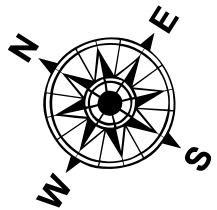


**LEGEND**

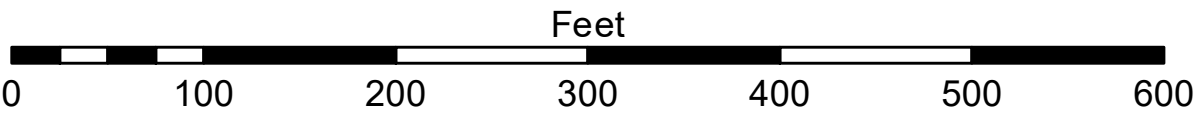
- ..... Cable Submarine
- - Cable Overhead
- Channel\_Limits
- Contour Lines

**SOUNDING LEGEND**

- LESS THAN PROJECT DEPTH
- PROJECT DEPTH
- PROJECT DEPTH +1'
- PROJECT DEPTH +2'
- PROJECT DEPTH +3'
- PROJECT DEPTH +4'
- PROJECT DEPTH +5'



1 inch = 100 feet



- NOTES:**
1. THE CHARTED SOUNDINGS REPRESENT THE MINIMUM DEPTH MEASURED AT THE TIME OF THE SURVEY WITHIN THE 10 X 10 AREA CENTERED ON THE TEXT. DERIVED FROM A 1" X 1" AVERAGE DATASET AT CELL CENTER. THIS CHART SHOULD NOT BE USED FOR CHANNEL CLEARANCE OR VOLUME COMPUTATIONS. MINIMUM DEPTH DATA IS PRODUCED FOR STRIKE/SOAL REMOVAL OPERATIONS AND NOTICE TO NAVIGATION INTERESTS.
  2. ALL SOUNDING DEPTHS ARE REFERENCED TO INTERNATIONAL GREAT LAKES DATUM 1985 (IGLD 85) LOW WATER DATUM ELEVATION 601.1 FEET ABOVE MEAN WATER LEVEL AT RIMOUSKI QUEBEC. WATER LEVEL READINGS WERE OBTAINED WITH REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) VALUES. DEPTHS ARE MEASURED USING AN R2SONIC 2024 MULTIBEAM SONAR.
  3. HORIZONTAL POSITIONING IS DETERMINED USING RTK GPS CORRECTIONS FROM A BASE STATION. THE GPS RECEIVER IS MANUFACTURED BY APPLANIX MARINE POS/MV VER. 4.0.
  4. THE GRID COORDINATE SYSTEM IS MICHIGAN STATE PLANE, NORTH ZONE (2111), NORTH AMERICAN DATUM 1983 (NAD83), US SURVEY FOOT.
  5. THE PROJECT DEPTHS FOR THIS WATERWAY ARE: 32.0', 30.0', 28.0', 27.0', 26.0' & 25' AS INDICATED HEREON.
  6. IMAGERY SOURCED FROM: ESRI & 2014 NAIP IMAGERY

**Keweenaw Waterway, MI**  
**Keweenaw Waterway**  
**KW\_01\_NAW\_20211020\_CS**  
**20 October 2021**

**Sheet**  
**Reference**  
**Number**  
**32 of 37**

U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By: _____	
Recommended:	Plotted By: _____	
Approved:	Checked By: _____	
	Chief, Survey Section	
	Chief, Technical Services	

