

TOPSAIL BEACH NOURISHMENT AND CHANNEL DREDGING PROJECT

PENDER COUNTY, NORTH CAROLINA

Beach Fill and Dredging of areas including:
Topsail Inlet, Banks Connector Channel, Topsail Creek, Cut Through Channel,
Banks Channel, and Banks Side Channels 1 & 2

WINTER 2018 DREDGE PLANS

SHEET	DESCRIPTION
SHEET 1	COVER
SHEET 2	PROJECT LAYOUT & CONTROL
SHEET 3	BEACH-LAYOUT & BATHYMETRY (Sta 0-25)
SHEET 4	BEACH-LAYOUT & BATHYMETRY (Sta 30-60)
SHEET 5	BEACH-LAYOUT & BATHYMETRY (Sta 60-90)
SHEET 6	BEACH-LAYOUT & BATHYMETRY (Sta 95-120)
SHEET 7	BEACH-LAYOUT & BATHYMETRY (Sta 125-150)
SHEET 8	BEACH-LAYOUT & BATHYMETRY (Sta 155-185)
SHEET 9	BEACH-LAYOUT & BATHYMETRY (Sta 185-215)
SHEET 10	BEACH-LAYOUT & BATHYMETRY (Sta 215-239)
SHEET 11	BEACH - CROSS SECTIONS (Sta 0-80)
SHEET 12	BEACH - CROSS SECTIONS (Sta 90-170)
SHEET 13	BEACH - CROSS SECTIONS (Sta 180-239)
SHEET 14	TOPSAIL CREEK - CONTROL
SHEET 15	TOPSAIL CREEK - BATHYMETRY
SHEET 16	TOPSAIL CREEK - CROSS SECTIONS
SHEET 17	TOPSAIL CREEK - CROSS SECTIONS
SHEET 18	TOPSAIL CREEK - CROSS SECTIONS
SHEET 19	INTERIOR CHANNELS - CONTROL
SHEET 20	INTERIOR CHANNELS - BATHYMETRY

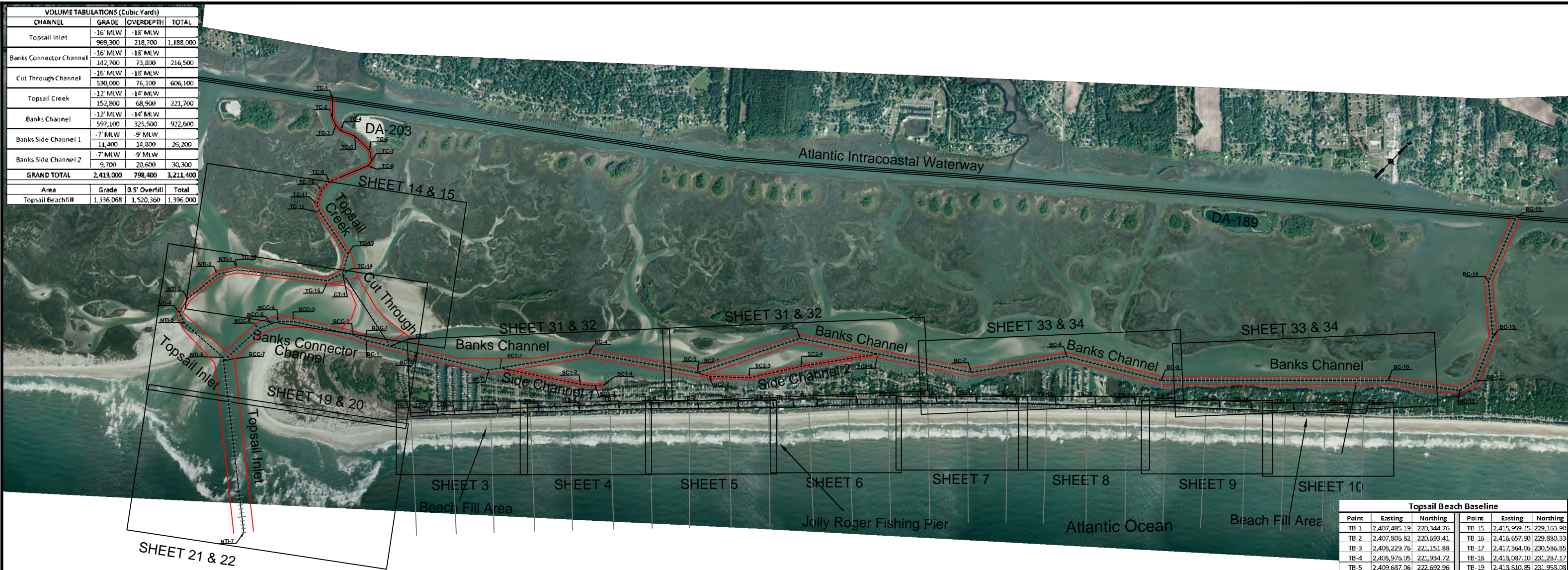


NOT TO SCALE

SHEET	DESCRIPTION
SHEET 21	TOPSAIL INLET - CONTROL
SHEET 22	TOPSAIL INLET - BATHYMETRY
SHEET 23	CUT THROUGH CHANNEL - CROSS SECTIONS
SHEET 24	CUT THROUGH CHANNEL - CROSS SECTIONS
SHEET 25	BANKS CONNECTOR - CROSS SECTIONS
SHEET 26	BANKS CONNECTOR - CROSS SECTIONS
SHEET 27	TOPSAIL INLET - CROSS SECTIONS
SHEET 28	TOPSAIL INLET - CROSS SECTIONS
SHEET 29	TOPSAIL INLET - CROSS SECTIONS
SHEET 30	TOPSAIL INLET - CROSS SECTIONS
SHEET 31	BANKS & SIDE CHANNELS - CONTROL
SHEET 32	BANKS & SIDE CHANNELS - BATHYMETRY
SHEET 33	BANKS CHANNEL - CONTROL
SHEET 34	BANKS CHANNEL - BATHYMETRY
SHEET 35	BANKS CHANNEL - CROSS SECTIONS
SHEET 36	BANKS CHANNEL - CROSS SECTIONS
SHEET 37	BANKS CHANNEL - CROSS SECTIONS
SHEET 38	BANKS SIDE CHANNEL 1 - CROSS SECTIONS
SHEET 39	BANKS SIDE CHANNEL 2 - CROSS SECTIONS
SHEET 40	BANKS SIDE CHANNEL 2 - CROSS SECTIONS



TI Coastal, PLLC, COL #P-1246
387-B N. Green Meadows Drive
Wilmington, NC 28405
Tel: 910.821.1358



VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	216,500
Cut Through Channel	-16' MLW	-18' MLW	606,100
Topsail Creek	-12' MLW	-14' MLW	221,700
Banks Channel	-12' MLW	-14' MLW	922,600
Banks Side Channel 1	-7' MLW	-9' MLW	26,200
Banks Side Channel 2	-7' MLW	-9' MLW	30,300
GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	1,520,360	1,396,000

Topsail Beach Baseline					
Point	Easting	Northing	Point	Easting	Northing
TB-1	2,407,485.19	220,344.76	TB-15	2,415,959.15	229,163.90
TB-2	2,407,306.82	220,693.41	TB-16	2,416,657.90	229,830.33
TB-3	2,408,229.76	221,151.88	TB-17	2,417,364.06	230,586.85
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TB-6	2,410,397.72	223,425.54	TB-20	2,419,528.24	232,659.19
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TB-8	2,411,782.30	224,872.08	TB-22	2,420,979.50	234,035.12
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TB-10	2,413,191.65	226,292.20	TB-24	2,422,440.44	235,533.82
TB-11	2,413,810.73	226,917.44	TB-25	2,423,192.42	236,284.02
TB-12	2,414,169.39	227,277.63	TB-26	2,424,180.57	236,977.11
TB-13	2,414,577.46	227,717.24	TB-27	2,424,503.98	237,279.22
TB-14	2,415,260.35	228,442.99			

Topsail Creek					
Centerline			Right Toe		
Point	Easting	Northing	Point	Easting	Northing
TC-1	2,400,467.12	224,628.55	TC-R1	2,400,434.88	224,597.12
TC-2	2,400,798.74	224,289.04	TC-R2	2,400,778.42	224,250.56
TC-3	2,400,994.85	224,213.71	TC-R3	2,400,985.39	224,168.95
TC-4	2,401,173.94	224,208.95	TC-R4	2,401,182.48	224,168.71
TC-5	2,401,525.33	224,357.41	TC-R5	2,401,534.77	224,312.55
TC-6	2,402,043.86	224,365.14	TC-R6	2,402,029.75	224,319.92
TC-7	2,402,266.40	224,206.31	TC-R7	2,402,224.13	224,181.20
TC-8	2,402,284.30	224,059.29	TC-R8	2,402,238.18	224,065.75
TC-9	2,401,873.24	223,085.39	TC-R9	2,401,827.59	223,082.96
TC-10	2,401,893.79	222,796.07	TC-R10	2,401,849.59	222,784.04
TC-11	2,402,059.80	222,460.89	TC-R11	2,402,027.02	222,425.69
TC-12	2,402,252.68	222,381.84	TC-R12	2,402,230.69	222,309.80
TC-13	2,403,485.87	222,127.30	TC-R13	2,403,437.46	222,060.71
TC-14	2,403,734.09	221,690.94	TC-R14	2,403,681.96	221,683.64
TC-15	2,403,595.24	221,298.24	TC-R15	2,403,531.83	221,343.89
TC-16	2,401,777.44	219,879.87	TC-R16	2,401,731.30	219,839.00

Banks Connector Channel					
Centerline			Right Toe		
Point	Easting	Northing	Point	Easting	Northing
BCC-1	2,405,540.36	220,907.85	BCC-R1	2,405,236.31	220,998.06
BCC-2	2,404,997.31	220,776.54	BCC-R2	2,404,952.16	220,966.33
BCC-3	2,403,708.75	219,957.45	BCC-R3	2,403,645.37	220,095.65
BCC-4	2,403,431.88	219,574.62	BCC-R4	2,403,338.29	219,807.61
BCC-5	2,403,340.07	219,504.98	BCC-R5	2,403,205.77	219,571.98
BCC-6	2,403,210.21	219,221.65	BCC-R6	2,403,061.89	219,257.92
BCC-7	2,403,151.61	218,043.44	BCC-R7	2,403,010.733	218,030.58

New Topsail Inlet					
Centerline			Right Toe		
Point	Easting	Northing	Point	Easting	Northing
NTI-1	2,401,777.44	219,879.87	TI-R1	2,401,720.85	219,930.85
NTI-2	2,401,514.13	219,458.36	TI-R2	2,401,441.49	219,483.64
NTI-3	2,401,407.40	218,503.01	TI-R3	2,401,331.38	218,498.07
NTI-4	2,401,506.24	218,101.09	TI-R4	2,401,443.09	218,043.82
NTI-5	2,401,779.84	218,004.65	TI-R5	2,401,861.66	217,873.44
NTI-6	2,403,078.09	218,074.94	TI-R6	2,403,038.31	217,822.15
NTI-7	2,406,547.18	215,305.49	TI-R7	2,406,380.70	215,118.50

Banks Side Channel 1					
Centerline			Right Toe		
Point	Easting	Northing	Point	Easting	Northing
SC1-1	2,408,224.40	222,787.92	SC1-R1	2,408,334.40	222,838.69
SC1-2	2,409,940.70	223,909.01	SC1-R2	2,409,967.32	223,872.65
SC1-3	2,410,229.43	224,144.93	SC1-R3	2,410,261.43	224,112.97
SC1-4	2,410,383.12	224,333.52	SC1-R4	2,410,418.00	224,305.10

Banks Side Channel 2					
Centerline			Right Toe		
Point	Easting	Northing	Point	Easting	Northing
SC2-1	2,411,830.05	226,186.58	SC2-R1	2,411,930.51	226,163.65
SC2-2	2,412,106.89	226,385.21	SC2-R2	2,412,132.96	226,298.13
SC2-3	2,412,851.57	227,011.38	SC2-R3	2,412,886.21	226,982.05
SC2-4	2,413,578.78	228,142.85	SC2-R4	2,413,615.92	228,117.41
SC2-5	2,414,727.896	229,718.7256	SC2-R5	2,414,666.453	229,558.09

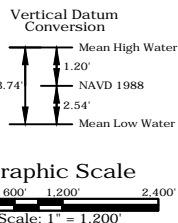
Cut Through					
Centerline			Right Toe		
Point	Easting	Northing	Point	Easting	Northing
CT-1	2,408,734.09	221,690.94	CT-R1	2,408,658.65	221,252.59
CT-2	2,405,872.00	221,228.60	CT-R2	2,408,991.51	221,506.04
			CT-R3	2,404,214.04	221,499.86
			CT-R4	2,404,532.38	221,367.06
			CT-R5	2,404,689.50	221,036.63
			CT-R6	2,404,679.98	220,693.28

Banks Channel					
Centerline			Right Toe		
Point	Easting	Northing	Point	Easting	Northing
BC-1	2,405,340.36	220,907.85	TC-R1	2,405,384.41	220,817.64
BC-2	2,405,458.08	221,579.16	TC-R2	2,406,504.88	221,493.65
BC-3	2,408,057.75	222,557.13	TC-R3	2,408,127.01	222,482.24
BC-4	2,409,545.24	224,617.12	TC-R4	2,409,616.16	224,544.51
BC-5	2,411,830.05	226,186.58	TC-R5	2,411,907.76	226,118.64
BC-6	2,413,055.54	228,611.12	TC-R6	2,413,132.84	228,542.37
BC-7	2,416,722.46	231,039.73	TC-R7	2,416,792.85	230,966.40
BC-8	2,418,146.52	233,009.74	TC-R8	2,418,215.29	232,934.17
BC-9	2,420,264.00	234,255.40	TC-R9	2,420,325.46	234,175.54
BC-10	2,424,320.56	238,268.98	TC-R10	2,424,385.81	238,192.86
BC-11	2,425,773.99	239,344.77	TC-R11	2,425,862.32	239,285.73
BC-12	2,425,887.31	239,798.43	TC-R12	2,425,992.40	239,806.50
BC-13	2,425,425.19	240,897.24	TC-R13	2,425,508.26	240,957.67
BC-14	2,424,362.36	241,812.84	TC-R14	2,424,446.47	241,872.37
BC-15	2,423,723.16	243,450.75	TC-R15	2,423,821.02	243,475.06

Left Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing
BC-L1	2,405,296.31	220,998.06	BC-L1	2,405,296.31	220,998.06
BC-L2	2,405,798.29	221,300.99	BC-L2	2,405,798.29	221,300.99
BC-L3	2,405,887.65	221,714.15	BC-L3	2,405,887.65	221,714.15
BC-L4	2,406,687.50	221,808.69	BC-L4	2,406,687.50	221,808.69
BC-L5	2,407,299.60	222,212.19	BC-L5	2,407,299.60	222,212.19
BC-L6	2,408,665.60	223,569.74	BC-L6	2,408,665.60	223,569.74
BC-L7	2,409,474.32	224,589.73	BC-L7	2,409,474.32	224,589.73
BC-L8	2,411,752.34	226,254.52	BC-L8	2,411,752.34	226,254.52
BC-L9	2,412,978.24	228,679.87	BC-L9	2,412,978.24	228,679.87
BC-L10	2,416,652.07	231,113.06	BC-L10	2,416,652.07	231,113.06
BC-L11	2,418,077.75	233,085.31	BC-L11	2,418,077.75	233,085.31
BC-L12	2,420,202.54	234,335.26	BC-L12	2,420,202.54	234,335.26
BC-L13	2,424,255.31	238,345.10	BC-L13	2,424,255.31	238,345.10
BC-L14	2,425,685.66	239,403.81	BC-L14	2,425,685.66	239,403.81
BC-L15	2,425,732.22	239,790.36	BC-L15	2,425,732.22	239,790.36
BC-L16	2,425,342.12	240,836.81	BC-L16	2,425,342.12	240,836.81
BC-L17	2,424,278.25	241,753.31	BC-L17	2,424,278.25	241,753.31
BC-L18	2,423,659.93	243,337.71	BC-L18	2,423,659.93	243,337.71



TI Coastal Services, Inc.
387-B N. Green Meadows Dr.
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910.821.1358 11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

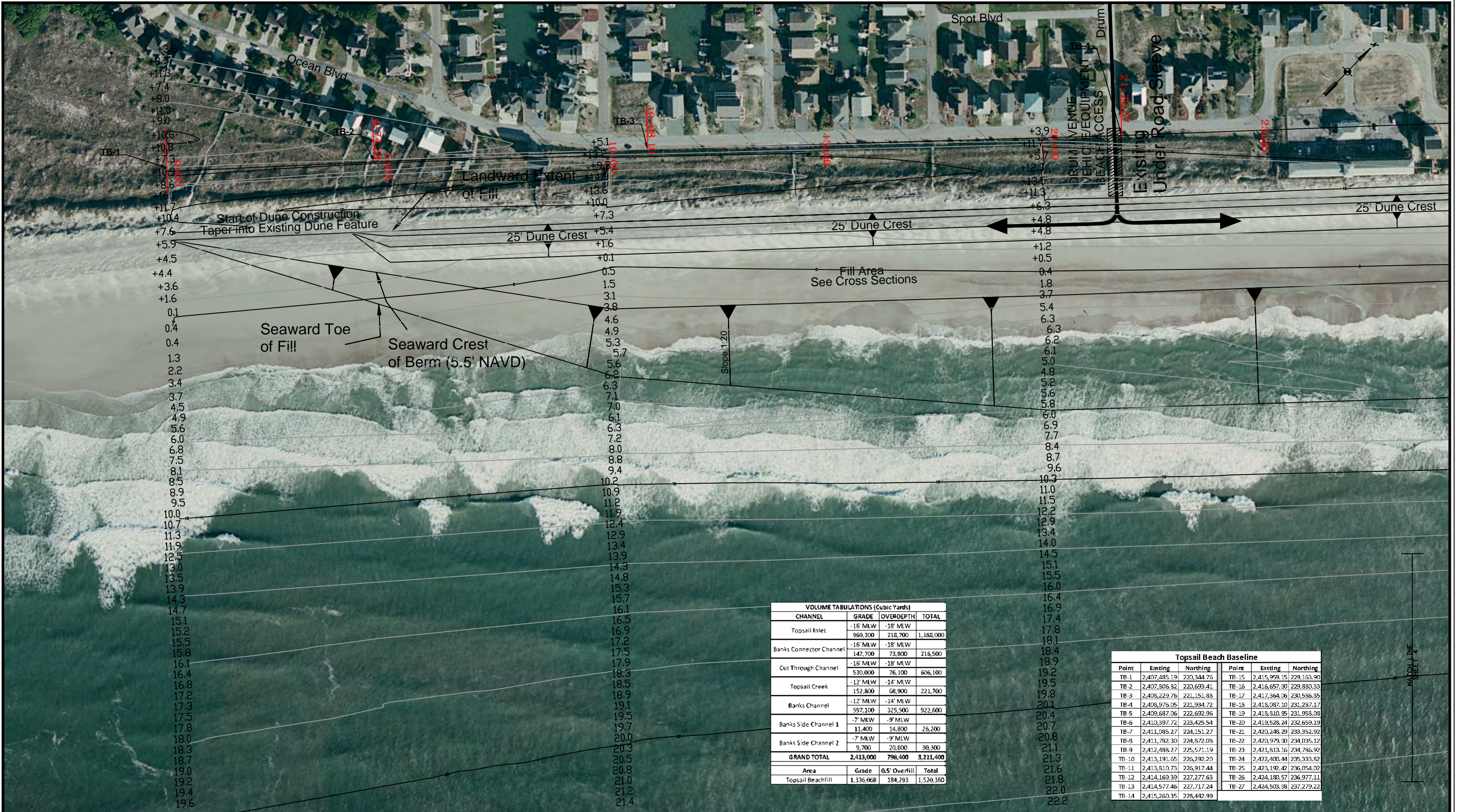
Channel Dredging and Coastal Storm Damage Reduction Project

Project Layout and Control

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in November 2016 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 15, 2016 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 1,200'	SHEET: 2 OF 40

Christian L. Gibson, P.E. No. 026273



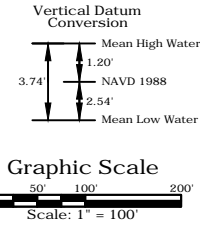
VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	
	969,300	218,700	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	
	142,700	73,800	216,500
Cut Through Channel	-16' MLW	-18' MLW	
	530,000	76,100	606,100
Topsail Creek	-12' MLW	-14' MLW	
	152,800	68,900	221,700
Banks Channel	-12' MLW	-14' MLW	
	597,100	325,500	922,600
Banks Side Channel 1	-7' MLW	-9' MLW	
	11,400	14,800	26,200
Banks Side Channel 2	-7' MLW	-9' MLW	
	9,700	20,600	30,300
GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	184,293	1,520,360

Topsail Beach Baseline					
Point	Easting	Northing	Point	Easting	Northing
TB-1	2,407,485.19	220,344.76	TB-15	2,415,959.15	229,163.90
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TOWN OF TOPSAIL BEACH
2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Beach Template and Bathymetry

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in November 2016 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 15, 2016 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 100'	
SHEET: 3 OF 40	

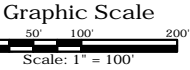
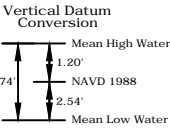


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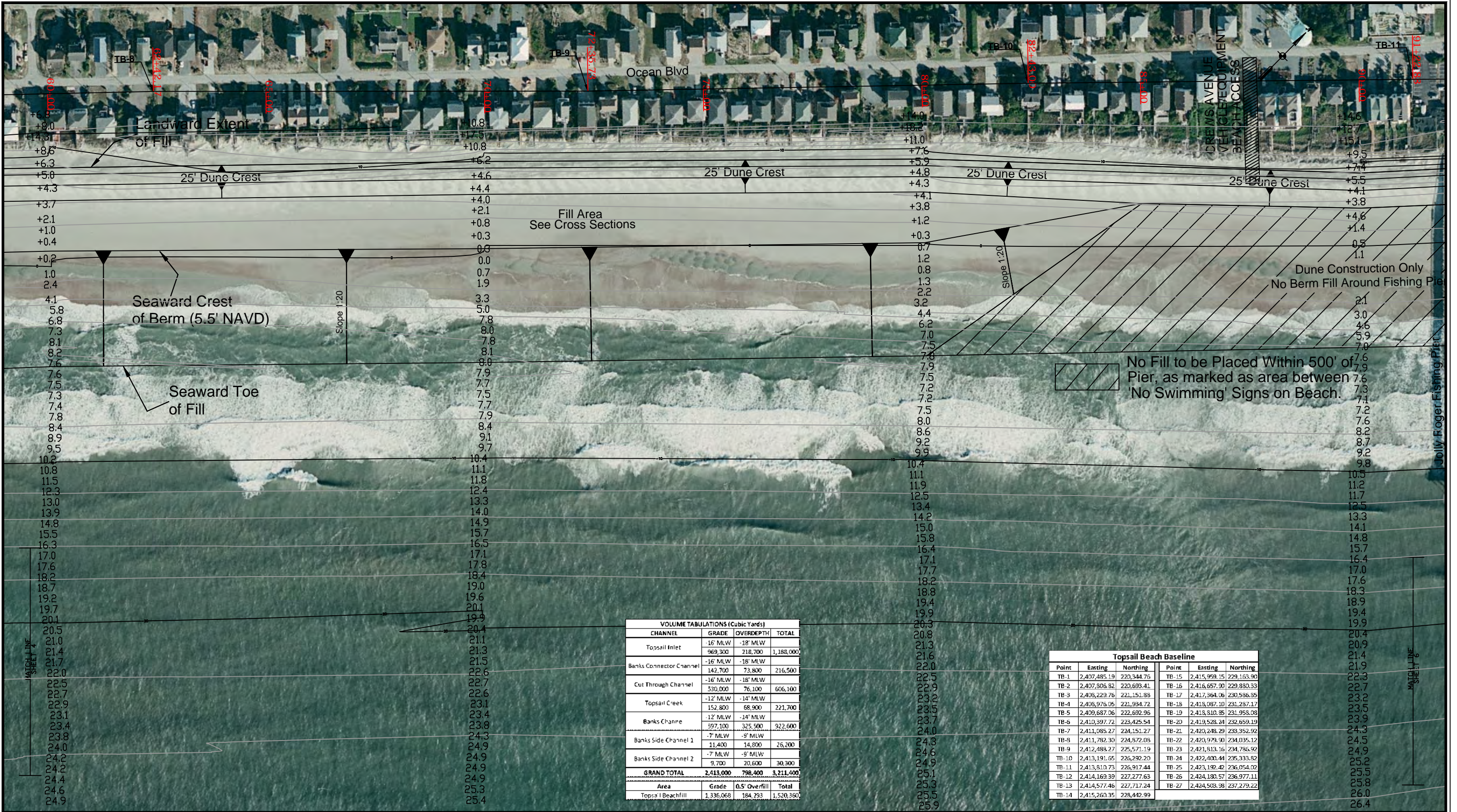
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Christian L. Gibson, P.E. No. 026273

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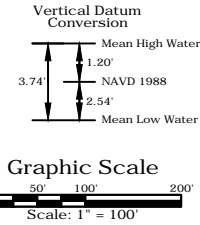


VOLUME TABULATIONS (Cubic Yards)		
CHANNEL	GRADE	OVERDEPTH TOTAL
Topsail Inlet	-16' MLW	-18' MLW
	969,300	218,700 1,188,000
Banks Connector Channel	-16' MLW	-18' MLW
	142,700	73,800 216,500
Cut Through Channel	-16' MLW	-18' MLW
	330,000	76,100 606,100
Topsail Creek	-12' MLW	-14' MLW
	152,800	68,900 221,700
Banks Channe	-12' MLW	-14' MLW
	597,100	325,500 922,600
Banks Side Channel 1	-7' MLW	-9' MLW
	11,400	14,800 26,200
Banks Side Channel 2	-7' MLW	-9' MLW
	9,700	20,600 30,300
GRAND TOTAL	2,413,000	798,400 3,211,400
Area	Grade	0.5' Overfill Total
Topsail Beachfill	1,336,068	184,293 1,520,360

Topsail Beach Baseline					
Point	Easting	Northing	Point	Easting	Northing
TB-1	2,407,485.19	220,344.76	TB-15	2,415,959.15	229,163.90
TB-2	2,407,806.82	220,693.41	TB-16	2,416,657.90	229,880.33
TB-3	2,408,229.76	221,151.88	TB-17	2,417,364.06	230,586.85
TB-4	2,408,975.05	221,934.72	TB-18	2,418,087.10	231,287.17
TB-5	2,409,687.06	222,692.96	TB-19	2,418,810.85	231,953.08
TB-6	2,410,397.72	223,425.54	TB-20	2,419,528.24	232,659.19
TB-7	2,411,085.27	224,151.27	TB-21	2,420,248.29	233,352.92
TB-8	2,411,782.30	224,872.08	TB-22	2,420,979.90	234,035.12
TB-9	2,412,488.27	225,571.19	TB-23	2,421,813.16	234,786.92
TB-10	2,413,191.65	226,292.20	TB-24	2,422,403.44	235,333.82
TB-11	2,413,810.73	226,917.44	TB-25	2,423,192.42	236,054.02
TB-12	2,414,169.39	227,277.63	TB-26	2,424,180.57	236,977.11
TB-13	2,414,577.46	227,717.24	TB-27	2,424,588.58	237,279.22
TB-14	2,415,260.35	228,442.99			



TI Coastal Services, Inc.
387-B N. Green Meadows Dr.
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910.821.1358



11x17 Plotted to Half Scale

TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

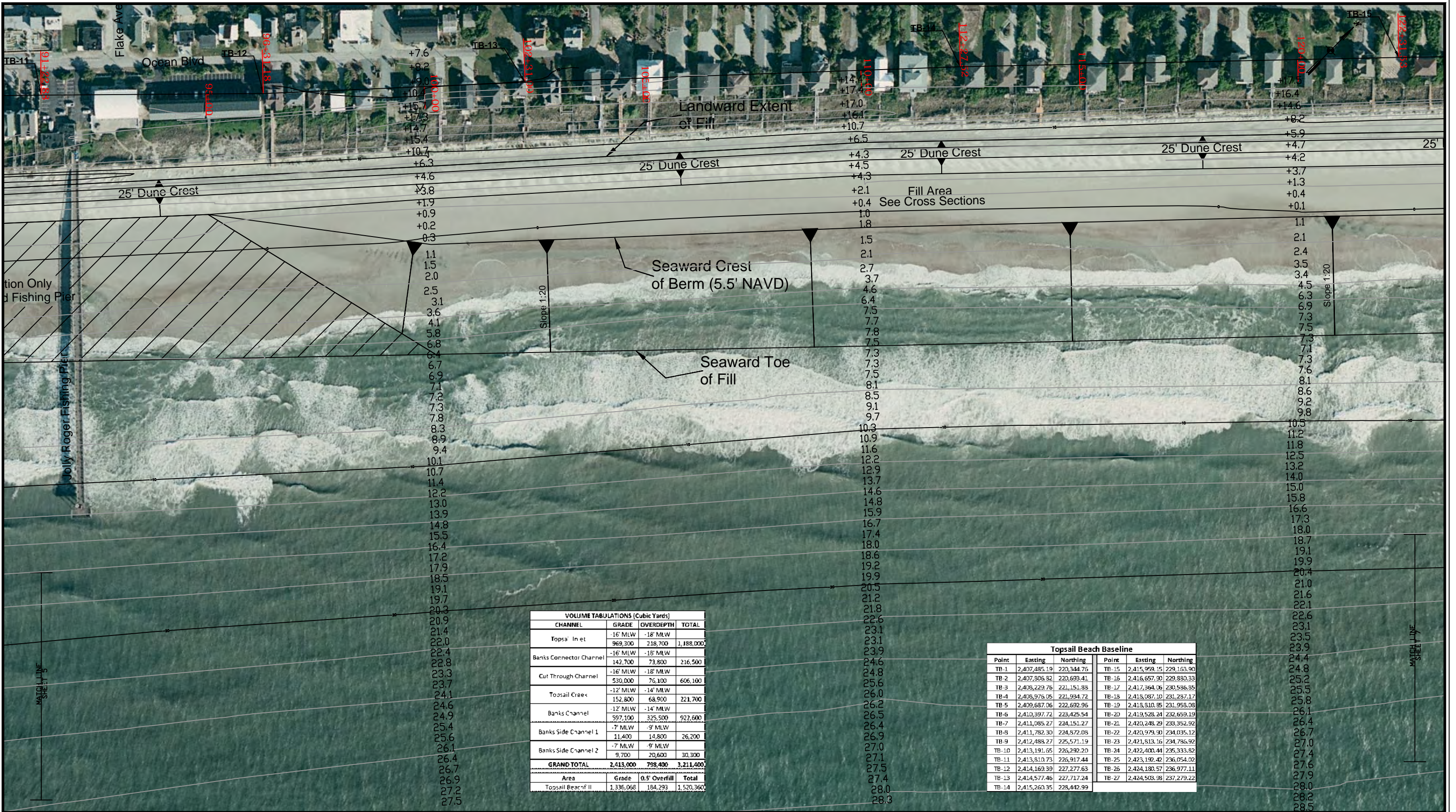
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Beach Template and Bathymetry

