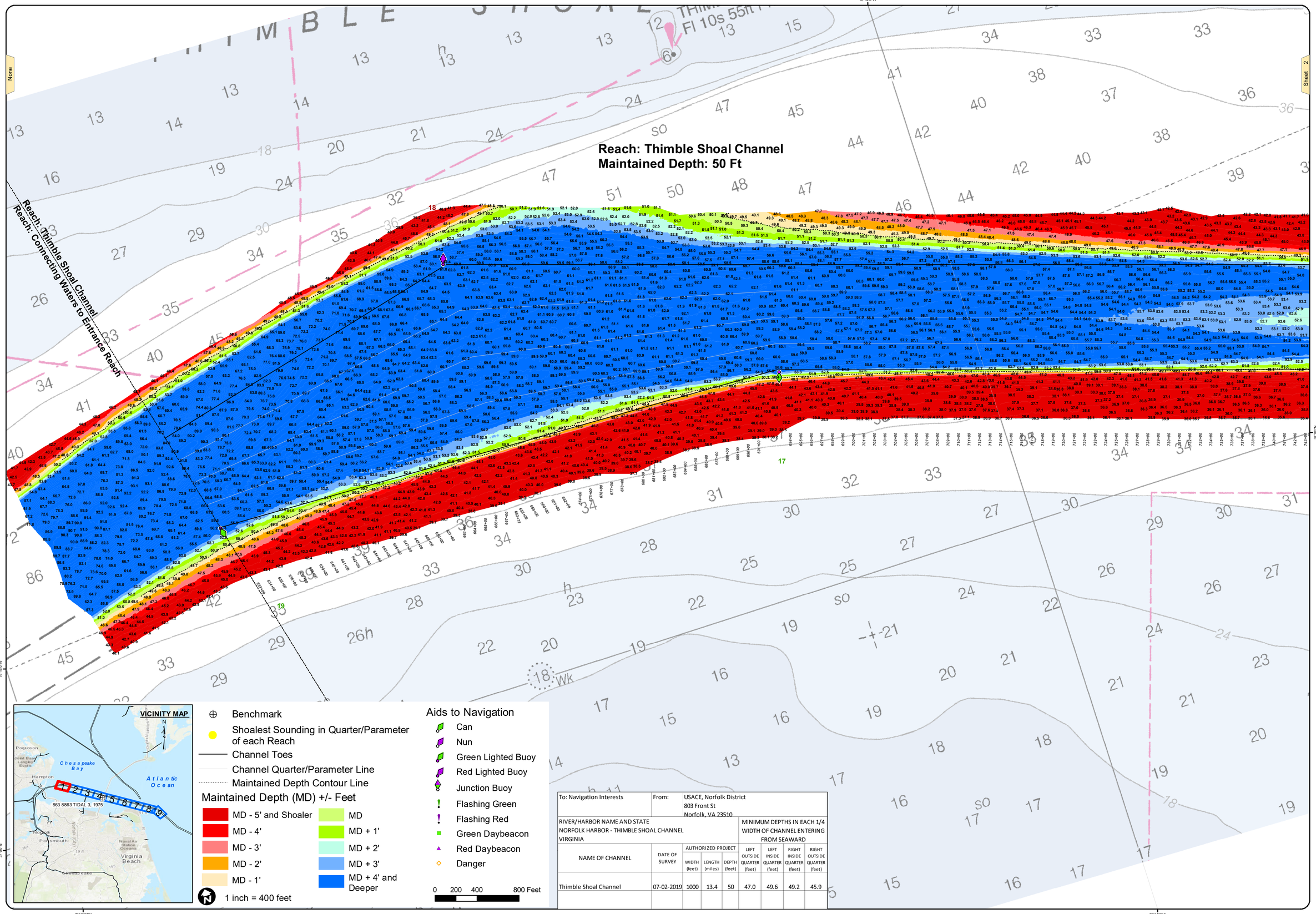


To: Navigation Interests	From: USACE, Norfolk District 803 Front St Norfolk, VA 23510							
RIVER/HARBOR NAME AND STATE NORFOLK HARBOR - THIMBLE SHOAL CHANNEL VIRGINIA					MINIMUM DEPTHS IN EACH 1/4 WIDTH OF CHANNEL ENTERING FROM SEAWARD			
NAME OF CHANNEL	DATE OF SURVEY	AUTHORIZED PROJECT			LEFT OUTSIDE QUARTER (feet)	LEFT INSIDE QUARTER (feet)	RIGHT INSIDE QUARTER (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)				
Thimble Shoal Channel	07-02-2019	1000	13.4	50	47.0	49.6	49.2	45.9

US Army Corps of Engineers
Norfolk District

NOTES:

1. PROJECT A CHANNEL 55 FT DEEP (MAINTAINED AT 50 FT), 1,000 FT WIDE AND 13.4 MILES LONG BETWEEN THE 55 FT CONTOURS IN THE LOWER CHESAPEAKE BAY.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED & CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 75 FT RADIUS GENERATED FROM HYDROSURVEY DATA.
4. BACKGROUND: NOAA RASTER CHART GIS WEB SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

GEODETIC CONTROL MONUMENTS		
PROJECTED COORDINATE SYSTEM: STATE PLANE DATUM/ELLIPSOID: NAD83 (2011) HORIZONTAL ZONE: VIRGINIA SOUTH ZONE PROJECTED COORDINATE UNITS: US SURVEY FEET IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET HORIZONTAL CONTROL: LEICA CORS STATIONS	VERTICAL REFERENCE DATUM: NGS MLLW VERTICAL CONTROL: NAVD88 VERTICAL CONTROL: TIDAL DATUM MDL NAVIGATION SYSTEM: MULTI-BEAM BIN SIZE: 5x5 BIN SELECTION METHOD: AVERAGE CELL CENTER	
MONUMENT	MLLW	NAVD88
NOS 3863 8863 Tidal No. 3 - 1975	26.96'	25.13' (GEOID12B)

MONUMENTS	MEAN RANGE OF TIDE	AREA
NOS 8638610 (9128)	2.5'S	620+00 to 1630+74

NORFOLK HARBOR THIMBLE SHOAL CHANNEL PROJECT CONDITION SURVEY (AFTER DREDGING)