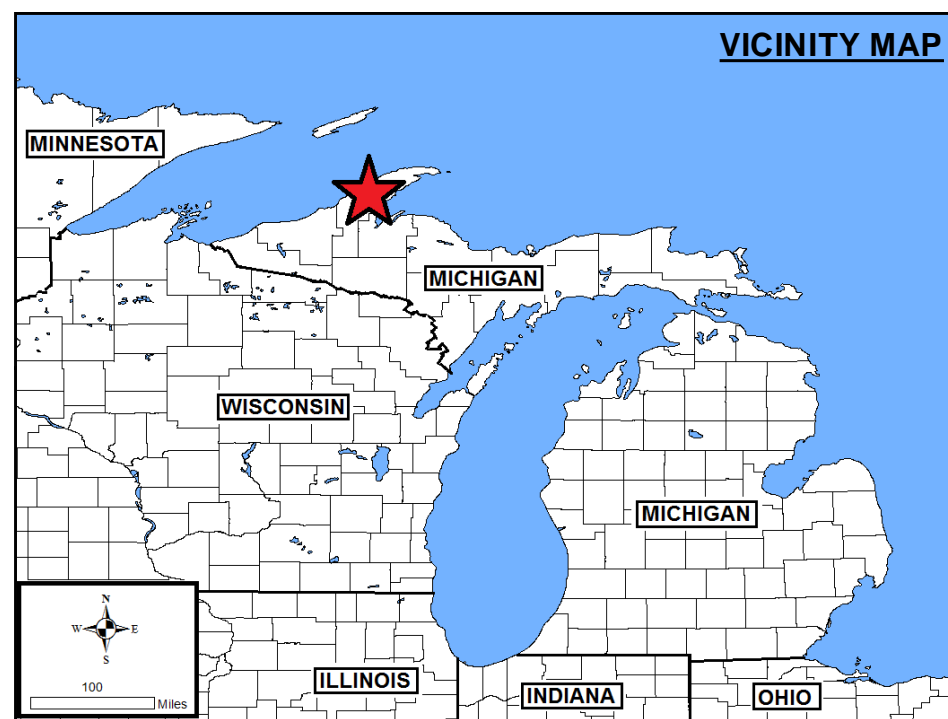
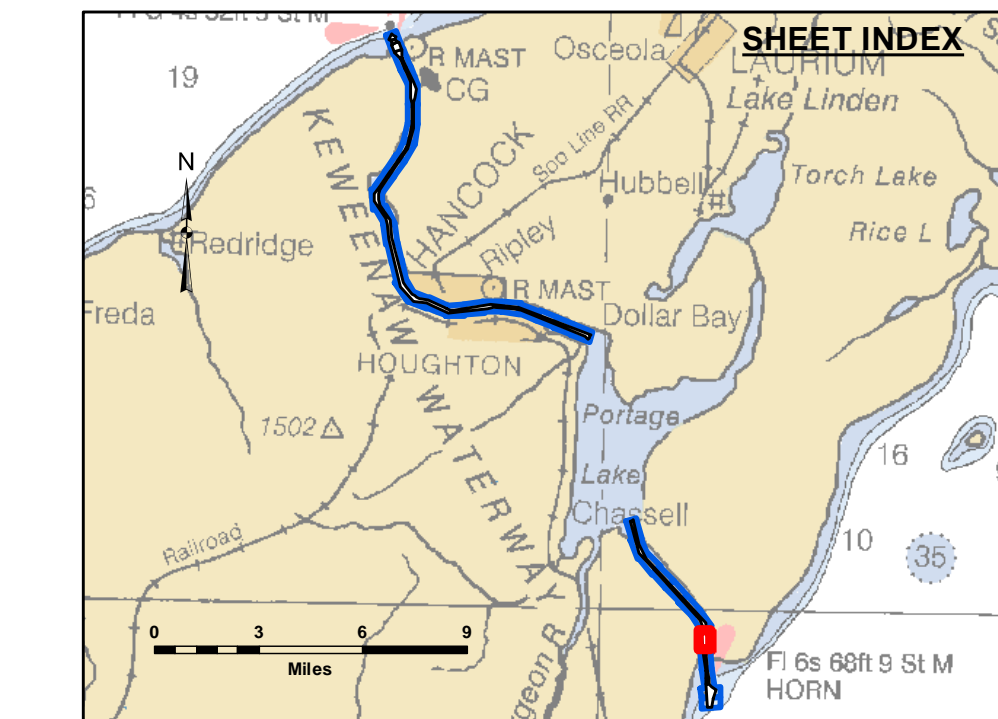
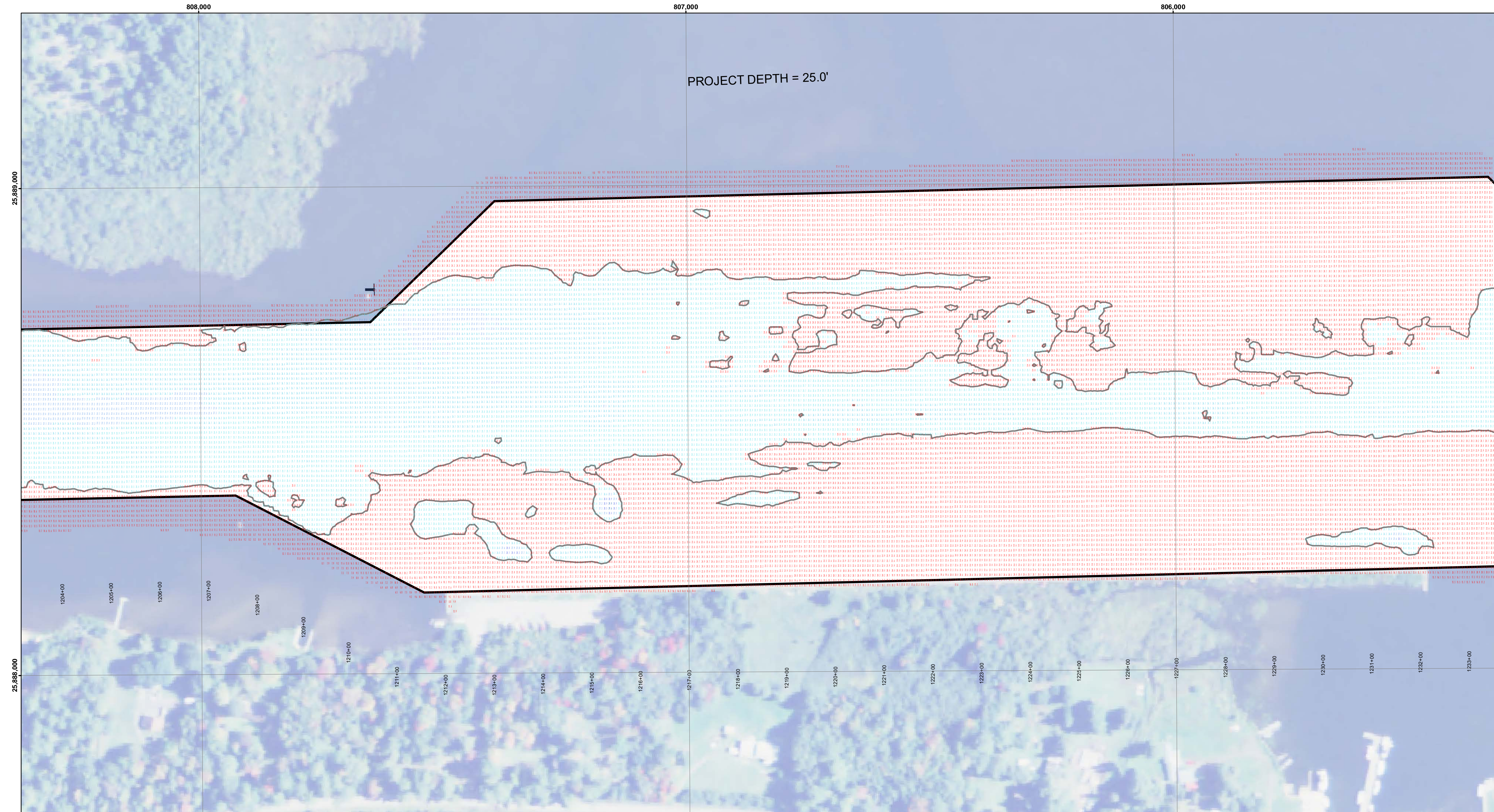
**DISCLAIMER:** The data presented in this chart is the property of the U.S. Army Corps of Engineers and is provided for informational purposes only. The data is not intended for use in any other manner. The user is responsible for the results of any application of the data for other than its intended purpose.

**ACCESS LIMITATIONS:** The United States Government furnishes these data and the recipient accepts and uses them with the express understanding that the data is not to be used for any other purpose, expressed, or implied concerning the accuracy, completeness, readability, usability or suitability for any particular purpose of the recipient. The data is provided as a courtesy and is not intended to be used for any other purpose. The user is responsible for the results of any application of the data for other than its intended purpose.

**DISCLAIMER:** These data belong to the Government. Therefore, the recipient may not transfer these data to others without also transferring this Disclaimer.

