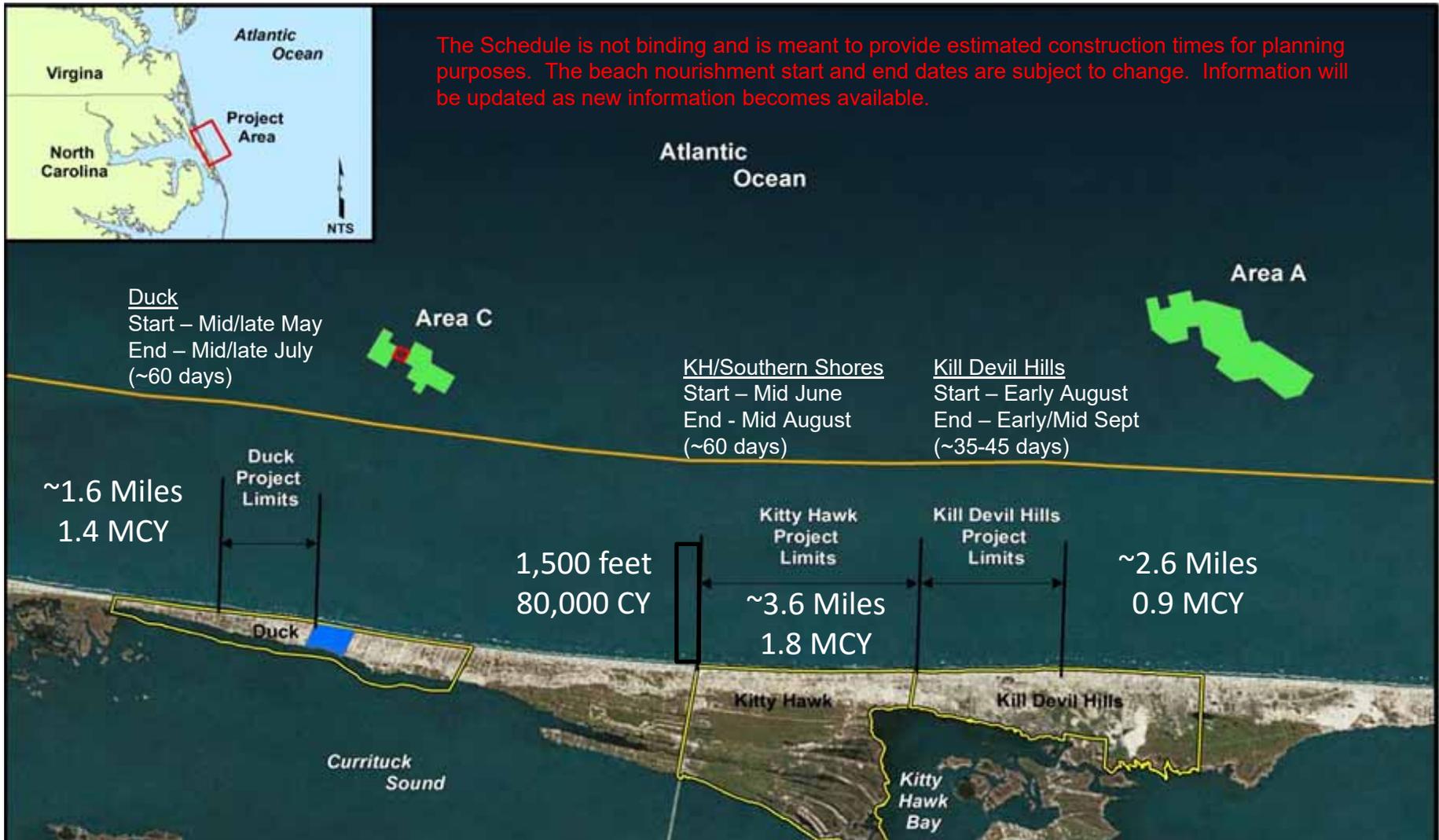
- Base Bid Items
 - 3 Towns
 - Mob/Demob, Bonds, BA surveys and Turtle Trawling (5 days)
 - Beach Fill
 - Sand Fencing
- Discretionary Bid Items
 - Potential Unsuitable Fill Material
 - Screening/Removal
 - Environmental Protection
 - Relocation Trawling
 - Tilling
 - Turbidity Monitoring
 - Dredge Standy Rates
 - Owner or Regulatory Agency shuts down work (not weather/mechanical delays)