SURVEY DATES:
July 2, August 22, September 3, 4, 25, 26, 30 & October 1, 2019

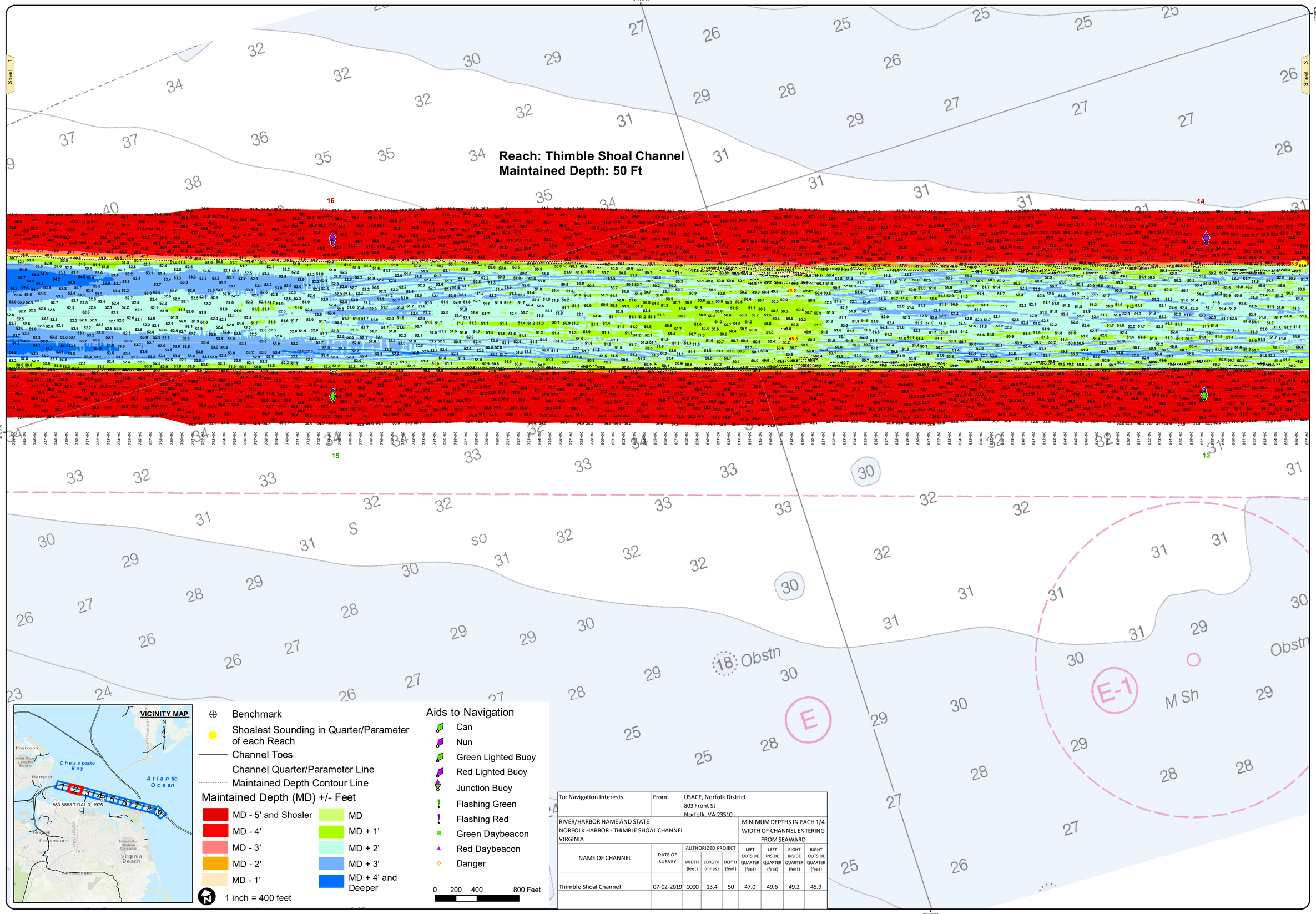
SURVEY BY: USACE Team Lead: Dustin Brooke

eHYDRO FILE: NH_02_TSC_20190702_AD

SHEET 1 of 9
Map Produced: 10/23/2019

APPROVED:
Jeff Swallow
Digitally signed by Jeff Swallow
Date: 2019.11.13 08:13:41 -05'00'
Chief, Navigation Analysis Section

APPROVED:
Digitally signed by Eric Legaspi
Date: 2019.11.14 08:14:35 -05'00'
Chief, Navigation Support and Survey Section



To: Navigation Interests	From:	USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE NORFOLK HARBOR - THIMBLE SHOAL CHANNEL VIRGINIA					MINIMUM DEPTHS IN EACH 1/4 WIDTH OF CHANNEL ENTERING FROM SEAWARD			
NAME OF CHANNEL	DATE OF SURVEY	AUTHORIZED PROJECT			LEFT OUTSIDE QUARTER (feet)	LEFT INSIDE QUARTER (feet)	RIGHT INSIDE QUARTER (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)				
Thimble Shoal Channel	07-02-2019	1000	13.4	50	47.0	49.6	49.2	45.9

US Army Corps of Engineers
Norfolk District

NOTES:

1. PROJECT A CHANNEL 55 FT DEEP (MAINTAINED AT 50 FT), 1,000 FT WIDE AND 13.4 MILES LONG BETWEEN THE 55 FT CONTOURS IN THE LOWER CHESAPEAKE BAY.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED & CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 75 FT RADIUS GENERATED FROM HYDROSURVEY DATA.
4. BACKGROUND: NOAA RASTER CHART GIS WEB SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM:	STATE PLANE
DATUM:	NAD83
HORIZONTAL ZONE:	VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS:	US SURVEY FEET
IMPLIED HORIZONTAL ACCURACY:	+/- 1.0 FEET
HORIZONTAL CONTROL:	LECA CORS STATIONS
VERTICAL REFERENCE DATUM:	NOS MLLW
TIDAL EPOCH:	1983-2001
IMPLIED VERTICAL ACCURACY:	+/- 0.5
VERTICAL CONTROL:	RTK/LEICA SMART NET
TIDE GAUGE LOCATION:	863 8863 TIDAL 3
SYSTEM/METHOD:	MULTI-BEAM
BIN SIZE:	5X5
BIN SELECTION METHOD:	AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88
NOS 863 8863 Tidal No. 3 - 1975	26.96'	25.13' (GEOID12B)

MEAN RANGE OF TIDE AREA
2.5'/5' 620+00 to 1630+74

NORFOLK HARBOR THIMBLE SHOAL CHANNEL PROJECT CONDITION SURVEY (AFTER DREDGING)