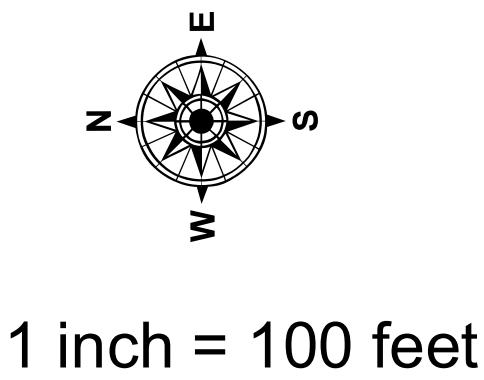






- LEGEND**
- ..... Cable Submarine
  - Cable Overhead
  - Channel Limits
  - Contour Lines

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
  - PROJECT DEPTH +2'
  - PROJECT DEPTH +3'
  - PROJECT DEPTH +4'
  - PROJECT DEPTH +5'



- NOTES:**
1. THE CHARTED SOUNDINGS REPRESENT THE MINIMUM DEPTH MEASURED AT THE TIME OF THE SURVEY WITHIN THE 10 X 10 FOOT CENTERED ON THE TEXT. DERIVED FROM A X-T AVERAGE DATA AT CELL CENTER. THIS CHART SHOULD NOT BE USED FOR CHANNEL CLEARANCE OR VOLUME COMPUTATIONS. MINIMUM DEPTH DATA IS PRODUCED FOR STRIKE/SOAL REMOVAL OPERATIONS AND NOTICE TO NAVIGATION INTERESTS.
  2. ALL SOUNDING DEPTHS ARE REFERENCED TO INTERNATIONAL GREAT LAKES DATUM 1985 (IGLD 85) LOW WATER DATUM ELEVATION 601.1 FEET ABOVE MEAN WATER LEVEL AT RIMOUSKI QUEBEC. WATER LEVEL READINGS WERE OBTAINED WITH REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) VALUES. DEPTHS ARE MEASURED USING AN RZSONIC 2024 MULTIBEAM SONAR.
  3. HORIZONTAL POSITIONING IS DETERMINED USING RTK GPS CORRECTIONS FROM A BASE STATION. THE GPS RECEIVER IS MANUFACTURED BY APPLANIX MARINE POSIMV VER. 4.0.
  4. THE GRID COORDINATE SYSTEM IS MICHIGAN STATE PLANE, NORTH ZONE (2111), NORTH AMERICAN DATUM 1983 (NAD83), US SURVEY FOOT.
  5. THE PROJECT DEPTHS FOR THIS WATERWAY ARE: 32.0', 30.0', 28.0', 27.0', 26.0' & 25' AS INDICATED HEREON.
  6. IMAGERY SOURCED FROM: ESRI & 2014 NAIP IMAGERY

Keweenaw Waterway, MI  
Keweenaw Waterway  
KW\_01\_NAW\_20211020\_CS  
20 October 2021

Sheet  
Reference  
Number  
33 of 37

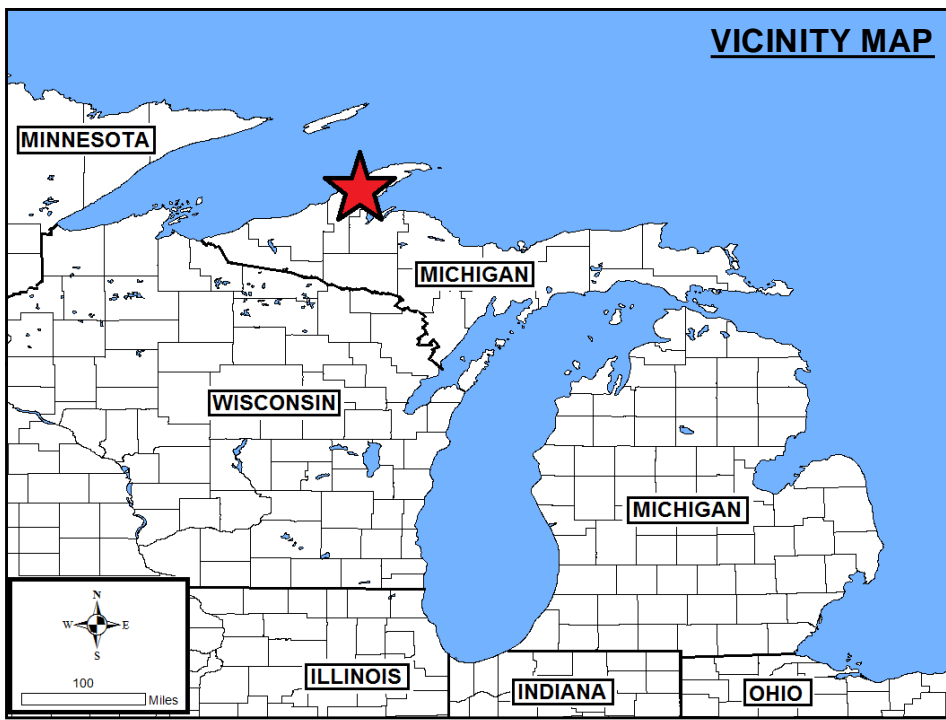
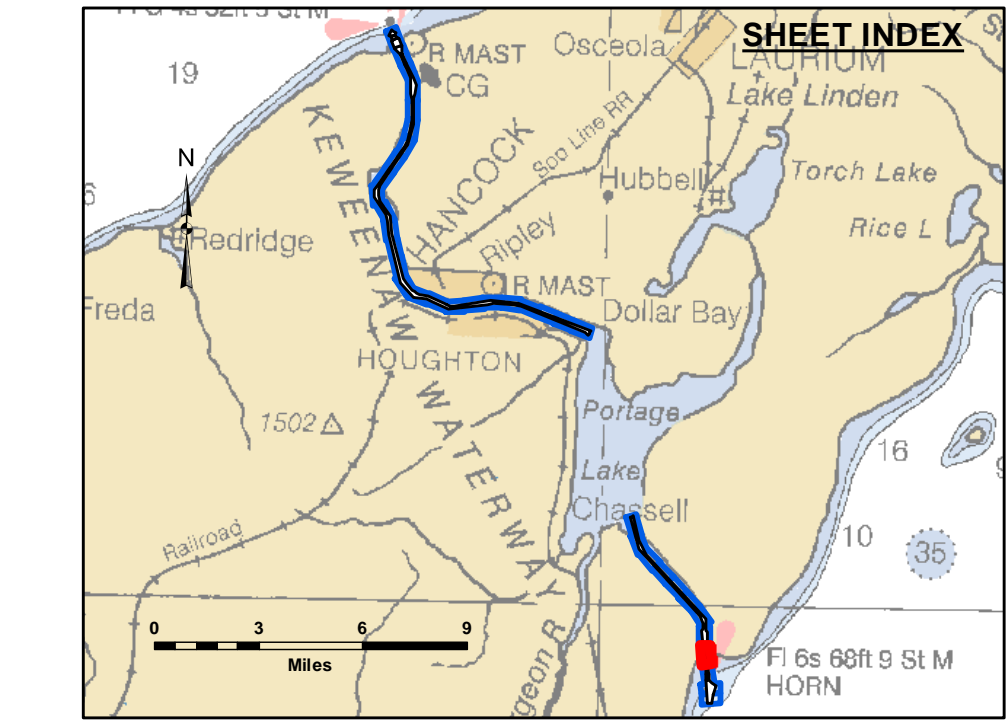
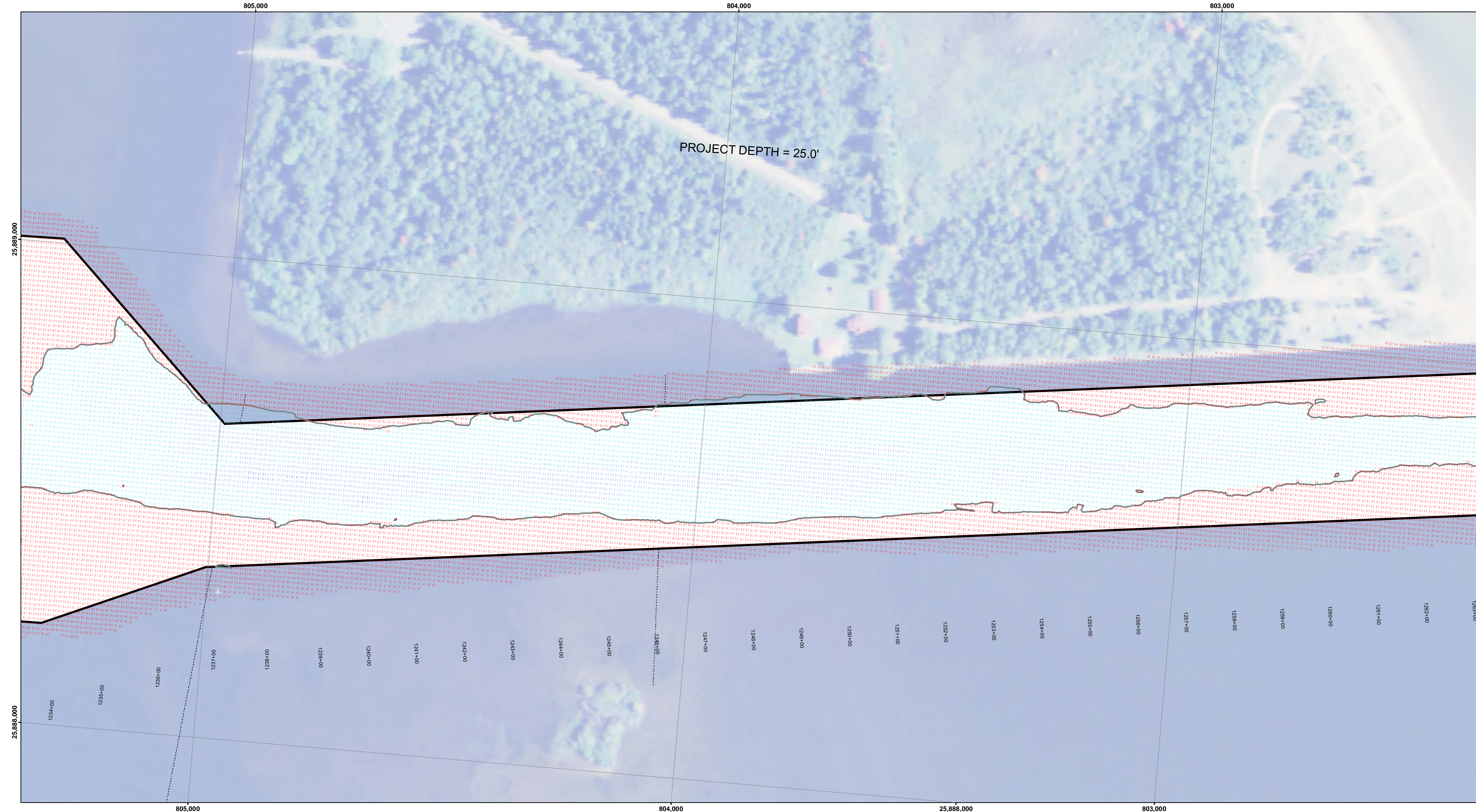


