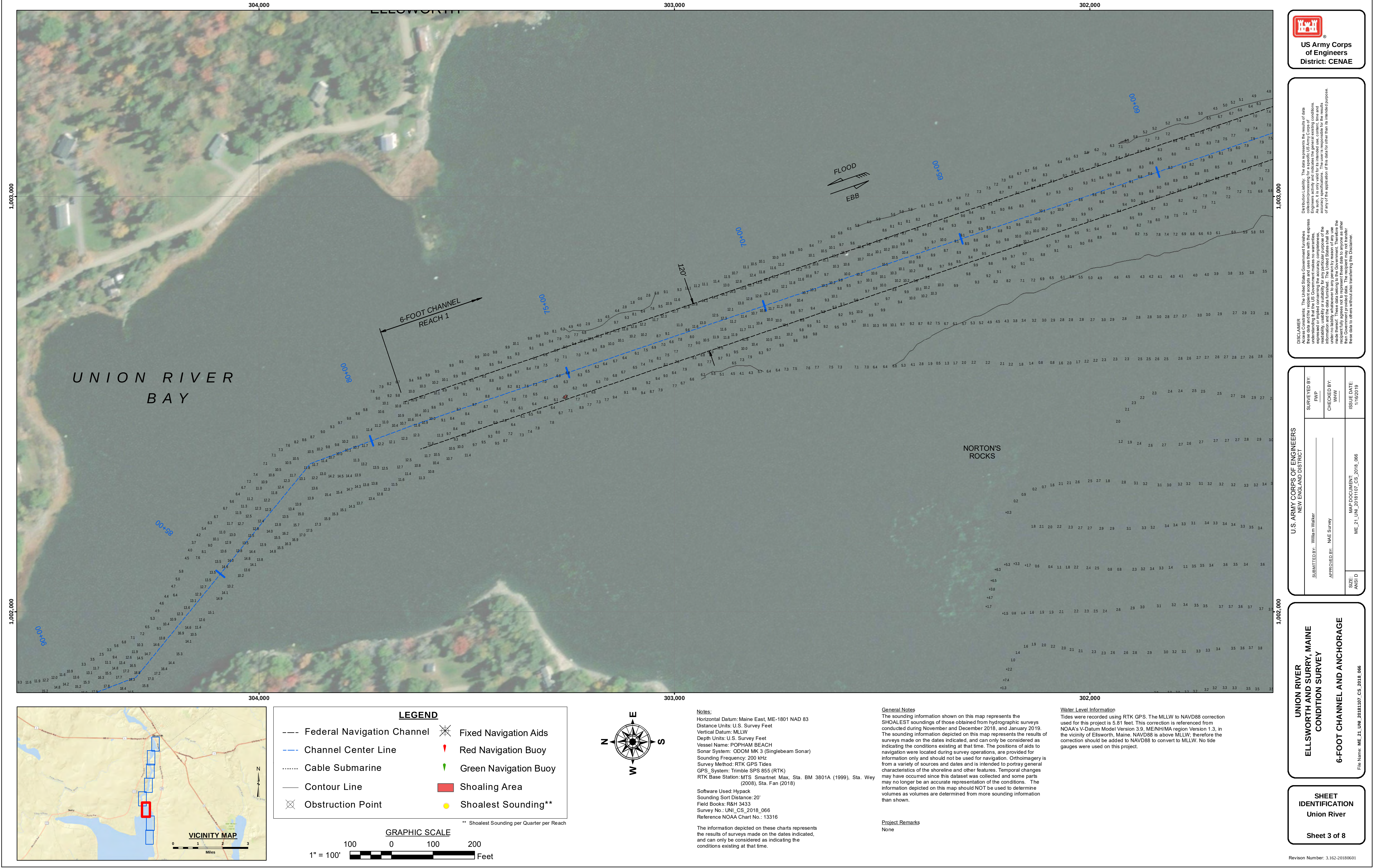






|                                                      |  |                            |                    |                          |
|------------------------------------------------------|--|----------------------------|--------------------|--------------------------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ENGLAND DISTRICT |  | SURVEYED BY:<br>FWP        | CHECKED BY:<br>WHW | ISSUE DATE:<br>11/6/2019 |
| SUBMITTED BY:<br>William Walker                      |  | APPROVED BY:<br>NAE Survey |                    |                          |
| MAP DOCUMENT<br>ME_21_UNI_20181107_CS_2018_066       |  | SIZE<br>ANSI D             |                    |                          |