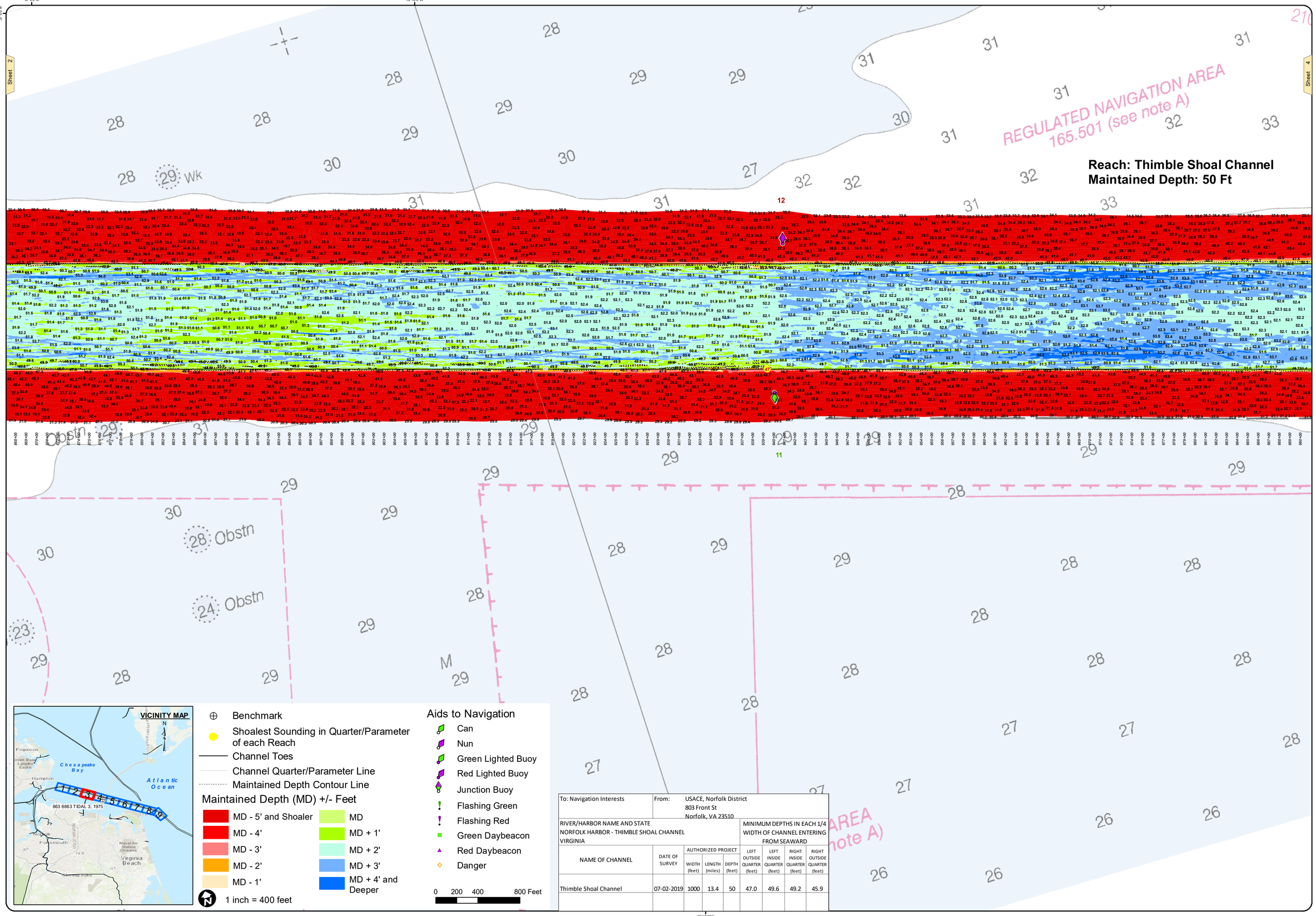
SURVEY DATES:
July 2, August 22, September 3, 4, 25, 26, 30 & October 1, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
eHYDRO FILE: NH_02_TSC_20190702_AD

SHEET 2 of 9
Map Produced: 10/23/2019

APPROVED:
Chief, Navigation Analysis Section

APPROVED:
Chief, Navigation Support and Survey Section



To: Navigation Interests	From:	USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE NORFOLK HARBOR - THIMBLE SHOAL CHANNEL VIRGINIA					MINIMUM DEPTHS IN EACH 1/4 WIDTH OF CHANNEL ENTERING FROM SEAWARD			
NAME OF CHANNEL	DATE OF SURVEY	AUTHORIZED PROJECT			LEFT OUTSIDE QUARTER (feet)	LEFT INSIDE QUARTER (feet)	RIGHT INSIDE QUARTER (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)				
Thimble Shoal Channel	07-02-2019	1000	13.4	50	47.0	49.6	49.2	45.9

US Army Corps of Engineers
Norfolk District

NOTES:

1. PROJECT A CHANNEL 55 FT DEEP (MAINTAINED AT 50 FT), 1,000 FT WIDE AND 13.4 MILES LONG BETWEEN THE 55 FT CONTOURS IN THE LOWER CHESAPEAKE BAY.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED & CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 75 FT RADIUS GENERATED FROM HYDROSURVEY DATA.
4. BACKGROUND: NOAA RASTER CHART GIS WEB SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY sHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM: STATE PLANE
DATUM/DATUM AREA: NAD83 / VIRGINIA
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
HORIZONTAL COORDINATE ACCURACY: +/- 5 FEET
HORIZONTAL CONTROL: LEICA CORS STATIONS

VERTICAL REFERENCE DATUM: NGS MLLW
VERTICAL EPOCH: 1983-2001
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMART NET
TIDE ZONE/ELEVATION: 863 8863 TIDAL 3, 1975
SYSTEM/METHOD: MULTI-BEAM
BIN SIZE: 5x5
BIN SELECTION METHOD: AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE
NGS 863 8863 Tidal No. 3 - 1975	26.86'	25.13' (GEOID12B)	2.55'

NORFOLK HARBOR
THIMBLE SHOAL CHANNEL
PROJECT CONDITION SURVEY
(AFTER DREDGING)

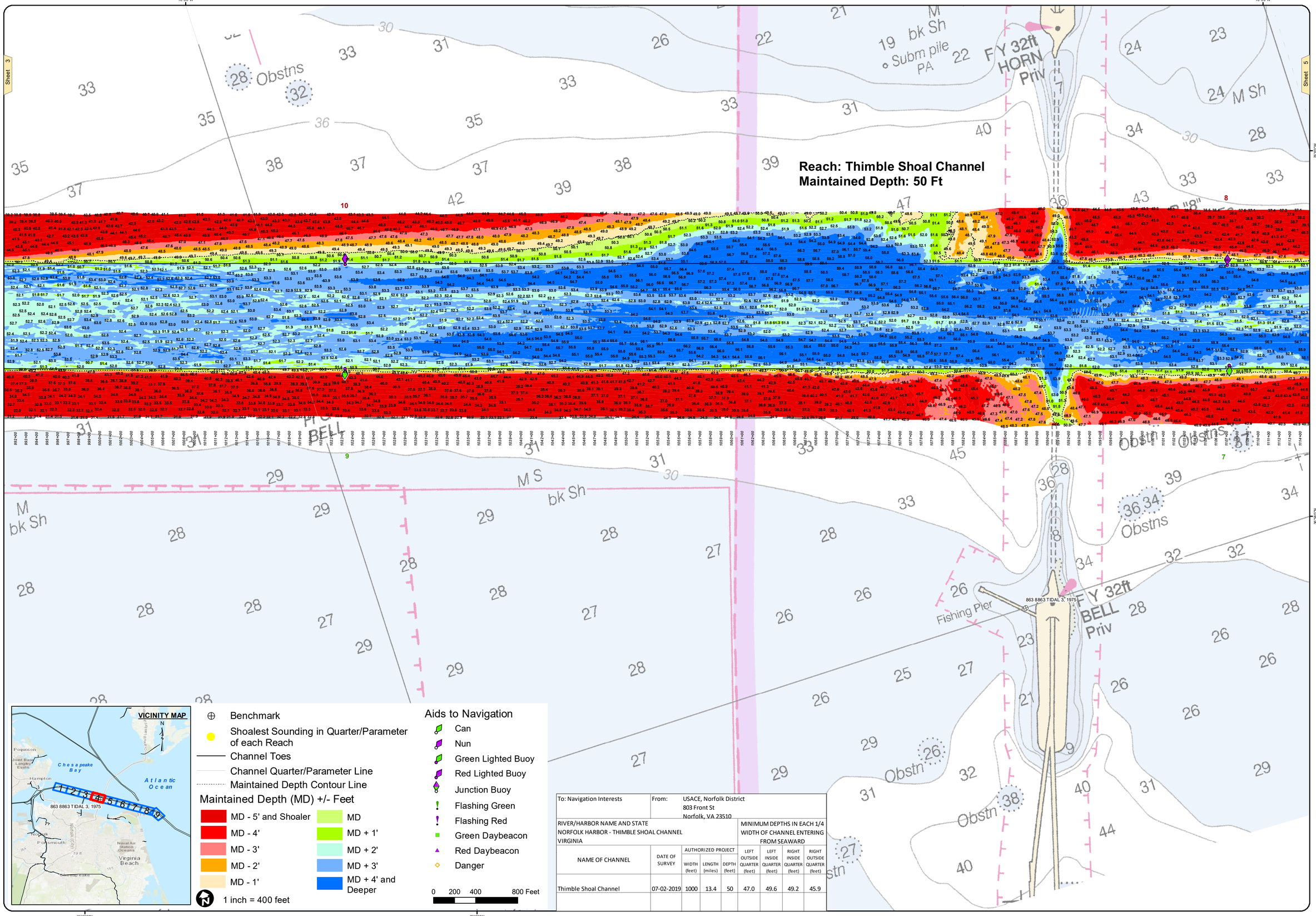
SURVEY DATES:
July 2, August 22, September 3, 4, 25, 26, 30 & October 1, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
sHYDRO FILE: NH_02_TBC_20190702_AD