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 100'	
SHEET: 5 OF 40	



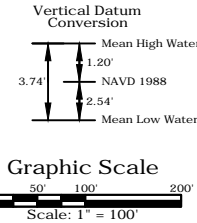
VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	
	969,300	218,700	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	
	142,700	73,800	216,500
Cut Through Channel	-16' MLW	-18' MLW	
	530,000	76,100	606,100
Topsail Creek	-12' MLW	-14' MLW	
	152,800	68,900	221,700
Banks Channel	-12' MLW	-14' MLW	
	597,100	325,500	922,600
Banks Side Channel 1	-7' MLW	-9' MLW	
	11,400	14,800	26,200
Banks Side Channel 2	-7' MLW	-9' MLW	
	9,700	20,600	30,300
GRAND TOTAL	2,415,000	798,400	3,213,400
Area	Grade	0.5' Overfill	Total
Topsail Beach II	1,336,068	184,293	1,520,360

Topsail Beach Baseline					
Point	Easting	Northing	Point	Easting	Northing
TB-1	2,407,485.19	220,344.76	TB-15	2,415,959.15	229,163.90
TB-2	2,407,806.32	220,693.41	TB-16	2,416,657.90	229,880.33
TB-3	2,408,229.76	221,151.88	TB-17	2,417,364.06	230,586.85
TB-4	2,408,976.05	221,994.72	TB-18	2,418,087.10	231,287.17
TB-5	2,409,687.06	222,692.96	TB-19	2,418,810.85	231,953.08
TB-6	2,410,397.72	223,425.54	TB-20	2,419,528.24	232,659.19
TB-7	2,411,085.27	224,151.27	TB-21	2,420,248.29	233,352.92
TB-8	2,411,782.30	224,872.09	TB-22	2,420,979.90	234,035.12
TB-9	2,412,488.27	225,571.19	TB-23	2,421,813.16	234,786.92
TB-10	2,413,191.65	226,292.20	TB-24	2,422,403.44	235,333.82
TB-11	2,413,810.73	226,917.44	TB-25	2,423,192.42	236,054.02
TB-12	2,414,169.39	227,277.63	TB-26	2,424,180.57	236,977.11
TB-13	2,414,577.46	227,717.24	TB-27	2,424,583.98	237,279.22
TB-14	2,415,260.35	228,442.99			



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11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Beach Template and Bathymetry

Christian L. Gibson, P.E. No. 026273

Notes:
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2. Vertical Datum: NAVD88
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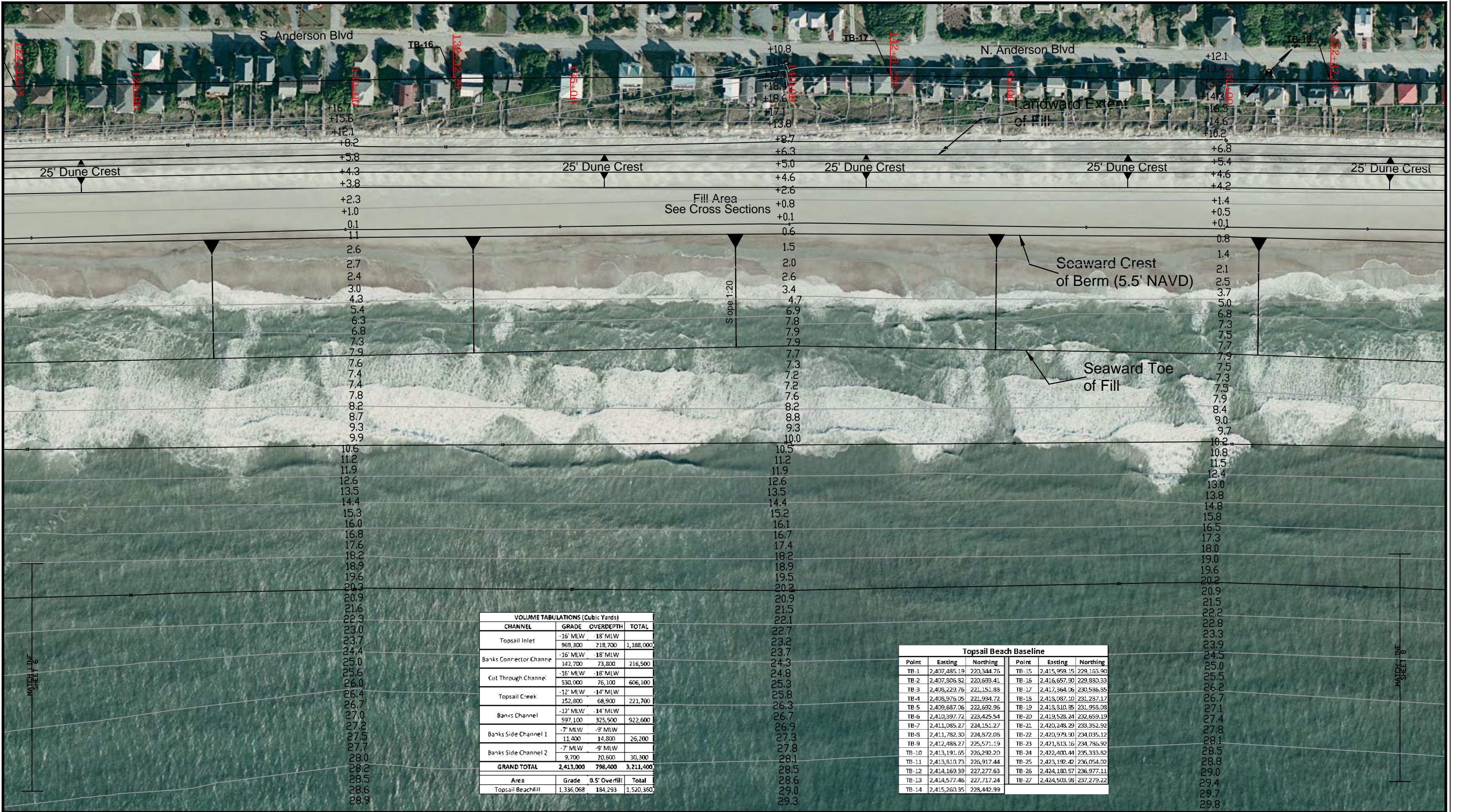
DWG NAME: Topsail Beach Construction Plans 2018.dwg

DWG DATE: December 1, 2017

SURVEY DATE: August 2017

SCALE: 1" = 100'

SHEET: 6 OF 40



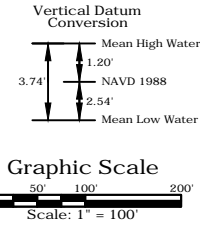
VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	
	969,300	218,700	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	
	142,700	73,800	216,500
Cut Through Channel	-16' MLW	-18' MLW	
	530,000	76,100	606,100
Topsail Creek	-12' MLW	-14' MLW	
	152,800	68,900	221,700
Banks Channel	-12' MLW	-14' MLW	
	597,100	325,500	922,600
Banks Side Channel 1	-7' MLW	-9' MLW	
	11,400	14,800	26,200
Banks Side Channel 2	-7' MLW	-9' MLW	
	9,700	20,600	30,300
GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	184,293	1,520,360

Topsail Beach Baseline					
Point	Easting	Northing	Point	Easting	Northing
TB-1	2,407,485.19	220,344.76	TB-15	2,415,959.15	229,163.90
TB-2	2,407,806.82	220,693.41	TB-16	2,416,657.90	229,880.33
TB-3	2,408,229.76	221,151.88	TB-17	2,417,364.06	230,586.85
TB-4	2,408,976.05	221,984.72	TB-18	2,418,087.10	231,287.17
TB-5	2,409,687.06	222,692.96	TB-19	2,418,810.85	231,958.08
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TB-9	2,412,488.27	225,571.19	TB-23	2,421,813.16	234,786.92
TB-10	2,413,191.65	226,292.20	TB-24	2,422,400.44	235,333.82
TB-11	2,413,810.73	226,917.44	TB-25	2,423,192.42	236,054.02
TB-12	2,414,169.39	227,277.63	TB-26	2,424,180.57	236,977.11
TB-13	2,414,577.46	227,717.24	TB-27	2,424,503.98	237,279.22
TB-14	2,415,260.35	228,442.99			



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910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

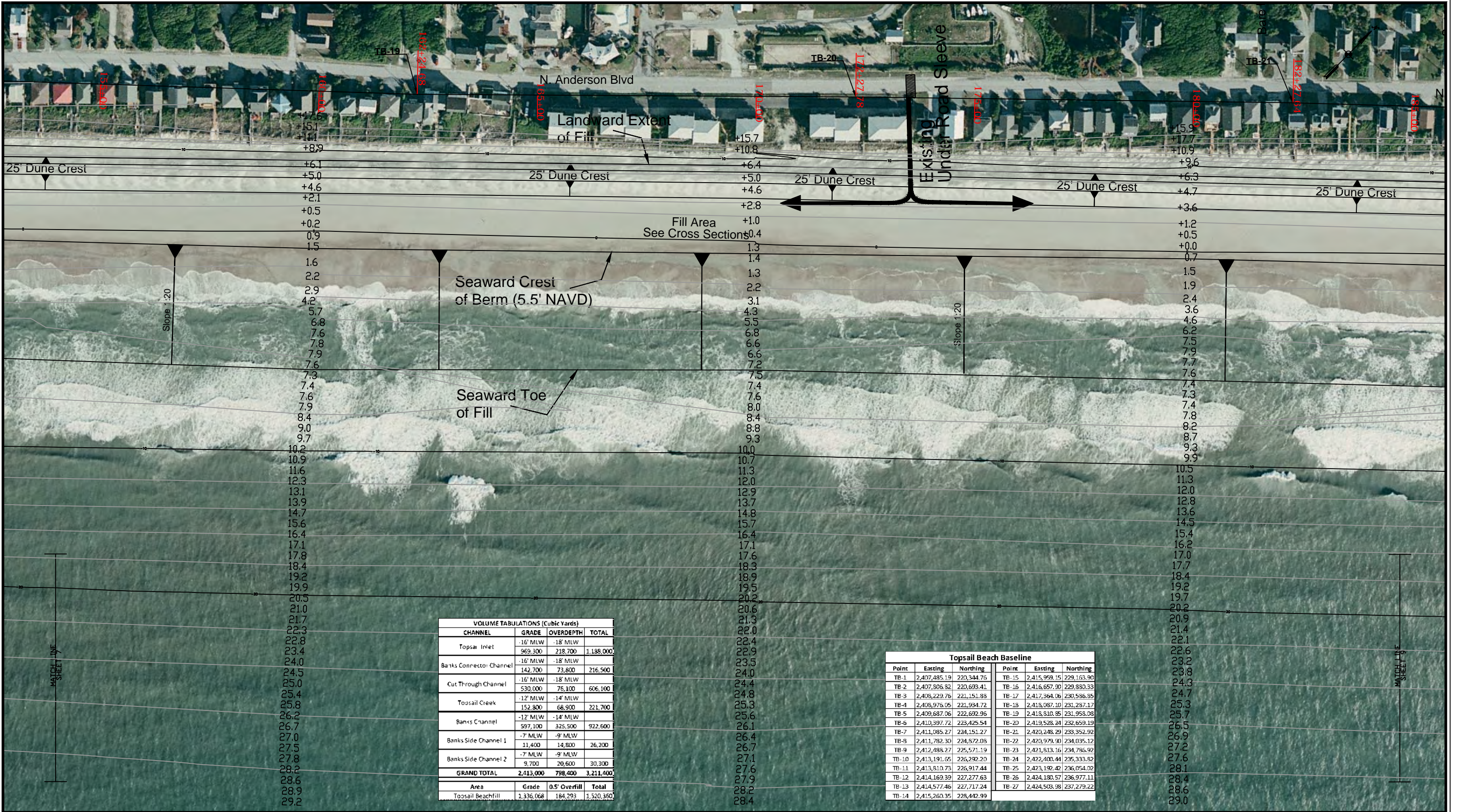
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Beach Template and Bathymetry

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 100'	SHEET: 7 OF 40

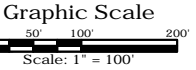
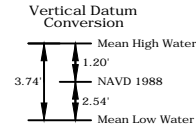


VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	
	969,300	218,700	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	
	142,700	73,800	216,500
Cut Through Channel	-16' MLW	-18' MLW	
	530,000	76,100	606,100
Topsail Creek	-12' MLW	-14' MLW	
	152,800	68,900	221,700
Banks Channel	-12' MLW	-14' MLW	
	597,100	325,500	922,600
Banks Side Channel 1	-7' MLW	-9' MLW	
	11,400	14,800	26,200
Banks Side Channel 2	-7' MLW	-9' MLW	
	9,700	20,600	30,300
GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	184,293	1,520,360

Topsail Beach Baseline					
Point	Easting	Northing	Point	Easting	Northing
TB-1	2,407,485.19	220,344.76	TB-15	2,415,959.15	229,163.90
TB-2	2,407,806.82	220,693.41	TB-16	2,416,657.90	229,880.33
TB-3	2,408,229.76	221,151.88	TB-17	2,417,364.06	230,586.85
TB-4	2,408,976.05	221,934.72	TB-18	2,418,087.10	231,287.17
TB-5	2,409,687.06	222,692.96	TB-19	2,418,810.85	231,958.08
TB-6	2,410,397.72	223,425.54	TB-20	2,419,528.24	232,659.19
TB-7	2,411,085.27	234,151.27	TB-21	2,420,248.29	233,352.92
TB-8	2,411,782.30	234,872.08	TB-22	2,420,979.90	234,035.12
TB-9	2,412,488.27	235,571.19	TB-23	2,421,813.16	234,786.92
TB-10	2,413,191.65	236,292.20	TB-24	2,422,400.44	235,333.82
TB-11	2,413,810.73	236,917.44	TB-25	2,423,192.42	236,054.02
TB-12	2,414,169.39	237,277.63	TB-26	2,424,180.57	236,977.11
TB-13	2,414,577.46	237,717.24	TB-27	2,424,508.98	237,279.22
TB-14	2,415,260.35	238,442.99			



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Wilmington, NC 28405
910.821.1358



11x17 Plotted to Half Scale

TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

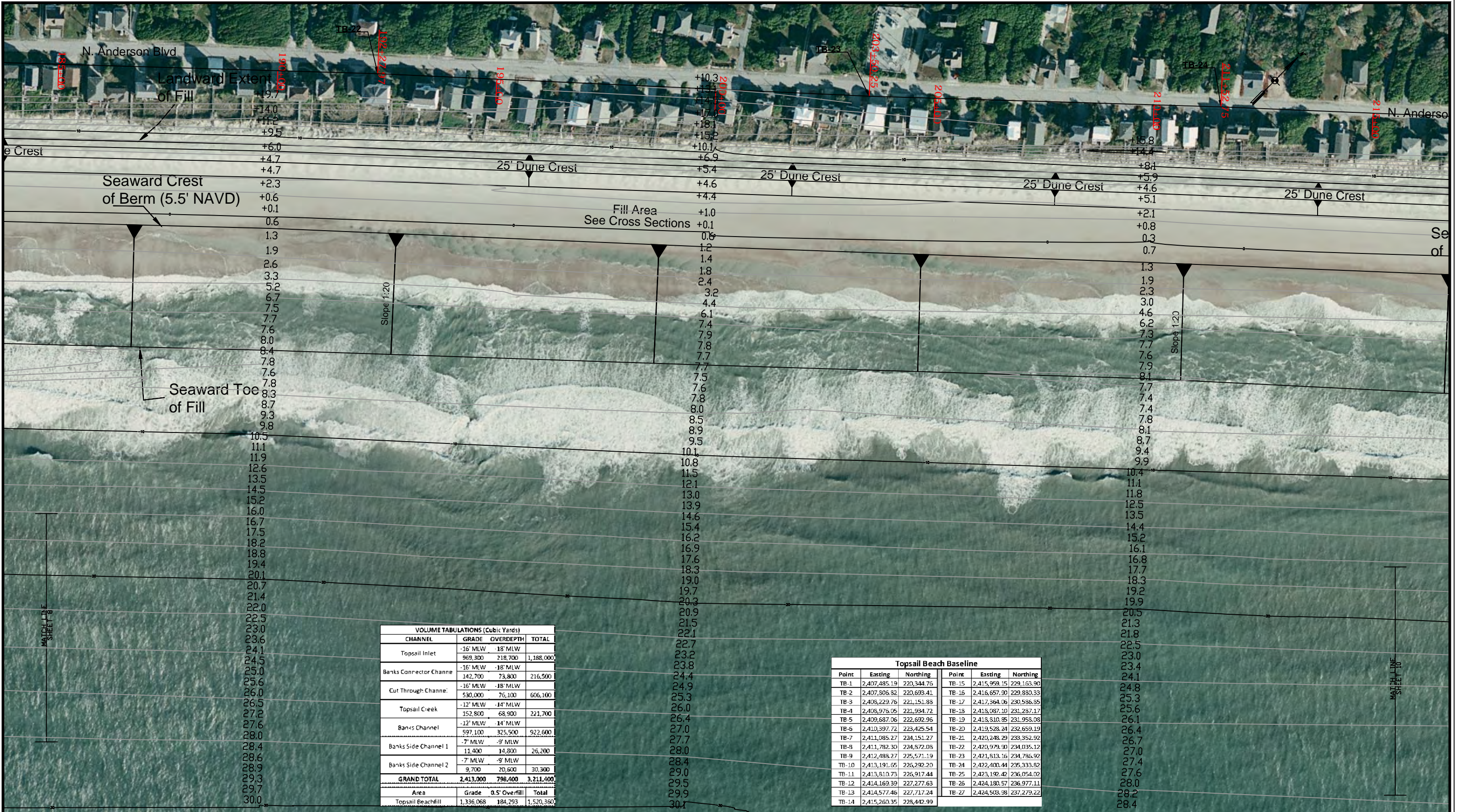
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Beach Template and Bathymetry

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 100'	
SHEET: 8 OF 40	

Christian L. Gibson, P.E. No. 026273



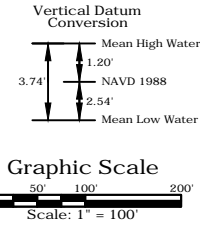
VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	
	969,300	218,700	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	
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Cut Through Channel	-16' MLW	-18' MLW	
	530,000	76,100	606,100
Topsail Creek	-12' MLW	-14' MLW	
	152,800	68,900	221,700
Banks Channel	-12' MLW	-14' MLW	
	597,100	325,500	922,600
Banks Side Channel 1	-7' MLW	-9' MLW	
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GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	184,293	1,520,360

Topsail Beach Baseline					
Point	Easting	Northing	Point	Easting	Northing
TB-1	2,407,485.19	220,344.76	TB-15	2,415,959.15	229,163.90
TB-2	2,407,806.82	220,693.41	TB-16	2,416,657.90	229,880.33
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TB-13	2,414,577.46	227,717.24	TB-27	2,424,503.38	237,279.22
TB-14	2,415,260.35	228,442.99			



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11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Beach Template and Bathymetry

Christian L. Gibson, P.E. No. 026273

- Notes:
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 3. Data collected by TI Coastal in November 2016 (post Hurricane Matthew) and represent conditions at that time.
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 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 15, 2016 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 100'	SHEET: 9 OF 40



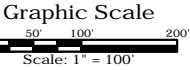
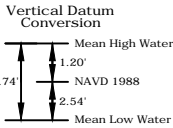
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Cut Through Channel	-16' MLW	-18' MLW	
	530,000	75,100	606,100
Topsail Creek	-12' MLW	-14' MLW	
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TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

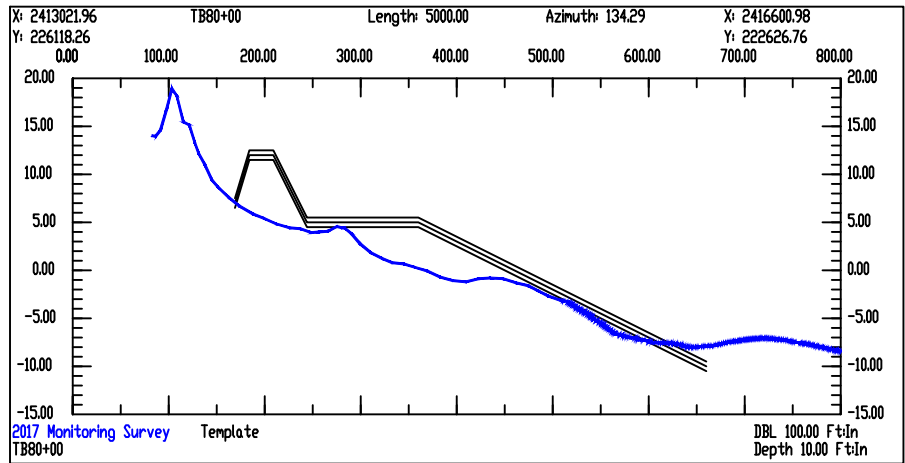
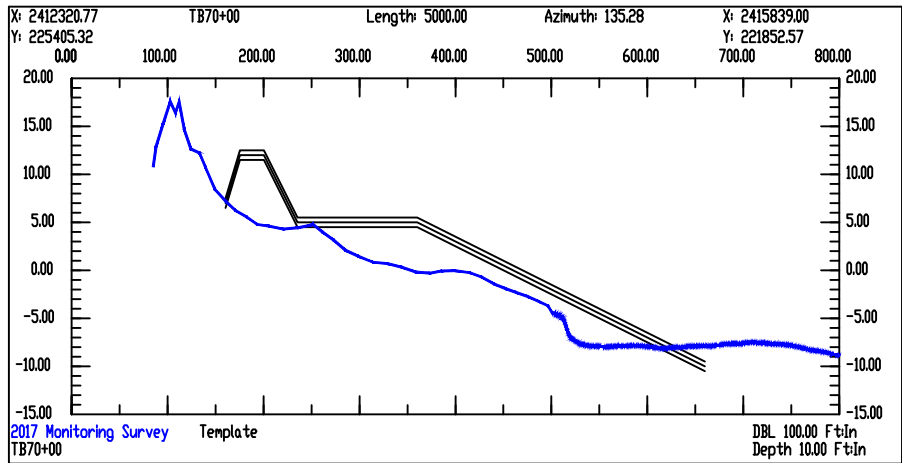
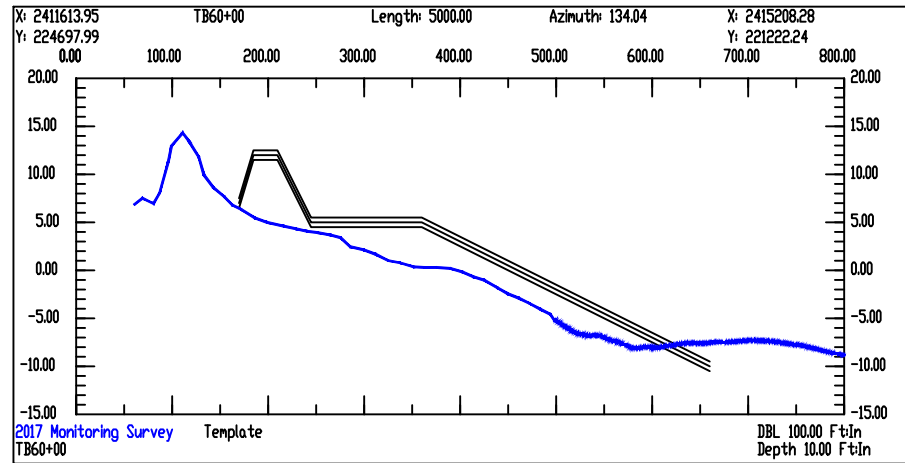
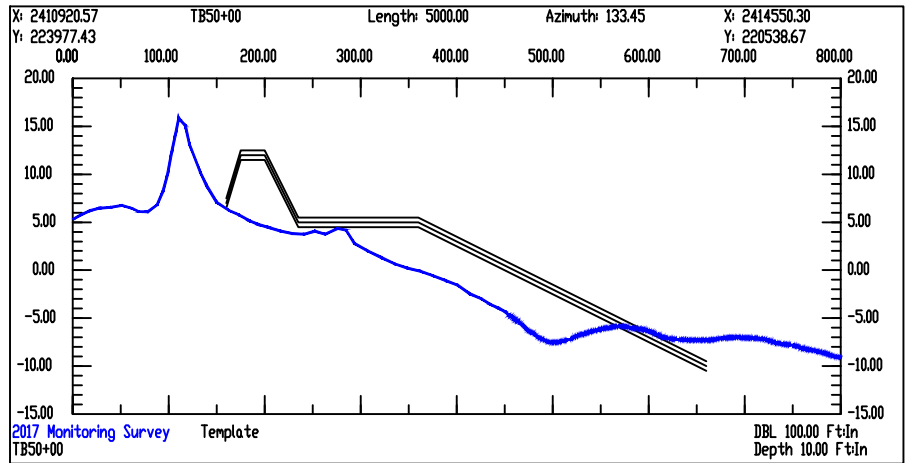
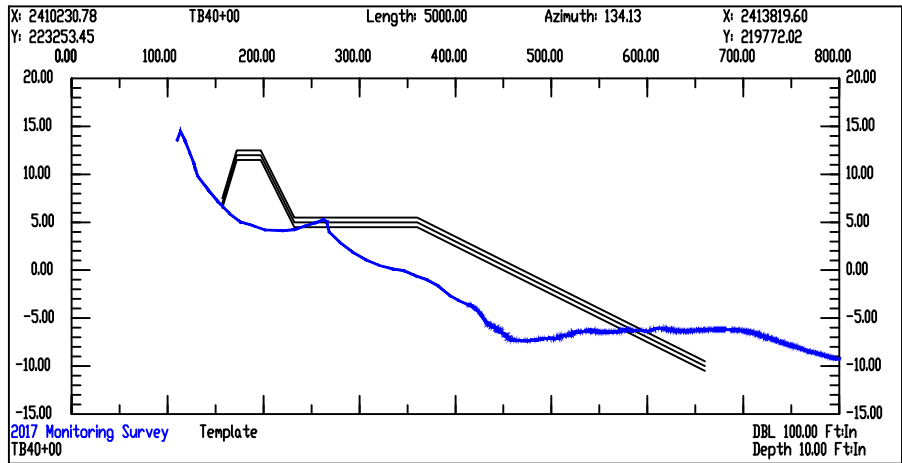
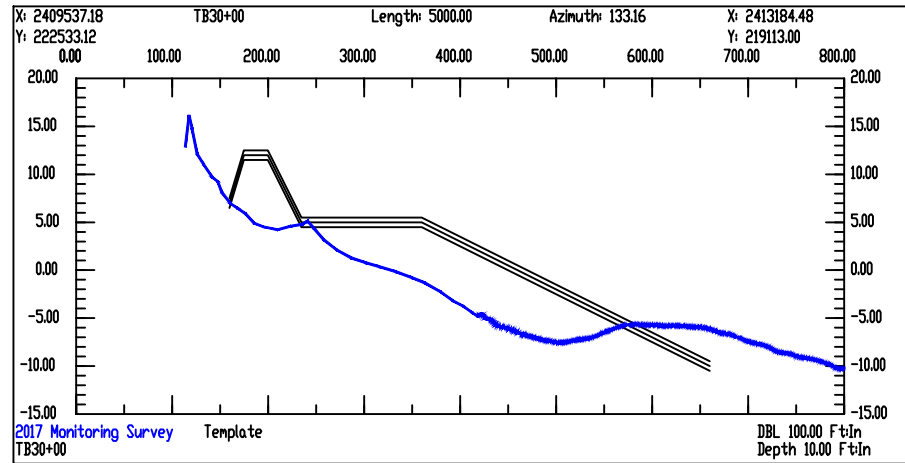
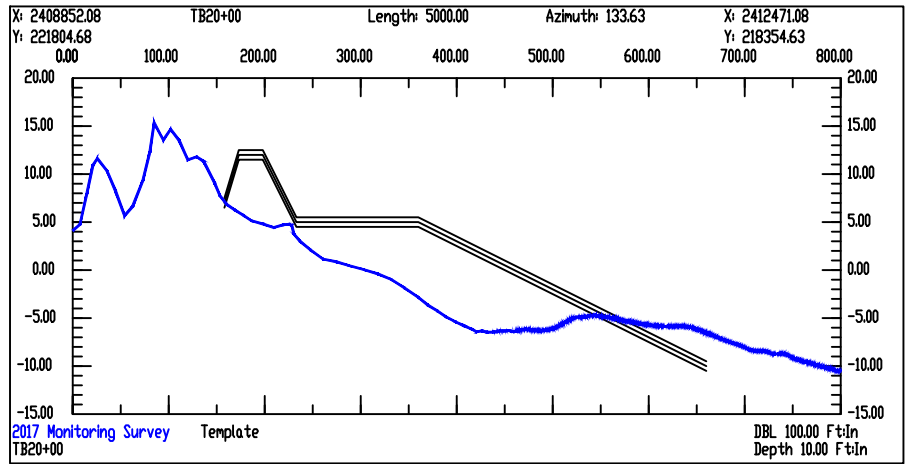
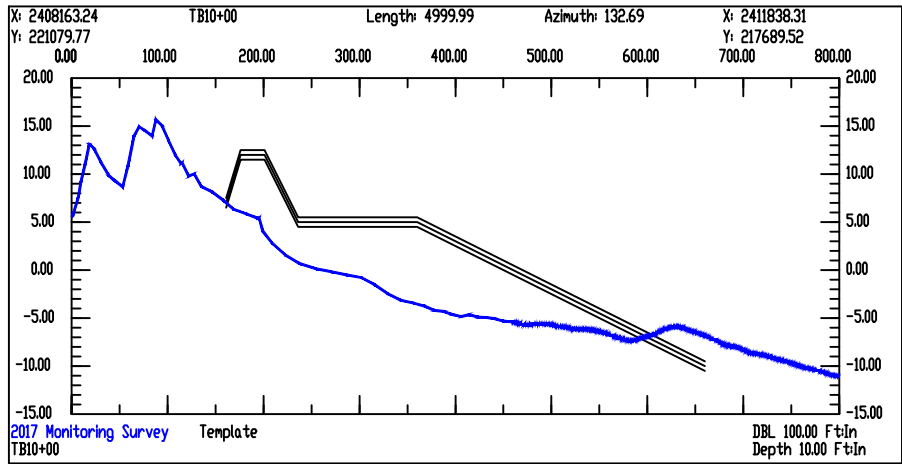
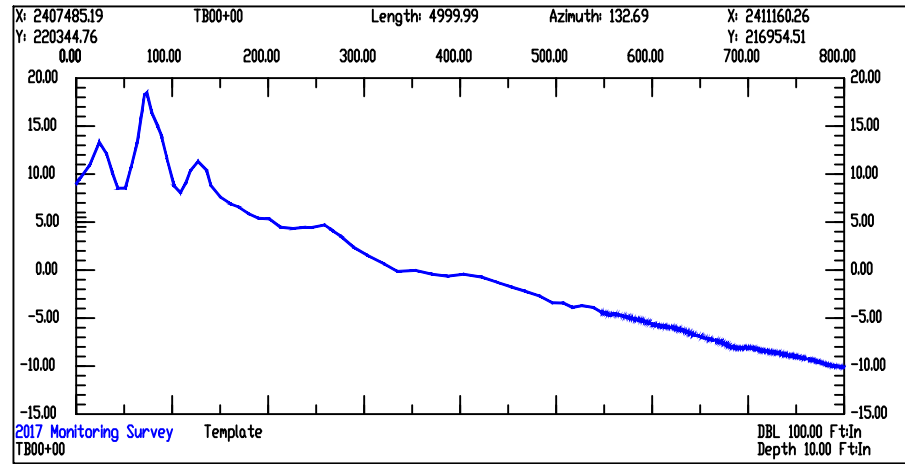
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Beach Template and Bathymetry

