NORTH TOPSAIL BEACH SHORELINE PROTECTION PROJECT - PHASE 5 BEACH RESTORATION
CONSTRUCTION OBSERVATION REPORT - PAGE 1

DATE: April 1, 2015
OBSERVER: Julien Devisse

OBSERVATION REPORT NO: 106
COMMENCEMENT DATE: November 16, 2014
CONTRACT DAY: 137

ARRIVAL TIMES:	DEPARTURE TIMES:
7:15	9:50
10:00	13:30
14:00	17:00
17:15	19:00
19:20	19:40

WEATHER CONDITIONS: Clear
WAVE HEIGHT AND DIRECTION: NE 3-5 ft
WIND SPEED & DIRECTION: E 15-25 mph
SEAWARD PIPE OUTFALL LOCATION: 674+00 (at the time of last observation)
LANDWARD PIPE OUTFALL LOCATION: 674+00 (at the time of last observation)
COMPLETED FILL SECTIONS: 753+00 to 676+00
PROGRESS MADE IN LAST 24 HRS.: LENGTH: 25 LF

OBSERVATIONS

		Y / N / NA	NOTES
Approach to Site			
1.	Is the contractor using the approved construction accesses and vehicle routes?	Y	
2.	Are construction warning signs in place?	Y	
3.	Are construction and staging areas fenced off to prevent public access?	Y	
Reports/Plans/Specifications			
4.	Are the construction plans and specifications located at the project site?	Y	
5.	Are the permits located and notices displayed at the project site?	Y	
6.	Has the contractor provided the Daily Reports for the previous day?	Y	
	If the submittals are incomplete, list deficiencies (QC Report, Turbidity, Dredge Plots, …etc.):		
Project Site			
7.	Are dredging and discharge operations being conducted today?	Y	Observation #1
8.	Are dunes being constructed?	Y	
	Location: Sta. 674+00 to 672+00		
9.	Is the contractor using approved staging and storage areas (marked, neat & orderly)?	Y	
10.	Are the natural dunes and vegetation being avoided?	Y	
11.	Is the public being kept out of the construction area?	Y	
12.	Are sand ramps constructed and maintained for public access to the beach?	Y	
13.	Are sand dikes being constructed for placement fill?	Y	
14.	Is debris being removed prior to placement of fill?	Y	
15.	Is rock removal (Rock Picker) being completed today?	N	
	Location:		
16.	Is there any material within the fill that does not meet the specifications?	N	
	a. Describe the lack of sediment compatibility:		
	b. When was this first observed? Date:_____ Time:_____		
	c. Did you notify the Engineer?	N/A	
	d. Did the contractor take action to avoid non-conforming material? (If yes, explain in notes)	N/A	
17.	Are construction stakes in place for the fill station?	Y	
18.	Does the construction berm appear level and uniform along the graded beach?	Y	
19.	Are escarpments being leveled?	N	
20.	Are grading and dressing operations of completed fill sections being conducted today?	Y	
	Location: Sta. 676+00		
21.	Is an acceptance survey for a completed section being conducted today?	Y	
	Location: Sta. 676+00		
22.	Was any environmental monitoring (turbidity, turtle, bird, ... etc) conducted today?	Y	
	If yes, describe: Piping Plover and Red Knot observations		
Measurements and Sampling			
23.	Were representative sand samples collected today?	Y	
	Location: Sta. 676+00		
24.	Were all sand samples within the range of acceptable limits as defined in the Sediment QA / QC Plan? If not, please explain.	Y	
25.	Was the constructed beach verified to meet the plans and specifications?	N	
	Measurement:		
26.	Were any photographs taken?	Y	

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Detailed Observations:

1. Beach fill operations resumed at approximately 08:15 but ceased at approximately 19:00 due to rough seas. Beach fill progress during the past 24 hours was 25 feet. The landward outfall was located within the beach berm area near Sta. 674+00 and the seaward outfall was located within the beach slope near Sta. 674+00. Beach fill progress to date is approximately 7,900 feet (Sta. 753+00 to 674+00). Approximately 12,420 feet remain to complete the project which includes approximately 9,245 feet to reach the end of the taper at the south end of the project (Sta. 674+00 to 581+80) and an additional 3,200 feet to complete the north end (Sta. 753+00 to 785+00).

2. The landward shore parallel containment dike was located between approximate Sta. 674+00 to 672+50 and had a crest elevation of approximately 4 to 7 feet NAVD. The seaward shore parallel containment dike was located between approximate Sta. 674+00 to 672+50 and had a crest elevation of approximately 4 to 6 feet NAVD.