The data on this chart is the property of the U.S. Army Corps of Engineers. It is provided for informational purposes only. The user is responsible for the results of any application of the data for other than its intended purpose.

DISCLAIMER: The United States Government (USG) and its agencies and the recipient accept and use them with the express understanding that they are not to be used for any purpose other than that for which they were prepared, expressed, or implied concerning the accuracy, completeness, reliability, or suitability for any particular purpose of the data. The USG makes no warranty, expressed or implied, for any use of the data other than that for which it was prepared. The USG is not responsible for any use of the data for other than its intended purpose.

Surveyed By: \_\_\_\_\_  
Plotted By: \_\_\_\_\_  
Recommended: Chief, Survey Section  
Approved: \_\_\_\_\_  
Chief, Technical Services



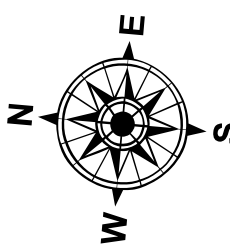


**LEGEND**

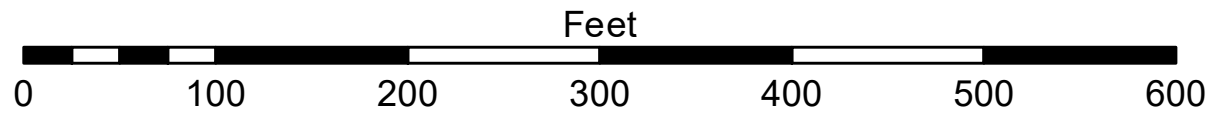
- ..... Cable Submarine
- Cable Overhead
- Channel\_Limits
- Contour Lines

**SOUNDING LEGEND**

- LESS THAN PROJECT DEPTH
- PROJECT DEPTH
- PROJECT DEPTH +1'
- PROJECT DEPTH +2'
- PROJECT DEPTH +3'
- PROJECT DEPTH +4'
- PROJECT DEPTH +5'



1 inch = 100 feet



- NOTES:**
1. THE CHARTED SOUNDINGS REPRESENT THE MINIMUM DEPTH MEASURED AT THE TIME OF THE SURVEY WITHIN THE 6' X 10' AREA CENTERED ON THE TEXT. DERIVED FROM A 1' X 1' AVERAGE DATASET AT CELL CENTER. THIS CHART SHOULD NOT BE USED FOR CHANNEL CLEARANCE OR VOLUME COMPUTATIONS. MINIMUM DEPTH DATA IS PRODUCED FOR STRIKE/SOAL REMOVAL OPERATIONS AND NOTICE TO NAVIGATION INTERESTS.
  2. ALL SOUNDING DEPTHS ARE REFERENCED TO INTERNATIONAL GREAT LAKES DATUM 1985 (IGLD 85) LOW WATER DATUM ELEVATION 601.1 FEET ABOVE MEAN WATER LEVEL AT RINOUSKI QUEL. WATER LEVEL READINGS WERE OBTAINED WITH REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) VALUES. DEPTHS ARE MEASURED USING AN RZSONIC 2024 MULTIBEAM SONAR.
  3. HORIZONTAL POSITIONING IS DETERMINED USING RTK GPS CORRECTIONS FROM A BASE STATION. THE GPS RECEIVER IS MANUFACTURED BY APPLANIX MARINE POS/MV VER. 4.0.
  4. THE GRID COORDINATE SYSTEM IS MICHIGAN STATE PLANE, NORTH ZONE (2111), NORTH AMERICAN DATUM 1983 (NAD83), US SURVEY FOOT.
  5. THE PROJECT DEPTHS FOR THIS WATERWAY ARE: 32.0', 30.0', 28.0', 27.0', 26.0' & 25' AS INDICATED HEREON.
  6. IMAGERY SOURCED FROM: ESRI & 2014 NAIP IMAGERY