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

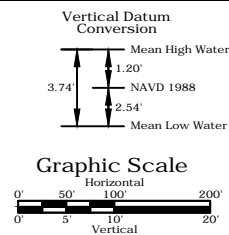
DWG NAME: Topsail Beach Construction Plans 2017.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 100'	SHEET: 10 OF 40

Christian L. Gibson, P.E. No. 026273



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Wilmington, NC 28405
910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

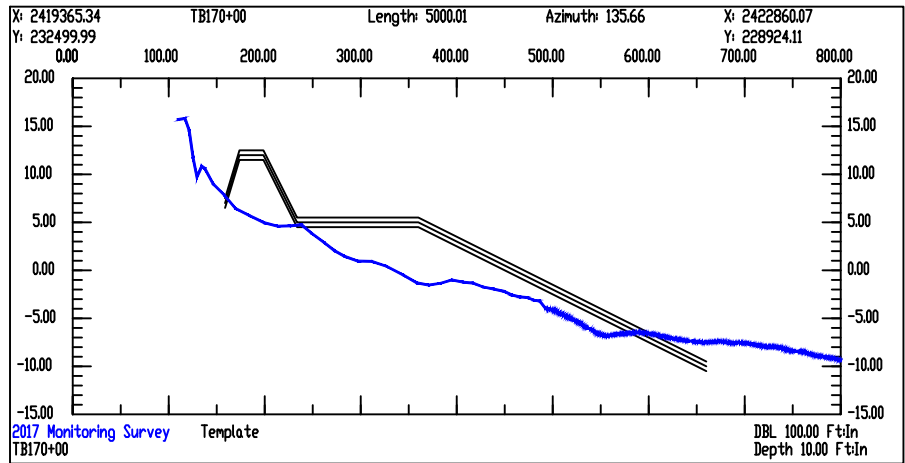
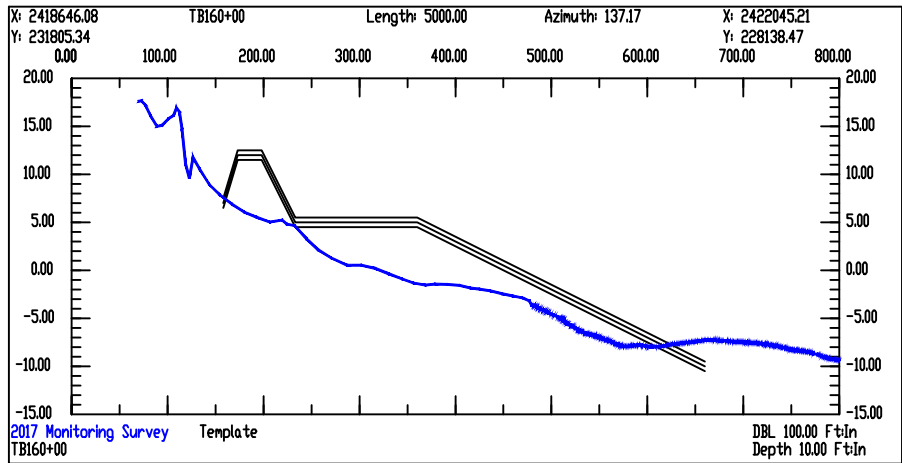
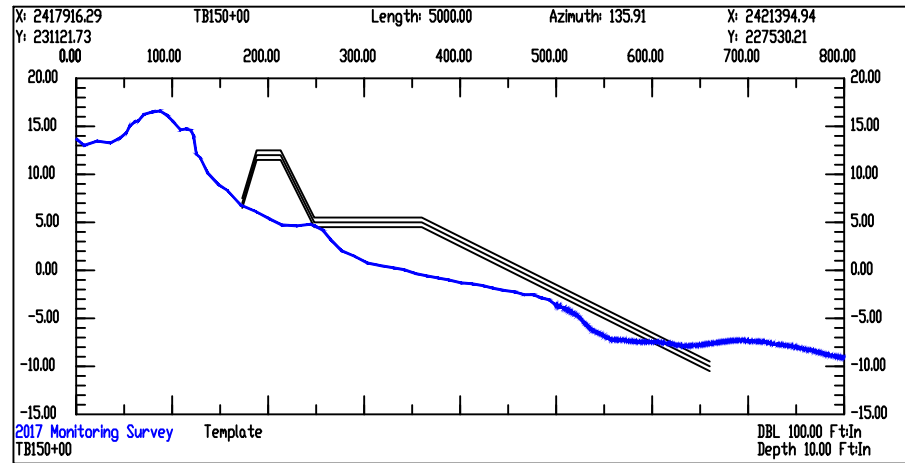
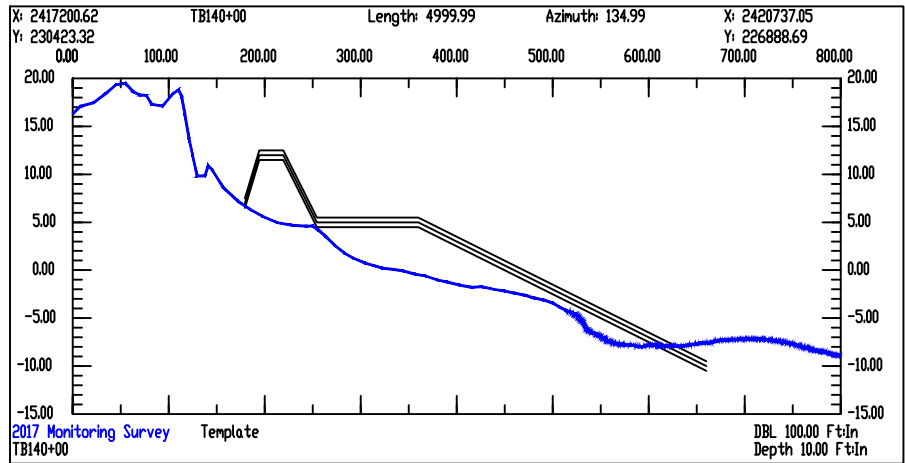
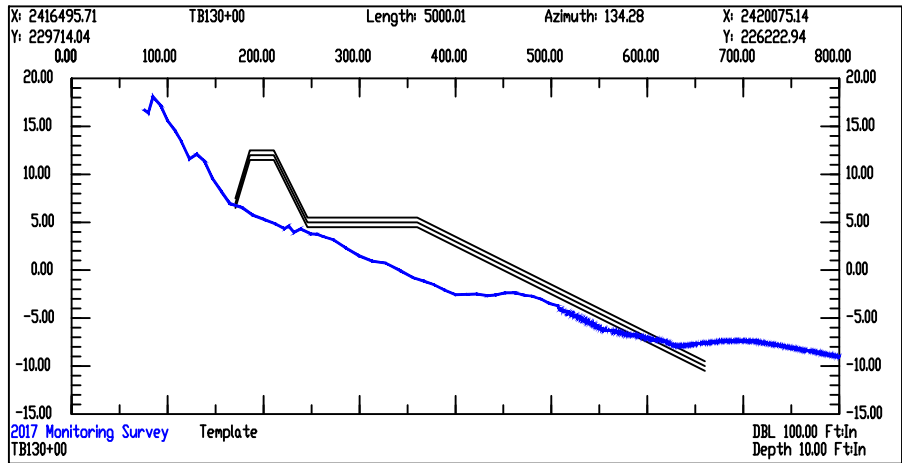
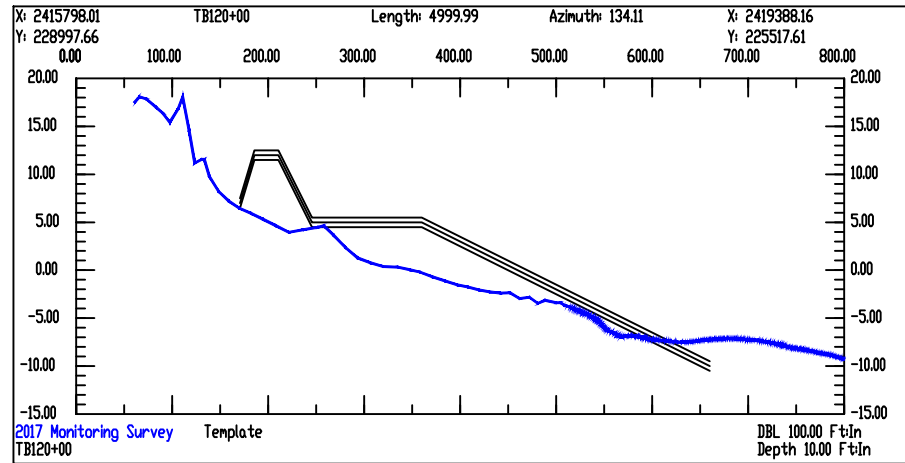
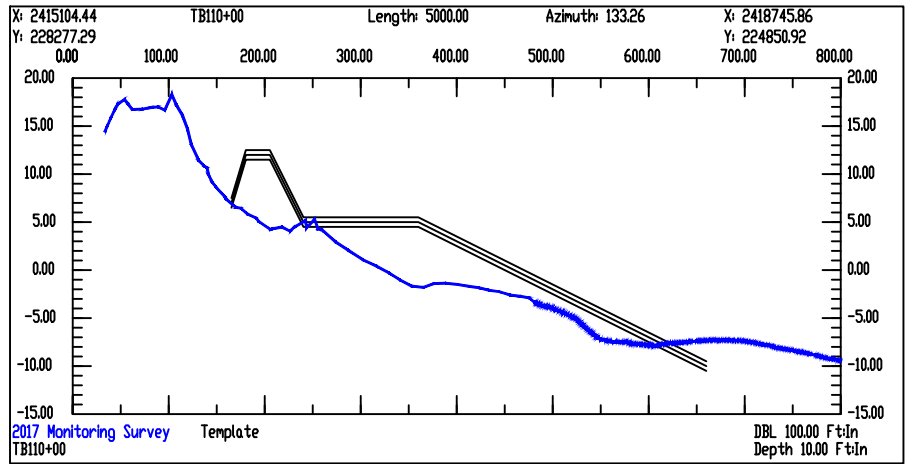
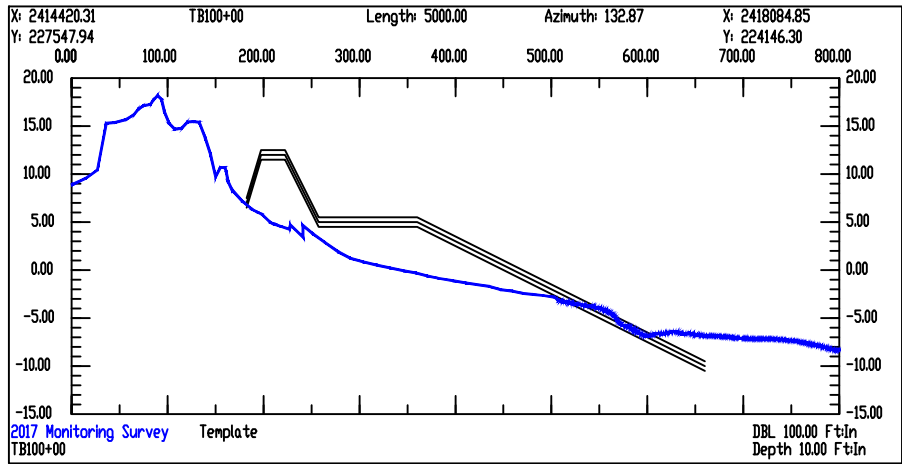
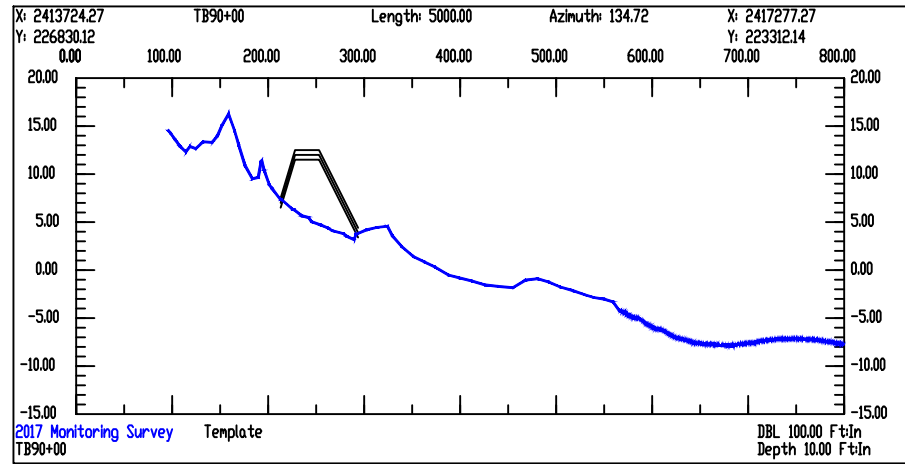
Channel Dredging and Coastal Storm Damage Reduction Project

Station 0+00 to 80+00 - Beach Template and Cross Sections

Christian L. Gibson, P.E. No. 026273

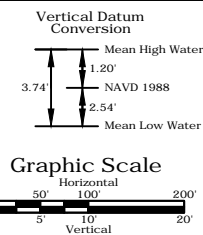
- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 11 OF 40



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910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

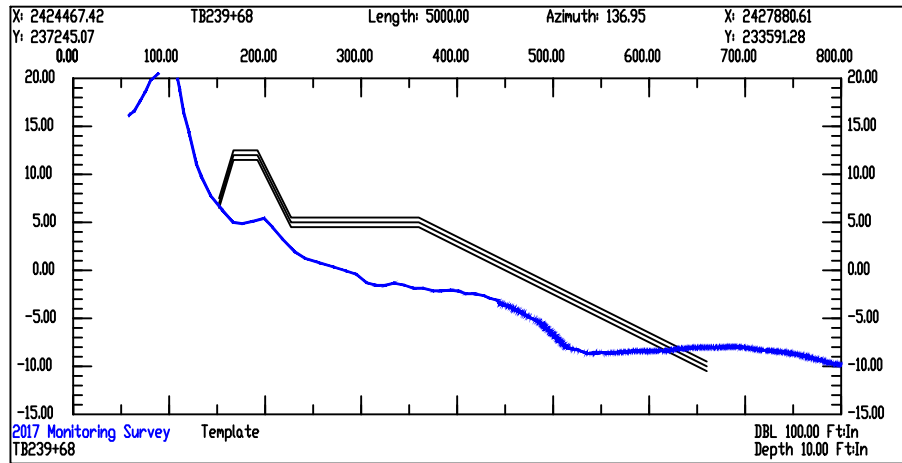
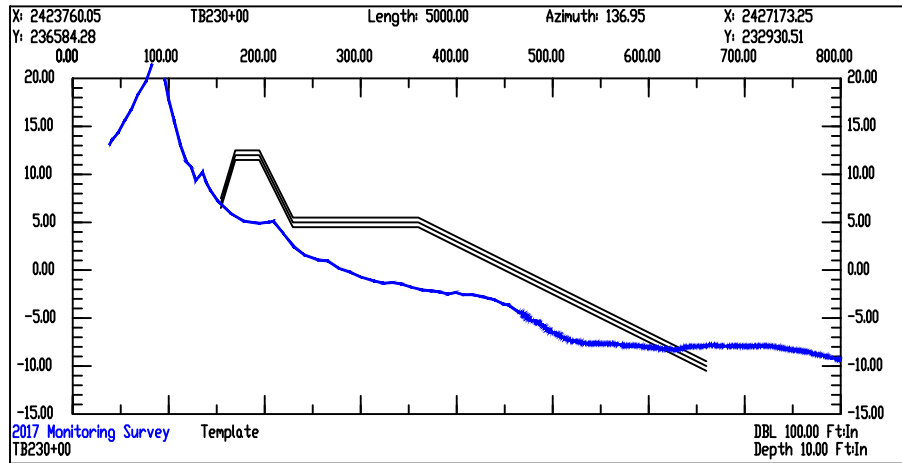
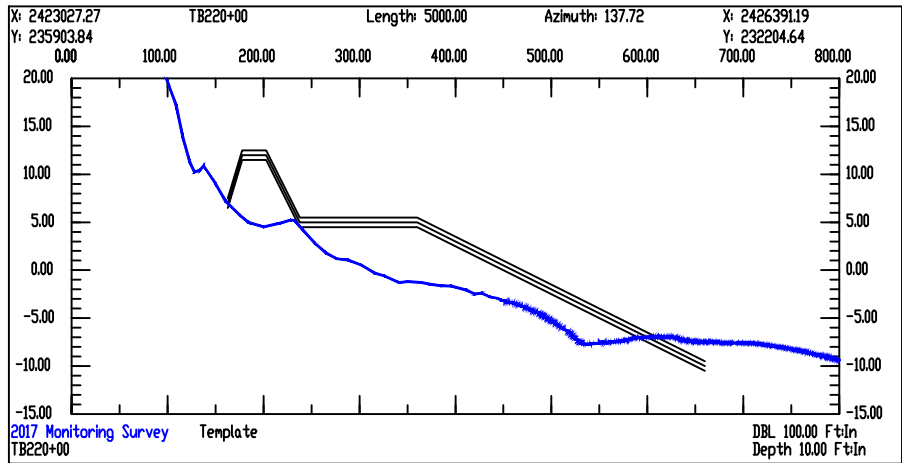
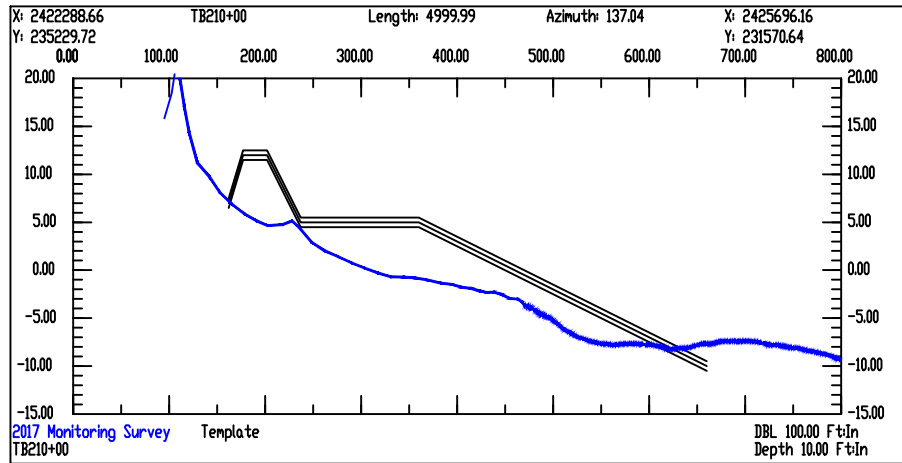
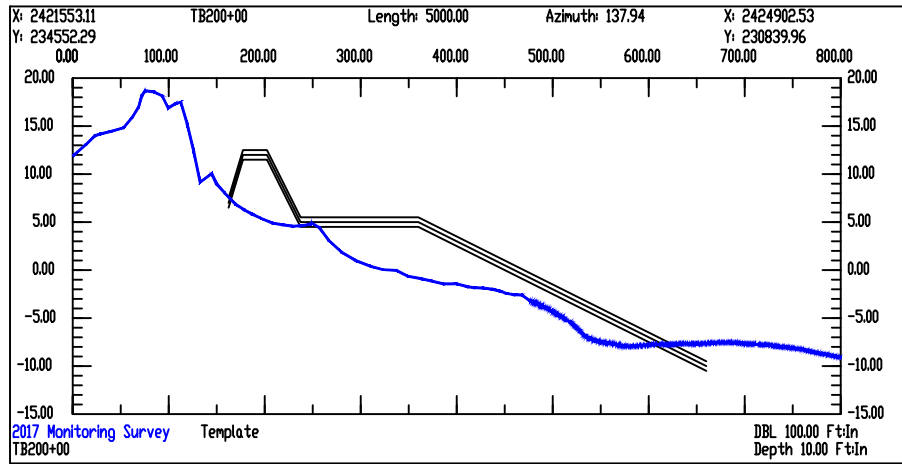
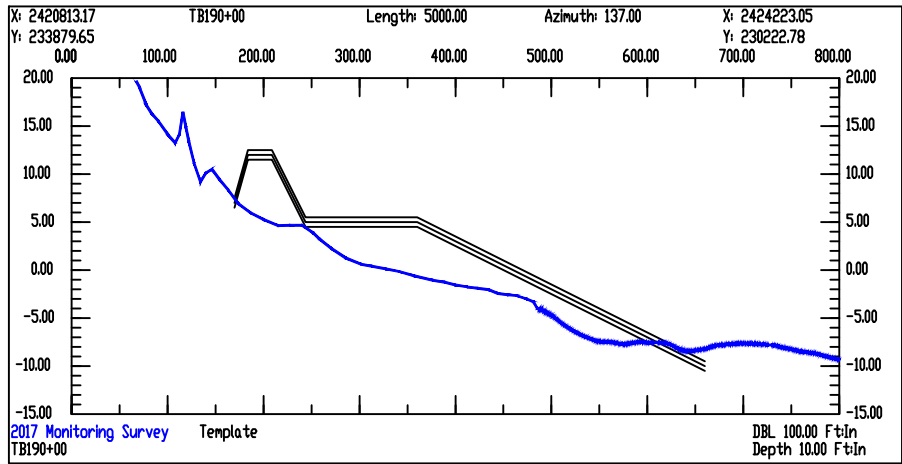
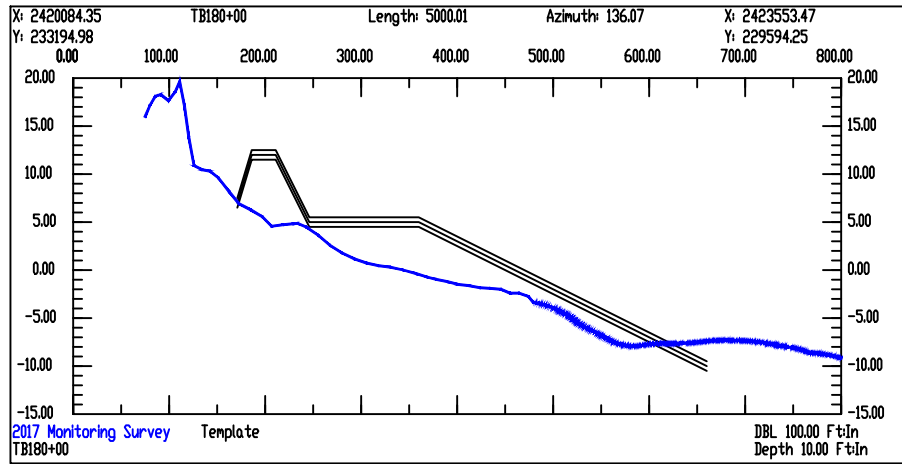
Channel Dredging and Coastal Storm Damage Reduction Project

Station 90+00 to 170+00 - Beach Template and Cross Sections

Christian L. Gibson, P.E. No. 026273

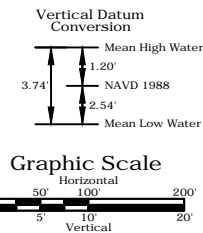
- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 12 OF 40



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387-B N. Green Meadows Dr.
Wilmington, NC 28405
910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 180+00 to 239+68 - Beach Template and Cross Sections

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 13 OF 40

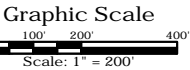
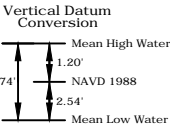
Topsail Creek								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
TC-1	2,400,467.12	224,628.56	TC-R1	2,400,434.93	224,597.12	TC-L1	2,400,499.32	224,660.01
TC-2	2,400,798.74	224,289.04	TC-R2	2,400,773.42	224,250.56	TC-L2	2,400,824.06	224,327.52
TC-3	2,400,994.85	224,213.71	TC-R3	2,400,985.93	224,168.93	TC-L3	2,401,003.77	224,258.49
TC-4	2,401,173.94	224,208.95	TC-R4	2,401,182.48	224,163.71	TC-L4	2,401,165.40	224,254.19
TC-5	2,401,525.33	224,357.41	TC-R5	2,401,534.77	224,312.55	TC-L5	2,401,515.89	224,402.27
TC-6	2,402,043.86	224,365.14	TC-R6	2,402,029.75	224,319.92	TC-L6	2,402,057.97	224,410.36
TC-7	2,402,266.40	224,206.31	TC-R7	2,402,224.13	224,181.20	TC-L7	2,402,308.67	224,231.42
TC-8	2,402,284.30	224,059.29	TC-R8	2,402,238.18	224,065.75	TC-L8	2,402,330.42	224,052.83
TC-9	2,401,873.24	223,085.39	TC-R9	2,401,827.58	223,092.98	TC-L9	2,401,918.89	223,077.82
TC-10	2,401,893.79	222,796.07	TC-R10	2,401,849.53	222,784.04	TC-L10	2,401,938.05	222,808.10
TC-11	2,402,059.80	222,460.89	TC-R11	2,402,027.02	222,425.69	TC-L11	2,402,092.58	222,496.09
TC-12	2,402,252.68	222,381.84	TC-R12	2,402,230.69	222,309.80	TC-L12	2,402,274.67	222,453.88
TC-13	2,403,485.87	222,127.30	TC-R13	2,403,437.46	222,060.71	TC-L13	2,403,534.28	222,193.89
TC-14	2,403,734.09	221,690.94	TC-R14	2,403,651.96	221,683.64	TC-L14	2,404,077.07	221,893.05
TC-15	2,403,595.24	221,298.24	TC-R15	2,403,531.83	221,343.89	TC-L15	2,403,658.65	221,252.59
TC-16	2,401,777.44	219,879.87	TC-R16	2,401,731.30	219,939.00	TC-L16	2,401,823.58	219,820.74

VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	216,500
Cut Through Channel	-16' MLW	-18' MLW	606,100
Topsail Creek	-12' MLW	-14' MLW	221,700
Banks Channel	-12' MLW	-14' MLW	922,600
Banks Side Channel '1	-7' MLW	-9' MLW	26,200
Banks Side Channel '2	-7' MLW	-9' MLW	30,300
GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	184,293	1,520,360