3. One (1) sand sample was collected today from the berm crest. Sample NTB076 was collected at 17:35 at Sta. 676+00, Rng. 1+05 (N 34.460436, W 77.484564 and E 2456801, N 262052). The representative sand sample taken at this location had a wet Munsell color of 2.5Y-6/1 (Gray) and a dry Munsell color of 2.5Y-7/1 (Light Gray). The native beach composite has a wet Munsell color value of 2.5Y-5/2 (Grayish Brown) and a dry Munsell color value of 2.5Y-7/2 (Light Gray). The size of the sediment for sample NTB076 appeared to be fine to medium with little shell hash (approx. shell content 10-15%) and appeared to have less than 5% silt. (Unified Soil Classification System Descriptive Terms: Trace = 1%-10%, Little = 10%-20%, Some = 20%-35%).

4. A sample of the discharge from the outfall was collected at 17:30 in a plastic bottle to determine the relative silt content; documentary photographs were taken at the 5-minute and 15-minute marks. After settling for 5 minutes the air/water interface was near the 5.1" line, the water/silt interface was near the 2.5" line, and the silt/sand interface was near the 0.3" line. After settling for 15 minutes the air/water interface was near the 5.1" line, the water/silt interface was near the 1.3" line, and the silt/sand interface was near the 0.3" line.

5. All dredge data submitted was reported within the 15 second required interval for dredging conducted on March 31, 2015.

6. Dredge records for 3/31 showed that the dredge Charleston was within the permitted borrow area limits. There was 1 occasion where the cutterhead extended below the maximum disturbance elevation. The total time in violation lasted less than 3 minutes and was not indicative that systematic dredging below the maximum disturbance elevation occurred.

7. During dredging operations, the rock boxes were installed on both the seaward and landward outfalls to capture rock that is being discharged within the beach fill area. NDC emptied the material from the rock boxes and placed the material on the seaward side of the landward shore pipeline near Sta. 677+00. An excavator was utilized to scoop up rock from the outfalls that overflowed from the rock boxes. The installation of the 1.5 inch mesh was installed on the large rock box today at the Gray Street staging area. The 1.5 inch rock box screen was welded on top of the 2 inch mesh, resulting in a mesh size that is smaller than 1.5 inches. See Discussions #1 and #3.

8. The rock picker was not operational today. Approximately 5 cy of rocks previously collected by the rock picker are being stockpiled near Sta. 721+50, approximately 8 cy of rocks are being stockpiled near Sta. 739+00 and approximately 36 cy of rocks are being stockpiled near Sta. 694+00 on the seaward side of the shore pipeline. See Discussion #2.

9. No rock was relocated off-site for NDC today. There are 3 stockpiled areas of rock box material within the beach fill area, near Sta. 694+00, 687+00 and 680+00.

10. A post hole digger was utilized to dig 3 holes, approximately 3 feet deep and 8 inches wide, within the constructed berm area at Station at 676+00. The holes were constructed to determine the quantity of rocks up to 3 feet below existing grade. The quantity of rocks within the hole at the landward portion of the constructed berm between 0-1 feet below existing grade was 0, between 1-2 feet was 1 and between 2-3 feet was 1. The quantity of rocks within the hole at the center of the constructed berm between 0-1 feet below existing grade was 3, between 1-2 feet was 4 and between 2-3 feet was 2. The quantity of rocks within the hole at the seaward portion of the constructed berm between 0-1 feet below existing grade was 3, between 1-2 feet was 2 and between 2-3 feet was 1.

11. TI Coastal conducted an AD survey at Sta. 676+00.

12. Hold harmless agreements have not yet been provided for the properties at 464 Topsail Road and 538 Ocean Drive.

13. Contractor performed Piping Plover and Red Knot monitoring between 08:35-08:50 and noted that no birds or nests were observed.

14. Tigerhole Landscaping commenced rock picking operations up to 36 inches below the constructed grade of the berm area between Sta. 720+00 and 715+00. The Town's off-road truck was utilized to relocate 3 truck loads of rock (36 cy) that were removed by the rock picker from the constructed berm area between Sta. 720+00 and 715+00. See Discussion #4.