**Keweenaw Waterway, MI**  
**Keweenaw Waterway**  
**KW\_01\_NAW\_20211020\_CS**  
**20 October 2021**

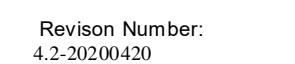
**Sheet**  
**Reference**  
**Number**  
**34 of 37**



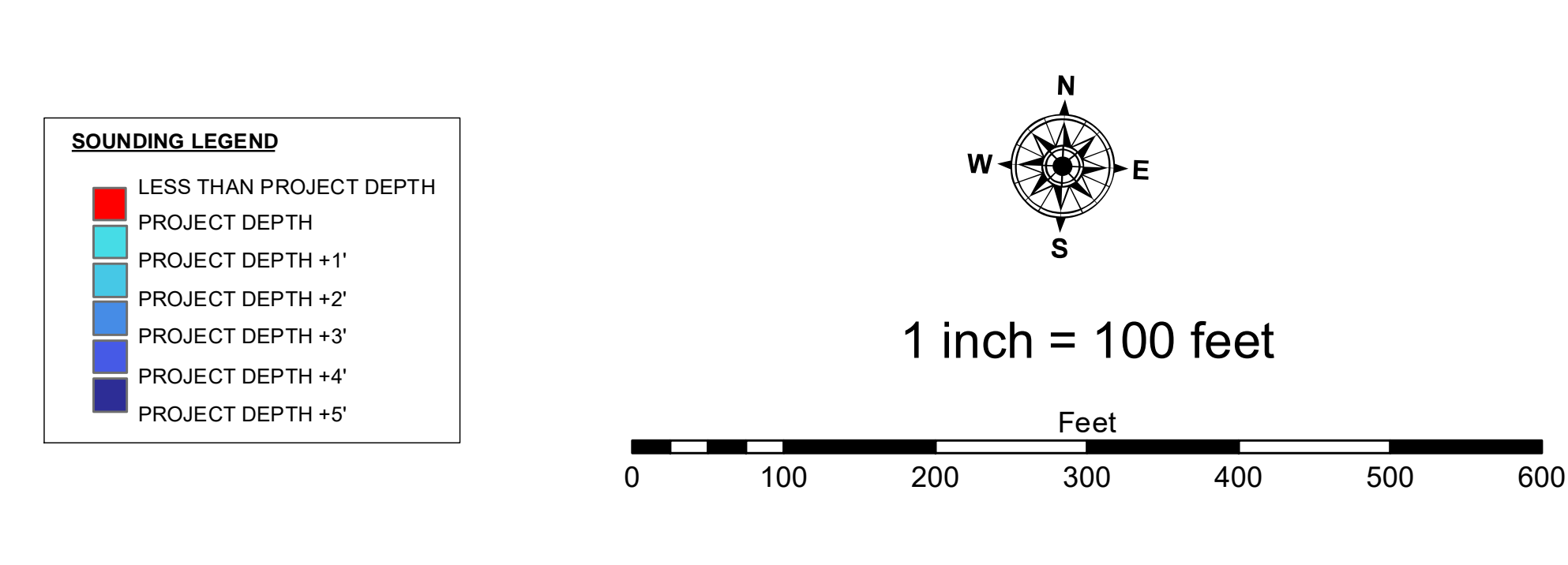
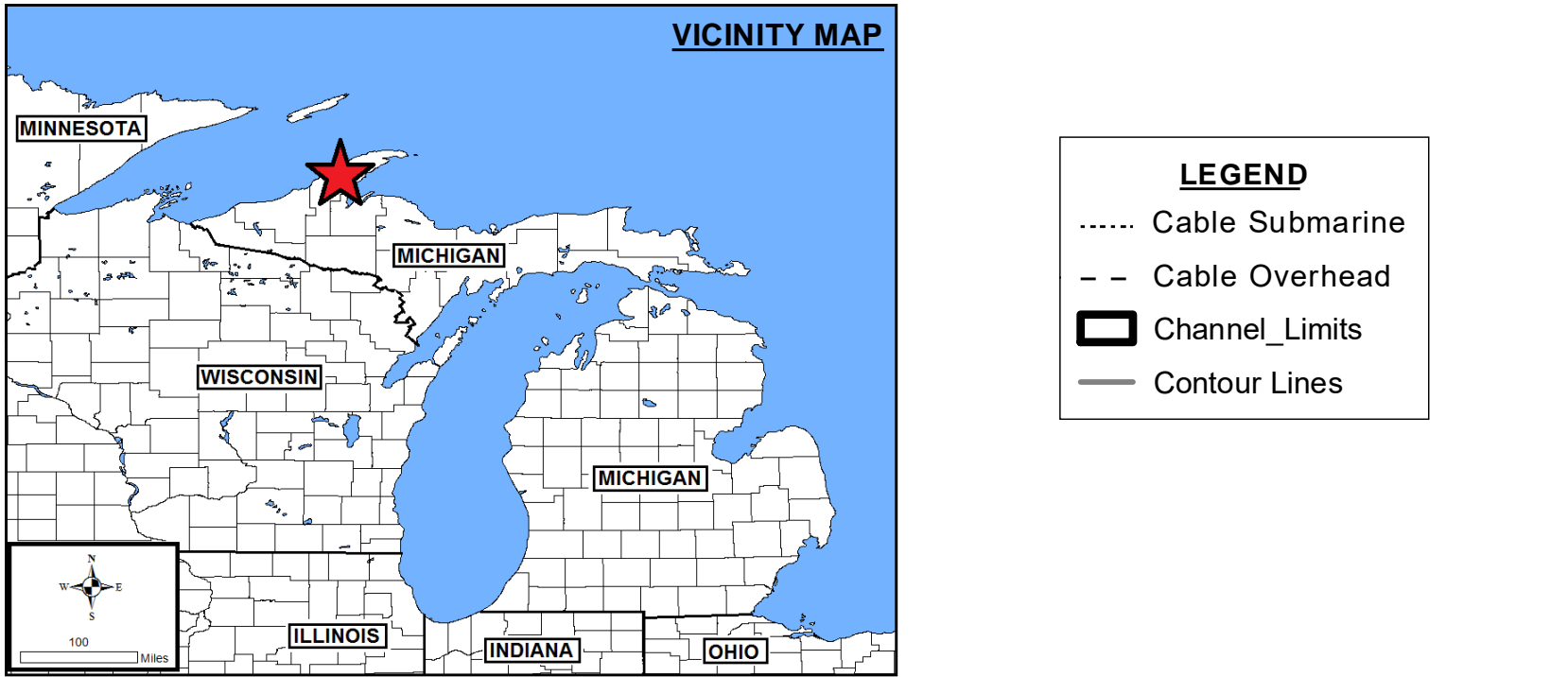
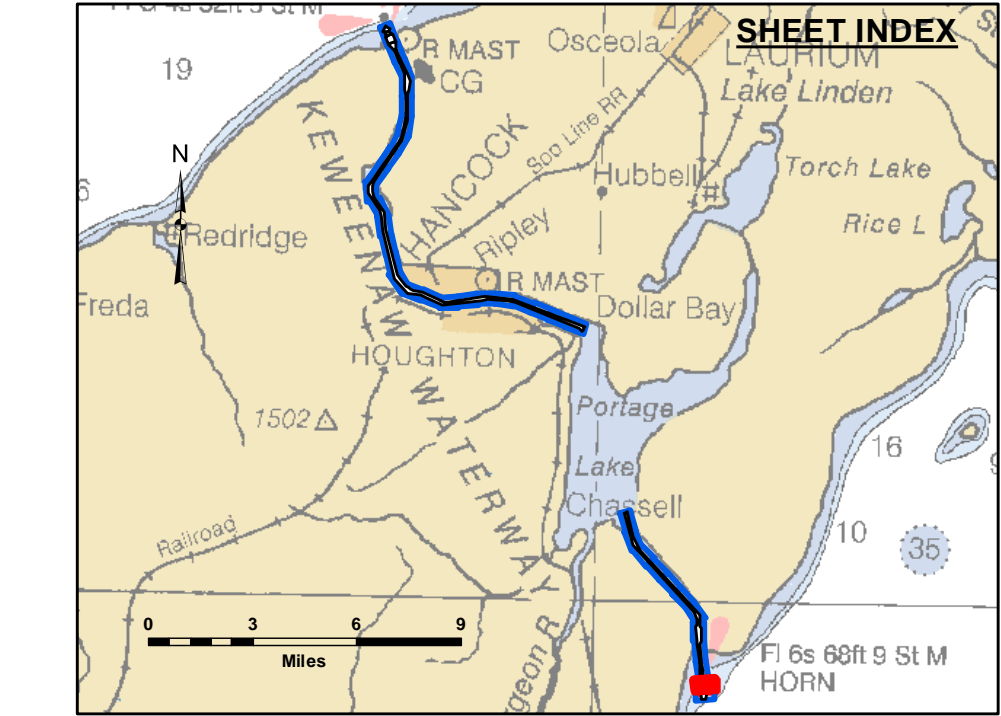
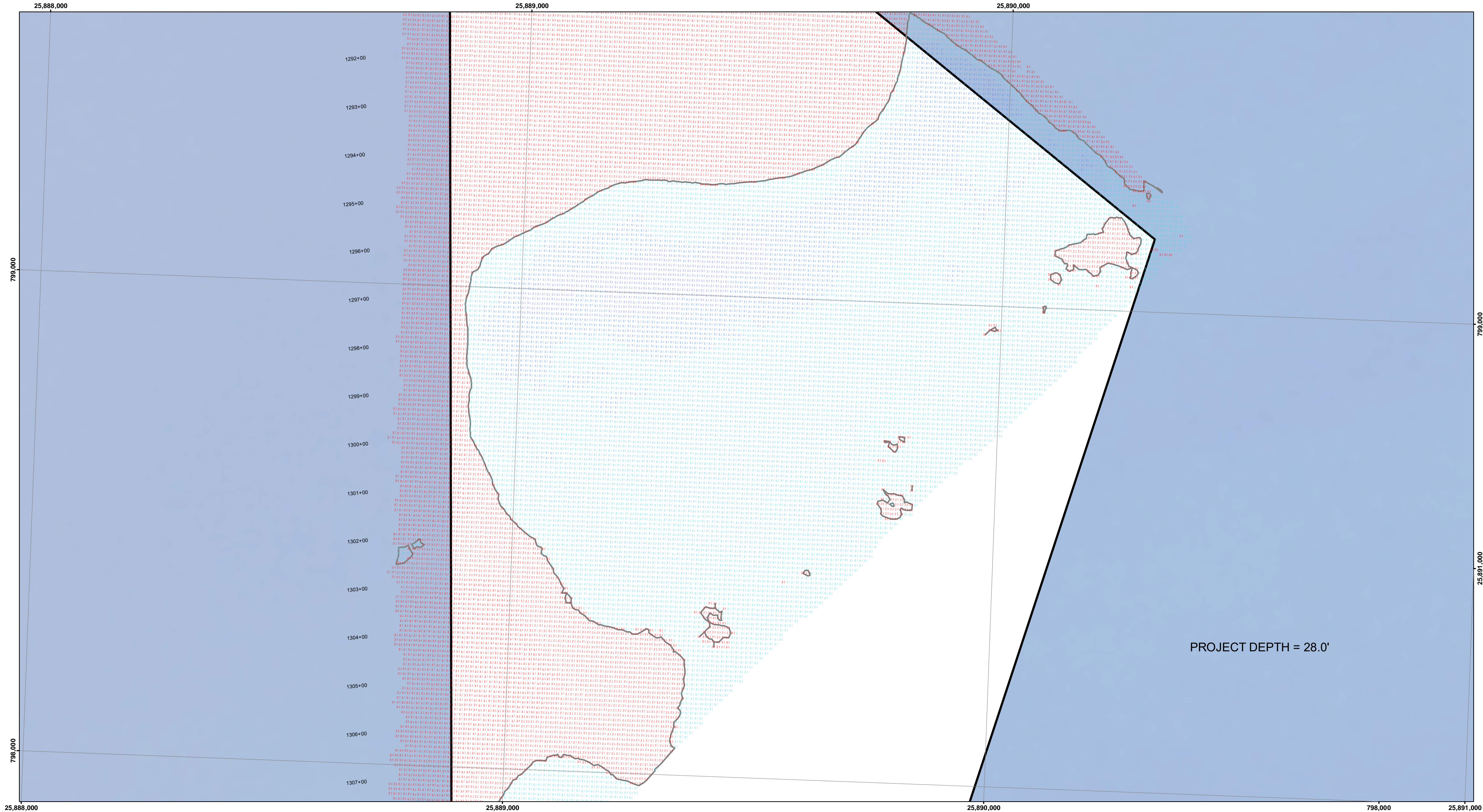
**DISCLAIMER:** The data presented in this report is the property of the U.S. Army Corps of Engineers and is provided for informational purposes only. The data is not to be used for any purpose other than that for which it was collected. The U.S. Army Corps of Engineers is not responsible for the accuracy, completeness, or reliability of the data for other than its intended purpose. The user is responsible for the accuracy, completeness, or reliability of the data for other than its intended purpose. The user is responsible for the accuracy, completeness, or reliability of the data for other than its intended purpose. The user is responsible for the accuracy, completeness, or reliability of the data for other than its intended purpose.