TI Coastal Services, Inc.
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Wilmington, NC 28405
910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Creek Dredge Channels and Control

Christian L. Gibson, P.E. No. 026273

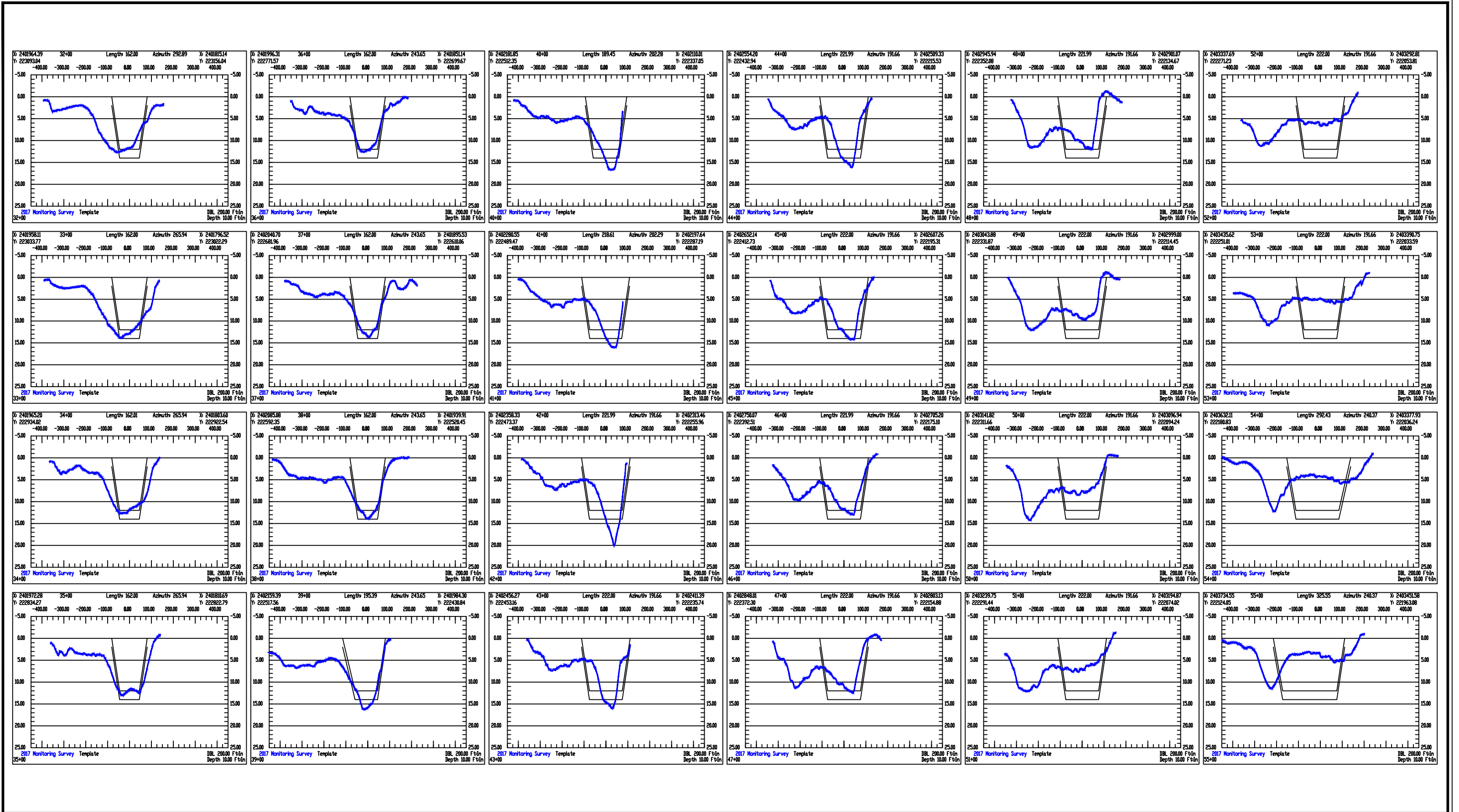
- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 200'	SHEET: 14 OF 40

Topsail Creek								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
TC-1	2,400,467.12	224,628.56	TC-R1	2,400,434.93	224,597.12	TC-L1	2,400,499.32	224,660.01
TC-2	2,400,798.74	224,289.04	TC-R2	2,400,773.42	224,250.56	TC-L2	2,400,824.06	224,327.52
TC-3	2,400,994.85	224,213.71	TC-R3	2,400,985.93	224,168.93	TC-L3	2,401,003.77	224,258.49
TC-4	2,401,173.94	224,208.95	TC-R4	2,401,182.48	224,163.71	TC-L4	2,401,165.40	224,254.19
TC-5	2,401,525.33	224,357.41	TC-R5	2,401,534.77	224,312.55	TC-L5	2,401,515.89	224,402.27
TC-6	2,402,043.86	224,365.14	TC-R6	2,402,029.75	224,319.92	TC-L6	2,402,057.97	224,410.36
TC-7	2,402,266.40	224,206.31	TC-R7	2,402,224.13	224,181.20	TC-L7	2,402,308.67	224,231.42
TC-8	2,402,284.30	224,059.29	TC-R8	2,402,238.18	224,065.75	TC-L8	2,402,330.42	224,052.83
TC-9	2,401,873.24	223,085.39	TC-R9	2,401,827.58	223,092.98	TC-L9	2,401,918.89	223,077.82
TC-10	2,401,893.79	222,796.07	TC-R10	2,401,849.53	222,784.04	TC-L10	2,401,938.05	222,808.10
TC-11	2,402,059.80	222,460.89	TC-R11	2,402,027.02	222,425.69	TC-L11	2,402,092.58	222,496.09
TC-12	2,402,252.68	222,381.84	TC-R12	2,402,230.69	222,309.80	TC-L12	2,402,274.67	222,453.88
TC-13	2,403,485.87	222,127.30	TC-R13	2,403,437.46	222,060.71	TC-L13	2,403,534.28	222,193.89
TC-14	2,403,734.09	221,690.94	TC-R14	2,403,651.96	221,683.64	TC-L14	2,404,077.07	221,893.05
TC-15	2,403,595.24	221,298.24	TC-R15	2,403,531.83	221,343.89	TC-L15	2,403,658.65	221,252.59
TC-16	2,401,777.44	219,879.87	TC-R16	2,401,731.30	219,939.00	TC-L16	2,401,823.58	219,820.74

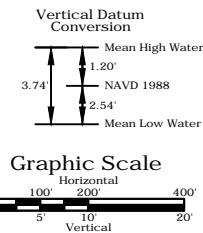
VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	216,500
Cut Through Channel	-16' MLW	-18' MLW	606,100
Topsail Creek	-12' MLW	-14' MLW	221,700
Banks Channel	-12' MLW	-14' MLW	922,600
Banks Side Channel 1	-7' MLW	-9' MLW	26,200
Banks Side Channel 2	-7' MLW	-9' MLW	30,300
GRAND TOTAL	2,413,000	796,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	184,293	1,520,360





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910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

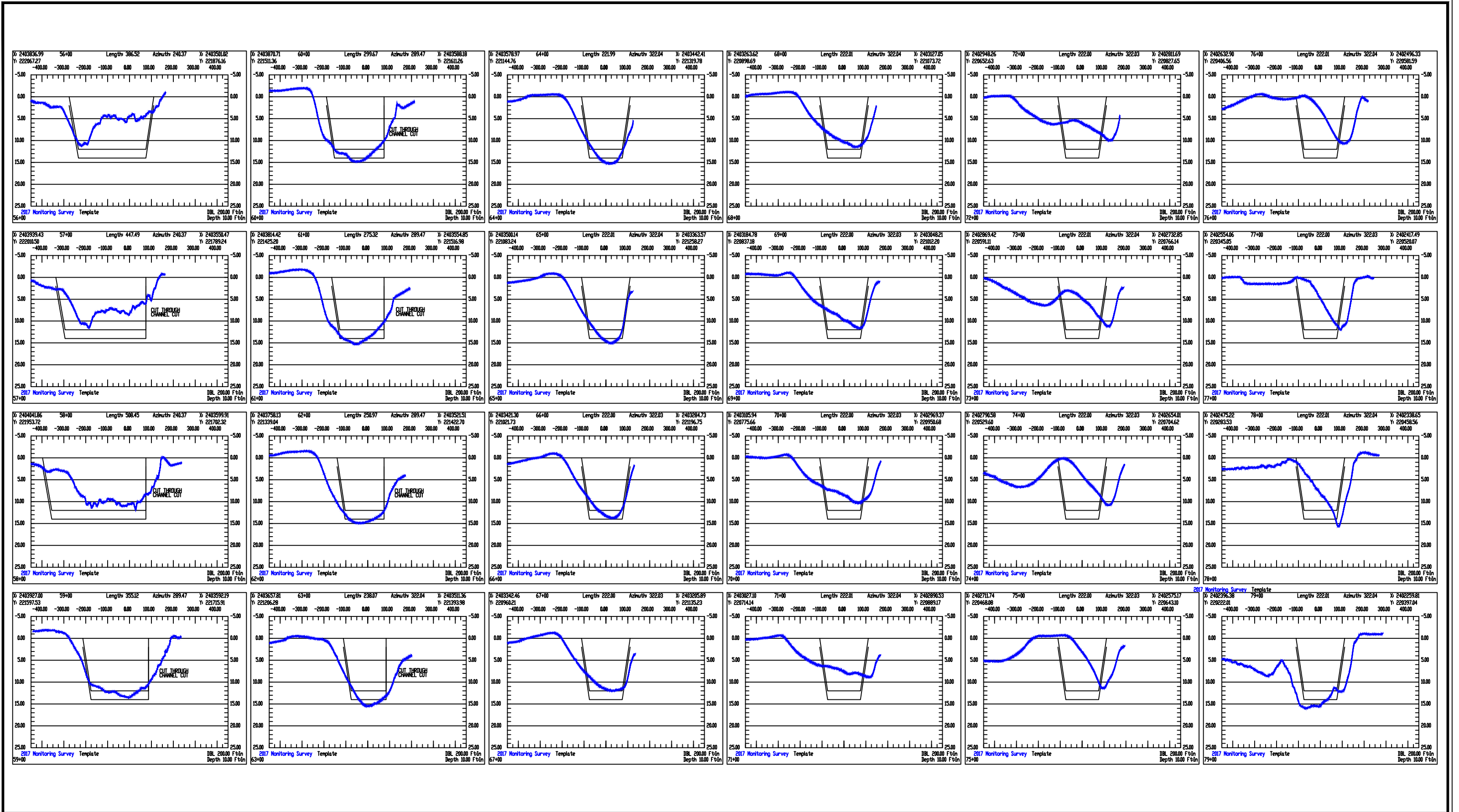
2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 32+00 to 55+00 - Topsail Creek Cross Sections

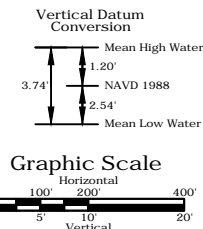
Christian L. Gibson, P.E. No. 026273

Notes: 1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet 2. Vertical Datum: Mean Low Water - Beaufort Datum 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time. 4. Soundings are expressed in feet and tenths. 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.	
DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 16 OF 40



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910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

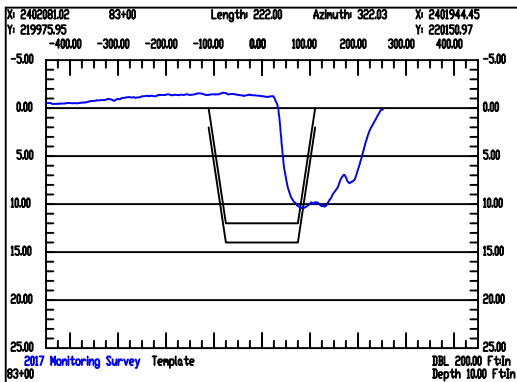
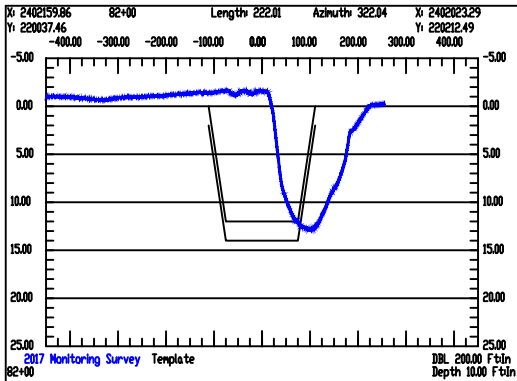
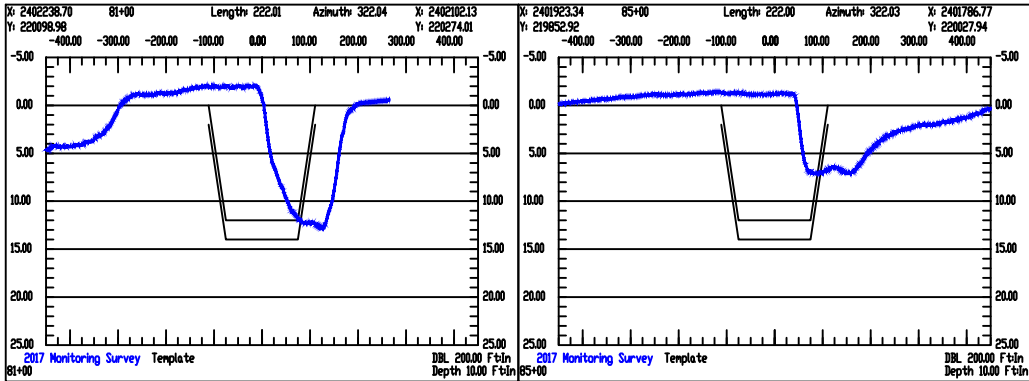
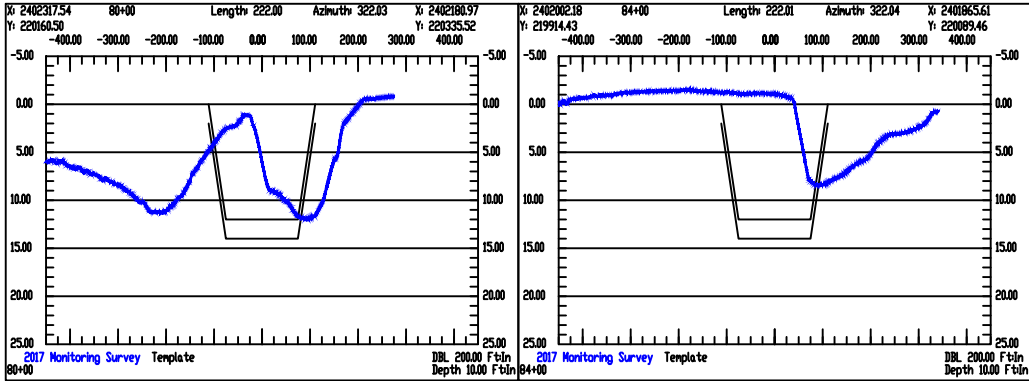
2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 56+00 to 79+00 - Topsail Creek Cross Sections

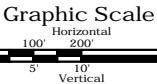
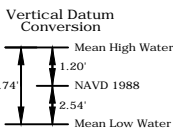
Christian L. Gibson, P.E. No. 026273

Notes: 1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet 2. Vertical Datum: Mean Low Water - Beaufort Datum 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time. 4. Soundings are expressed in feet and tenths. 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.	
DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 17 OF 40



TI Coastal Services, Inc.
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910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 80+00 to 85+00 - Topsail Creek Cross Sections

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg

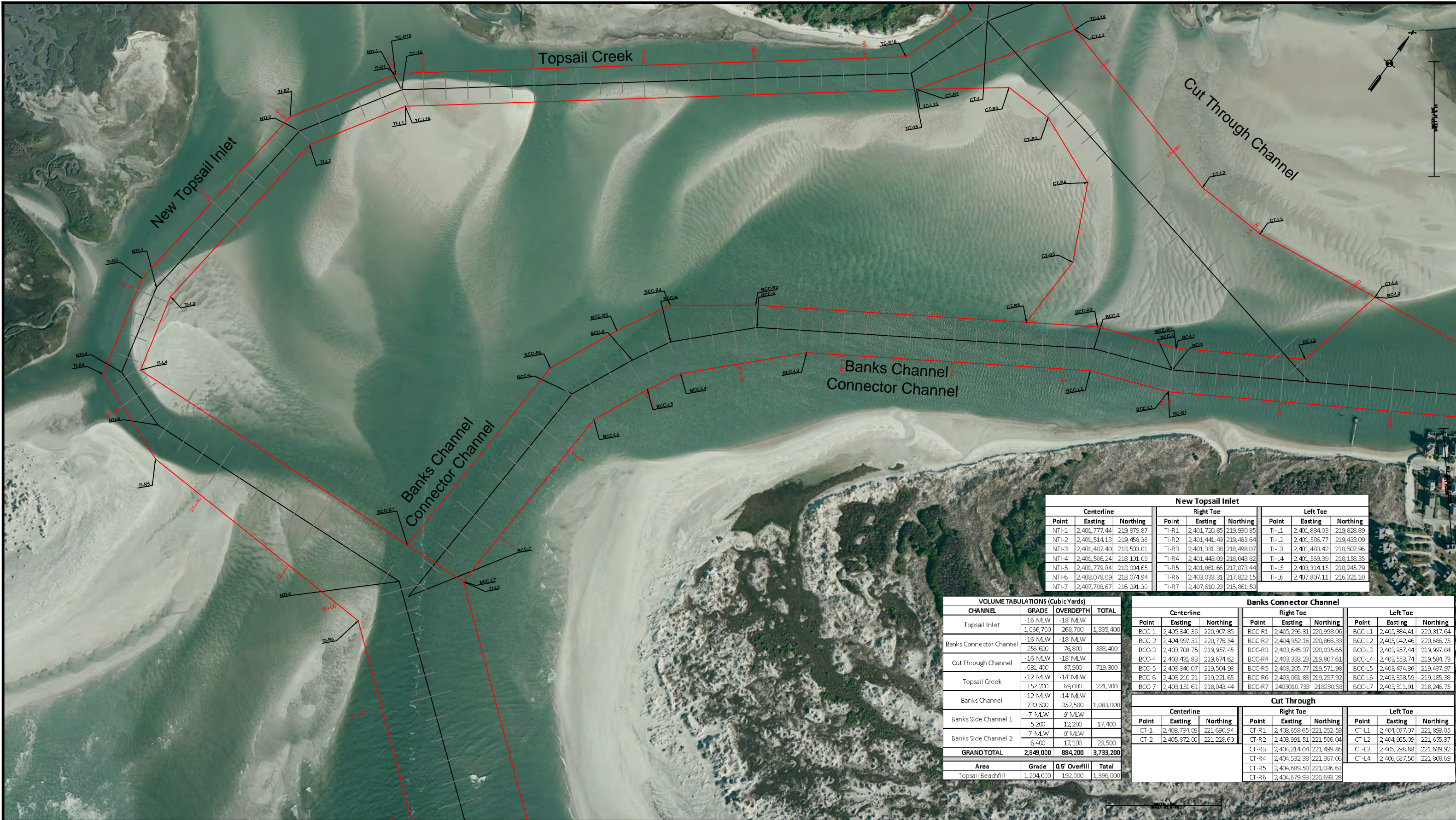
DWG DATE: December 1, 2017

SCALE: As Shown

SURVEY DATE: August 2017

SHEET: 18 OF 40

Christian L. Gibson, P.E. No. 026273



New Topsail Inlet								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
NTI-1	2,401,777.44	219,879.87	TI-R1	2,401,720.85	219,980.85	TI-L1	2,401,884.08	219,828.89
NTI-2	2,401,514.13	219,458.36	TI-R2	2,401,441.49	219,483.64	TI-L2	2,401,586.77	219,433.09
NTI-3	2,401,407.40	218,503.01	TI-R3	2,401,331.38	218,488.07	TI-L3	2,401,483.42	218,507.96
NTI-4	2,401,506.24	218,101.09	TI-R4	2,401,443.09	218,043.82	TI-L4	2,401,569.39	218,158.35
NTI-5	2,401,779.84	218,004.65	TI-R5	2,401,861.66	217,873.44	TI-L5	2,403,314.15	218,245.79
NTI-6	2,408,078.09	218,074.94	TI-R6	2,403,088.31	217,822.15	TI-L6	2,407,807.11	216,321.10
NTI-7	2,407,708.67	216,091.30	TI-R7	2,407,610.23	215,961.50			

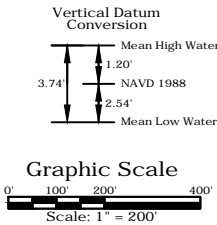
VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-18' MLW	-18' MLW	1,335,400
Banks Connector Channel	-18' MLW	-18' MLW	333,400
Cut Through Channel	-16' MLW	-18' MLW	719,300
Topsail Creek	-12' MLW	-14' MLW	221,200
Banks Channel	-12' MLW	-14' MLW	1,083,000
Banks Side Channel 1	-7' MLW	-9' MLW	17,400
Banks Side Channel 2	-7' MLW	-9' MLW	23,500
GRAND TOTAL	2,849,000	884,200	3,733,200
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,204,000	192,000	1,396,000

Banks Connector Channel								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
BCC-1	2,405,340.36	220,907.85	BCC-R1	2,405,296.31	220,998.06	BCC-L1	2,405,384.41	220,817.64
BCC-2	2,404,997.31	220,776.54	BCC-R2	2,404,952.16	220,866.33	BCC-L2	2,405,042.46	220,686.75
BCC-3	2,403,708.75	219,957.45	BCC-R3	2,403,645.37	220,035.65	BCC-L3	2,403,957.44	219,997.04
BCC-4	2,408,481.83	219,674.62	BCC-R4	2,408,398.23	219,807.61	BCC-L4	2,408,553.74	219,584.73
BCC-5	2,408,340.07	219,504.98	BCC-R5	2,408,205.77	219,571.98	BCC-L5	2,408,474.36	219,487.97
BCC-6	2,403,210.21	219,221.65	BCC-R6	2,403,061.83	219,257.92	BCC-L6	2,403,358.59	219,185.38
BCC-7	2,403,151.61	218,043.44	BCC-R7	2,403,010.733	218,230.58	BCC-L7	2,403,311.91	218,246.75

Cut Through								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
CT-1	2,408,734.09	221,690.94	CT-R1	2,408,658.65	221,252.59	CT-L1	2,404,077.07	221,688.05
CT-2	2,405,872.00	221,228.60	CT-R2	2,406,991.51	221,506.04	CT-L2	2,404,965.09	221,655.37
			CT-R3	2,404,214.04	221,499.86	CT-L3	2,405,298.68	221,639.92
			CT-R4	2,404,532.38	221,367.06	CT-L4	2,406,637.50	221,808.68
			CT-R5	2,404,689.50	221,036.63			
			CT-R6	2,404,679.93	220,696.28			



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Wilmington, NC 28405
910.821.1358 11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

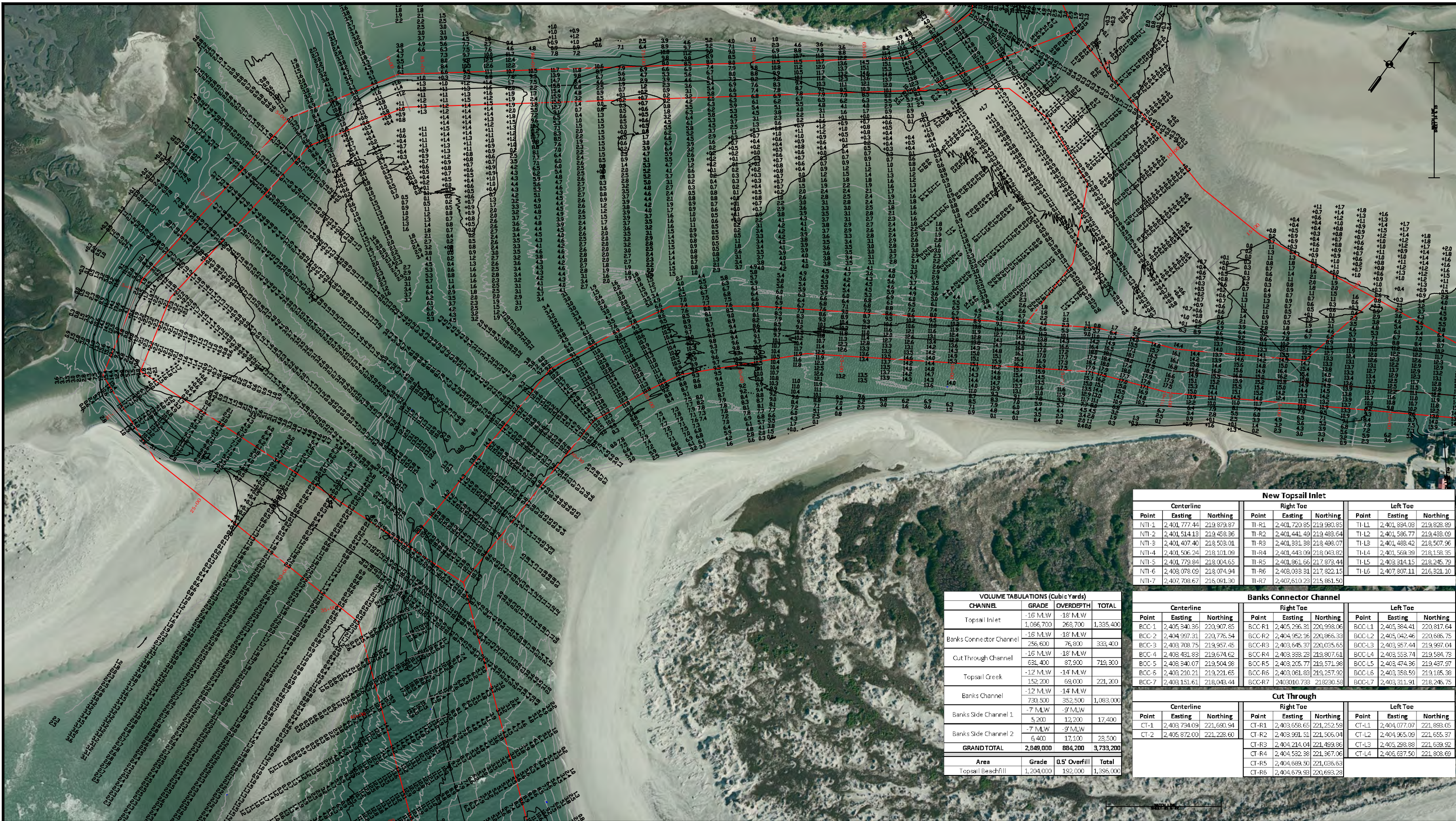
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Creek Dredge Channels and Control

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 200'	SHEET: 19 OF 40

Christian L. Gibson, P.E. No. 026273



New Topsail Inlet								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
NTI-1	2,400,777.44	219,879.87	TI-R1	2,401,720.85	219,980.85	TI-L1	2,401,894.03	219,828.89
NTI-2	2,401,514.13	219,458.36	TI-R2	2,401,441.49	219,488.64	TI-L2	2,401,586.77	219,488.09
NTI-3	2,401,407.40	218,503.01	TI-R3	2,401,331.38	218,498.07	TI-L3	2,401,488.42	218,507.96
NTI-4	2,401,506.24	218,101.09	TI-R4	2,401,443.09	218,043.82	TI-L4	2,401,569.39	218,158.35
NTI-5	2,401,779.84	218,004.65	TI-R5	2,401,961.66	217,872.44	TI-L5	2,403,314.15	218,245.79
NTI-6	2,403,078.09	218,074.94	TI-R6	2,408,093.31	217,822.15	TI-L6	2,407,807.11	216,321.10
NTI-7	2,407,708.67	216,091.30	TI-R7	2,407,610.23	215,861.50			

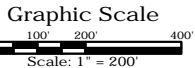
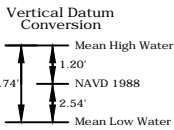
VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	1,335,400
Banks Connector Channel	-16' MLW	-18' MLW	333,400
Cut Through Channel	-16' MLW	-18' MLW	719,300
Topsail Creek	-12' MLW	-14' MLW	221,200
Banks Channel	-12' MLW	-14' MLW	1,083,000
Banks Slide Channel 1	-7' MLW	-9' MLW	17,400
Banks Slide Channel 2	-7' MLW	-9' MLW	23,500
GRAND TOTAL	2,849,000	884,200	3,733,200
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,204,000	192,000	1,396,000

Banks Connector Channel								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
BCC-1	2,405,340.36	220,907.85	BCC-R1	2,405,296.31	220,998.06	BCC-L1	2,405,384.41	220,817.64
BCC-2	2,404,997.31	220,776.54	BCC-R2	2,404,952.16	220,866.33	BCC-L2	2,405,042.46	220,686.75
BCC-3	2,403,708.75	219,957.45	BCC-R3	2,403,645.37	220,035.65	BCC-L3	2,403,957.44	219,997.04
BCC-4	2,403,431.83	219,674.62	BCC-R4	2,403,338.23	219,807.61	BCC-L4	2,403,553.74	219,584.73
BCC-5	2,403,340.07	219,504.98	BCC-R5	2,403,205.77	219,571.98	BCC-L5	2,403,474.36	219,457.97
BCC-6	2,403,210.21	219,221.65	BCC-R6	2,403,061.83	219,257.92	BCC-L6	2,403,358.59	219,185.39
BCC-7	2,403,151.61	218,043.44	BCC-R7	2,403,010.733	218,230.58	BCC-L7	2,403,311.91	218,246.75