SHEET 3 of 9
Map Produced: 10/23/2019

APPROVED:
Chief, Navigation Analysis Section

APPROVED:
Chief, Navigation Support and Survey Section



To: Navigation Interests		From: USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE NORFOLK HARBOR - THIMBLE SHOAL CHANNEL VIRGINIA					MINIMUM DEPTHS IN EACH 1/4 WIDTH OF CHANNEL ENTERING FROM SEAWARD			
NAME OF CHANNEL	DATE OF SURVEY	AUTHORIZED PROJECT			LEFT OUTSIDE QUARTER (feet)	LEFT INSIDE QUARTER (feet)	RIGHT INSIDE QUARTER (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)				
Thimble Shoal Channel	07-02-2019	1000	13.4	50	47.0	49.6	49.2	45.9

US Army Corps of Engineers
Norfolk District

NOTES:

1. PROJECT A CHANNEL 55 FT DEEP (MAINTAINED AT 50 FT), 1,000 FT WIDE AND 13.4 MILES LONG BETWEEN THE 55 FT CONTOURS IN THE LOWER CHESAPEAKE BAY.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED & CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 75 FT RADIUS GENERATED FROM HYDROSURVEY DATA.
4. BACKGROUND: NOAA RASTER CHART GIS WEB SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM: STATE PLANE
DATUM/ELLIPSOID: NAD83
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
IMPLIED HORIZONTAL ACCURACY: +/- 0.5 FEET
HORIZONTAL CONTROL: LEICA CORS STATIONS

VERTICAL REFERENCE DATUM: NOS MLLW
TIDAL DATUM: MEAN RANGE OF TIDE
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMART NET
TIDE AREA: ACCEPTED TIDE STATION MDL
SYSTEM/METHOD: MULTI-BEAM
BIN SIZE: 5x5
BIN SELECTION METHOD: AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS '863 8863 Tidal No. 3', 1975	26.96'	25.13' (GEOID12B)	2.55'	620+00 to 1630+74

NORFOLK HARBOR THIMBLE SHOAL CHANNEL PROJECT CONDITION SURVEY (AFTER DREDGING)

SURVEY DATES:
July 2, August 22, September 3, 4, 25, 26, 30 & October 1, 2019

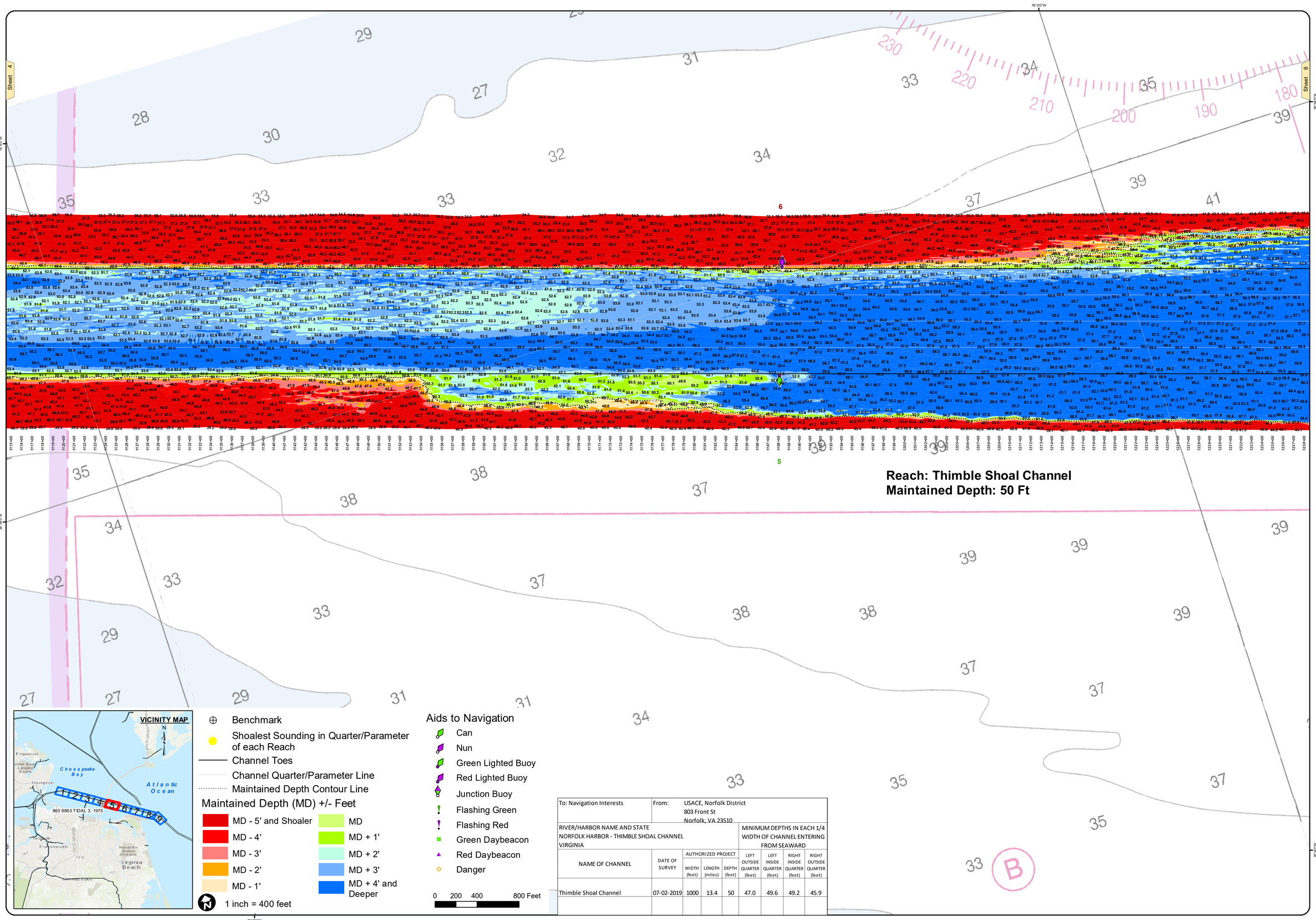
SURVEY BY: USACE Team Lead: Dustin Brooke

eHYDRO FILE: NH_02_TSC_20190702_A0

SHEET 4 of 9
Map Produced: 10/23/2019

APPROVED:
Chief, Navigation Analysis Section

APPROVED:
Chief, Navigation Support and Survey Section



To: Navigation Interests	From:	USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE NORFOLK HARBOR - THIMBLE SHOAL CHANNEL VIRGINIA					MINIMUM DEPTHS IN EACH 1/4 WIDTH OF CHANNEL ENTERING FROM SEAWARD			
NAME OF CHANNEL	DATE OF SURVEY	AUTHORIZED PROJECT			LEFT OUTSIDE QUARTER (feet)	LEFT INSIDE QUARTER (feet)	RIGHT INSIDE QUARTER (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)				
Thimble Shoal Channel	07-02-2019	1000	13.4	50	47.0	49.6	49.2	45.9