Submitted:	Surveyed By:
Recommended:	Plotted By:
Approved:	Checked By:
Chief, Survey Section	
Chief, Technical Services	









NOTES:

1. THE CHARTED SOUNDINGS REPRESENT THE MINIMUM DEPTH MEASURED AT THE TIME OF THE SURVEY WITHIN THE 10' X 10' GRID CENTERED ON THE TEXT. DERIVED FROM A 1' AVERAGE DATASET AT 1' CENTER.
2. ALL SOUNDING DEPTHS ARE REFERENCED TO INTERNATIONAL GREAT LAKES DATUM 1985 (IGLD 85) LOW WATER DATUM ELEVATION 601.1 FEET ABOVE MEAN WATER LEVEL. AT RIMOUSKI QUAYS, DEPTHS WERE OBTAINED WITH REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) VALUES. DEPTHS ARE MEASURED USING AN RZSONIC 2024 MULTIBeam SONAR.
3. HORIZONTAL POSITIONING IS DETERMINED USING RTK GPS CORRECTIONS FROM A BASE STATION. THE GPS RECEIVER IS MANUFACTURED BY APPLANIX MARINE POSIMV VER. 4.0.
4. THE GRID COORDINATE SYSTEM IS MICHIGAN STATE PLANE, NORTH ZONE (2111), NORTH AMERICAN DATUM 1983 (NAD83), US SURVEY FOOT.
5. THE PROJECT DEPTHS FOR THIS WATERWAY ARE: 32.0', 30.0', 28.0', 27.0', 26.0' & 25' AS INDICATED HEREON.
6. IMAGERY SOURCED FROM: ESRI & 2014 NAIP IMAGERY



DISCLAIMER: The data presented in this chart is for informational purposes only. The data was collected using a variety of methods and is not guaranteed to be accurate. The user is responsible for the results of any of the application of the data for other than its intended purpose.

DISCLAIMER: The United States Government (USG) does not warrant, represent, or guarantee the accuracy, completeness, or reliability of any information, data, or materials provided by the USG. The USG is not responsible for any errors or omissions in this document. The USG is not responsible for any damages, including consequential damages, arising from the use of this document. The USG is not responsible for any claims, including consequential claims, arising from the use of this document. The USG is not responsible for any claims, including consequential claims, arising from the use of this document.

Surveyed By: \_\_\_\_\_

Plotted By: \_\_\_\_\_

Checked By: \_\_\_\_\_

Submitted: \_\_\_\_\_

Recommended: \_\_\_\_\_

Approved: \_\_\_\_\_

Keweenaw Waterway, MI

Keweenaw Waterway

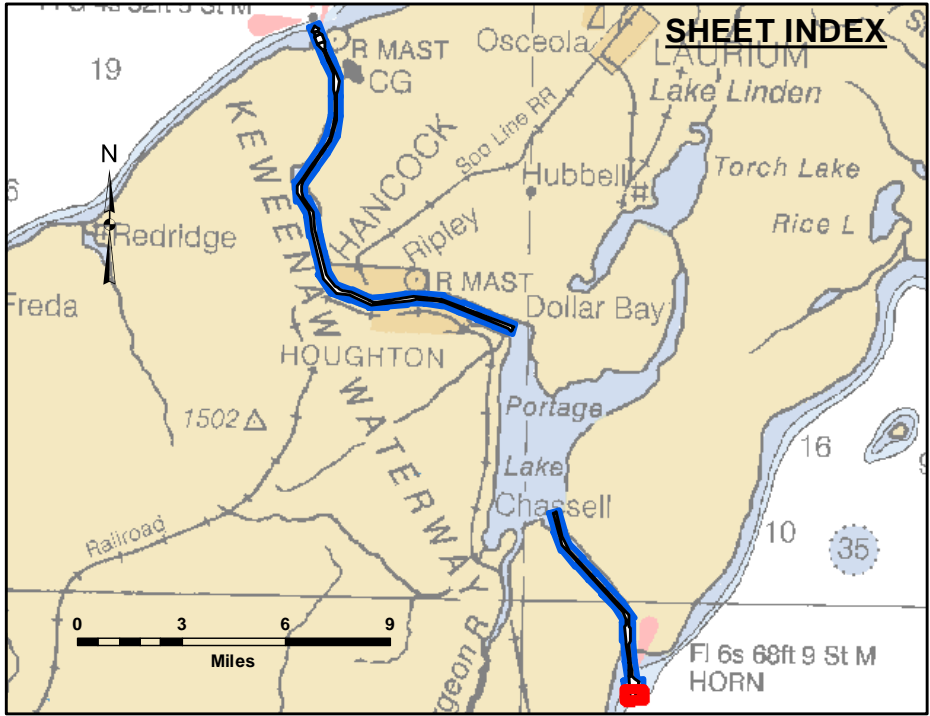
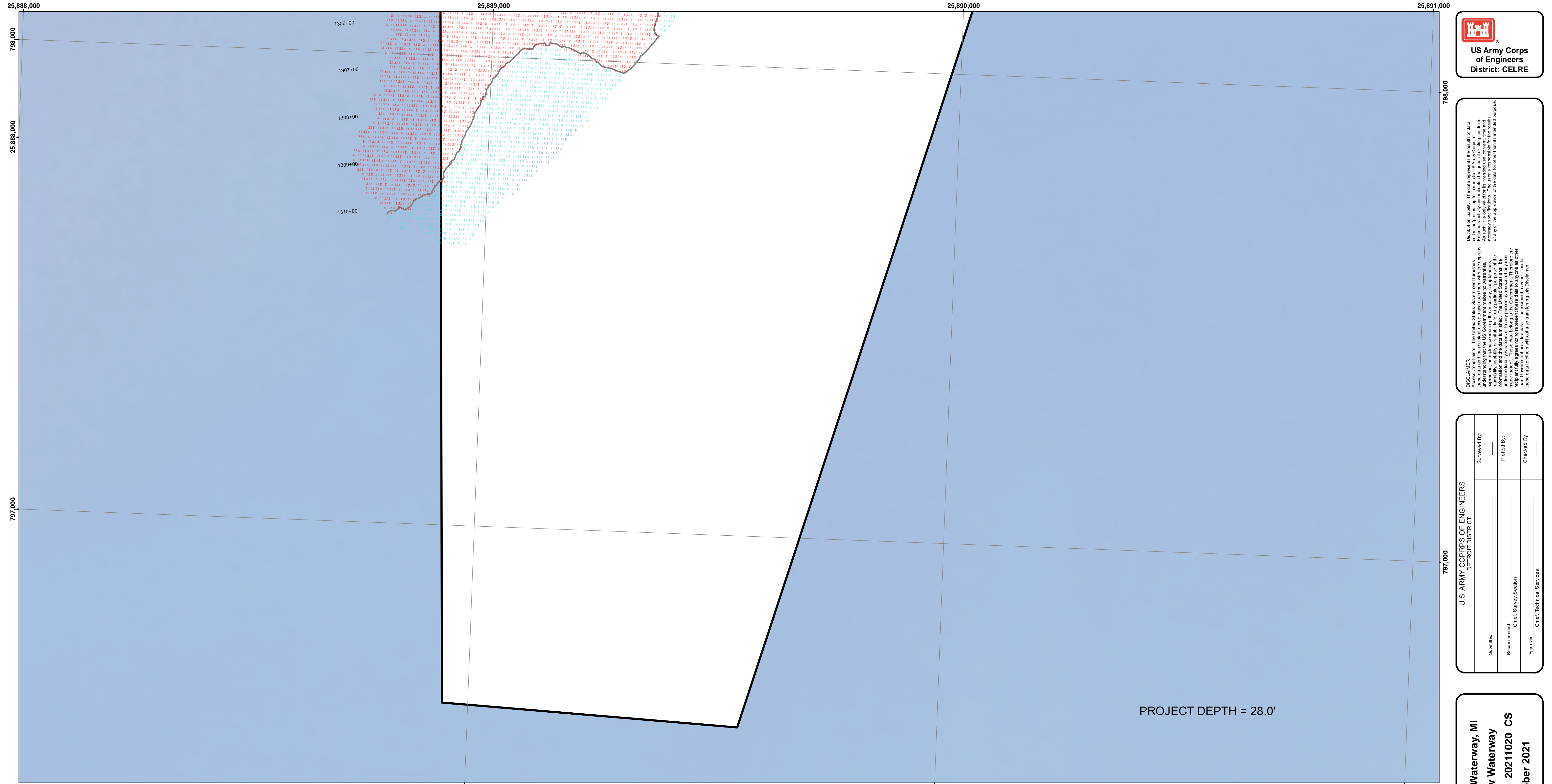
KW\_01\_NAW\_20211020\_CS