Cut Through								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
CT-1	2,403,734.09	221,690.94	CT-R1	2,403,658.65	221,252.59	CT-L1	2,404,077.07	221,893.05
CT-2	2,405,872.00	221,228.60	CT-R2	2,403,991.51	221,506.04	CT-L2	2,404,965.09	221,655.37
CT-R3	2,404,214.04	221,499.86	CT-L3	2,405,298.88	221,638.92			
CT-R4	2,404,592.38	221,367.06	CT-L4	2,406,637.50	221,808.69			
CT-R5	2,404,689.50	221,036.63						
CT-R6	2,404,679.93	220,693.28						



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TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

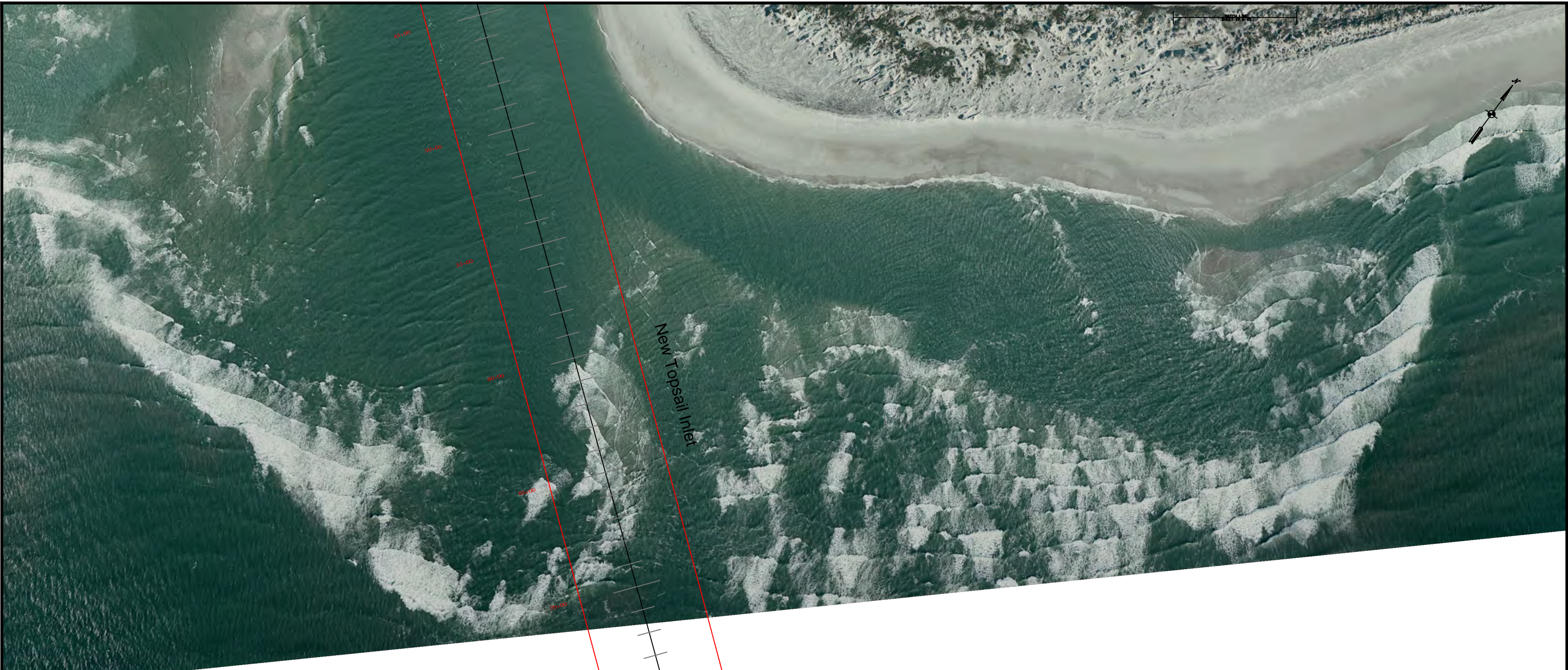
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Creek Dredge Channels and Control

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 200'	SHEET: 20 OF 40

Christian L. Gibson, P.E. No. 026273

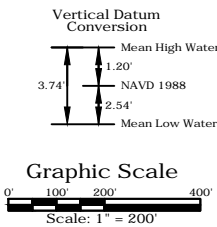


VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	
	1,066,700	268,700	1,335,400
Banks Connector Channel	-16' MLW	-18' MLW	
	256,600	76,800	333,400
Cut Through Channel	-16' MLW	-18' MLW	
	631,400	87,900	719,300
Topsail Creek	-12' MLW	-14' MLW	
	152,200	69,000	221,200
Banks Channel	-12' MLW	-14' MLW	
	730,500	352,500	1,083,000
Banks Side Channel 1	-7' MLW	-9' MLW	
	5,200	12,200	17,400
Banks Side Channel 2	-7' MLW	-9' MLW	
	6,400	17,100	23,500
GRAND TOTAL	2,849,000	884,200	3,733,200
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,204,000	192,000	1,396,000

New Topsail Inlet								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
NTI-1	2,401,777.44	219,879.87	TI-R1	2,400,720.85	219,980.85	TI-L1	2,401,894.08	219,828.89
NTI-2	2,401,514.13	219,458.36	TI-R2	2,400,441.49	219,488.64	TI-L2	2,401,586.77	219,438.09
NTI-3	2,401,407.40	218,503.01	TI-R3	2,400,331.38	218,498.07	TI-L3	2,401,483.42	218,507.96
NTI-4	2,401,506.24	218,101.09	TI-R4	2,400,443.09	218,043.82	TI-L4	2,401,569.39	218,158.35
NTI-5	2,401,779.84	218,004.65	TI-R5	2,400,861.66	217,873.44	TI-L5	2,403,314.15	218,245.79
NTI-6	2,408,078.09	218,074.94	TI-R6	2,408,088.81	217,822.15	TI-L6	2,406,694.87	215,507.47
NTI-7	2,406,547.18	215,305.49	TI-R7	2,406,380.70	215,118.50			



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910.821.1358 11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

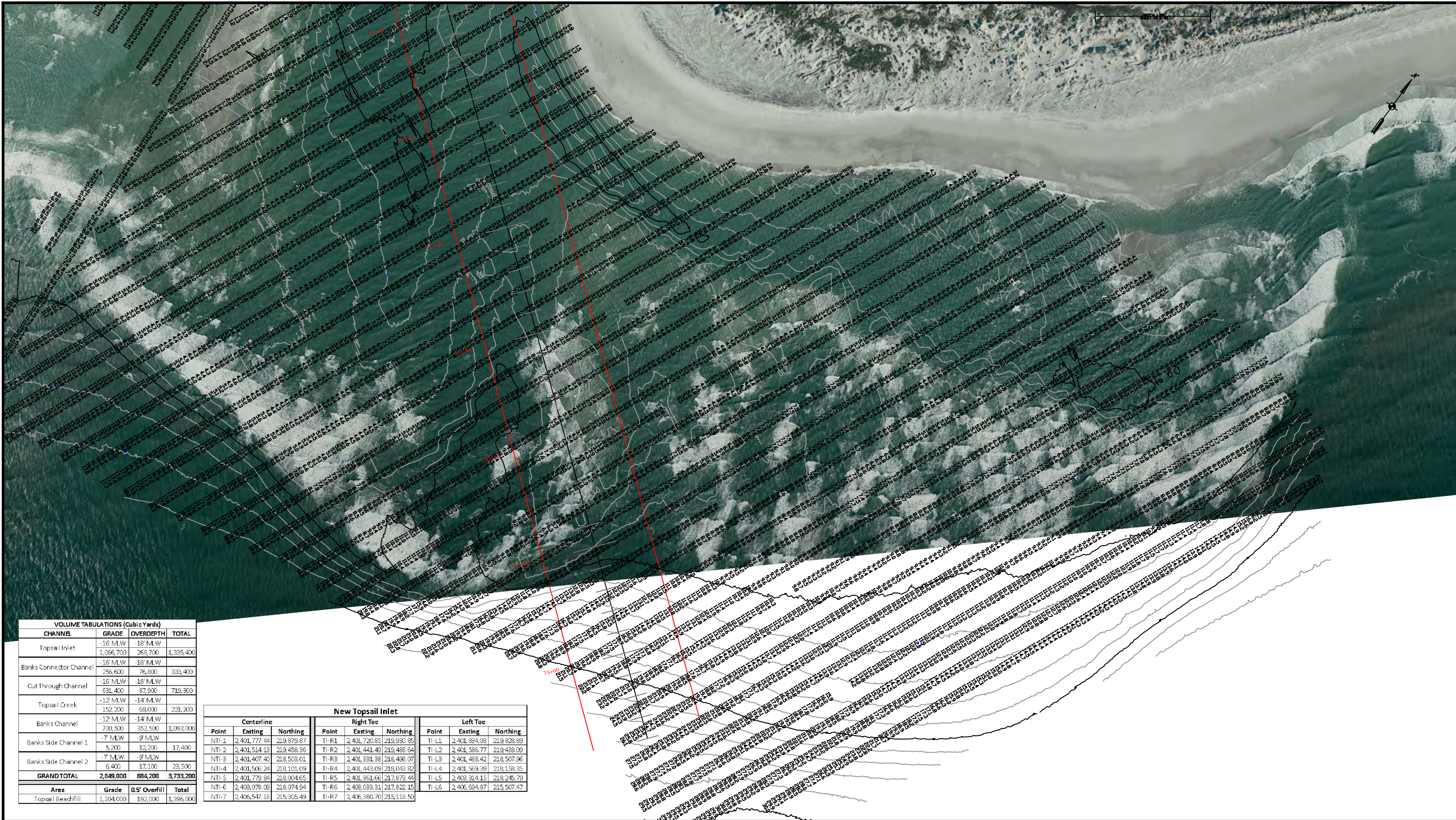
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Creek Dredge Channels and Control

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 200'	SHEET: 21 OF 40

Christian L. Gibson, P.E. No. 026273

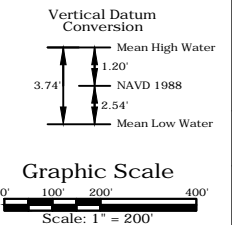


VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' M.L.W.	-18' M.L.W.	1,395,400
Banks Connector Channel	-16' M.L.W.	-18' M.L.W.	333,400
Cut Through Channel	-16' M.L.W.	-18' M.L.W.	719,300
Topsail Creek	-12' M.L.W.	-14' M.L.W.	221,200
Banks Channel	-12' M.L.W.	-14' M.L.W.	1,063,000
Banks Side Channel 1	-7' M.L.W.	-9' M.L.W.	17,400
Banks Side Channel 2	-7' M.L.W.	-9' M.L.W.	23,500
GRAND TOTAL	2,849,000	884,200	3,733,200
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,204,000	192,000	1,396,000

New Topsail Inlet								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
NTI-1	2,401,777.44	219,879.87	TI-R1	2,401,720.85	219,930.85	TI-L1	2,401,894.09	219,828.89
NTI-2	2,401,514.13	219,458.36	TI-R2	2,401,441.49	219,488.64	TI-L2	2,401,586.77	219,438.09
NTI-3	2,401,407.40	218,503.01	TI-R3	2,401,531.38	218,498.07	TI-L3	2,401,483.42	218,507.96
NTI-4	2,401,506.24	218,101.09	TI-R4	2,401,443.09	218,043.82	TI-L4	2,401,569.39	218,158.35
NTI-5	2,401,779.84	218,004.65	TI-R5	2,401,861.66	217,873.44	TI-L5	2,403,314.15	218,245.79
NTI-6	2,403,078.09	218,074.94	TI-R6	2,403,033.31	217,822.15	TI-L6	2,406,694.87	215,507.47
NTI-7	2,406,547.18	215,305.49	TI-R7	2,406,380.70	215,118.50			



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Wilmington, NC 28405
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TOWN OF TOPSAIL BEACH

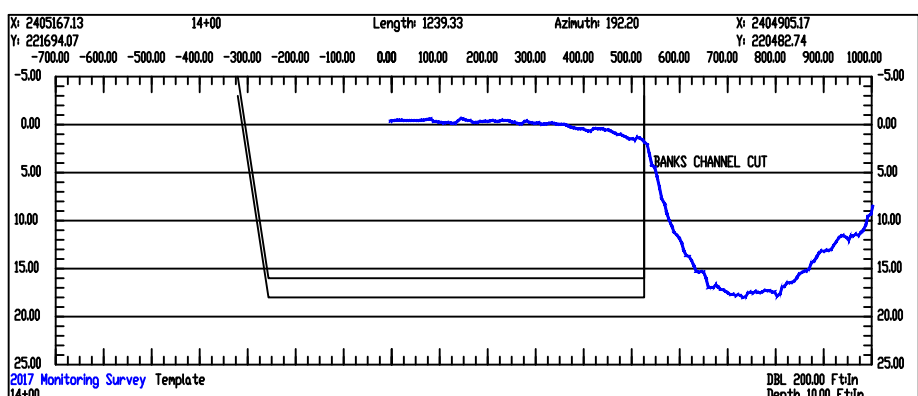
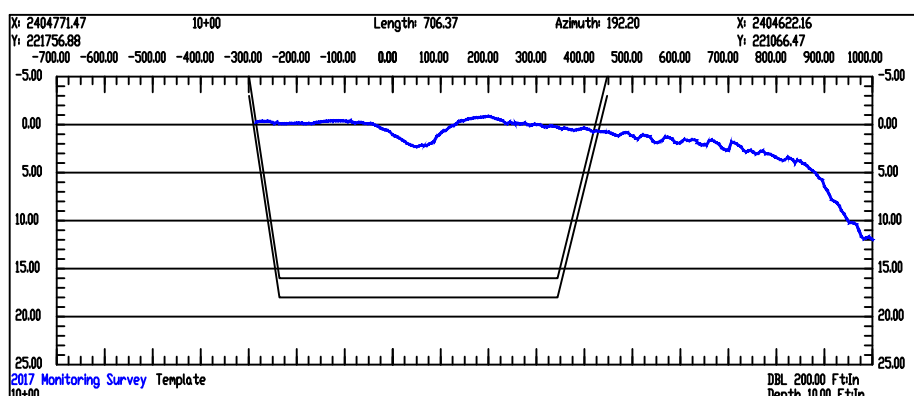
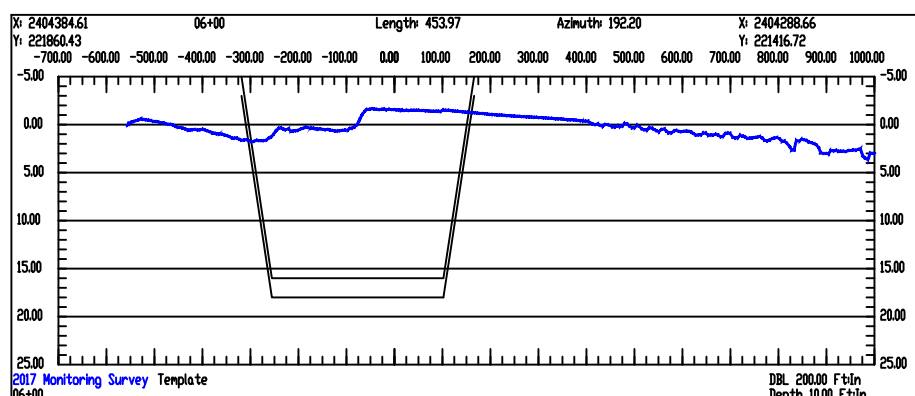
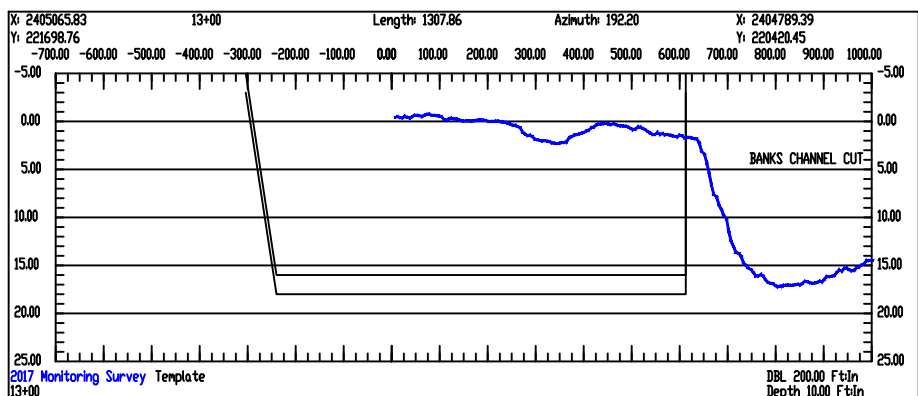
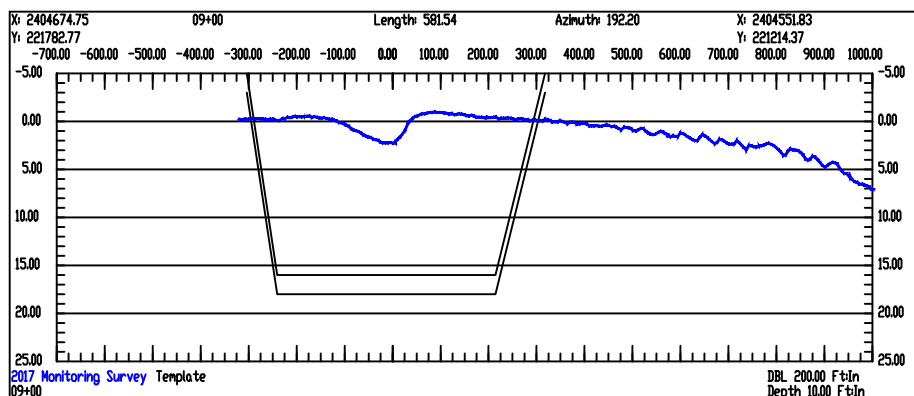
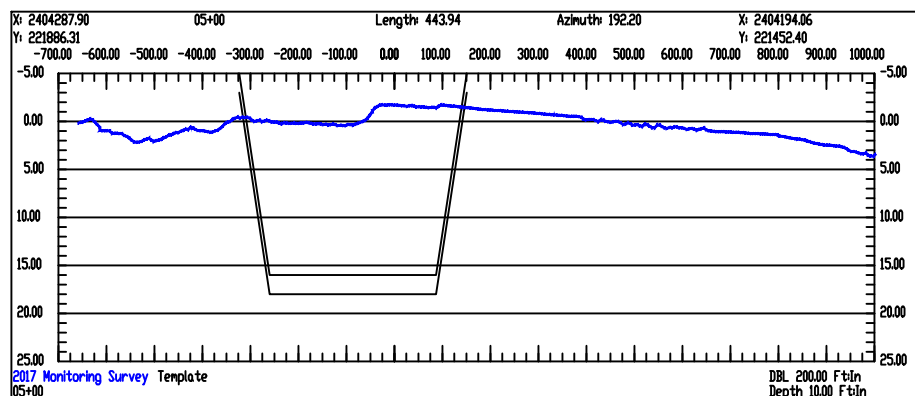
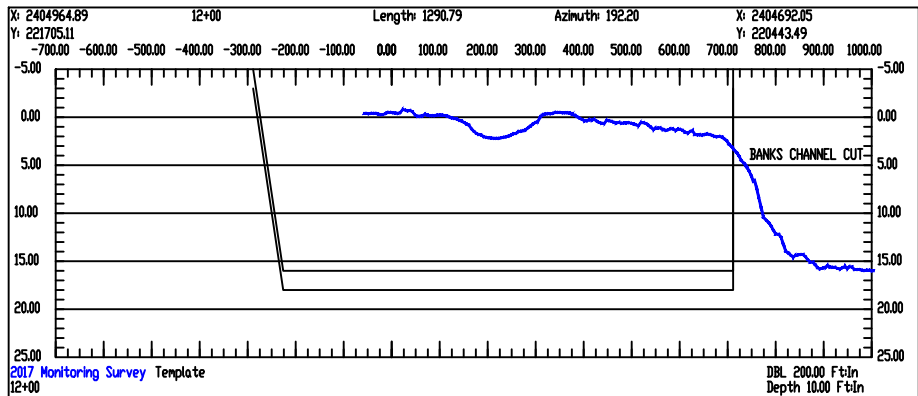
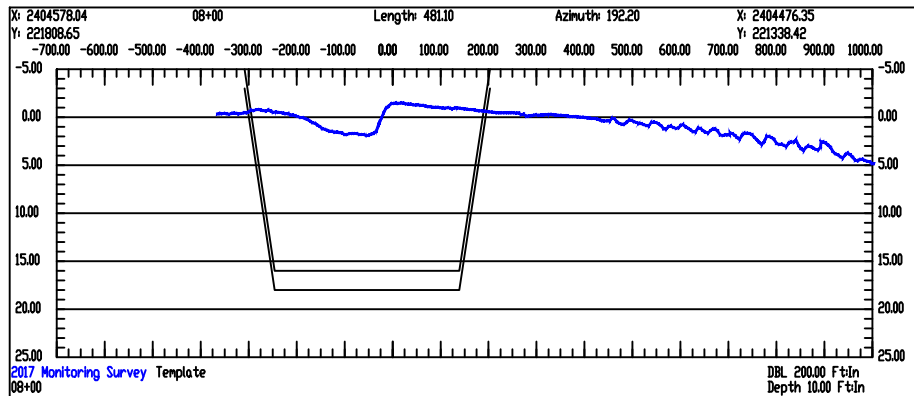
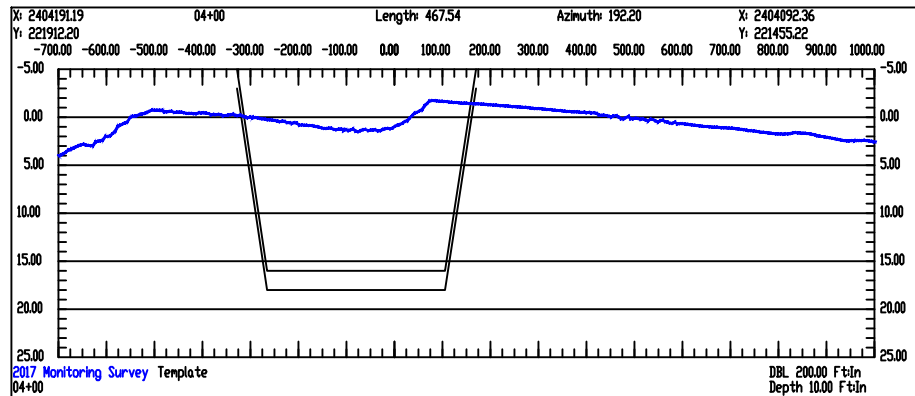
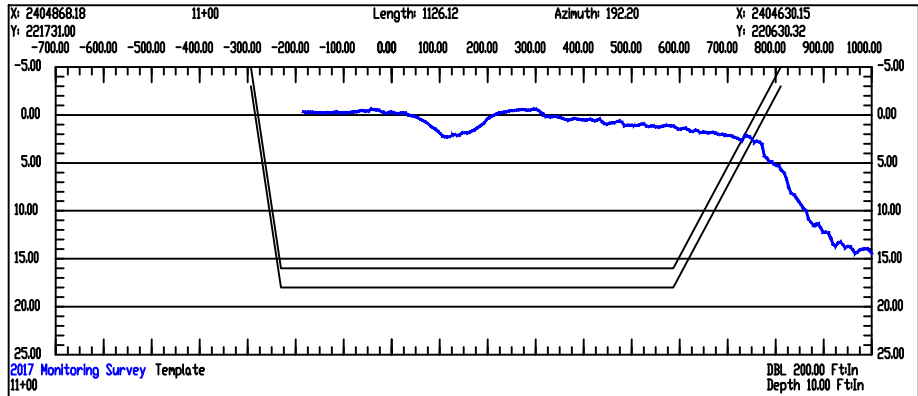
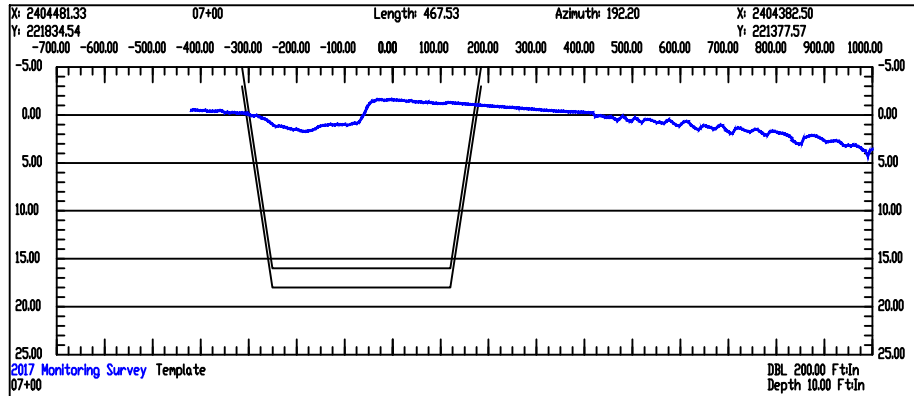
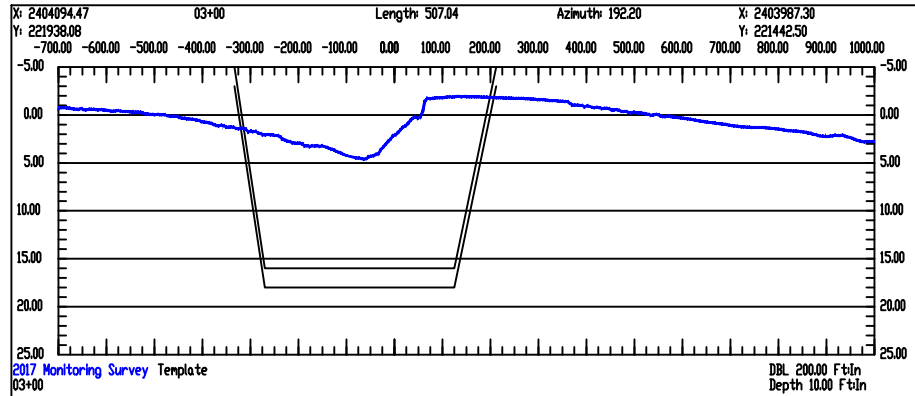
2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Creek Dredge Channels and Control

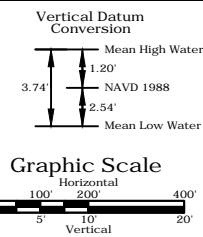
Notes: 1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet 2. Vertical Datum: NAVD88 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time. 4. Soundings are expressed in feet and tenths. 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.	
DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 200'	SHEET: 22 OF 40

Christian L. Gibson, P.E. No. 026273



TI Coastal Services, Inc.
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Wilmington, NC 28405
910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