US Army Corps of Engineers
Norfolk District

NOTES:
1. PROJECT A CHANNEL 55 FT DEEP (MAINTAINED AT 50 FT), 1,000 FT WIDE AND 13.4 MILES LONG BETWEEN THE 55 FT CONTOURS IN THE LOWER CHESAPEAKE BAY.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED & CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 75 FT RADIUS GENERATED FROM HYDROSURVEY DATA.
4. BACKGROUND: NOAA RASTER CHART GIS WEB SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

VERTICAL REFERENCE DATUM: NOS MLLW
TIDAL EPOCH: 1983-2001
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMART NET
TIDE APPLICATION: RTK/NOAA VDATUM MDL
SYSTEM/METHOD: MULTI-BEAM
BIN SIZE: 5x5'
BIN SELECTION METHOD: AVERAGE CELL CENTER

PROJECTED COORDINATE SYSTEM: STATE PLANE
DATUM NAME: NAD 83
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
IMPLIED HORIZONTAL ACCURACY: +/- 1 FOOT
HORIZONTAL CONTROL: LEICA CORS STATIONS

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS "863 8863 Tidal No. 3", 1975	26.96'	25.13' (GEOID12B)	2.55'	620+00 to 1630+74

NORFOLK HARBOR
THIMBLE SHOAL CHANNEL
PROJECT CONDITION SURVEY
(AFTER DREDGING)

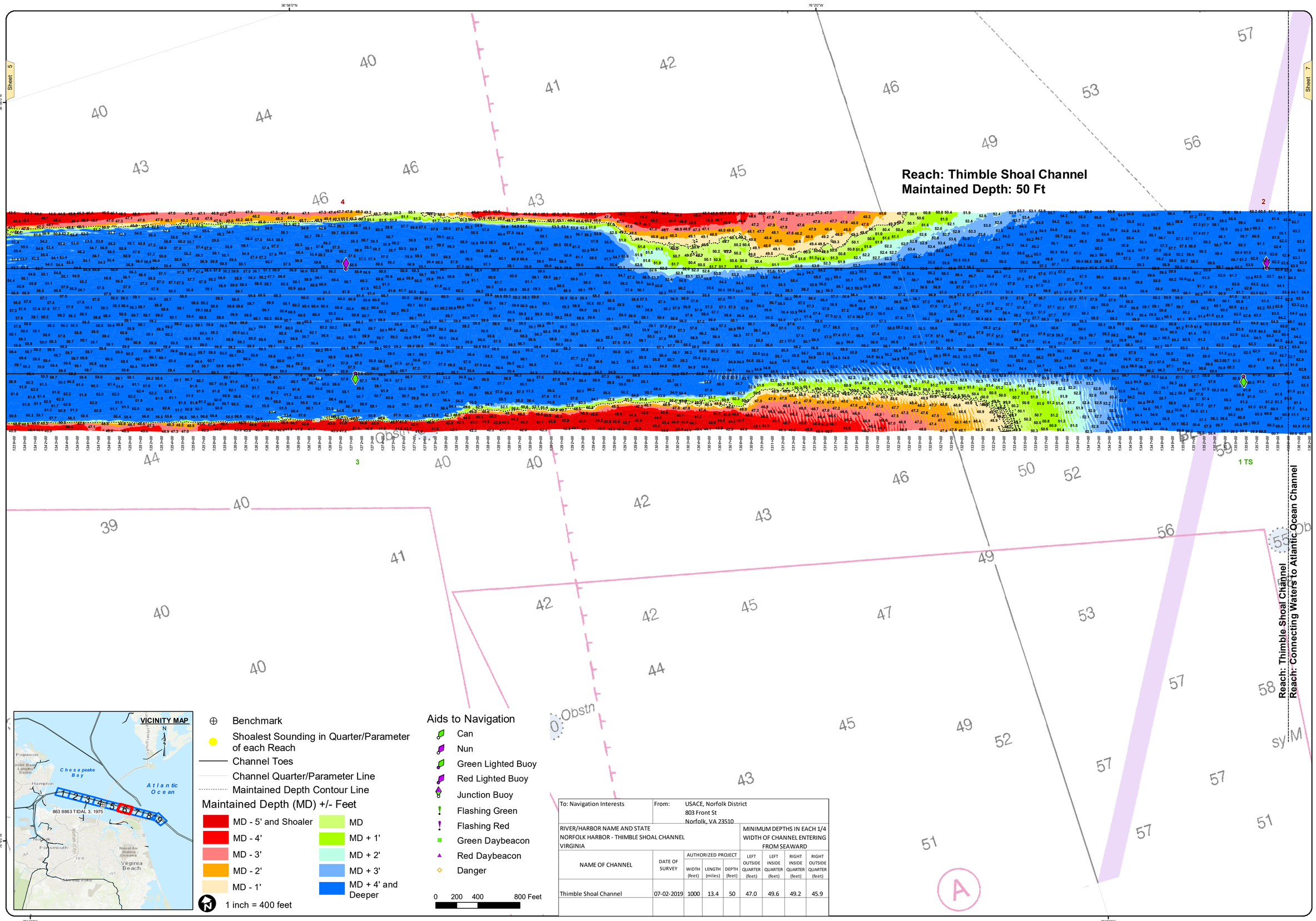
SURVEY DATES:
July 2, August 22, September 3, 4, 25, 26, 30 & October 1, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
eHYDRO FILE: NH_02_TSC_20190702_AD

SHEET 5 of 9
Map Produced: 10/23/2019

APPROVED:
Chief, Navigation Analysis Section

APPROVED:
Chief, Navigation Support and Survey Section



To: Navigation Interests	From:	USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE NORFOLK HARBOR - THIMBLE SHOAL CHANNEL VIRGINIA					MINIMUM DEPTHS IN EACH 1/4 WIDTH OF CHANNEL ENTERING FROM SEAWARD			
NAME OF CHANNEL	DATE OF SURVEY	AUTHORIZED PROJECT			LEFT OUTSIDE QUARTER (feet)	LEFT INSIDE QUARTER (feet)	RIGHT INSIDE QUARTER (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)				
Thimble Shoal Channel	07-02-2019	1000	13.4	50	47.0	49.6	49.2	45.9

US Army Corps of Engineers
Norfolk District

NOTES:

1. PROJECT A CHANNEL 55 FT DEEP (MAINTAINED AT 50 FT), 1,000 FT WIDE AND 13.4 MILES LONG BETWEEN THE 55 FT CONTOURS IN THE LOWER CHESAPEAKE BAY.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED & CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 75 FT RADIUS GENERATED FROM HYDROSURVEY DATA.
4. BACKGROUND: NOAA RASTER CHART GIS WEB SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM: STATE PLANE
DATUM NAME: NAD 83
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
IMPLIED HORIZONTAL ACCURACY: +/- 1 FOOT
HORIZONTAL CONTROL: LEICA CORS STATIONS

VERTICAL REFERENCE DATUM: NOS MLLW
TIDAL EPOCH: 1983-2001
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMART NET
TIDE APPLICATION: RTK/NOAA VDATUM MDL
SYSTEM/METHOD: MULTIBEAM
BIN SIZE: 5x5'
BIN SELECTION METHOD: AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS 8863 8863 Tidal No. 3*, 1975	26.96'	25.13' (GEOID12B)	2.55'	620+00 to 1630+74

NORFOLK HARBOR
THIMBLE SHOAL CHANNEL
PROJECT CONDITION SURVEY
(AFTER DREDGING)

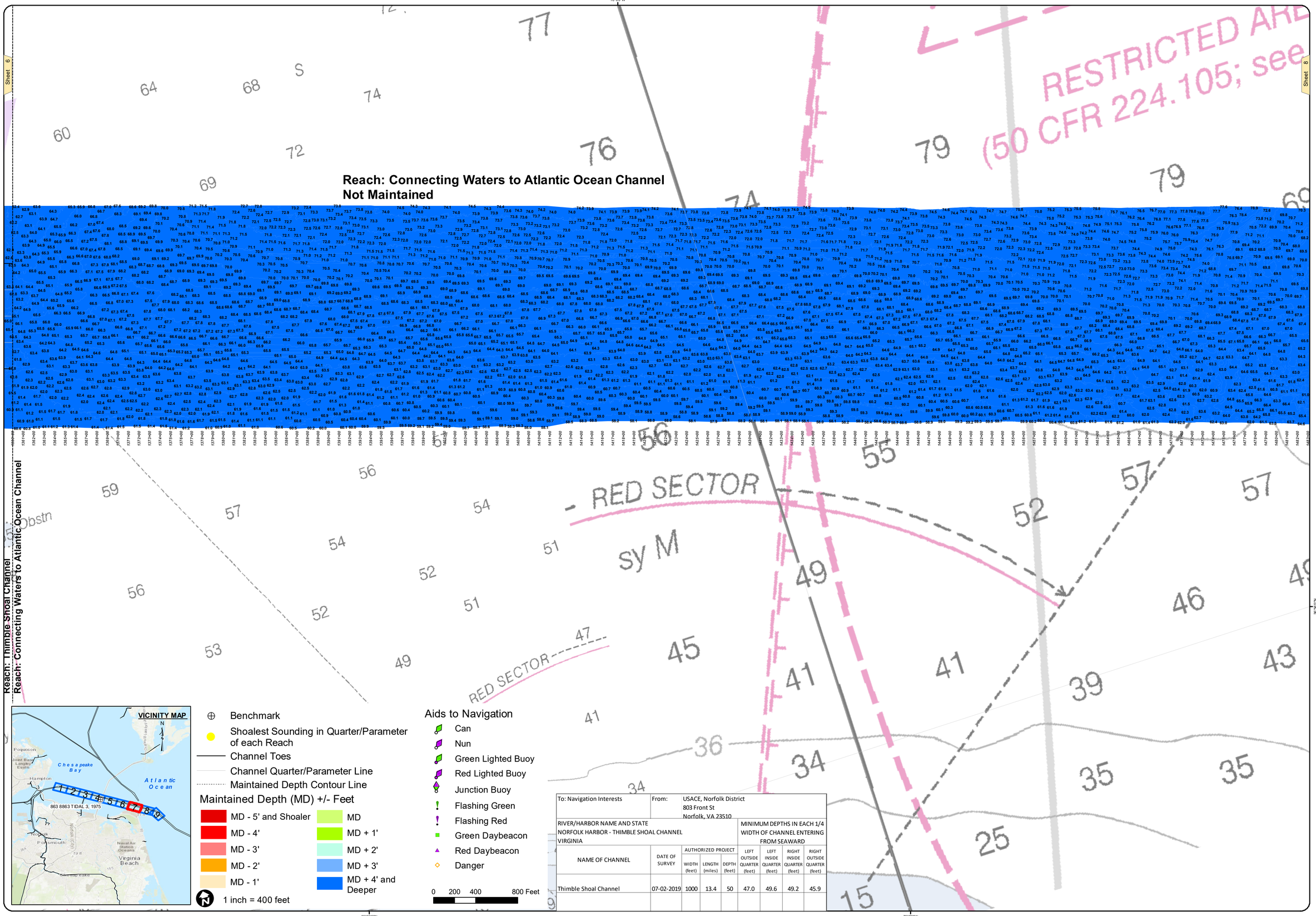
SURVEY DATES:
July 2, August 22, September 3, 4, 25, 26, 30 & October 1, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
eHYDRO FILE: NH_O2_TSC_20190702_AD

SHEET 6 of 9
Map Produced: 10/23/2019

APPROVED:
Chief, Navigation Analysis Section

APPROVED:
Chief, Navigation Support and Survey Section



To: Navigation Interests		From: USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE NORFOLK HARBOR - THIMBLE SHOAL CHANNEL VIRGINIA					MINIMUM DEPTHS IN EACH 1/4 WIDTH OF CHANNEL ENTERING FROM SEAWARD			
NAME OF CHANNEL	DATE OF SURVEY	AUTHORIZED PROJECT			LEFT OUTSIDE QUARTER (feet)	LEFT INSIDE QUARTER (feet)	RIGHT INSIDE QUARTER (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)				
Thimble Shoal Channel	07-02-2019	1000	13.4	50	47.0	49.6	49.2	45.9

US Army Corps of Engineers
Norfolk District

NOTES:

1. PROJECT A CHANNEL 55 FT DEEP (MAINTAINED AT 50 FT), 1,000 FT WIDE AND 13.4 MILES LONG BETWEEN THE 55 FT CONTOURS IN THE LOWER CHESAPEAKE BAY.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED & CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 75 FT RADIUS GENERATED FROM HYDROSURVEY DATA.
4. BACKGROUND: NOAA RASTER CHART GIS WEB SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY sHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM: STATE PLANE
HORIZONTAL DATUM: NAD83
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
HORIZONTAL COORDINATE ACCURACY: +/- 0.5 FEET
HORIZONTAL CONTROL: LEICA CORS STATIONS

VERTICAL REFERENCE DATUM: NOS MLLW
VERTICAL DATUM: MLLW
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMART NET
TIDE ZONE/ GAUGE: 863 8863 TIDAL 3, 1975
SYSTEM/METHOD: MULTI-BEAM
BIN SIZE: 5x5
BIN SELECTION METHOD: AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS 863 8863 Tidal No. 3 - 1975	26.96'	25.13' (GEOID12B)	2.55	620+00 to 1630+74

NORFOLK HARBOR THIMBLE SHOAL CHANNEL PROJECT CONDITION SURVEY (AFTER DREDGING)