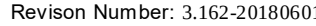
UNION RIVER  
ELLSWORTH AND SURRY, MAINE  
CONDITION SURVEY  
6-FOOT CHANNEL AND ANCHORAGE

File Name: ME 21 UNI\_20181107\_CS\_2018\_066

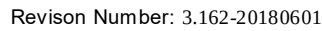
SHEET  
IDENTIFICATION  
Union River

Sheet 3 of 8

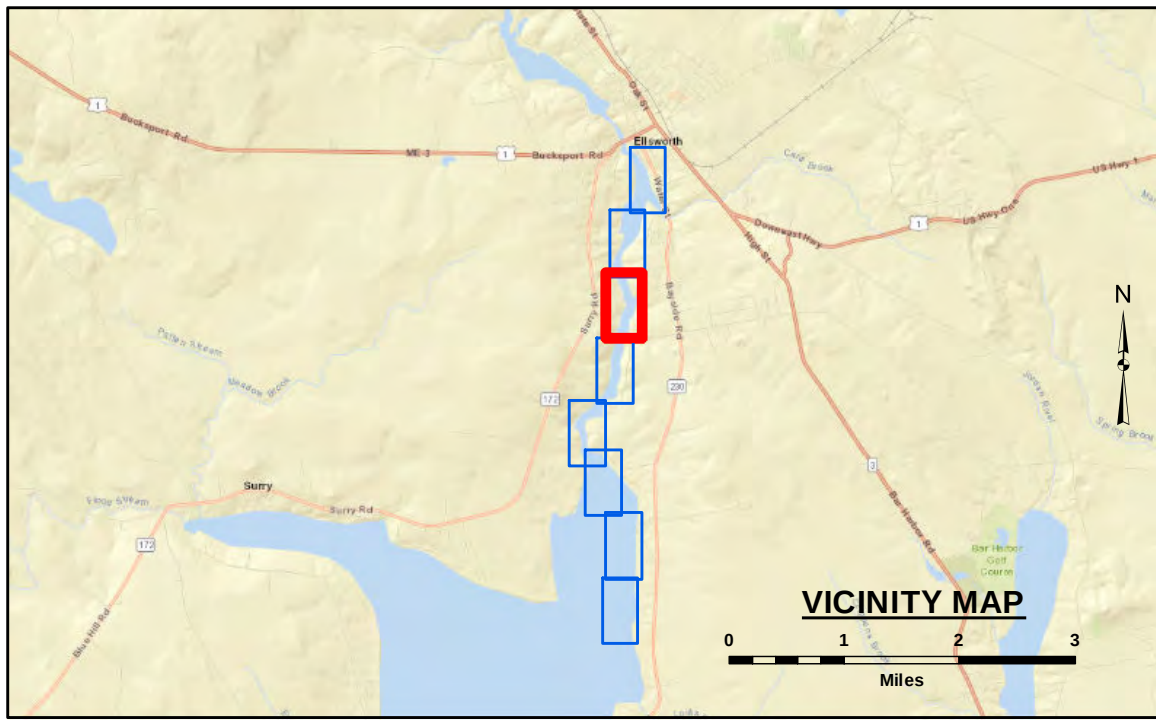
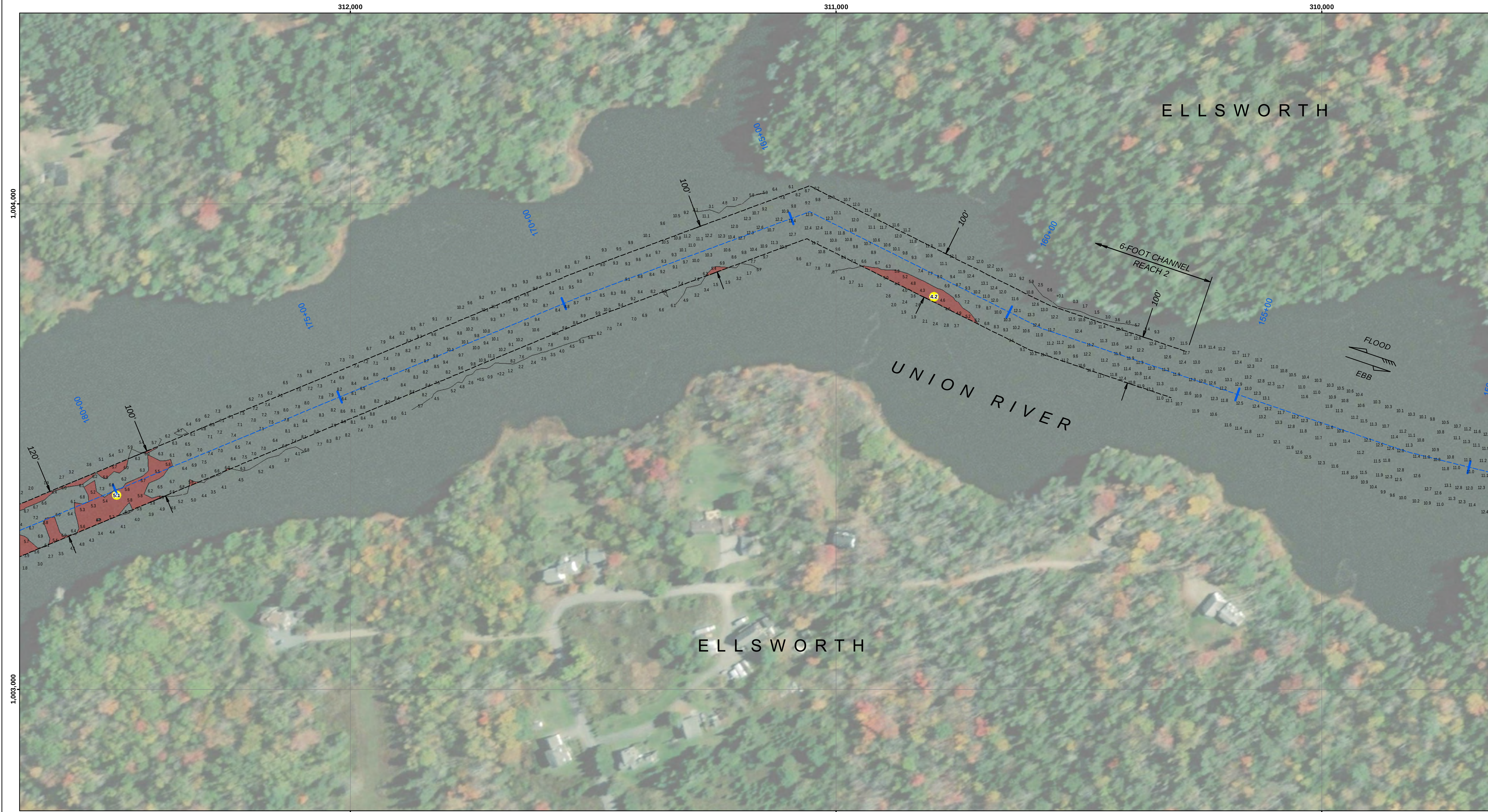












