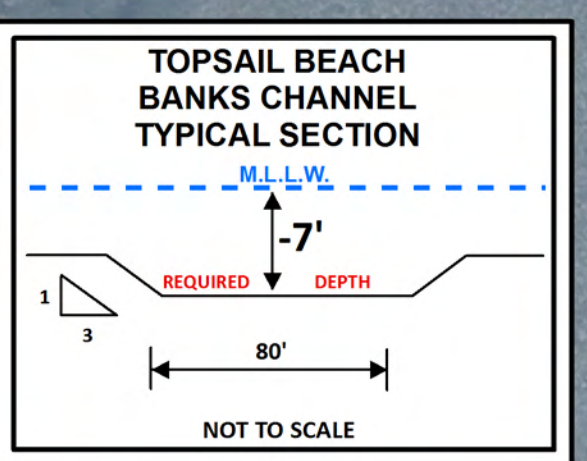


34°24'0"N 77°36'0"W 34°24'10"N 48°24'20"N 77°35'50"W 34°24'30"N 34°24'40"N



**US Army Corps of Engineers  
Wilmington District**

**NORTH CAROLINA**

**PENDER COUNTY**

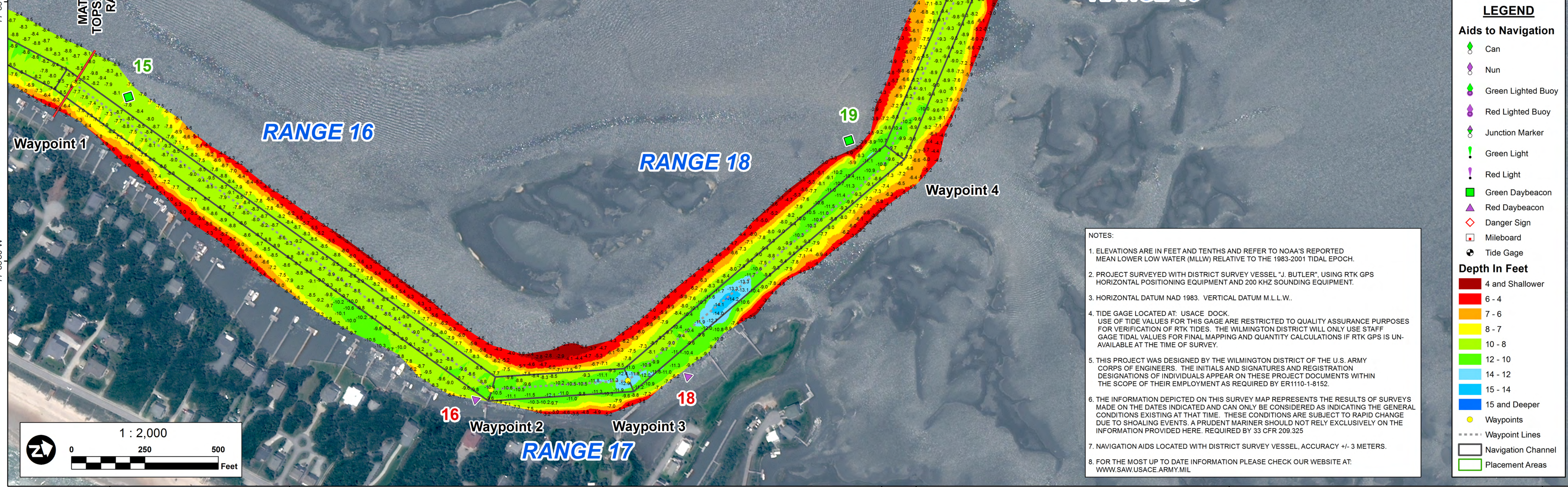
**AIDS TO NAVIGATION**

Type	Number	Survey Date	SPF_X	SPF_Y	DMS_X	DMS_Y
Green Daybeacon	15	2015-04-27	2424448	238470	77° 35' 34.763" W	34° 23' 49.039" N
Red Daybeacon	16	2015-04-27	2425792	239281	77° 35' 18.593" W	34° 23' 56.871" N
Red Daybeacon	18	2015-04-27	2425938	239993	77° 35' 16.730" W	34° 24' 3.895" N
Green Daybeacon	19	2015-04-27	2425339	240761	77° 35' 23.749" W	34° 24' 11.575" N
Green Daybeacon	21	2015-04-27	2424278	241834	77° 35' 36.226" W	34° 24' 22.333" N
Nun	22	2015-04-27	2424069	242433	77° 35' 38.613" W	34° 24' 28.290" N
Nun	BC	2015-04-27	2423794	243360	77° 35' 41.743" W	34° 24' 37.496" N