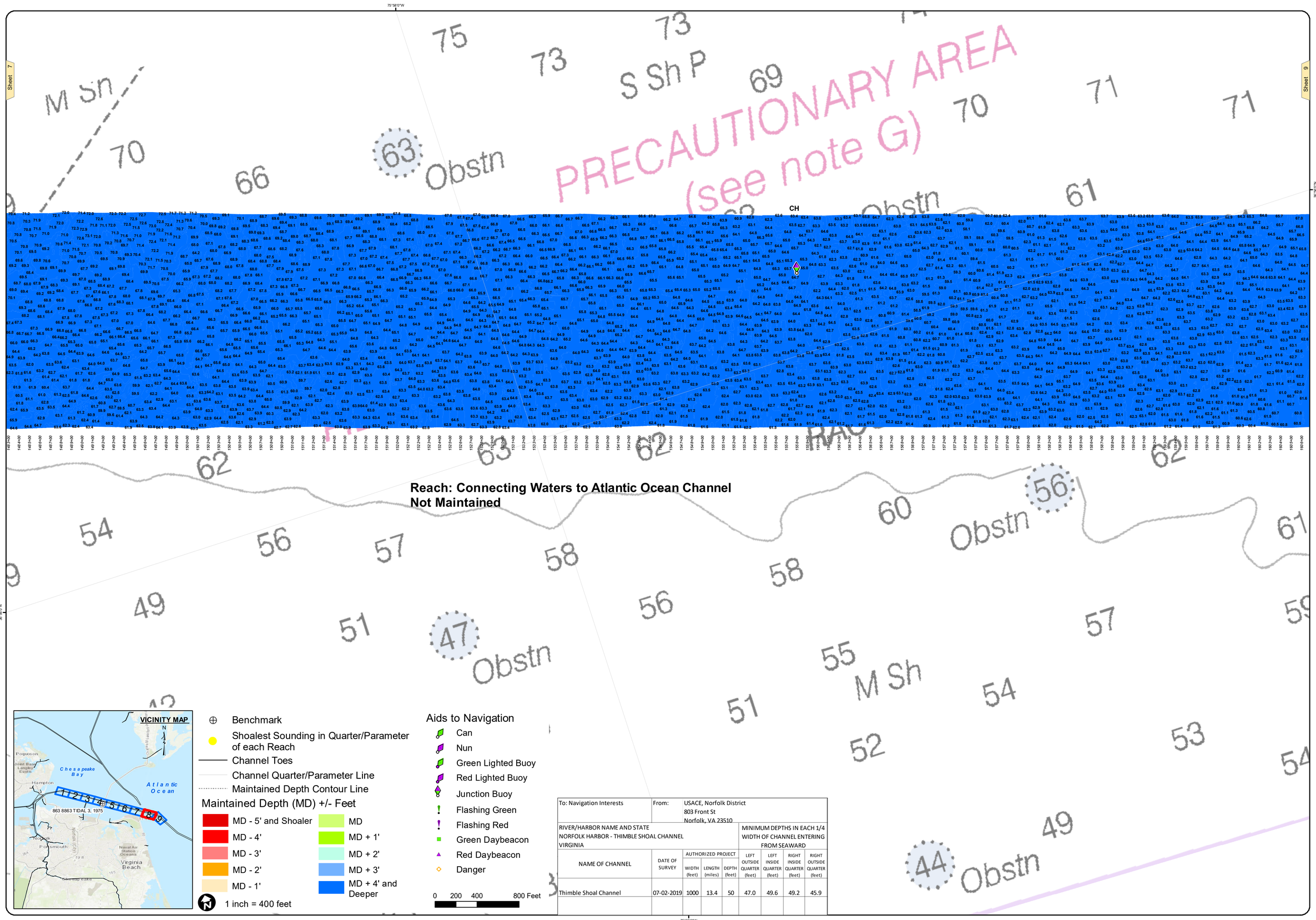
SURVEY DATES:
July 2, August 22, September 3, 4, 25, 26, 30 & October 1, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
sHYDRO FILE: NH_02_TSC_20190702_AD

SHEET 7 of 9
Map Produced: 10/23/2019

APPROVED:
Chief, Navigation Analysis Section

APPROVED:
Chief, Navigation Support and Survey Section



To: Navigation Interests	From: USACE, Norfolk District 803 Front St Norfolk, VA 23510							
RIVER/HARBOR NAME AND STATE NORFOLK HARBOR - THIMBLE SHOAL CHANNEL VIRGINIA					MINIMUM DEPTHS IN EACH 1/4 WIDTH OF CHANNEL ENTERING FROM SEAWARD			
NAME OF CHANNEL	DATE OF SURVEY	AUTHORIZED PROJECT			LEFT OUTSIDE QUARTER (feet)	LEFT INSIDE QUARTER (feet)	RIGHT INSIDE QUARTER (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)				
Thimble Shoal Channel	07-02-2019	1000	13.4	50	47.0	49.6	49.2	45.9

US Army Corps of Engineers
Norfolk District

NOTES:

1. PROJECT: A CHANNEL 55 FT DEEP (MAINTAINED AT 50 FT), 1,000 FT WIDE AND 13.4 MILES LONG BETWEEN THE 55 FT CONTOURS IN THE LOWER CHESAPEAKE BAY.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED & CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 75 FT RADIUS GENERATED FROM HYDROSURVEY DATA.
4. BACKGROUND: NOAA RASTER CHART GIS WEB SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM: STATE PLANE
DATUM NAME: NAD 83
HORIZONTAL ZONE: VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS: US SURVEY FEET
IMPLIED HORIZONTAL ACCURACY: +/- 1 FOOT
HORIZONTAL CONTROL: LEICA CORS STATIONS

VERTICAL REFERENCE DATUM: NOS MLLW
TIDAL EPOCH: 1983-2001
IMPLIED VERTICAL ACCURACY: +/- 0.5 FEET
VERTICAL CONTROL: RTK/LEICA SMART NET
TIDE APPLICATION: RTK/NOAA VDATUM MDL
SYSTEM/METHOD: MULTI-BEAM
BIN SIZE: 5x5'
BIN SELECTION METHOD: AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS 8863 8863 Tidal No. 3*, 1975	26.96'	25.13' (GEOID12B)	2.55'	620+00 to 1630+74

NORFOLK HARBOR
THIMBLE SHOAL CHANNEL
PROJECT CONDITION SURVEY
(AFTER DREDGING)