**LEGEND**

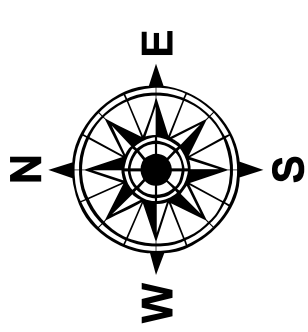
|                                |                         |
|--------------------------------|-------------------------|
| --- Federal Navigation Channel | ✕ Fixed Navigation Aids |
| — Channel Center Line          | 🚩 Red Navigation Buoy   |
| ..... Cable Submarine          | 🌿 Green Navigation Buoy |
| — Contour Line                 | 🔴 Shoaling Area         |
| ⊗ Obstruction Point            | 🟡 Shoalest Sounding**   |

\*\* Shoalest Sounding per Quarter per Reach

**GRAPHIC SCALE**

1" = 100'

0 100 200 Feet



**Notes:**  
Horizontal Datum: Maine East, ME-1801 NAD 83  
Distance Units: U.S. Survey Feet  
Vertical Datum: MLLW  
Depth Units: U.S. Survey Feet  
Vessel Name: POPHAM BEACH  
Sonar System: ODOM MK 3 (Singlebeam Sonar)  
Sounding Frequency: 200 kHz  
Survey Method: RTK GPS Tides  
GPS System: Trimble SPS 855 (RTK)  
RTK Base Station: MTS Smartnet Max, Sta. BM 3801A (1999), Sta. Wey (2008), Sta. Fan (2018)

**Software Used:** Hypack  
Sounding Sort Distance: 20'  
Field Books: R&H 3433  
Survey No.: UNI\_CS\_2018\_066  
Reference NOAA Chart No.: 13316

The information depicted on these charts represents the results of surveys made on the dates indicated, and can only be considered as indicating the conditions existing at that time.