- Network for Endangered Sea Turtles (N.E.S.T.)
- May 1 through Nov 15
- Nesting Surveys between sunrise and 9 am – must clear beach
- Limits of beach fill reduced
- Nighttime turtle observer on-site/Escort outside of active work zone
- Sea Turtle observed – Work stopped within 500 ft.
- Lays nest – Work shall not resume within 500 ft. until relocated
- <http://nestonline.org/>



Courtesy of N.E.S.T

TENTATIVE Schedule



Approx. 8.3 miles and 4.1 MCY



Frequently Asked Questions

- **Why does the sand pumped onto the beach initially appear to be a darker color?**
- **What impacts can be expected during nourishment construction?**
- **What if the contracted volume is reached before all sections of the project area receive sand?**
- **What will happen to the organisms, such as sand fleas, that live on the beach and in the surf zone?**
- **Why are there escarpments on the beach?**
- **Why don't we have federal assistance like Wrightsville Beach or Virginia Beach?**
- **What do you mean by FEMA-reimbursed nourishment?**
- **What happens if a storm hits and damages the beach?**
- **How long will construction take place in front of a particular property?**
- **Why is dredging occurring during the summer months?**

- Construction
- Monitoring
- Analysis of Conditions
- Nourishment / Renourishment



Thank you!

Contact

Julien Devisse, P.E.
Project Engineer
Julien.Devisse@cbi.com
(910) 791-9494 – Office



Frequently Asked Questions

Why does the sand pumped onto the beach initially appear to be a darker color? The sand has been buried and unexposed to sunlight. Once exposed to the elements, this disappears quickly and the material will match the existing sand.

What impacts can be expected during nourishment construction? Once the project starts the contractor will be working 24/7 to complete the project as quickly as possible. To ensure public safety during this time, direct access to the beach in front of a given property will be prohibited. The contractor will install caution tape at crossovers that lead to the active construction area.

Likewise, the contractor will install a temporary barrier on the northern and southern boundary of the active construction area to prohibit pedestrian traffic.

In the immediate construction zone, the sound of heavy equipment, including backup alarms, will be heard and, at night, lights will be visible. As the project moves down the beach, a pipe will be placed incrementally to pump the sand for the project. Ramps will be provided at regular intervals to ensure that access to the water is maintained.



Frequently Asked Questions

What if the contracted volume is reached before all sections of the project area receive sand?

GLDD and CPE-NC will monitor the quantity placed each day to insure that the nourishment volume is distributed according to plan. Minor adjustments are made as the project progresses along the beach in response to changing conditions so as to provide the planned nourishment volume within each subsection of the project area.

What will happen to the organisms, such as sand fleas, that live on the beach and in the surf zone?

Benthic organisms (organisms that live on or near the seabed) in the surf zone generally have short life cycles and recover rapidly after beach nourishment (or severe storms). Typical recovery rates are measured in months according to numerous studies.

Why are there escarpments on the beach?

Equilibration of the profile may leave low escarpments at the edge of the surf between the new dry beach and the wet beach. This process is similar to what natural beaches experience after minor storm events, particularly during the first northeasters of the fall. Any escarpments greater than 18 inches that are present between May 1 and August 30 shall be leveled.



Frequently Asked Questions

Why don't we have federal assistance like Wrightsville Beach or Virginia Beach?

Unfortunately, federal funds for beach nourishment have never been made available to Nags Head. Dare County has been working with the US Army Corps of Engineers on a county-wide, federally-funded project for many years, but money for construction has never been allocated.

What do you mean by FEMA-reimbursed nourishment?