20 October 2021

Sheet Reference Number

36 of 37



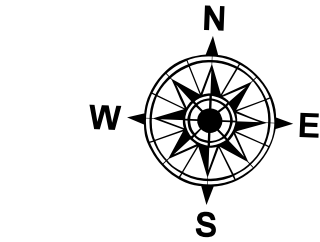


**LEGEND**

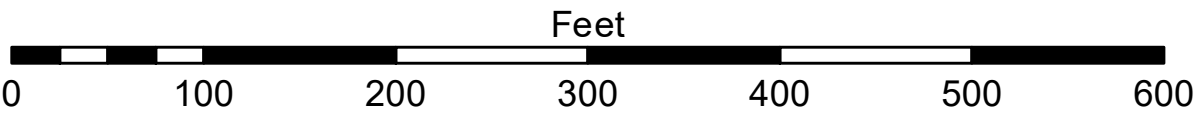
- ..... Cable Submarine
- Cable Overhead
- Channel\_Limits
- Contour Lines

**SOUNDING LEGEND**

- LESS THAN PROJECT DEPTH
- PROJECT DEPTH
- PROJECT DEPTH +1'
- PROJECT DEPTH +2'
- PROJECT DEPTH +3'
- PROJECT DEPTH +4'
- PROJECT DEPTH +5'



1 inch = 100 feet



- NOTES:**
- THE CHARTED SOUNDINGS REPRESENT THE MINIMUM DEPTH MEASURED AT THE TIME OF THE SURVEY WITHIN THE 10' X 10' AREA CENTERED ON THE TEXT. DERIVED FROM A 1" X 1" AVERAGE DATASET AT CELL CENTER. THIS CHART SHOULD NOT BE USED FOR CHANNEL CLEARANCE OR VOLUME COMPUTATIONS. MINIMUM DEPTH DATA IS PRODUCED FOR STRIKE/SOAL REMOVAL OPERATIONS AND NOTICE TO NAVIGATION INTERESTS.
  - ALL SOUNDING DEPTHS ARE REFERENCED TO INTERNATIONAL GREAT LAKES DATUM 1985 (IGLD 85) LOW WATER DATUM ELEVATION 601.1 FEET ABOVE MEAN WATER LEVEL AT RIMOUSKI QUEBEC. WATER LEVEL READINGS WERE OBTAINED WITH REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) VALUES. DEPTHS ARE MEASURED USING AN R2SONIC 2024 MULTIBEAM SONAR.
  - HORIZONTAL POSITIONING IS DETERMINED USING RTK GPS CORRECTIONS FROM A BASE STATION. THE GPS RECEIVER IS MANUFACTURED BY APPLANIX MARINE POS/MV VER. 4.0.
  - THE GRID COORDINATE SYSTEM IS MICHIGAN STATE PLANE, NORTH ZONE (2111), NORTH AMERICAN DATUM 1983 (NAD83), US SURVEY FOOT.
  - THE PROJECT DEPTHS FOR THIS WATERWAY ARE: 32.0', 30.0', 28.0', 27.0', 26.0' & 25' AS INDICATED HEREON.
  - IMAGERY SOURCED FROM: ESRI & 2014 NAIP IMAGERY

**Keweenaw Waterway, MI**  
**Keweenaw Waterway**  
**KW\_01\_NAW\_20211020\_CS**  
**20 October 2021**

**Sheet**  
**Reference**  
**Number**  
**37 of 37**

U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By: _____	
Recommended: Chief, Survey Section	Plotted By: _____	
Approved: Chief, Technical Services	Checked By: _____	

**DISCLAIMER:** The data represents the results of data collection and is not intended for use in any other manner than that intended for its intended purpose. The user is responsible for the results of any of the application of the data for other than its intended purpose.

**DISCLAIMER:** The United States Government furnishes these data and the recipient accepts and uses them with the express understanding that the data are not to be used for any purpose other than that for which they were collected, expressed, or implied concerning the accuracy, completeness, readability, usability or suitability for any particular purpose of the recipient. The data are not to be used for any purpose other than that for which they were collected, expressed, or implied concerning the accuracy, completeness, readability, usability or suitability for any particular purpose of the recipient. These data belong to the Government. Therefore the recipient may not transfer these data to others without also transferring this Disclaimer.

  
**US Army Corps**  
**of Engineers**  
**District: CELRE**