**General Notes**  
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**Project Remarks**  
None

**Water Level Information**  
Tides were recorded using RTK GPS. The MLLW to NAVD88 correction used for this project is 5.81 feet. This correction is referenced from NOAA's V-Datum Model Version 3.9, ME/NH/MA region Version 1.3, in the vicinity of Ellsworth, Maine. NAVD88 is above MLLW; therefore the correction should be added to NAVD88 to convert to MLLW. No tide gauges were used on this project.



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|                                                      |  |                            |                    |                          |
|------------------------------------------------------|--|----------------------------|--------------------|--------------------------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ENGLAND DISTRICT |  | SURVEYED BY:<br>FWP        | CHECKED BY:<br>WHW | ISSUE DATE:<br>1/16/2019 |
| SUBMITTED BY:<br>William Walker                      |  | APPROVED BY:<br>NAE Survey |                    |                          |
| MAP DOCUMENT<br>ME_21_UNI_20181107_CS_2018_066       |  | SIZE<br>ANSI D             |                    |                          |

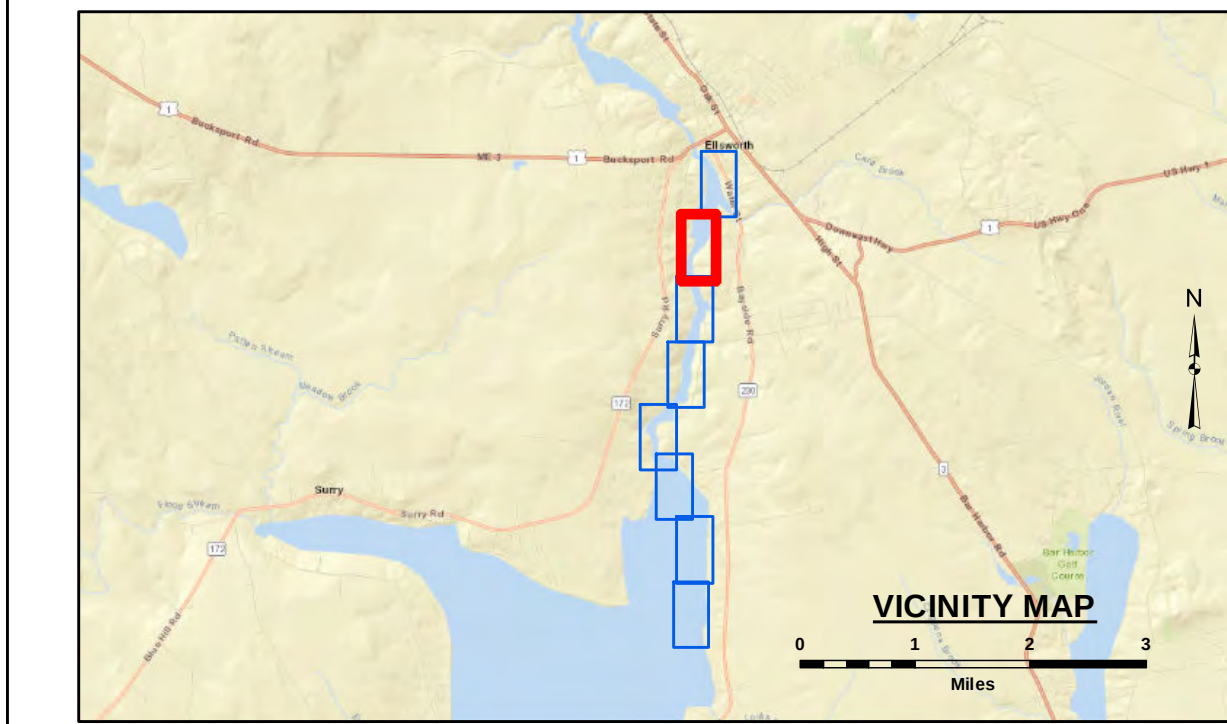
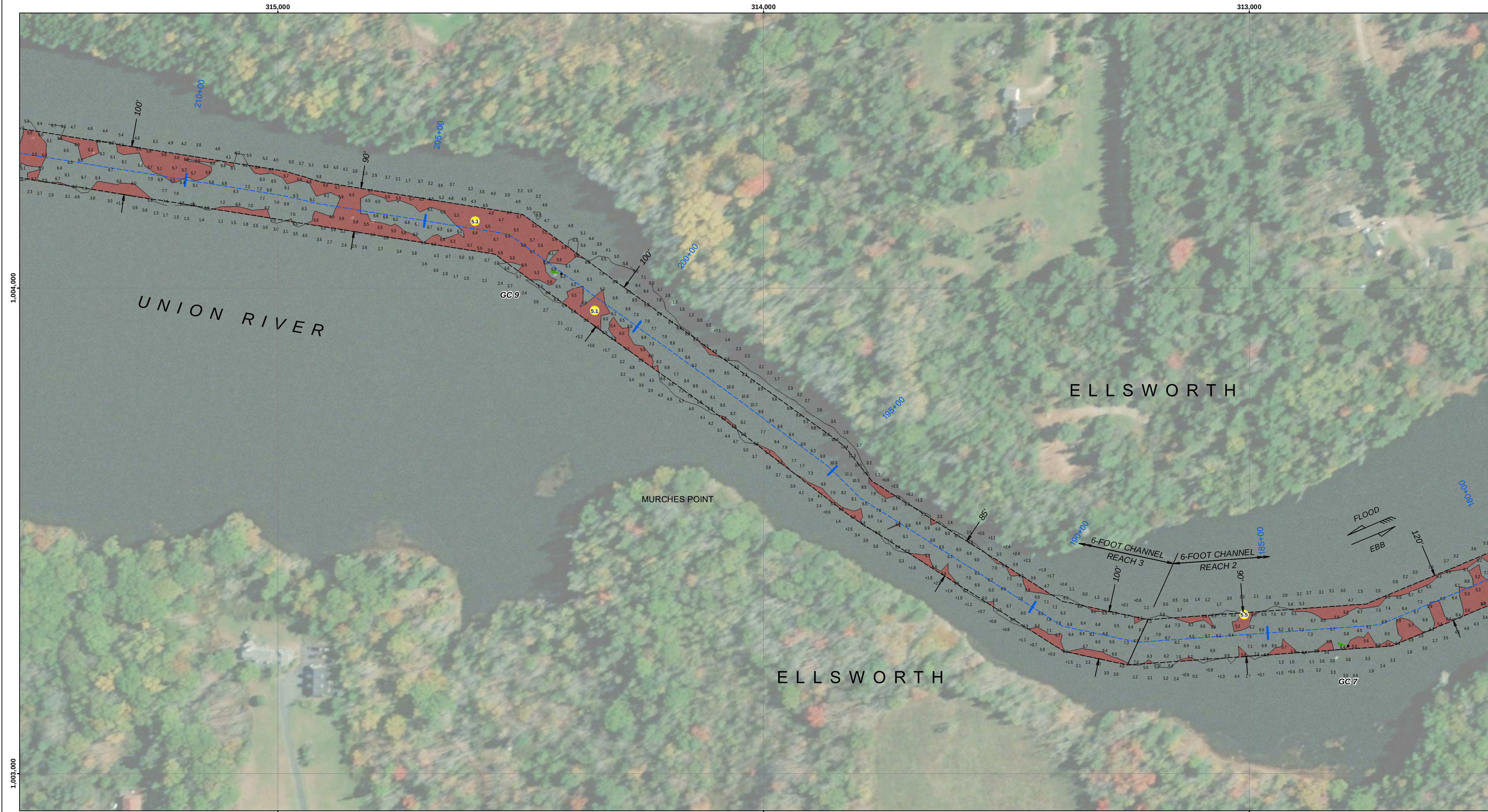
**UNION RIVER  
ELLSWORTH AND SURRY, MAINE  
CONDITION SURVEY  
6-FOOT CHANNEL AND ANCHORAGE**

File Name: ME\_21\_UNI\_20181107\_CS\_2018\_066

**SHEET  
IDENTIFICATION  
Union River**

Sheet 6 of 8





**LEGEND**

---

Channel Center Line

.....