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Items Discussed with Contractor's Superintendent, Dump Shack Foreman, Regulatory Agencies, … etc:

1. Chip Forbes (NDC) confirmed that the 1.5 inch rock box mesh will continue to be installed on top of the 2 inch mesh, resulting in a mesh size that is smaller than 1.5 inches. Chip indicated that the 1.5 inch mesh was installed on the larger rock box as this rock box already had a back plate that minimized overflow. The smaller rock boxes will need additional time compared to the larger rock box as they need to install both the 1.5 inch mesh and the additional screening on the back side to prevent overflow. Chip indicated that NDC has 4 welders working on the rock boxes and are attempting to complete all of the modifications as quickly as possible.

2. Chip Forbes (NDC) indicated that the PTO shaft had been repaired on the rock picker.

3. Jonathan Keever (NDC) indicated that 7 rock boxes were emptied today and that no down time was experienced due to the emptying of the rock boxes.

4. Tigerhole Landscaping indicated that they would provide a schedule update tomorrow after they have had sufficient time to estimate the time needed to rock pick up to 36 inches below the constructed grade of the berm area between Sta. 720+00 and 715+00.

Were any issues identified today which may result in a field adjustment report, contract modification, request for interpretation, or noncompliance notice? If so, describe:

1. No issues were identified today.

Equipment List:

6 Bulldozers, 3 Front End Loaders, 2 Light Plants, "Dump" Shack, Survey Shack, 3 Rock Boxes, Rock Picker, Tractor, Excavator

Photo 1. View of the seaward outfall and rock box at 08:50 near Sta. 674+00, looking south.

Photo 2. View of the landward and seaward outfalls and rock boxes at 17:45 near Sta. 674+00, looking northeast.

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Photo 3. View of the landward discharge area at 17:50 near Sta. 674+00, looking north.

Photo 4. View of the full rock box with the 1.5 inch mesh overlaid on top of the 2 inch mesh.

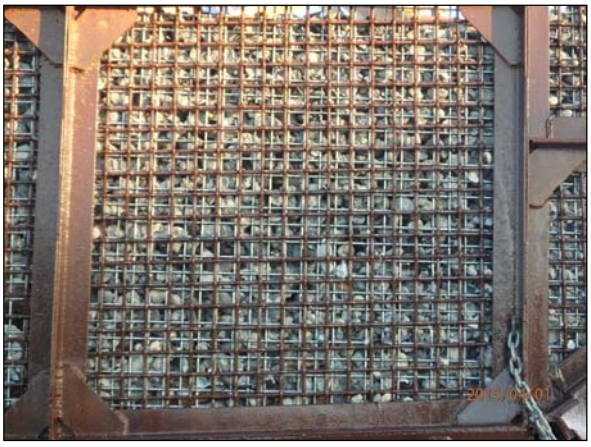

Photo 5. View of the full rock box with the 1.5 inch mesh overlaid on top of the 2 inch mesh.

Photo 6. View of the rock box with the 1.5 inch mesh overlaid on top of the 2 inch mesh.

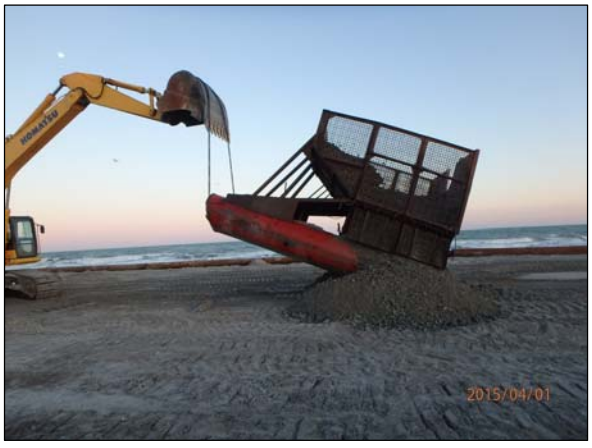

Photo 7. View of an excavator emptying a full rock box.

Photo 8. An excavator being used to collect the material from the rock boxes within the discharge area.

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Photo 9. View of the material from the rock boxes being stockpiled seaward of the landward shore pipeline near Sta. 680+00 and 677+00, looking north.

Photo 10. View of the rocks previously collected by the rock picker being stockpiled seaward of the shore pipeline near Sta. 694+00.

Photo 11. The quantity of rocks within the hole at the center of the constructed berm at Sta. 676+00 between 0-1 feet below existing grade was 3, between 1-2 feet was 4 and between 2-3 feet was 2.

Photo 12. Wave conditions at 18:40.