If the Town experiences a storm that is declared a disaster by the President, the Town may be eligible for FEMA funding to replace sand lost during that storm. A monitoring and maintenance plan, along with a plan for funding the maintenance, must be in place for FEMA to consider reimbursing the Town for lost sand.

What happens if a storm hits and damages the beach?

The Town will establish a monitoring and maintenance program that will help us determine the amount of sand loss so that we can move forward with either the regular maintenance nourishment or a FEMA-reimbursed nourishment.



Frequently Asked Questions

How long will construction take place in front of a particular property?

The progress can vary greatly depending on weather, downtime and the volume of sand being placed along the beach. At the commencement of the project, progress is typically slower as the contractor needs some time to work out the kinks in their equipment. Once these kinks have been worked out, the contractor averages between 50 and 150 feet of beach per day. Therefore, a specific property will be impacted by construction on average 4 to 6 days. Once the Project commences a daily progress map will be available at www.morebeachtolove.com.

Why is dredging occurring during the summer months? Dredging operations offshore of the Outer Banks typically take place in the summer months because it is much safer for the crews working on the offshore dredge. The increased risk of safety and anticipated decreases in productivity in the winter months when sea conditions can shut down dredge operations were found to drive the costs of the projects up to a point where they would have no longer been financially viable.



Summertime Dredging

Dredging Contractors of America
Sustaining America's
Access to the World

505 D Street, N.W., Suite 160
Washington, D.C. 20001-2728
(202) 737-2874
(202) 737-2677 fax



February 1, 2007

Mr. Charlie Cameron
Interim Town Manager
Town of Nags Head
P.O. Box 99
Nags Head, NC 27959

Dear Mr. Cameron:

This is in response to your letter of January 24, 2007, requesting my opinion regarding the feasibility of offshore dredging operations in the winter months in the vicinity of Nags Head, North Carolina. I understand the Town of Nags Head is planning a locally funded beach nourishment project using an offshore borrow area approximately 1.5-2 miles offshore of south Nags Head which is about 6 miles north of Oregon Inlet.

Of paramount concern would be the safety of the crew and equipment operating in one of the highest and most unpredictable energy environments in the Atlantic Ocean. I served as Navigation Branch Chief in the Corps of Engineers Wilmington District for 13 years, and have personally experienced the effects of numerous winter storms in their vicinity of Oregon Inlet. I have seen intense "Hatteras Low" form off of Oregon Inlet, without warning and of such magnitude that no dredging work would be possible, and one such storm resulted in an industry hopper dredge being driven thru the Oregon Inlet bridge even though it was anchored and all engines were at full throttle. Forecasting these intense local low pressure systems is not very effective, and often the intensities are not properly captured by measurement equipment some distance from the full fury of these storms. This area is called the "Grave Yard of the Atlantic" because of the vulnerability of these storms and the extremely high energy environment of this region.

Attempting to dredge in the winter months would result in numerous interruptions in operations due to the shutdowns forced by each storm passage or even the potential for a storm to develop. The dredges would have to seek shelter all the way up to Hampton Roads. This disruption would most likely result in loss of beach fill and could substantially impact the actual dredged material quantity needed to construct the ten miles of beach at Nags Head. Severe winter storms would most likely damage equipment and pipelines in the beach, and substantial contingencies would be required to address this risk.

Unless there have been significant changes in the normal turtle activities observed along this region of the North Carolina coast since I was last in the area, I do not recall there being very many turtles laying eggs on the beaches in the vicinity of Nags Head. I would think that with

the steep eroded beaches, the ability for turtles to find suitable sites for laying their eggs would be substantially diminished.

My opinion is that it would be extremely dangerous and expensive to place a dredge and the support equipment needed to accomplish a beach nourishment project in the offshore waters north of Oregon Inlet during the winter months. This would be extremely unsafe and warrant very high prices to address the risk and extra equipment and vessels needed to attempt to operate in this high energy environment. I hope that the regulatory agencies that are seeking this restriction will consider the extreme danger to the dredge crews in resolving this issue. Thank you for this opportunity to comment on this beach nourishment project for Nags Head.

Sincerely,

Barry W. Holliday
Technical Director
Dredging Contractors of America