Cable Submarine

—

Contour Line

⊗

Obstruction Point

✕

Fixed Navigation Aids

●

Red Navigation Buoy

●

Green Navigation Buoy

■

Shoaling Area

●

Shoalest Sounding\*\*

\*\* Shoalest Sounding per Quarter per Reach

**GRAPHIC SCALE**

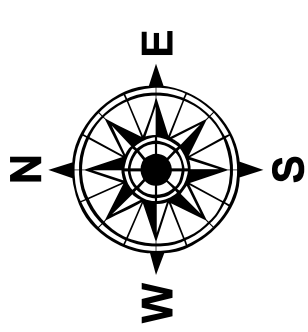
100

0

100

200

1" = 100' Feet



**Notes:**  
Horizontal Datum: Maine East, ME-1801 NAD 83  
Distance Units: U.S. Survey Feet  
Vertical Datum: MLLW  
Depth Units: U.S. Survey Feet  
Vessel Name: POPHAM BEACH  
Sonar System: ODOM MK 3 (Singlebeam Sonar)  
Sounding Frequency: 200 kHz  
Survey Method: RTK GPS Tides  
GPS System: Trimble SPS 855 (RTK)  
RTK Base Station: MTS Smartnet Max, Sta. BM 3801A (1999), Sta. Wey (2008), Sta. Fan (2018)  
Software Used: Hypack  
Sounding Sort Distance: 20'  
Field Books: R&H 3433  
Survey No.: UNI\_CS\_2018\_066  
Reference NOAA Chart No.: 13316

The information depicted on these charts represents the results of surveys made on the dates indicated, and can only be considered as indicating the conditions existing at that time.

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**Project Remarks**  
None

**Water Level Information**  
Tides were recorded using RTK GPS. The MLLW to NAVD88 correction used for this project is 5.81 feet. This correction is referenced from NOAA's V-Datum Model Version 3.9, ME/NH/MA region Version 1.3, in the vicinity of Ellsworth, Maine. NAVD88 is above MLLW; therefore the correction should be added to NAVD88 to convert to MLLW. No tide gauges were used on this project.



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|                                                      |                                 |                            |                                                 |
|------------------------------------------------------|---------------------------------|----------------------------|-------------------------------------------------|
| U.S. ARMY CORPS OF ENGINEERS<br>NEW ENGLAND DISTRICT | SURVEYED BY:<br>FMP             | CHECKED BY:<br>WHW         | ISSUE DATE:<br>11/6/2019                        |
|                                                      | SUBMITTED BY:<br>William Walker | APPROVED BY:<br>NAE Survey | MAP DOCUMENT:<br>ME_21_UNI_20181107_CS_2018_066 |
| SIZE<br>ANSI D                                       |                                 |                            |                                                 |