**WAYPOINTS**

Survey Date	Project	SPF_X	SPF_Y	DMS_X	DMS_Y
2015-04-27	Topsail Banks - Ranges 16-20 - Waypoint 1	2424349	238308	77° 35' 35.977" W	34° 23' 47.450" N
2015-04-27	Topsail Banks - Ranges 16-20 - Waypoint 2	2425774	239341	77° 35' 18.791" W	34° 23' 57.469" N
2015-04-27	Topsail Banks - Ranges 16-20 - Waypoint 3	2425888	239794	77° 35' 17.362" W	34° 24' 1.937" N
2015-04-27	Topsail Banks - Ranges 16-20 - Waypoint 4	2425461	240842	77° 35' 22.269" W	34° 24' 12.354" N
2015-04-27	Topsail Banks - Ranges 16-20 - Waypoint 5	2424342	241819	77° 35' 35.465" W	34° 24' 22.174" N
2015-04-27	Topsail Banks - Ranges 16-20 - Waypoint 6	2423995	242483	77° 35' 39.487" W	34° 24' 28.793" N
2015-04-27	Topsail Banks - Ranges 16-20 - Waypoint 7	2423738	243465	77° 35' 42.392" W	34° 24' 38.545" N

MATCHLINE JOINS  
TOPSAIL BANKS MAP  
RANGES 14-15



**LEGEND**

**Aids to Navigation**

- Can
- Nun
- Green Lighted Buoy
- Red Lighted Buoy
- Junction Marker
- Green Light
- Red Light
- Green Daybeacon
- Red Daybeacon
- Danger Sign
- Mileboard
- Tide Gage

**Depth In Feet**

- 4 and Shallower
- 6 - 4
- 7 - 6
- 8 - 7
- 10 - 8
- 12 - 10
- 14 - 12
- 15 - 14
- 15 and Deeper
- Waypoints
- Waypoint Lines
- Navigation Channel
- Placement Areas

- NOTES:**
- ELEVATIONS ARE IN FEET AND TENTHS AND REFER TO NOAA'S REPORTED MEAN LOWER LOW WATER (MLLW) RELATIVE TO THE 1983-2001 TIDAL EPOCH.
  - PROJECT SURVEYED WITH DISTRICT SURVEY VESSEL "J. BUTLER", USING RTK GPS HORIZONTAL POSITIONING EQUIPMENT AND 200 KHZ SOUNDING EQUIPMENT.
  - HORIZONTAL DATUM NAD 1983. VERTICAL DATUM M.L.L.W.
  - TIDE GAGE LOCATED AT: USACE DOCK. USE OF TIDE VALUES FOR THIS GAGE ARE RESTRICTED TO QUALITY ASSURANCE PURPOSES FOR VERIFICATION OF RTK TIDES. THE WILMINGTON DISTRICT WILL ONLY USE STAFF GAGE TIDAL VALUES FOR FINAL MAPPING AND QUANTITY CALCULATIONS IF RTK GPS IS UNAVAILABLE AT THE TIME OF SURVEY.
  - THIS PROJECT WAS DESIGNED BY THE WILMINGTON DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS AND SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER1110-1-8152.
  - THE INFORMATION DEPICTED ON THIS SURVEY MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME. THESE CONDITIONS ARE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REQUIRED BY 33 CFR 209.325
  - NAVIGATION AIDS LOCATED WITH DISTRICT SURVEY VESSEL. ACCURACY +/- 3 METERS.
  - FOR THE MOST UP TO DATE INFORMATION PLEASE CHECK OUR WEBSITE AT: WWW.SAW.USACE.ARMY.MIL

Survey Date(s): April 27, 2015	Surveyed By: MAS, JBD, WJC
Map Date: May 5, 2015	Mapped By: SGD
Scale: 1 : 2,000	
Imagery Date: July 23, 2014	© Digital Globe, Inc.

Map File Name: Topsail\_Banks\_R16-20\_2015-04-27\_cs.mxd

**HYDROGRAPHIC SURVEY**

U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
WILMINGTON, NORTH CAROLINA

**TOPSAIL - BANKS CHANNEL  
RANGES 16-20**

Topsail Beach, North Carolina

77°35'20"W 34°23'50"N 34°24'0"N 77°35'10"W 77°35'20"W 34°24'30"N 34°24'40"N