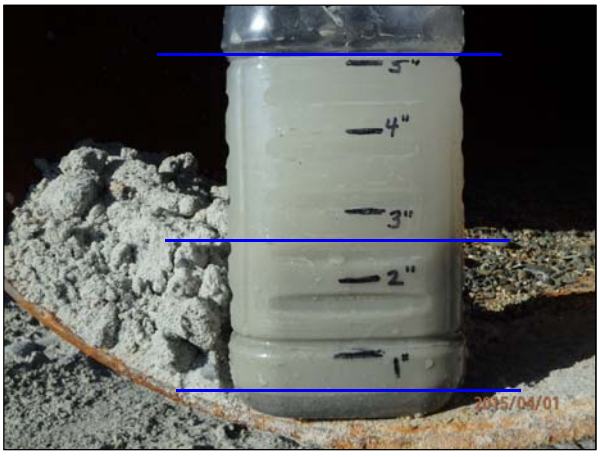

Photo 13. Discharge sample after settling for 5 minutes. The blue lines are used to show sand, silt, and water interfaces.

Photo 14. Discharge sample after settling for 15 minutes. The blue lines are used to show sand, silt, and water interfaces.

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Photo 15. Tigerhole Landscaping commenced rock picking operations up to 36 inches below the constructed grade of the berm area between Sta. 720+00 and 715+00.

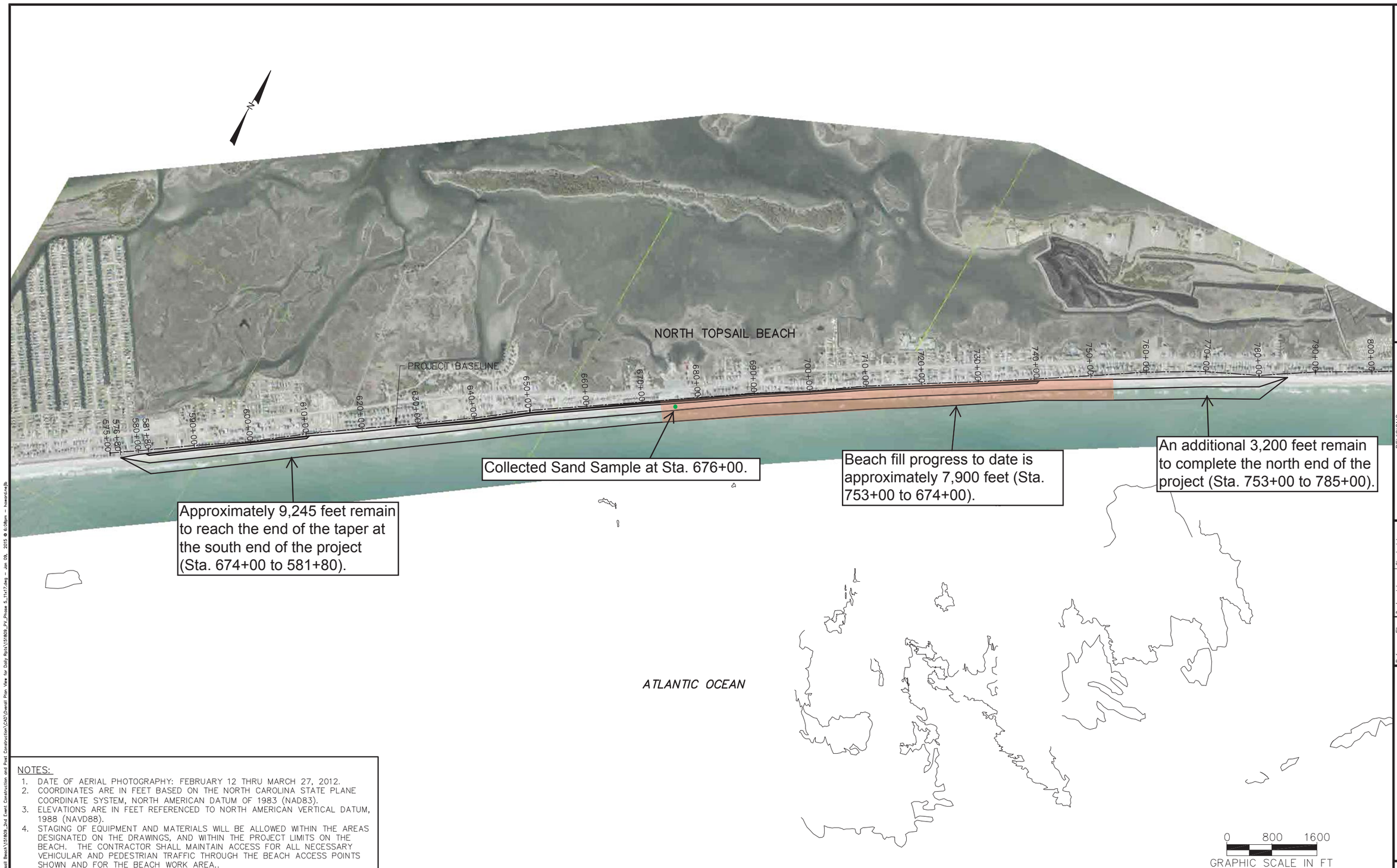
Photo 16. Tigerhole Landscaping emptying the rock picker hopper into a front end loader for removal.