**UNION RIVER  
ELLSWORTH AND SURRY, MAINE  
CONDITION SURVEY**

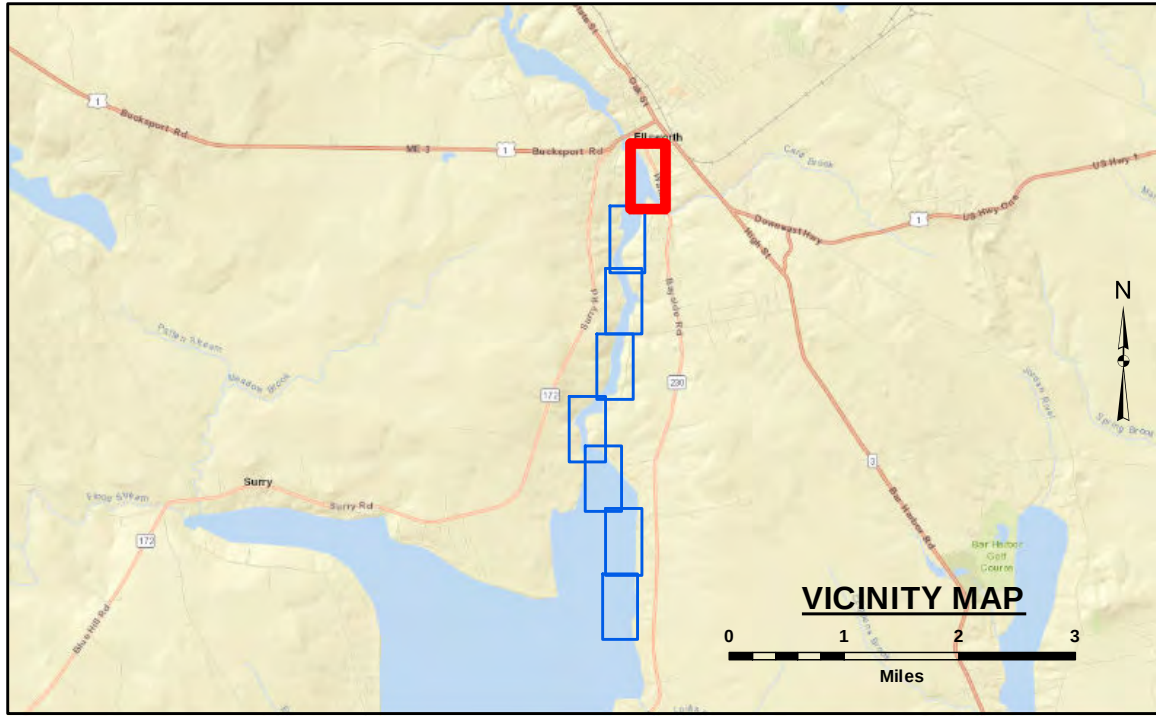
**6-FOOT CHANNEL AND ANCHORAGE**

File Name: ME\_21\_UNI\_20181107\_CS\_2018\_066

**SHEET  
IDENTIFICATION**  
Union River

Sheet 7 of 8





**LEGEND**

---

Channel Center Line

.....

Cable Submarine

—

Contour Line

⊗

Obstruction Point

⊗

Fixed Navigation Aids

📍

Red Navigation Buoy

📍

Green Navigation Buoy

■

Shoaling Area

●

Shoalest Sounding\*\*

**GRAPHIC SCALE**

1" = 100'

100 0 100 200 Feet

**Notes:**

Horizontal Datum: Maine East, ME-1801 NAD 83  
Distance Units: U.S. Survey Feet  
Vertical Datum: MLLW  
Depth Units: U.S. Survey Feet  
Vessel Name: POPHAM BEACH  
Sonar System: ODOM MK 3 (Singlebeam Sonar)  
Sounding Frequency: 200 kHz  
Survey Method: RTK GPS Tides  
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Software Used: Hypack  
Sounding Sort Distance: 20'  
Field Books: R&H 3433  
Survey No.: UNI\_CS\_2018\_066  
Reference NOAA Chart No.: 13316

The information depicted on these charts represents the results of surveys made on the dates indicated, and can only be considered as indicating the conditions existing at that time.

**\*\* Shoalest Sounding per Quarter per Reach**

**General Notes**

The sounding information shown on this map represents the SHOALEST soundings of those obtained from hydrographic surveys conducted during November and December 2018, and January 2019. The sounding information depicted on this map represents the results of surveys made on the dates indicated, and can only be considered as indicating the conditions existing at that time. The positions of aids to navigation were located during survey operations, are provided for information only and should not be used for navigation. Orthomagey is from a variety of sources and dates and is intended to portray general characteristics of the shoreline and other features. Temporal changes may have occurred since this dataset was collected and some parts may no longer be an accurate representation of the conditions. The information depicted on this map should NOT be used to determine volumes as volumes are determined from more sounding information than shown.

**Project Remarks**

None

**Water Level Information**

Tides were recorded using RTK GPS. The MLLW to NAVD88 correction used for this project is 5.81 feet. This correction is referenced from NOAA's V-Datum Model Version 3.9, ME/NH/MA region Version 1.3, in the vicinity of Ellsworth, Maine. NAVD88 is above MLLW; therefore the correction should be added to NAVD88 to convert to MLLW. No tide gauges were used on this project.

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**U.S. ARMY CORPS OF ENGINEERS**

NEW ENGLAND DISTRICT

|               |                |              |            |               |                                |
|---------------|----------------|--------------|------------|---------------|--------------------------------|
| SURVEYED BY:  | FMP            | CHECKED BY:  | WHW        | ISSUE DATE:   | 11/6/2019                      |
| SUBMITTED BY: | William Walker | APPROVED BY: | NAE Survey | MAP DOCUMENT: | ME_21_UNI_20181107_CS_2018_066 |
| SIZE:         | ANSI D         |              |            |               |                                |

**UNION RIVER**

**ELLSWORTH AND SURRY, MAINE**

**CONDITION SURVEY**

**6-FOOT CHANNEL AND ANCHORAGE**

File Name: ME 21 UNI\_20181107\_CS\_2018\_066

**SHEET IDENTIFICATION**

Union River

Sheet 8 of 8

Revision Number: 3.162-20180601