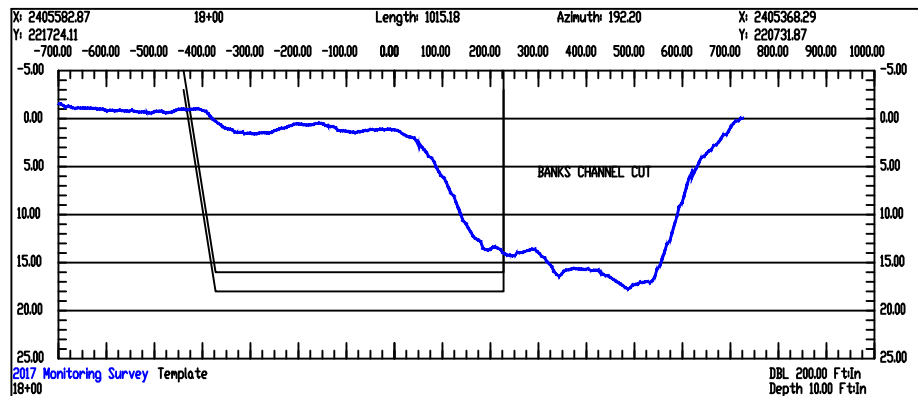
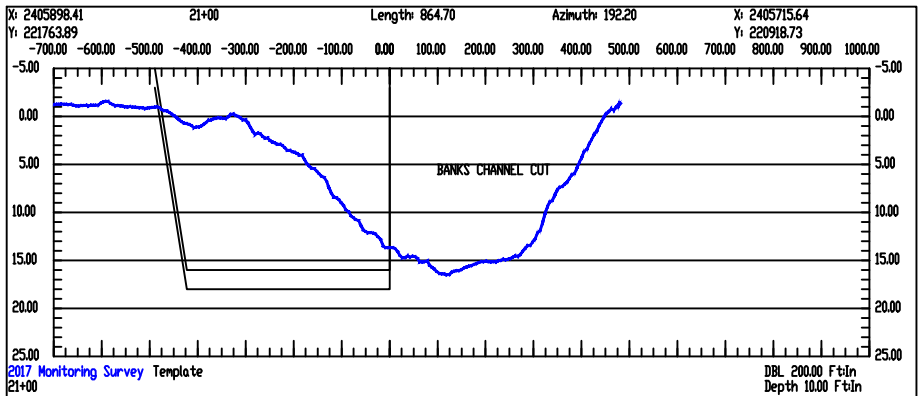
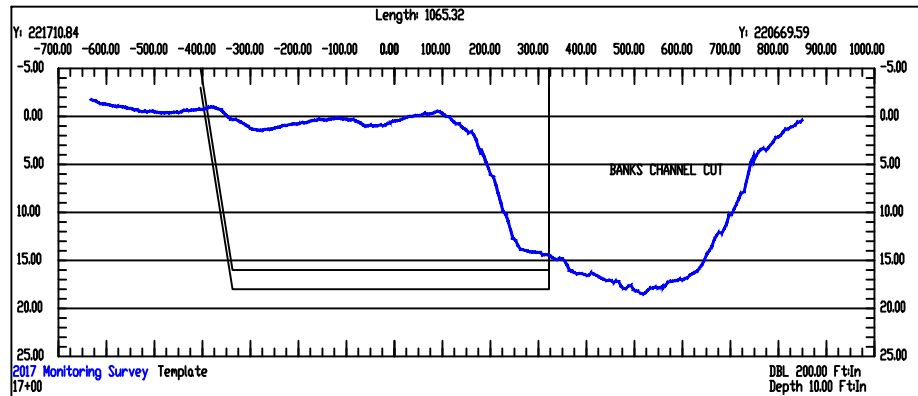
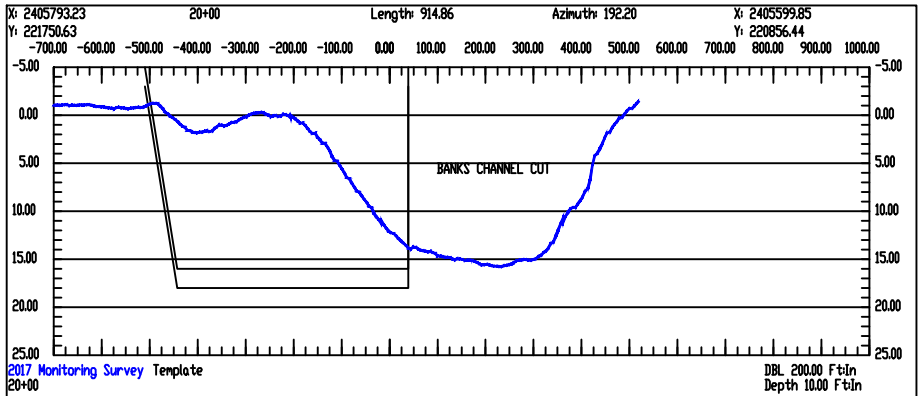
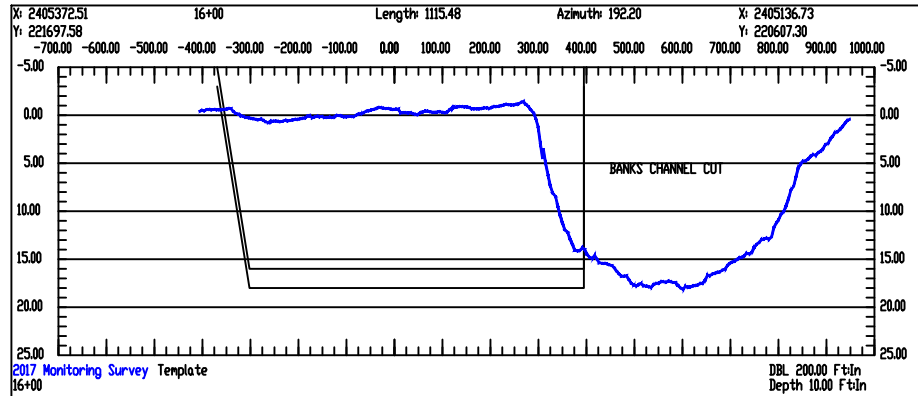
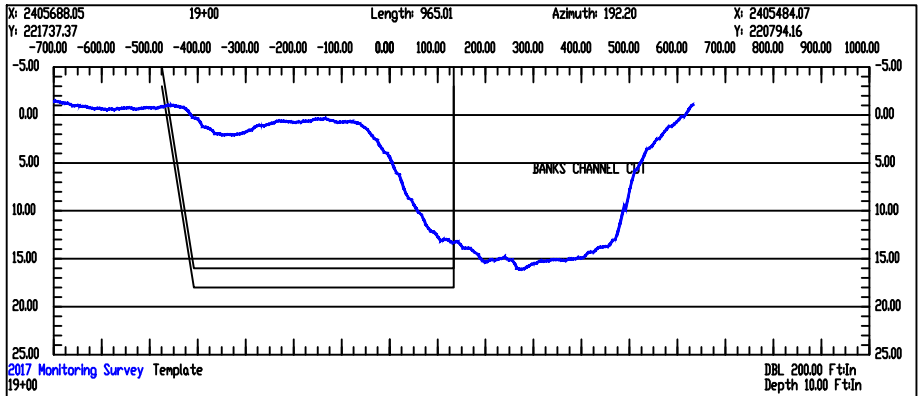
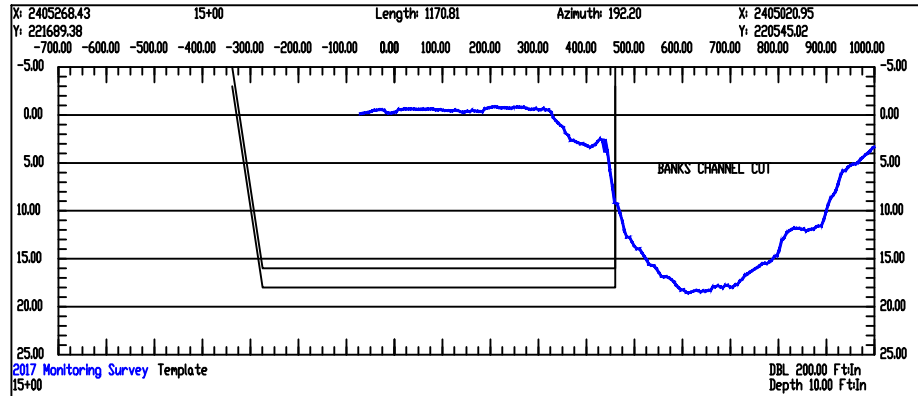
2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 3+00 to 14+00 - Cut Through Cross Sections

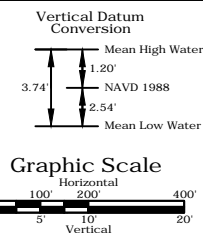
Christian L. Gibson, P.E. No. 026273

Notes: 1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet 2. Vertical Datum: Mean Low Water - Beaufort Datum 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time. 4. Soundings are expressed in feet and tenths. 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.	
DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 23 OF 40



TI Coastal Services, Inc.
387-B N. Green Meadows Dr.
Wilmington, NC 28405
910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

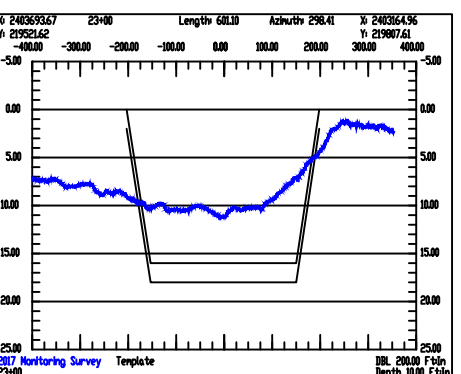
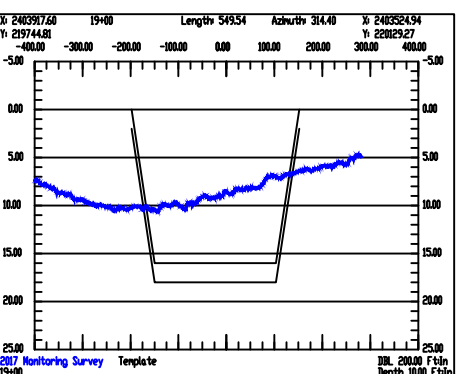
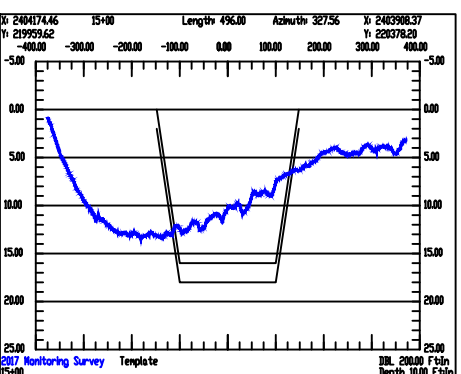
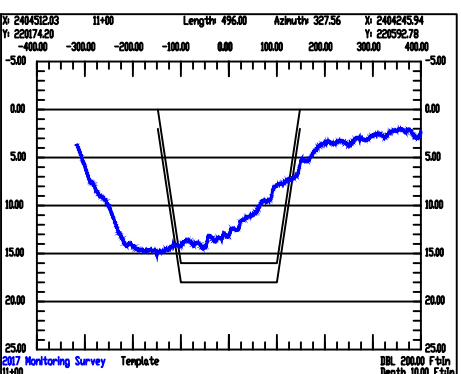
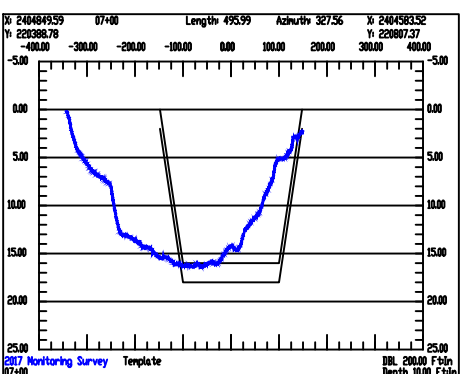
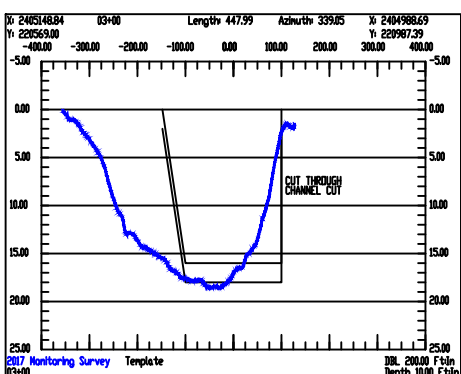
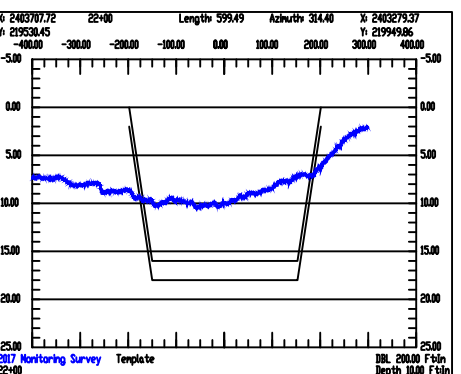
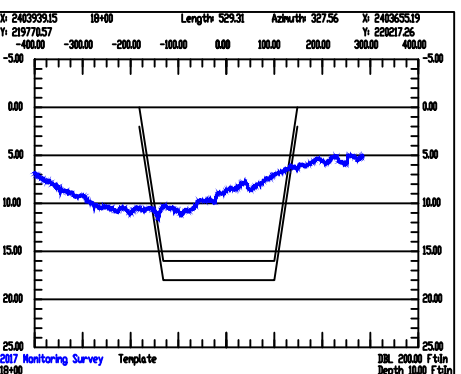
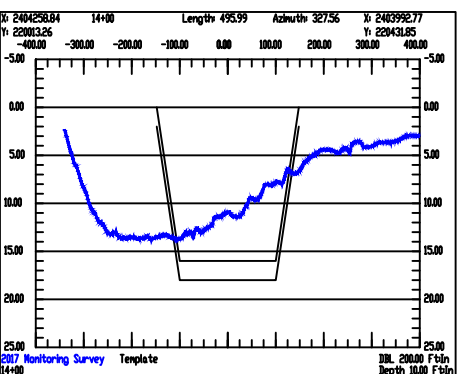
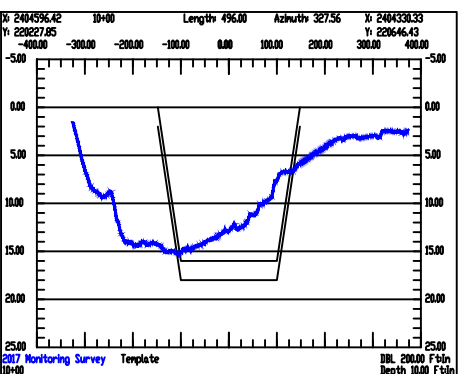
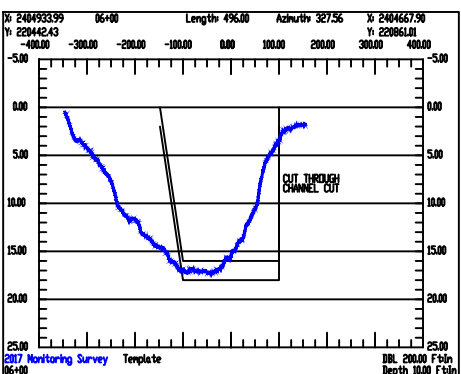
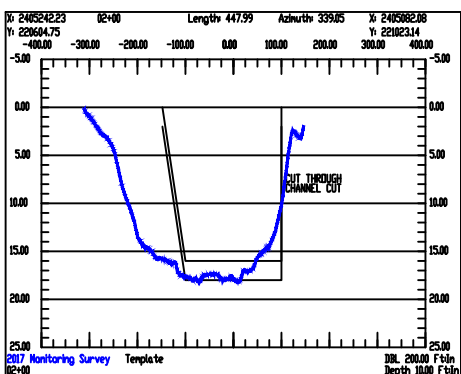
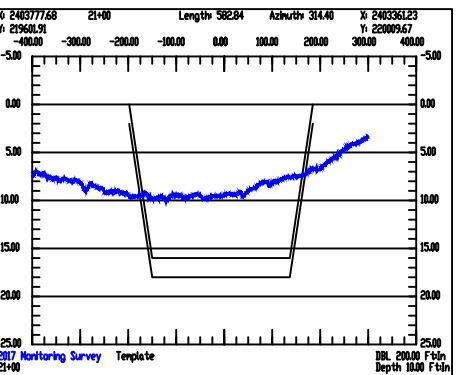
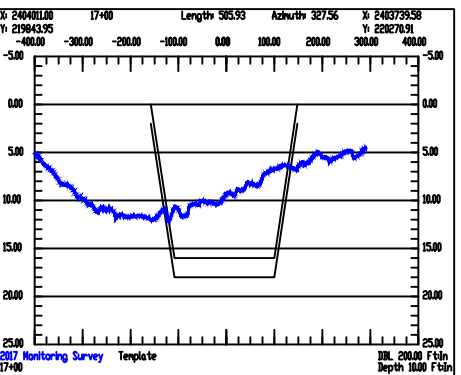
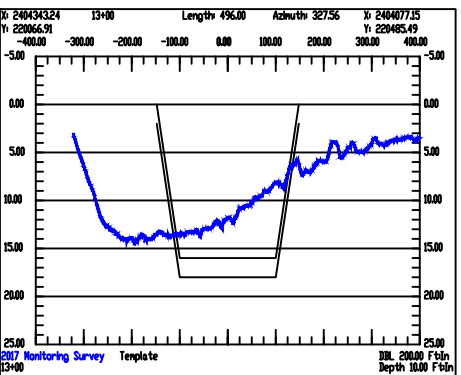
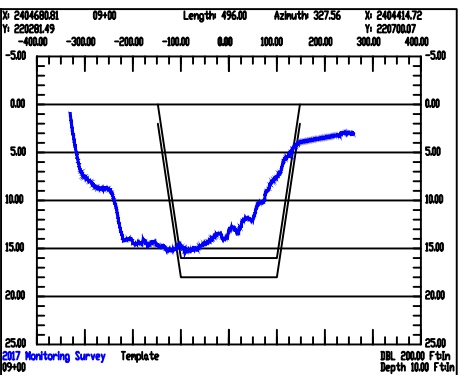
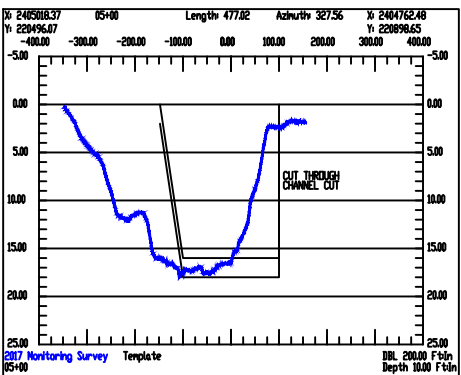
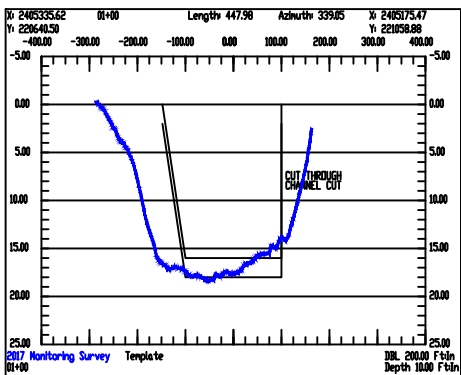
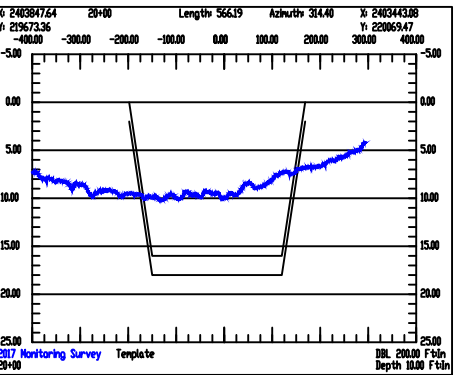
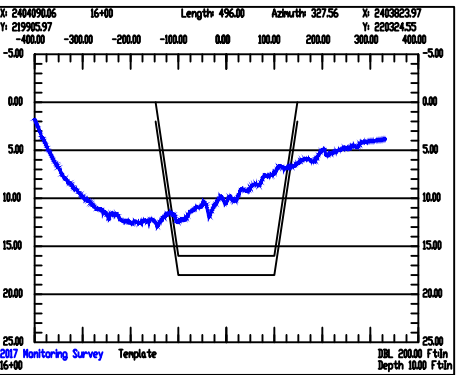
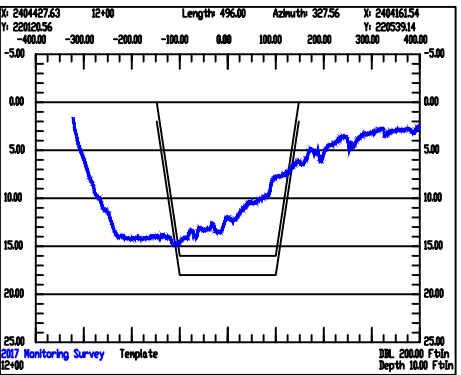
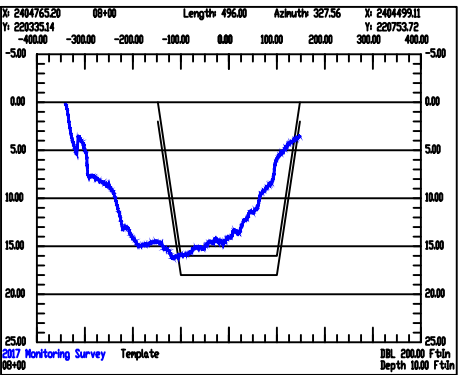
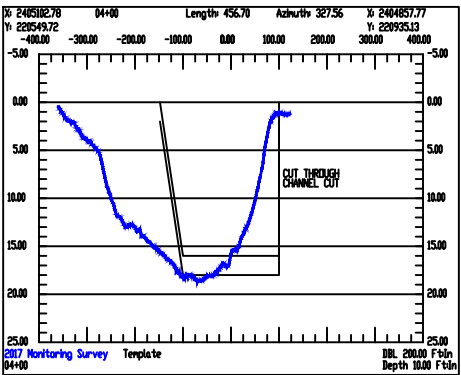
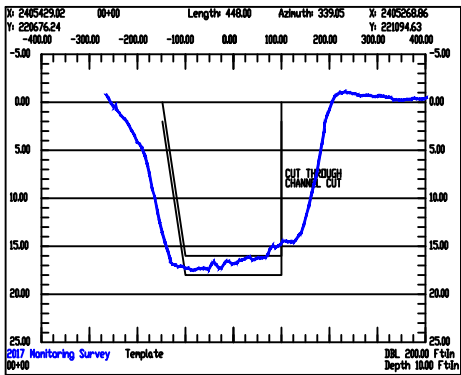
Channel Dredging and Coastal Storm Damage Reduction Project

Station 15+00 to 21+00 - Cut Through Cross Sections

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

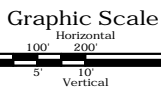
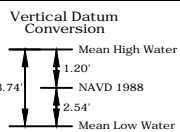
DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 24 OF 40

Christian L. Gibson, P.E. No. 026273



387-B N. Green Meadows Dr.
Wilmington, NC 28405
910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 0+00 to 23+00 - Banks Connector Channel Cross Sections

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

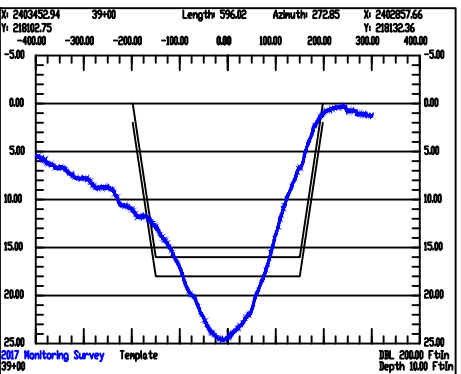
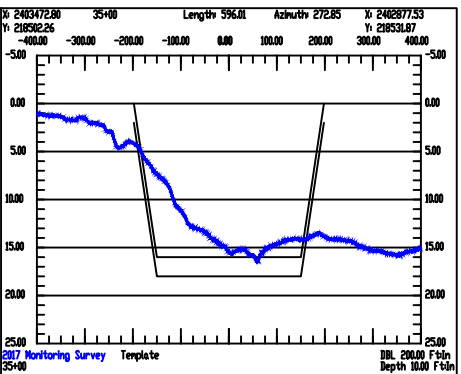
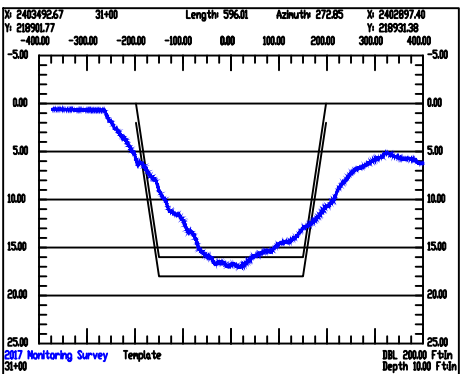
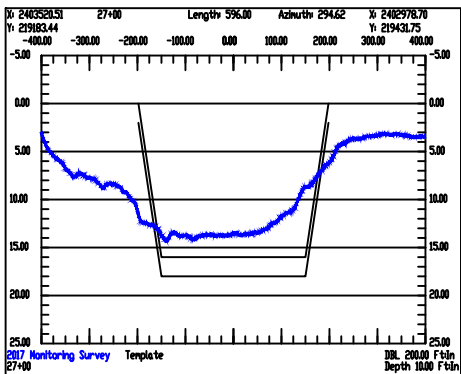
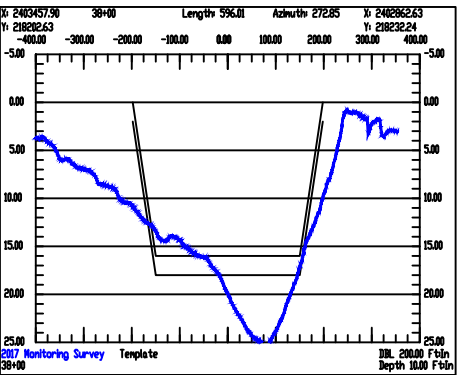
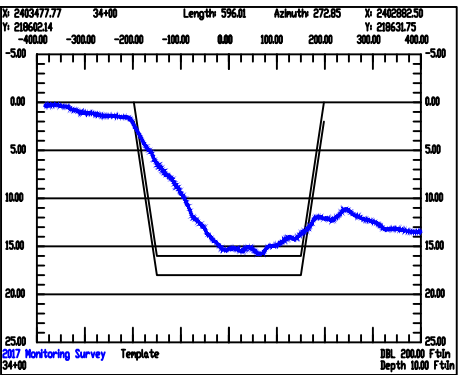
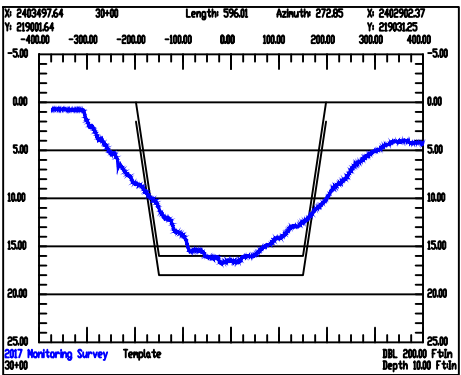
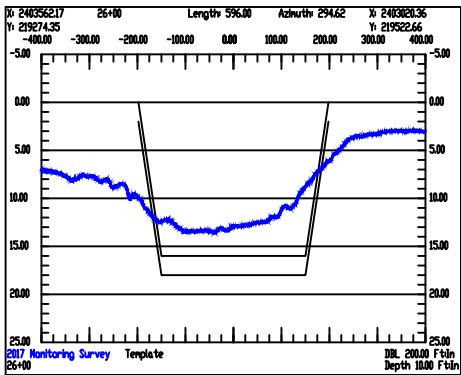
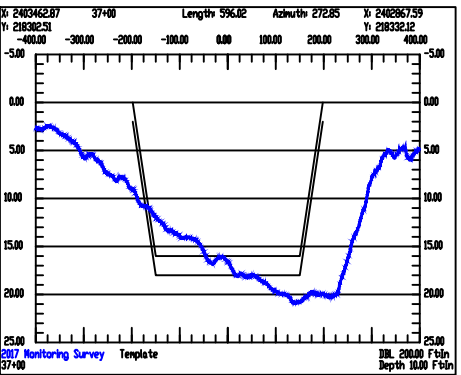
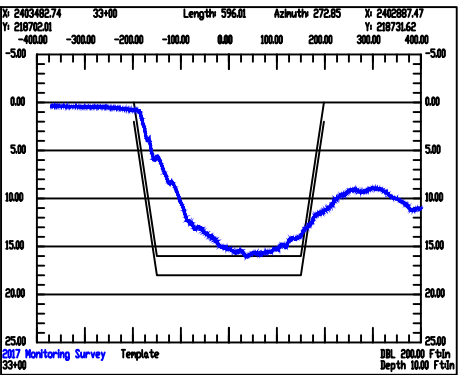
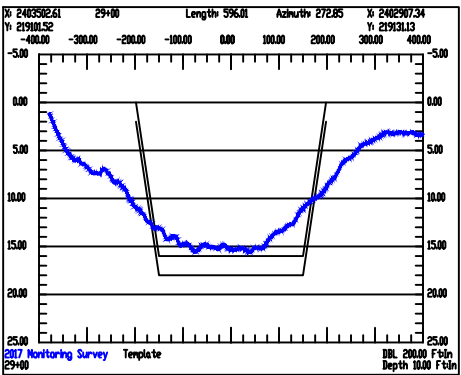
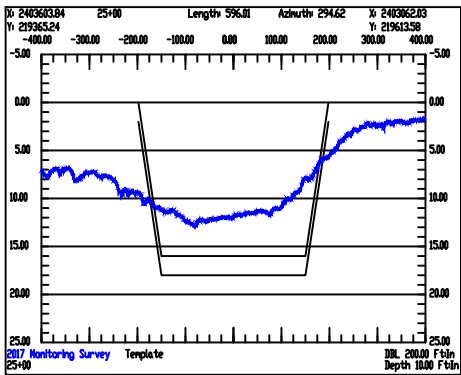
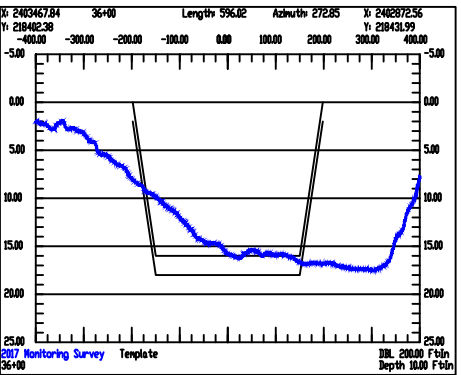
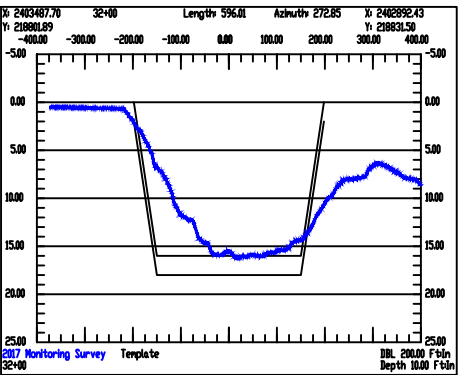
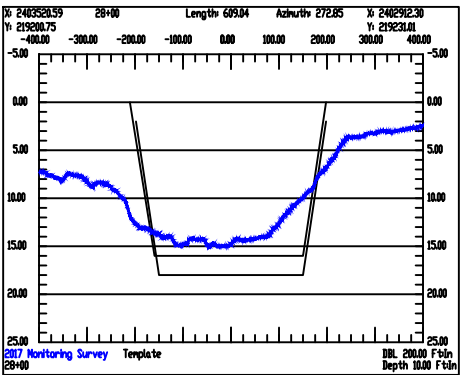
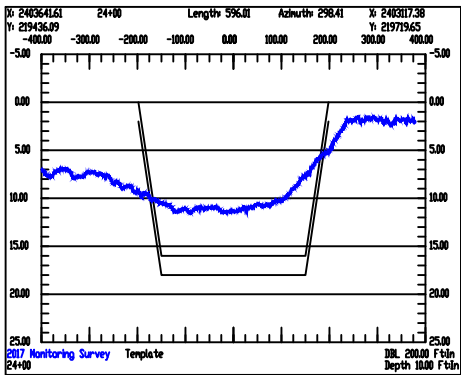
DWG NAME: Topsail Beach Construction Plans 2018.dwg