Photo 17. The Town's off-road truck was utilized to relocate 3 truck loads of rock (36 cy) that were removed by Tigerhole Landscaping's rock picker from the constructed berm area between Sta. 720+00 and 715+00.

Photo 18. Tigerhole Landscaping's equipment being stored overnight near the shore pipeline in the vicinity of Sta. 720+00.

Photo 19. View of the material from Tigerhole Landscaping's rock picking operations being stockpiled at the lot 2 blocks south of the Gray Street access.

Photo 20. View of the material from the rock boxes being stockpiled at the lot 2 blocks south of the Gray Street access.



NOTES:

1. DATE OF AERIAL PHOTOGRAPHY: FEBRUARY 12 THRU MARCH 27, 2012.
2. COORDINATES ARE IN FEET BASED ON THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83).
3. ELEVATIONS ARE IN FEET REFERENCED TO NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD88).
4. STAGING OF EQUIPMENT AND MATERIALS WILL BE ALLOWED WITHIN THE AREAS DESIGNATED ON THE DRAWINGS, AND WITHIN THE PROJECT LIMITS ON THE BEACH. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR ALL NECESSARY VEHICULAR AND PEDESTRIAN TRAFFIC THROUGH THE BEACH ACCESS POINTS SHOWN AND FOR THE BEACH WORK AREA..
5. CONSTRUCTION OF A 14 FT. NAVD DUNE MAY BE REQUIRED BASED ON CONDITIONS AT THE TIME OF CONSTRUCTION AS DETERMINED BY THE ENGINEER.
6. THE CONSTRUCTION TOE OF FILL AS SHOWN ON THE DRAWINGS IS BASED ON AN ASSUMED SEAWARD FORESHORE SLOPE FROM THE BERM CREST TO THE EXISTING GRADE OF 1V:15H. THIS SLOPE MAY BE CHANGED BY THE ENGINEER DURING CONSTRUCTION BASED ON THE FILL MATERIAL BEHAVIOR.

Coastal Planning & Engineering of North Carolina, Inc.
4038 MASONBORO LOOP RD.
WILMINGTON, NC 28409
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FAX (910) 791-4129

REVISIONS

No.	Date	Description
1	1/5/15	UPDATED DESIGN TEMPLATE

Reference Files:

Designed by: AP | Checked by: AMB
Drawn by: GK | Reviewed by: AP
Date: 4/02/2014 | Submitted by: KW
Plot Scale: AS NOTED | Comm. No.: 15809