SURVEY DATES:
July 2, August 22, September 3, 4, 25, 26, 30 & October 1, 2019

SURVEY BY: USACE Team Lead: Dustin Brooke
eHYDRO FILE: NH_O2_TSC_20190702_AD

SHEET 8 of 9
Map Produced: 10/23/2019

APPROVED:
Chief, Navigation Analysis Section

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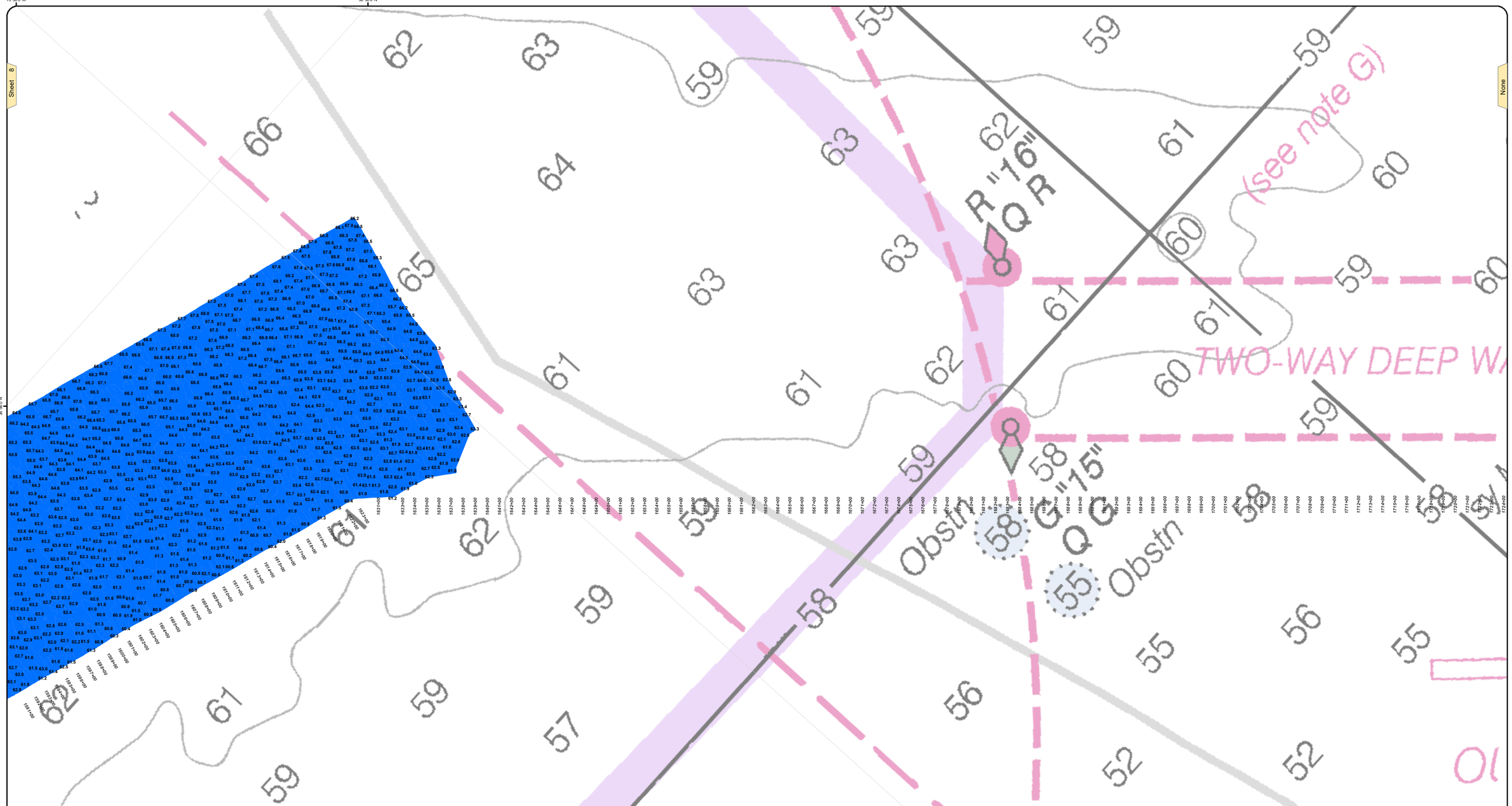
Chief, Navigation Support and Survey Section



Benchmark

Shoalest Sounding in Quarter/Parameter of each Reach

Channel Toes

Channel Quarter/Parameter Line

Maintained Depth Contour Line

Maintained Depth (MD) +/- Feet

- MD - 5' and Shoaler
- MD - 4'
- MD - 3'
- MD - 2'
- MD - 1'
- MD
- MD + 1'
- MD + 2'
- MD + 3'
- MD + 4' and Deeper

1 inch = 400 feet

Aids to Navigation

- Can
- Nun
- Green Lighted Buoy
- Red Lighted Buoy
- Junction Buoy
- Flashing Green
- Flashing Red
- Green Daybeacon
- Red Daybeacon
- Danger

0 200 400 800 Feet

To: Navigation Interests		From: USACE, Norfolk District 803 Front St Norfolk, VA 23510						
RIVER/HARBOR NAME AND STATE NORFOLK HARBOR - THIMBLE SHOAL CHANNEL VIRGINIA					MINIMUM DEPTHS IN EACH 1/4 WIDTH OF CHANNEL ENTERING FROM SEAWARD			
NAME OF CHANNEL	DATE OF SURVEY	AUTHORIZED PROJECT			LEFT OUTSIDE QUARTER (feet)	LEFT INSIDE QUARTER (feet)	RIGHT INSIDE QUARTER (feet)	RIGHT OUTSIDE QUARTER (feet)
		WIDTH (feet)	LENGTH (miles)	DEPTH (feet)				
Thimble Shoal Channel	07-02-2019	1000	13.4	50	47.0	49.6	49.2	45.9

US Army Corps of Engineers Norfolk District

NOTES:

1. PROJECT A CHANNEL 55 FT DEEP (MANTAINED AT 50 FT), 1,000 FT WIDE AND 13.4 MILES LONG BETWEEN THE 55 FT CONTOURS IN THE LOWER CHESAPEAKE BAY.
2. NOT FOR NAVIGATION USE. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) INDICATED & CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. SOUNDINGS: SHOWN IN FEET CENTERED ON POINT OF SHOALEST DEPTH IN 75 FT RADIUS GENERATED FROM HYDROSURVEY DATA.
4. BACKGROUND: NOAA RASTER CHART GIS WEB SERVICE.
5. AIDS TO NAVIGATION LOCATED WITH SURVEY VESSEL +/- 10 FEET ON DATE OF SURVEY.
6. SURVEY XYZ (*.XYZ) AND METADATA (*.MET) FILE NAME REFERENCED BY eHYDRO FILE NAME.

PROJECTED COORDINATE SYSTEM:	STATE PLANE
DATUM/ZONE:	NAD 83
HORIZONTAL ZONE:	VIRGINIA SOUTH ZONE
PROJECTED COORDINATE UNITS:	US SURVEY FEET
IMPLIED HORIZONTAL ACCURACY:	+/- 0.5 FEET
HORIZONTAL CONTROL:	LEICA CORS STATIONS

VERTICAL REFERENCE DATUM:	NOS MLLW
VERTICAL DATUM:	MLLW
IMPLIED VERTICAL ACCURACY:	+/- 0.5 FEET
VERTICAL CONTROL:	RTK/LEICA SMART NET
ACCEPTED SOUNDING DATUM:	MLLW/NAVD88 MDL
SYSTEM/METHOD:	MULTI-BEAM
BIN SIZE:	5x5
BIN SELECTION METHOD:	AVERAGE CELL CENTER

GEODETIC CONTROL MONUMENTS

MONUMENT	MLLW	NAVD88	MEAN RANGE OF TIDE	AREA
NOS 863 8863 Tidal No. 3 , 1975	26.96'	25.13' (GEOID12B)	2.5'S	620+00 to 1630+74

NORFOLK HARBOR THIMBLE SHOAL CHANNEL PROJECT CONDITION SURVEY (AFTER DREDGING)

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