DWG DATE: December 1, 2017

SURVEY DATE: August 2017

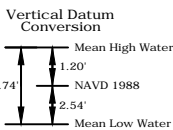
SCALE: As Shown

SHEET: 25 OF 40



387-B N. Green Meadows Dr.
Wilmington, NC 28405
910.821.1358

11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 24+00 to 39+00 - Banks Connector Channel Cross Sections

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

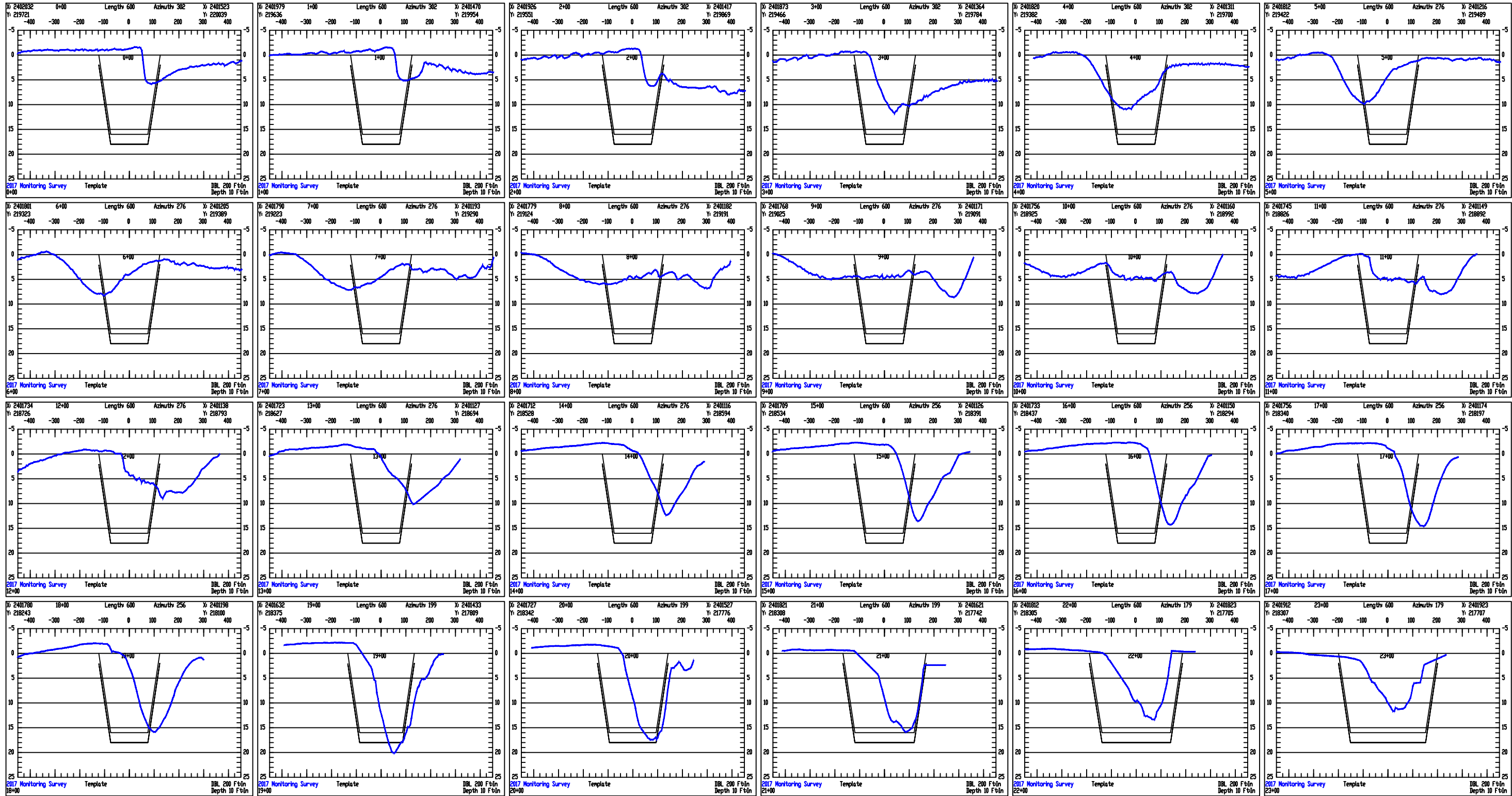
DWG NAME: Topsail Beach Construction Plans 2018.dwg

DWG DATE: December 1, 2017

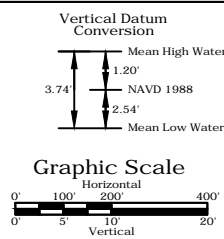
SCALE: As Shown

SURVEY DATE: August 2017

SHEET: 26 OF 40



TI Coastal Services, Inc.
387-B N. Green Meadows Dr.
Wilmington, NC 28405
910.821.1358 11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

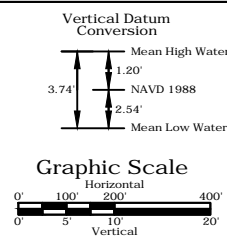
Station 0+00 to 23+00 - New Topsail Inlet Cross Sections

Christian L. Gibson, P.E. No. 026273

Notes: 1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet 2. Vertical Datum: NAVD88 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time. 4. Soundings are expressed in feet and tenths. 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.	
DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 27 OF 40



TI Coastal Services, Inc.
387-B N. Green Meadows Dr.
Wilmington, NC 28405
910.821.1358 11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

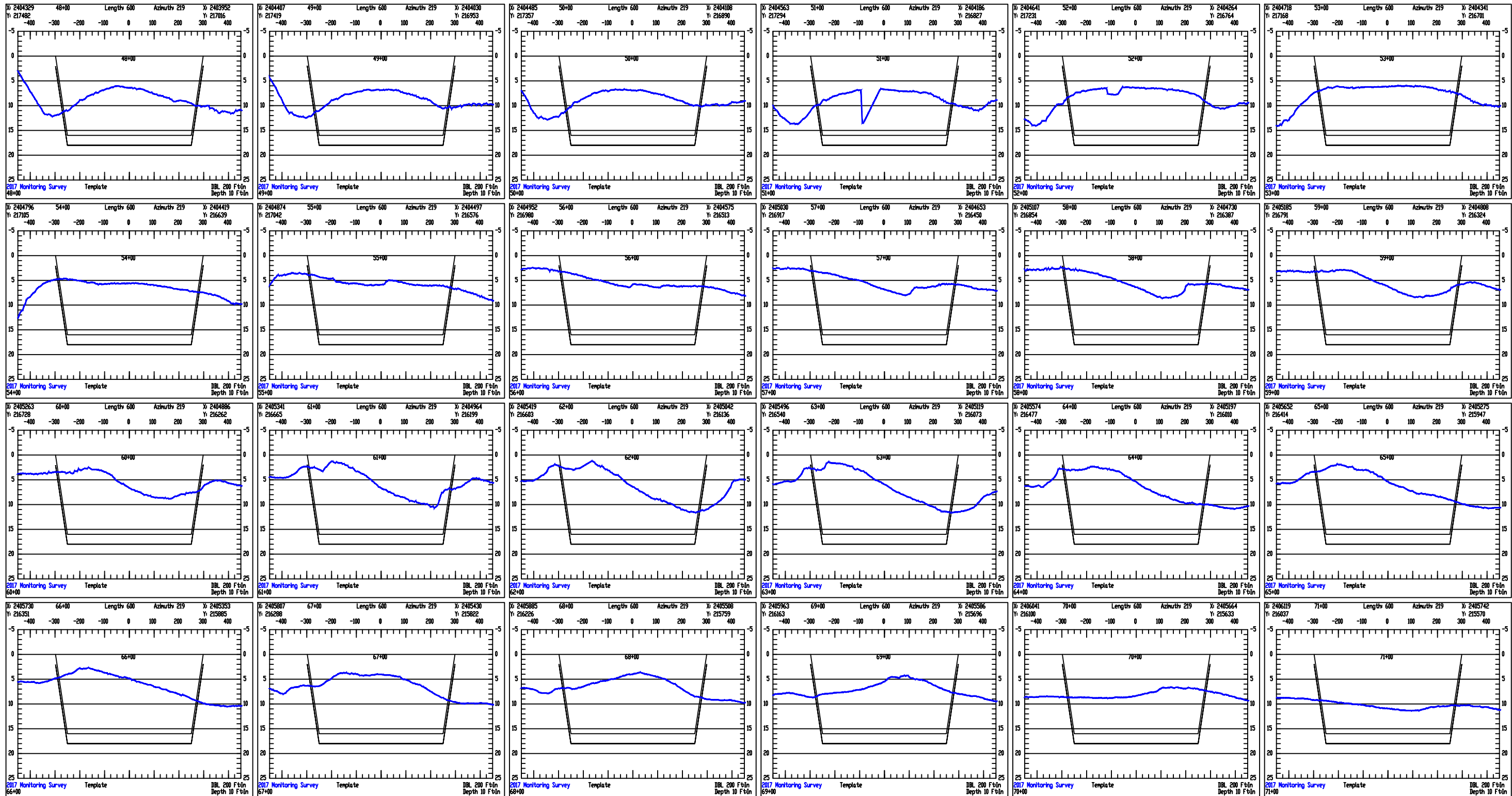
Channel Dredging and Coastal Storm Damage Reduction Project

Station 24+00 to 47+00 - New Topsail Inlet Cross Sections

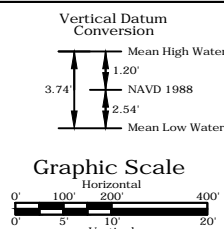
Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 28 OF 40



TI Coastal Services, Inc.
387-B N. Green Meadows Dr.
Wilmington, NC 28405
910.821.1358 11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

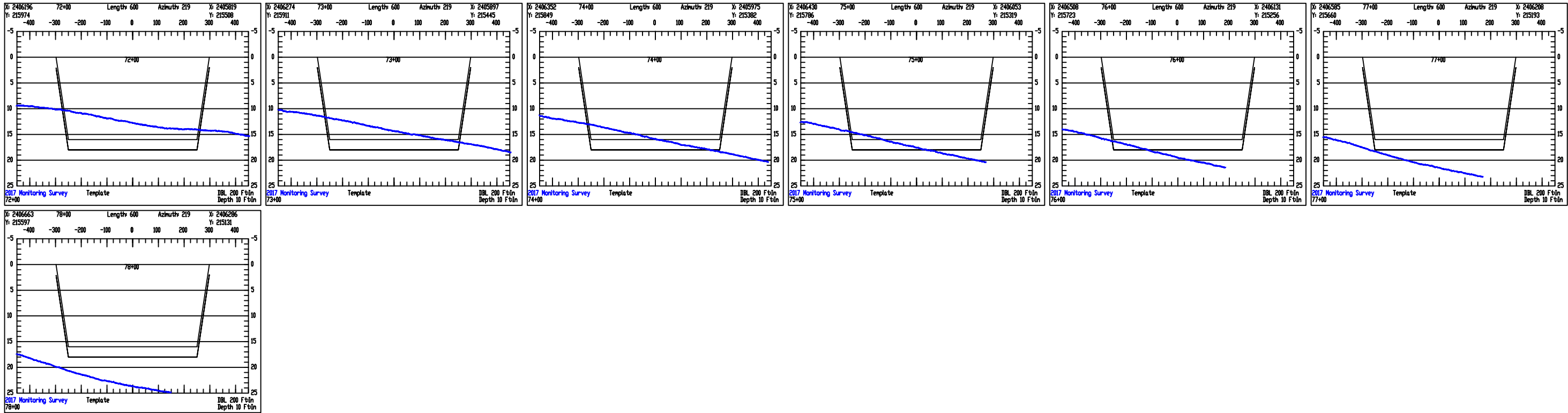
2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

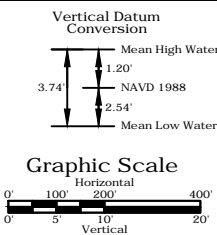
Station 48+00 to 71+00 - New Topsail Inlet Cross Sections

Christian L. Gibson, P.E. No. 026273

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 29 OF 40



TI Coastal Services, Inc.
387-B N. Green Meadows Dr.
Wilmington, NC 28405
910.821.1358 11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 72+00 to 78+00 - New Topsail Inlet Cross Sections

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: NAVD88
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 30 OF 40



Banks Channel								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
BC-1	2,405,340.36	220,907.85	TC-R1	2,405,384.41	220,817.64	BC-L1	2,405,296.31	220,988.06
BC-2	2,406,458.03	221,579.16	TC-R2	2,406,504.88	221,499.65	BC-L2	2,405,798.29	221,300.98
BC-3	2,408,057.75	222,557.13	TC-R3	2,408,127.01	222,482.24	BC-L3	2,405,887.65	221,714.15
BC-4	2,409,545.24	224,617.12	TC-R4	2,409,616.16	224,544.51	BC-L4	2,406,687.50	221,808.69
BC-5	2,411,830.05	226,186.58	TC-R5	2,411,907.76	226,118.64	BC-L5	2,407,299.60	222,212.19
BC-6	2,413,055.54	228,611.12	TC-R6	2,413,132.84	228,542.37	BC-L6	2,408,665.60	223,569.74
BC-7	2,416,722.46	231,039.73	TC-R7	2,416,792.85	230,966.40	BC-L7	2,409,474.32	224,689.73
BC-8	2,418,146.52	233,009.74	TC-R8	2,418,215.29	232,934.17	BC-L8	2,411,752.34	226,254.52
BC-9	2,420,264.00	234,255.40	TC-R9	2,420,325.46	234,175.54	BC-L9	2,412,978.24	228,679.87
BC-10	2,424,330.56	238,268.98	TC-R10	2,424,385.81	238,192.86	BC-L10	2,416,652.07	231,113.06
BC-11	2,425,773.99	239,344.77	TC-R11	2,425,862.32	239,285.73	BC-L11	2,418,077.75	233,065.31
BC-12	2,425,887.31	239,798.43	TC-R12	2,425,992.40	239,806.50	BC-L12	2,420,202.54	234,335.26
BC-13	2,425,425.19	240,897.24	TC-R13	2,425,508.26	240,957.67	BC-L13	2,424,255.31	238,345.10
BC-14	2,424,362.36	241,812.84	TC-R14	2,424,446.47	241,872.37	BC-L14	2,425,685.66	239,403.81
BC-15	2,423,723.16	243,450.75	TC-R15	2,423,821.02	243,475.06	BC-L15	2,425,782.22	239,790.36
						BC-L16	2,425,342.12	240,836.81
						BC-L17	2,424,278.25	241,753.31
						BC-L18	2,423,659.93	243,337.71

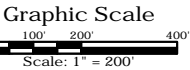
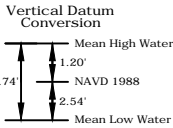
VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	
	969,300	218,700	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	
	142,700	73,800	216,500
Cut Through Channel	-16' MLW	-18' MLW	
	530,000	76,100	606,100
Topsail Creek	-12' MLW	-14' MLW	
	152,800	68,900	221,700
Banks Channel	-12' MLW	-14' MLW	
	597,100	325,500	922,600
Banks Side Channel 1	-7' MLW	-9' MLW	
	11,400	14,800	26,200
Banks Side Channel 2	-7' MLW	-9' MLW	
	9,700	20,600	30,300
GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	184,293	1,520,360

Banks Side Channel 1								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
SC1-1	2,408,224.40	222,787.92	SC1-R1	2,408,394.40	222,838.69	SC1-L1	2,408,531.33	223,042.16
SC1-2	2,409,940.70	223,909.01	SC1-R2	2,409,967.32	223,872.65	SC1-L2	2,409,914.08	223,945.37
SC1-3	2,410,229.43	224,144.93	SC1-R3	2,410,261.43	224,112.97	SC1-L3	2,410,197.43	224,176.90
SC1-4	2,410,383.12	224,383.52	SC1-R4	2,410,418.00	224,305.10	SC1-L4	2,410,348.24	224,361.95

Banks Side Channel 2								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
SC2-1	2,411,830.05	226,186.58	SC2-R1	2,411,930.51	226,163.65	SC2-L1	2,412,019.29	226,339.29
SC2-2	2,412,106.80	226,395.21	SC2-R2	2,412,132.96	226,298.18	SC2-L2	2,412,080.64	226,372.24
SC2-3	2,412,851.57	227,011.38	SC2-R3	2,412,886.21	226,982.05	SC2-L3	2,412,816.92	227,040.70
SC2-4	2,413,578.78	228,142.85	SC2-R4	2,413,615.92	228,117.41	SC2-L4	2,413,541.64	228,168.30
SC2-5	2,414,727.896	229,718.7256	SC2-R5	2,414,666.453	229,558.09	SC2-L5	2,414,4451.026	229,415.4105



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TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

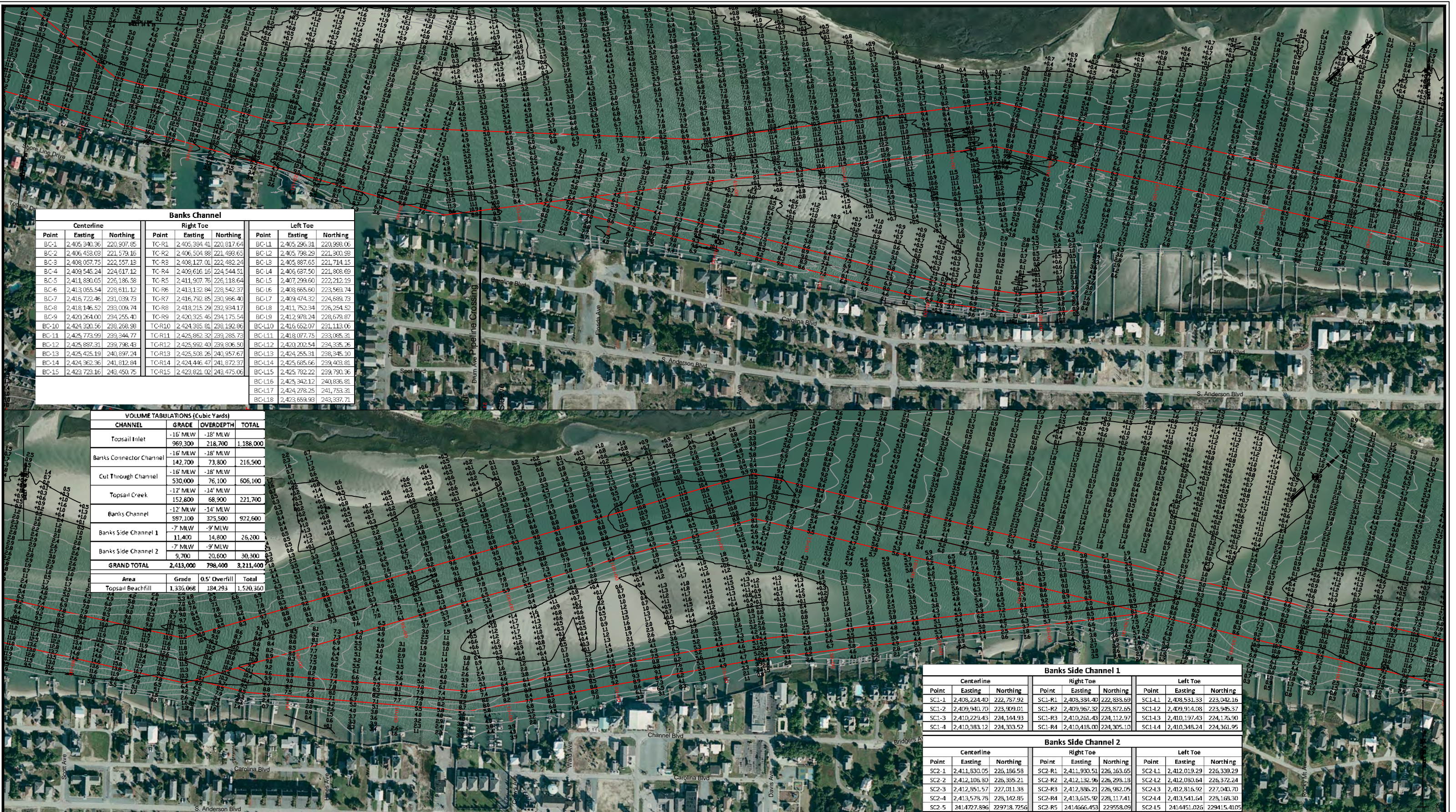
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Banks Channel and Side Channels Layout and Control

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg
DWG DATE: December 1, 2017
SCALE: 1" = 200'
SURVEY DATE: August 2017
SHEET: 31 OF 40



Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
BC-1	2,405,340.36	220,907.85	TC-R1	2,405,384.41	220,817.64	BC-L1	2,405,296.31	220,998.05
BC-2	2,406,458.03	221,579.16	TC-R2	2,406,504.88	221,493.65	BC-L2	2,405,798.29	221,300.38
BC-3	2,408,057.75	222,557.13	TC-R3	2,408,127.01	222,482.24	BC-L3	2,405,887.65	221,714.15
BC-4	2,409,545.24	224,617.12	TC-R4	2,409,616.16	224,544.31	BC-L4	2,406,687.50	221,808.69
BC-5	2,411,830.05	226,186.58	TC-R5	2,411,907.76	226,118.64	BC-L5	2,407,299.60	222,212.19
BC-6	2,413,055.54	228,611.12	TC-R6	2,413,132.84	228,542.37	BC-L6	2,408,665.60	223,569.74
BC-7	2,416,722.46	231,039.73	TC-R7	2,416,792.85	230,966.40	BC-L7	2,409,474.32	224,689.73
BC-8	2,418,146.52	233,009.74	TC-R8	2,418,215.29	232,994.17	BC-L8	2,411,752.34	226,254.52
BC-9	2,420,264.00	234,255.40	TC-R9	2,420,325.46	234,175.54	BC-L9	2,412,978.24	228,679.87
BC-10	2,424,330.56	238,268.98	TC-R10	2,424,385.81	238,192.86	BC-L10	2,416,652.07	231,113.06
BC-11	2,425,773.99	239,344.77	TC-R11	2,425,862.32	239,285.73	BC-L11	2,418,077.75	233,065.31
BC-12	2,425,887.31	239,798.43	TC-R12	2,425,992.40	239,806.50	BC-L12	2,420,202.54	234,335.26
BC-13	2,425,425.19	240,897.24	TC-R13	2,425,508.26	240,957.67	BC-L13	2,424,255.31	238,345.10
BC-14	2,424,362.36	241,812.84	TC-R14	2,424,446.47	241,872.37	BC-L14	2,425,685.66	239,403.81
BC-15	2,423,723.16	243,450.75	TC-R15	2,423,821.02	243,475.06	BC-L15	2,425,782.22	239,790.36
						BC-L16	2,425,342.12	240,836.81
						BC-L17	2,424,278.25	241,753.31
						BC-L18	2,423,659.93	243,337.71

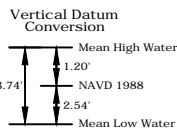
VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	
	969,300	218,700	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	
	142,700	73,800	216,500
Cut Through Channel	-16' MLW	-18' MLW	
	530,000	76,100	606,100
Topsail Creek	-12' MLW	-14' MLW	
	152,800	68,900	221,700
Banks Channel	-12' MLW	-14' MLW	
	597,100	375,500	972,600
Banks Side Channel 1	-7' MLW	-9' MLW	
	11,400	14,800	26,200
Banks Side Channel 2	-7' MLW	-9' MLW	
	9,700	20,600	30,300
GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,335,068	184,293	1,520,360

Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
SC1-1	2,408,224.40	227,787.92	SC1-R1	2,408,394.40	222,838.69	SC1-L1	2,408,531.33	223,042.16
SC1-2	2,409,910.70	223,909.01	SC1-R2	2,409,967.32	223,872.65	SC1-L2	2,409,914.08	223,945.37
SC1-3	2,410,229.43	224,144.93	SC1-R3	2,410,261.43	224,112.97	SC1-L3	2,410,197.43	224,176.90
SC1-4	2,410,383.12	224,333.52	SC1-R4	2,410,418.00	224,305.10	SC1-L4	2,410,348.24	224,361.95

Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
SC2-1	2,411,830.05	226,186.58	SC2-R1	2,411,930.51	226,163.65	SC2-L1	2,412,019.29	226,339.29
SC2-2	2,412,105.80	226,395.21	SC2-R2	2,412,132.96	226,298.18	SC2-L2	2,412,080.64	226,372.24
SC2-3	2,412,851.57	227,011.38	SC2-R3	2,412,886.21	226,982.05	SC2-L3	2,412,816.92	227,040.70
SC2-4	2,413,578.78	228,142.85	SC2-R4	2,413,615.92	228,117.41	SC2-L4	2,413,541.64	228,168.30
SC2-5	2,414,727.896	229,718.7256	SC2-R5	2,414,666.453	229,558.09	SC2-L5	2,414,445.026	229,415.4105



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Graphic Scale
0' 100' 200' 400'
Scale: 1" = 200'

TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

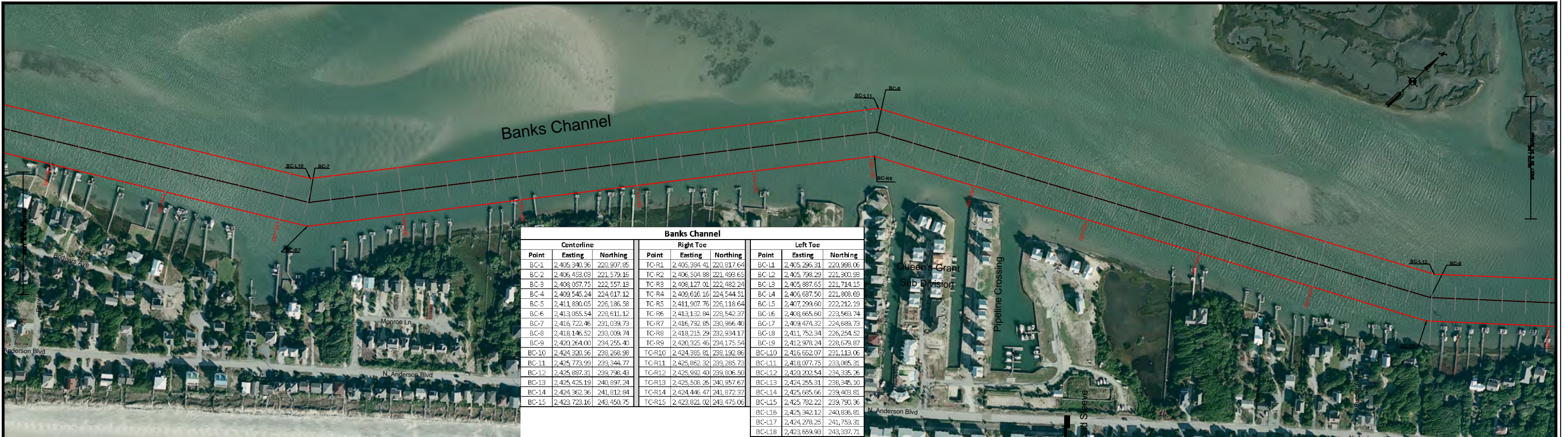
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Banks Channel and Side Channels Bathymetry

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2016	SURVEY DATE: August 2017
SCALE: 1" = 200'	SHEET: 32 OF 40

Christian L. Gibson, P.E. No. 026273



Banks Channel					
Centerline			Right Toe		Left Toe
Point	Easting	Northing	Point	Easting	Northing
BC-1	2,405,340.36	220,907.85	TC-R1	2,405,394.41	220,817.64
BC-2	2,406,453.03	221,579.16	TC-R2	2,406,504.88	221,493.63
BC-3	2,408,057.75	222,557.13	TC-R3	2,408,127.01	222,482.24
BC-4	2,409,545.24	224,617.12	TC-R4	2,409,616.16	224,544.51
BC-5	2,411,830.05	226,186.58	TC-R5	2,411,907.76	226,118.64
BC-6	2,413,055.54	228,611.12	TC-R6	2,413,132.84	228,542.37
BC-7	2,416,722.46	231,039.73	TC-R7	2,416,792.85	230,966.40
BC-8	2,418,146.52	233,009.74	TC-R8	2,418,215.29	232,934.17
BC-9	2,420,264.00	234,255.40	TC-R9	2,420,325.46	234,175.54
BC-10	2,424,320.56	238,268.98	TC-R10	2,424,385.81	238,192.86
BC-11	2,425,773.99	239,344.77	TC-R11	2,425,862.32	239,285.73
BC-12	2,425,887.31	239,798.43	TC-R12	2,425,992.40	239,806.50
BC-13	2,425,425.19	240,897.24	TC-R13	2,425,508.26	240,957.67
BC-14	2,424,362.36	241,812.84	TC-R14	2,424,446.47	241,872.37
BC-15	2,423,723.16	243,450.75	TC-R15	2,423,821.02	243,475.06

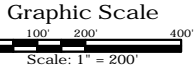
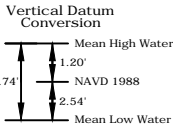


VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	
	969,300	218,700	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	
	142,700	73,800	216,500
Cut Through Channel	-16' MLW	-18' MLW	
	520,000	76,100	606,100
Topsail Creek	-12' MLW	-14' MLW	
	152,800	68,900	221,700
Banks Channel	-12' MLW	-14' MLW	
	597,100	325,500	922,600
Banks Side Channel 1	-7' MLW	-9' MLW	
	11,400	14,800	26,200
Banks Side Channel 2	-7' MLW	-9' MLW	
	9,700	20,600	30,300
GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	184,293	1,520,360



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11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