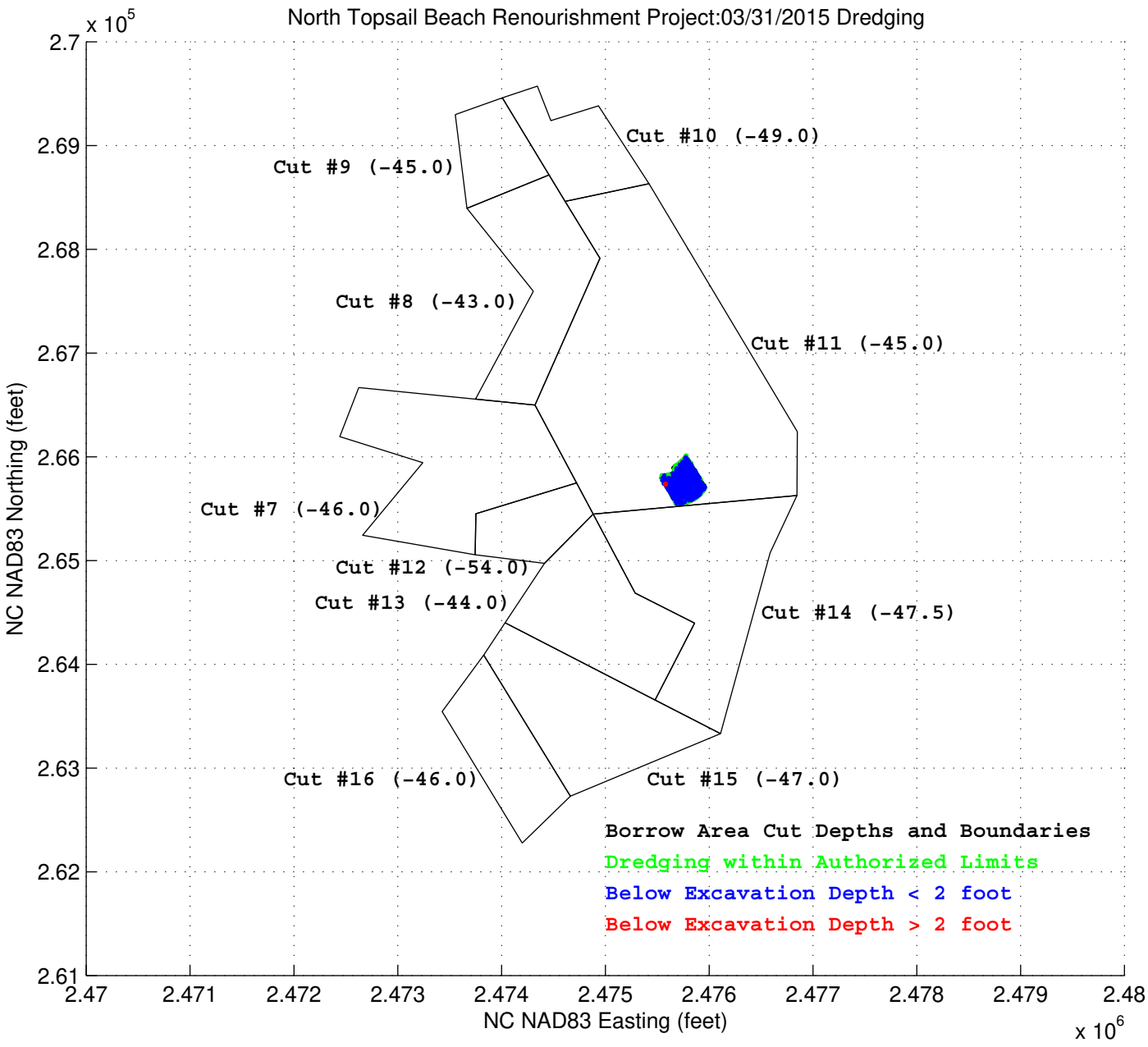
NORTH TOPSAIL BEACH
SHORELINE PROTECTION PROJECT
PHASE 5 BEACH RESTORATION

BEACH NOURISHMENT
PLAN VIEW

DRAWING NO.
PV–1

SHEET 1 OF 13

P:\North Carolina\North Topsail Beach\15180\9_2nd Event Construction and Post Construction\CAD\Overall Plan View for Daily Rpts\15180\9_PV_Phase 5_11x17.dwg – Jan 09, 2015 @ 6:08pm – howardw\jb


North Topsail Beach Renourishment Project:03/31/2015 Dredging
x 10^5
2.7
2.69
2.68
2.67
2.66
2.65
2.64
2.63
2.62
2.61
NC NAD83 Northing (feet)
Cut #9 (-45.0)
Cut #10 (-49.0)
Cut #8 (-43.0)
Cut #11 (-45.0)
Cut #7 (-46.0)
Cut #12 (-54.0)
Cut #13 (-44.0)
Cut #14 (-47.5)
Cut #16 (-46.0)
Cut #15 (-47.0)
Borrow Area Cut Depths and Boundaries
Dredging within Authorized Limits
Below Excavation Depth < 2 foot
Below Excavation Depth > 2 foot
2.47
2.471
2.472
2.473
2.474
2.475
2.476
2.477
2.478
2.479
2.48
NC NAD83 Easting (feet)
x 10^6


North Topsail Beach Phase 5 Shoreline Protection Project
Legend
Dredge Location 3/31/15
North Topsail Beach
Dredge Location 3/31/15
Google earth
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image © 2015 TerraMetrics
N
1 mi