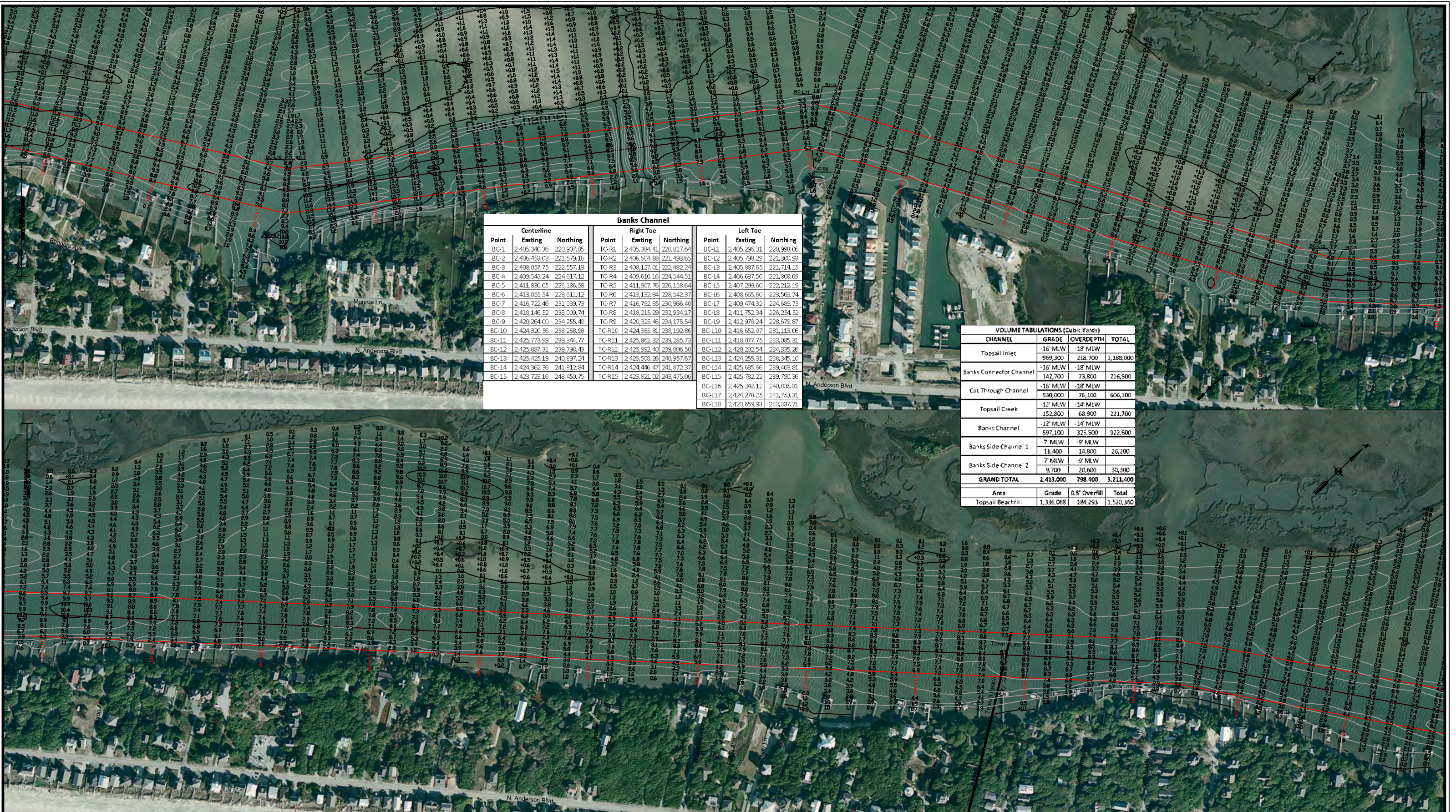
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Banks Channel Layout and Control

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 200'	
SHEET: 33 OF 40	

Christian L. Gibson, P.E. No. 026273



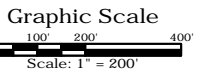
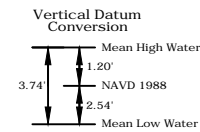
Banks Channel								
Centerline			Right Toe			Left Toe		
Point	Easting	Northing	Point	Easting	Northing	Point	Easting	Northing
BC-1	2,405,340.36	220,907.85	TC-R1	2,405,394.41	220,917.64	BC-L1	2,405,296.31	220,998.06
BC-2	2,406,453.03	221,579.16	TC-R2	2,406,504.88	221,498.63	BC-L2	2,405,798.29	221,300.98
BC-3	2,408,057.75	222,557.13	TC-R3	2,408,127.01	222,482.24	BC-L3	2,405,887.65	221,714.15
BC-4	2,409,545.24	224,617.12	TC-R4	2,409,616.16	224,544.51	BC-L4	2,406,687.50	221,808.69
BC-5	2,411,830.05	226,186.58	TC-R5	2,411,907.76	226,118.64	BC-L5	2,407,299.60	222,212.19
BC-6	2,413,055.54	228,611.12	TC-R6	2,413,132.84	228,542.37	BC-L6	2,408,665.60	223,569.74
BC-7	2,416,722.46	231,039.73	TC-R7	2,416,792.85	230,966.40	BC-L7	2,409,474.32	224,689.73
BC-8	2,418,146.52	233,009.74	TC-R8	2,418,215.29	232,934.17	BC-L8	2,411,752.34	226,254.52
BC-9	2,420,264.00	234,255.40	TC-R9	2,420,325.46	234,175.54	BC-L9	2,412,978.24	228,679.87
BC-10	2,424,320.56	238,268.98	TC-R10	2,424,385.81	238,192.86	BC-L10	2,416,652.07	231,113.06
BC-11	2,425,773.99	239,344.77	TC-R11	2,425,862.32	239,285.73	BC-L11	2,418,077.75	233,085.31
BC-12	2,425,887.31	239,798.43	TC-R12	2,425,992.40	239,806.50	BC-L12	2,420,202.54	234,335.26
BC-13	2,425,425.19	240,897.24	TC-R13	2,425,508.26	240,957.67	BC-L13	2,424,255.31	238,345.10
BC-14	2,424,362.36	241,812.84	TC-R14	2,424,446.47	241,872.37	BC-L14	2,425,685.66	239,403.81
BC-15	2,423,723.16	243,450.75	TC-R15	2,423,821.02	243,475.06	BC-L15	2,425,782.22	239,730.36
						BC-L16	2,425,342.12	240,836.81
						BC-L17	2,424,278.25	241,753.31
						BC-L18	2,423,659.93	243,397.71

VOLUME TABULATIONS (Cubic Yards)			
CHANNEL	GRADE	OVERDEPTH	TOTAL
Topsail Inlet	-16' MLW	-18' MLW	1,188,000
Banks Connector Channel	-16' MLW	-18' MLW	216,500
Cut Through Channel	-16' MLW	-18' MLW	606,100
Topsail Creek	-12' MLW	-14' MLW	152,800
Banks Channel	-12' MLW	-14' MLW	597,100
Banks Side Channel: 1	-7' MLW	-9' MLW	11,400
Banks Side Channel: 2	-7' MLW	-9' MLW	9,700
GRAND TOTAL	2,413,000	798,400	3,211,400
Area	Grade	0.5' Overfill	Total
Topsail Beachfill	1,336,068	184,293	1,520,360



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TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

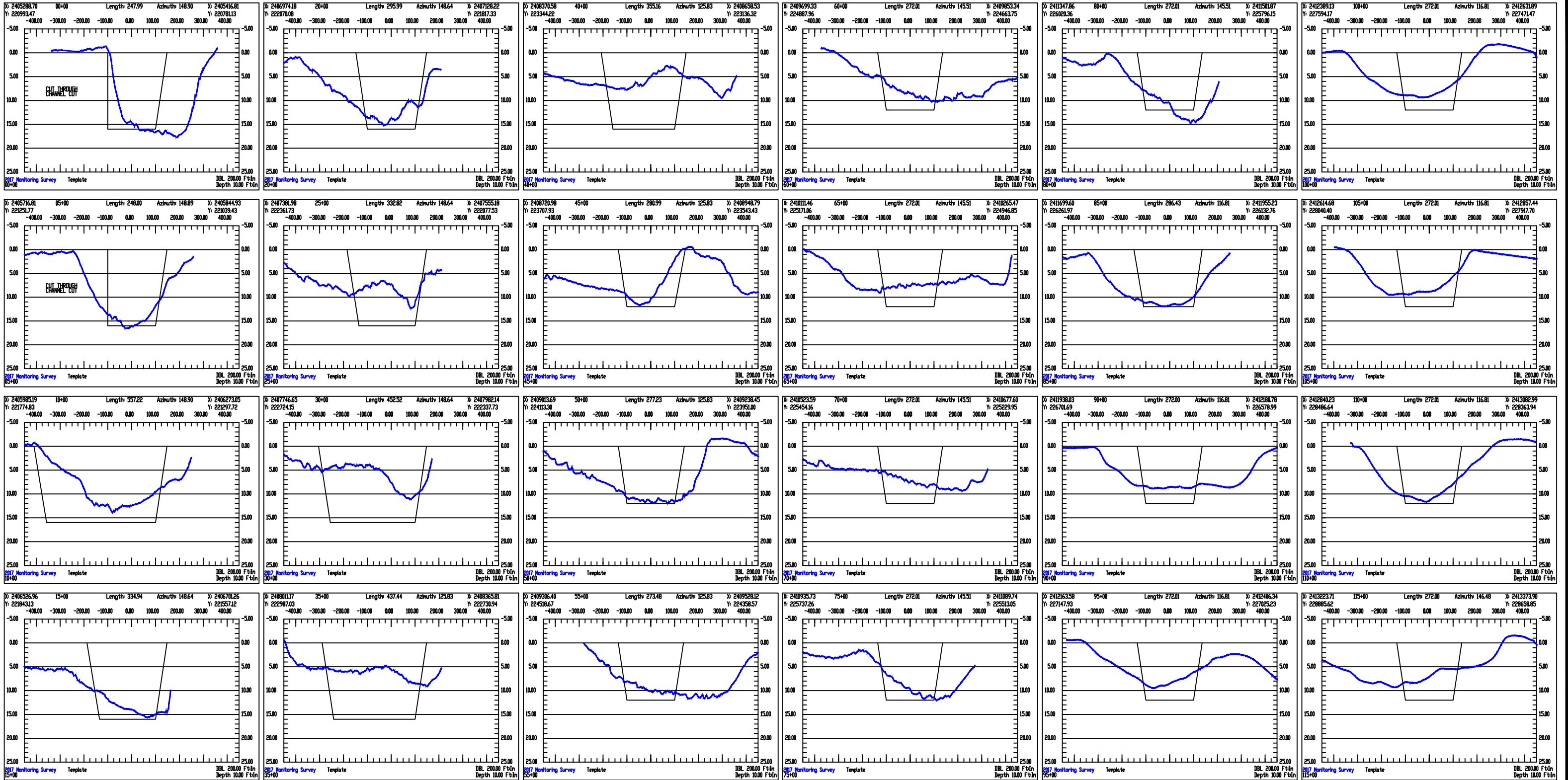
Channel Dredging and Coastal Storm Damage Reduction Project

Plan View - Banks Channel Bathymetry

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

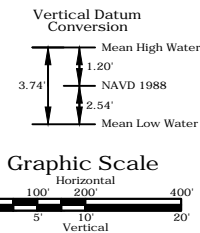
DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: 1" = 200'	SHEET: 34 OF 40

Christian L. Gibson, P.E. No. 026273



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TOWN OF TOPSAIL BEACH

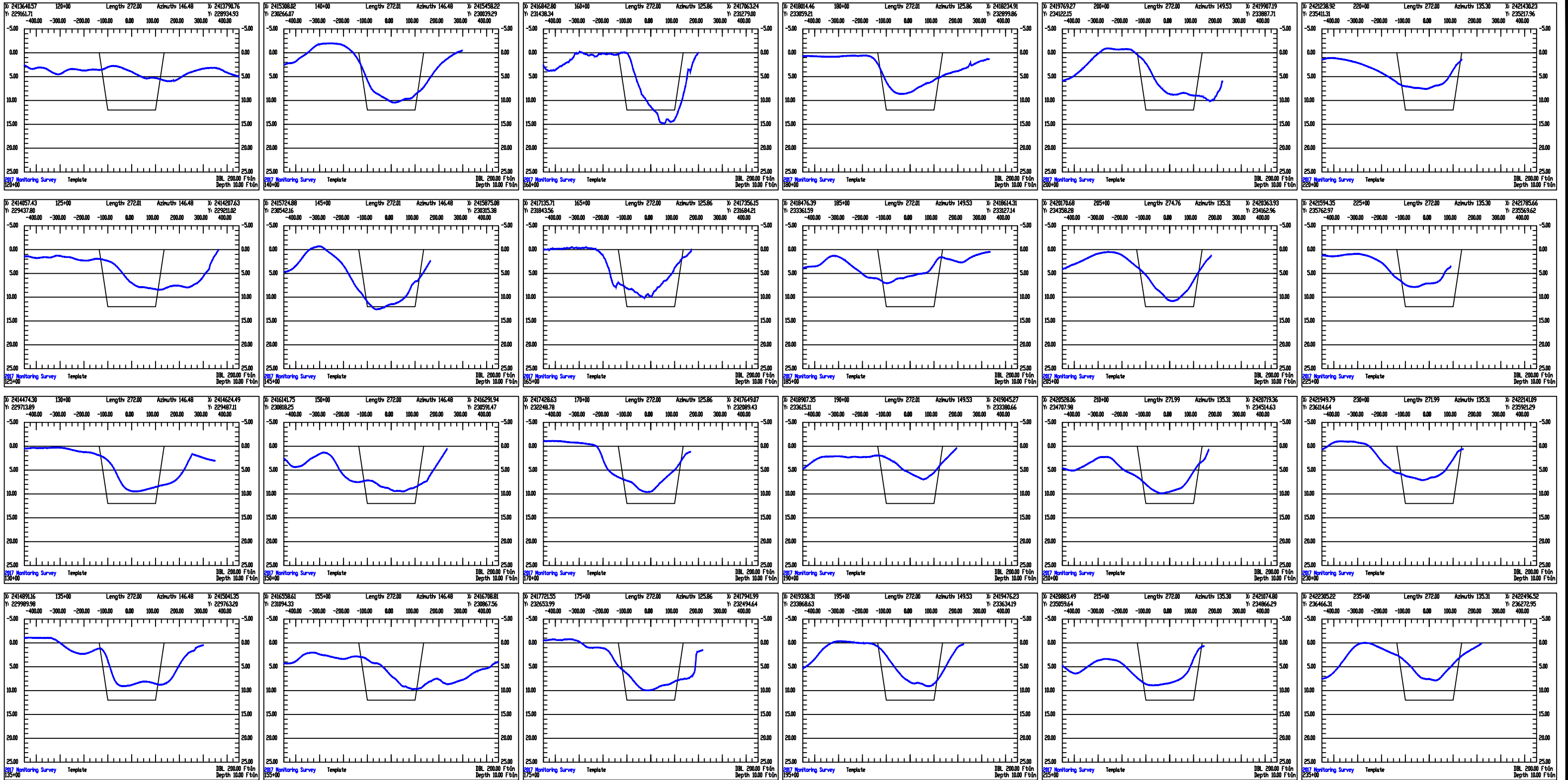
2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 0+00 to 115+00 - Banks Channel Cross Sections

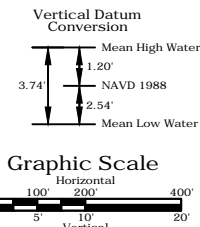
Christian L. Gibson, P.E. No. 026273

Notes: 1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet 2. Vertical Datum: Mean Low Water - Beaufort Datum 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time. 4. Soundings are expressed in feet and tenths. 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.	
DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 35 OF 40



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11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

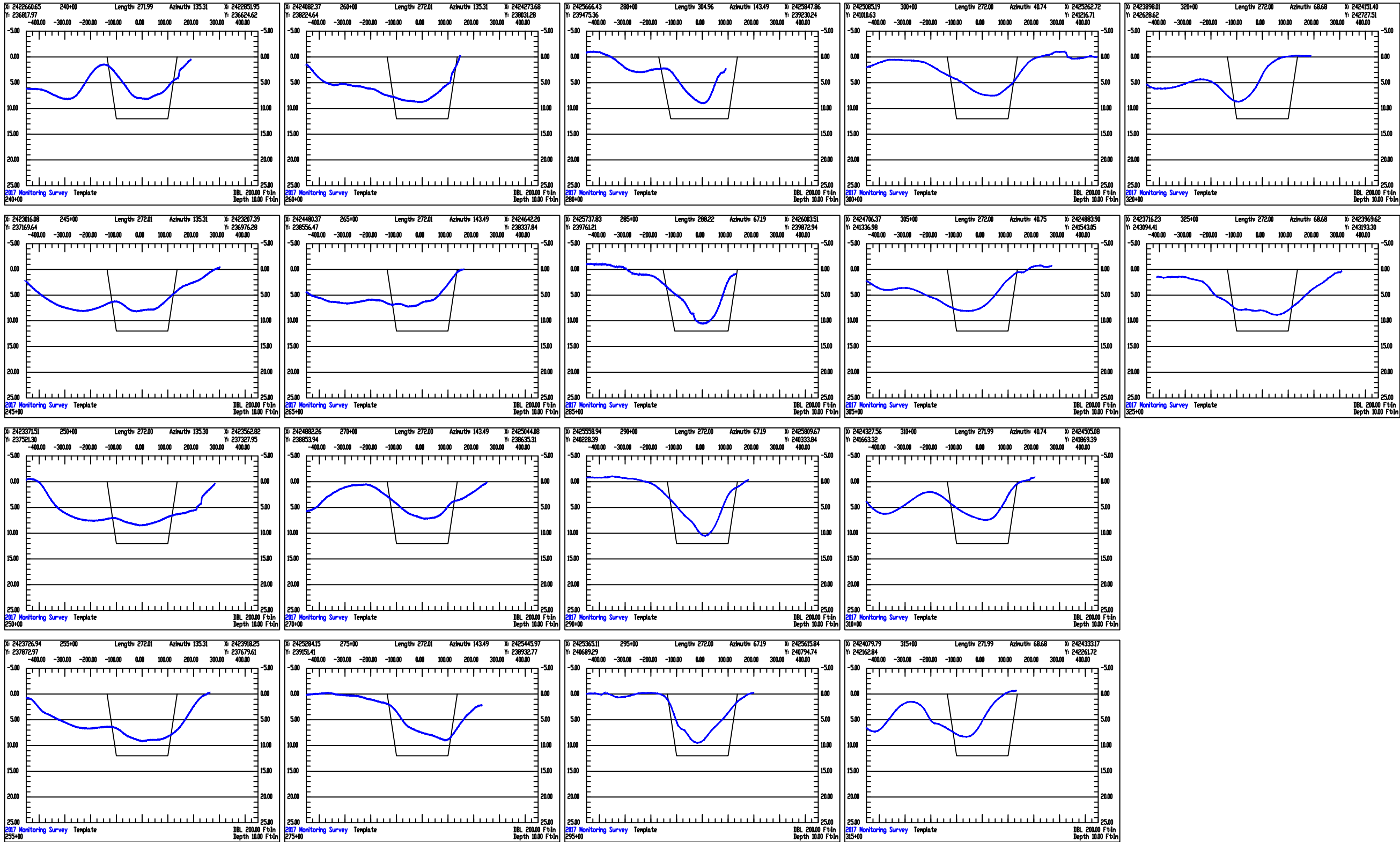
2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 120+00 to 235+00 - Banks Channel Cross Sections

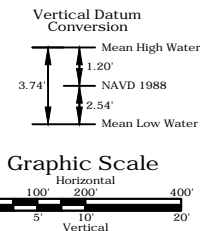
Christian L. Gibson, P.E. No. 026273

Notes: 1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet 2. Vertical Datum: Mean Low Water - Beaufort Datum 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time. 4. Soundings are expressed in feet and tenths. 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.	
DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 36 OF 40



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11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 240+00 to 325+00 - Banks Channel Cross Sections

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

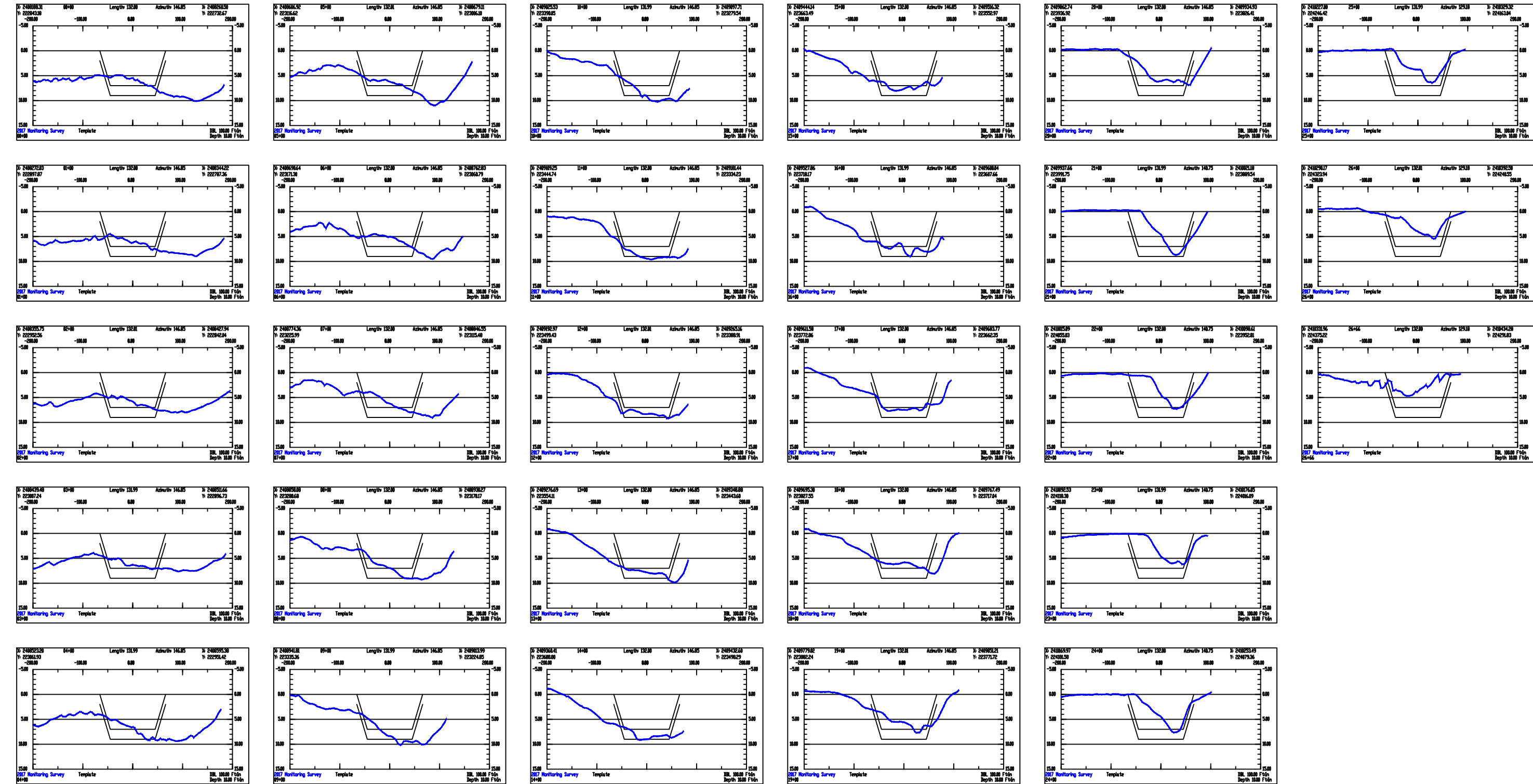
DWG NAME: Topsail Beach Construction Plans 2018.dwg

DWG DATE: December 1, 2017

SCALE: As Shown

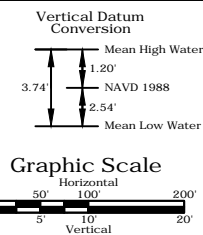
SURVEY DATE: August 2017

SHEET: 37 OF 40



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TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 0+00 to 26+66 - Banks Side Channel 1 Cross Sections

Christian L. Gibson, P.E. No. 026273

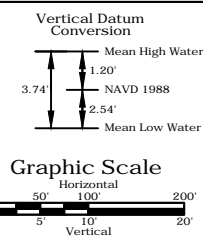
- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in November 2016 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 15, 2016 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 38 OF 40



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11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 0+00 to 35+00 - Banks Side Channel 2 Cross Sections

Christian L. Gibson, P.E. No. 026273

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

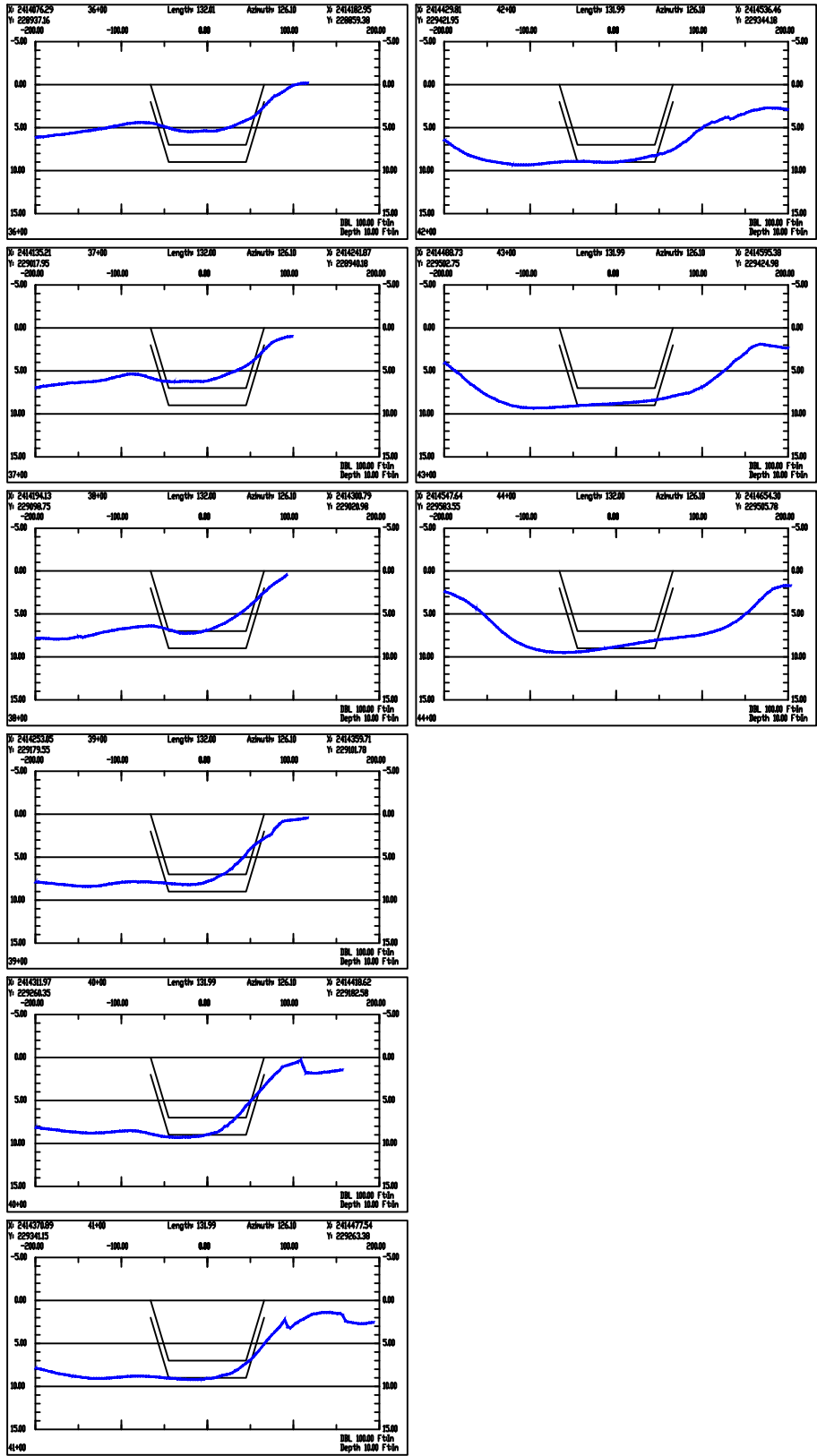
DWG NAME: Topsail Beach Construction Plans 2018.dwg

DWG DATE: December 1, 2017

SURVEY DATE: August 2017

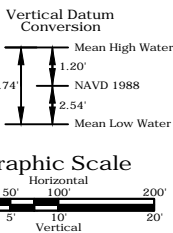
SCALE: As Shown

SHEET: 39 OF 40



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11x17 Plotted to Half Scale



TOWN OF TOPSAIL BEACH

2018 BEACH NOURISHMENT PROJECT
Pender County, NC

Channel Dredging and Coastal Storm Damage Reduction Project

Station 0+00 to 35+00 - Banks Side Channel 2 Cross Sections

- Notes:
1. Horizontal Datum: NC State Plane - Zone 3200, NAD83, Feet
 2. Vertical Datum: Mean Low Water - Beaufort Datum
 3. Data collected by TI Coastal in August 2017 (post Hurricane Matthew) and represent conditions at that time.
 4. Soundings are expressed in feet and tenths.
 5. Aerial photography performed by TerraLina Mapping Consultants, Inc. on May 24, 2017 and represent conditions at that time.

DWG NAME: Topsail Beach Construction Plans 2018.dwg	
DWG DATE: December 1, 2017	SURVEY DATE: August 2017
SCALE: As Shown	SHEET: 40 OF 40

Christian L. Gibson, P.E. No. 026273