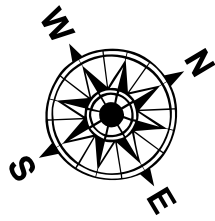
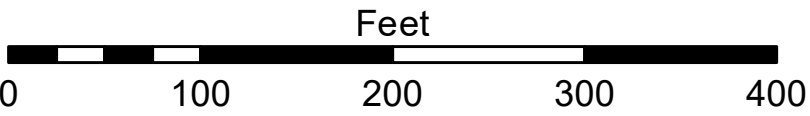


- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
  - PROJECT DEPTH +2'
  - PROJECT DEPTH +3'
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2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS ALL COORDINATES ARE IN U.S. SURVEY FEET.



US Army Corps of Engineers District: CELRE

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U.S. ARMY CORPS OF ENGINEERS  
DETROIT DISTRICT

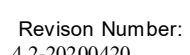
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Recommended:	Plotted By:
Approved:	Checked By:

Chief, Survey Section  
Chief, Technical Services

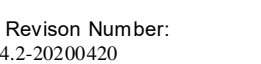
Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20230531\_CS  
31 May 2023

Sheet Reference Number  
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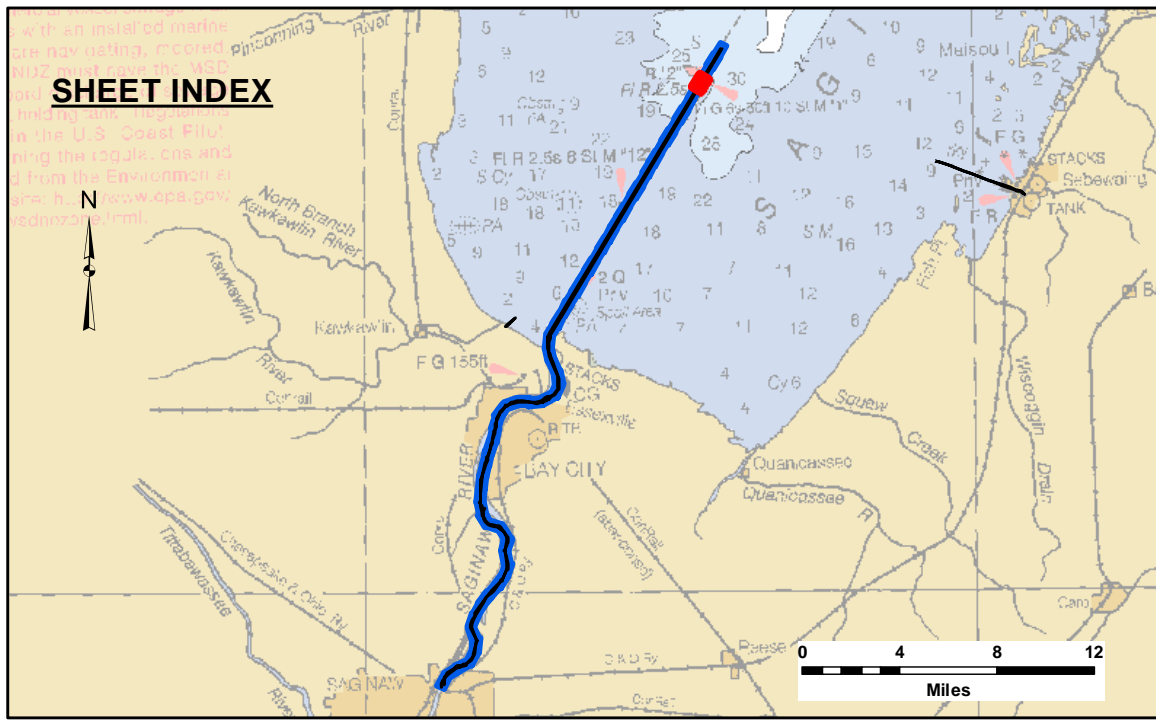
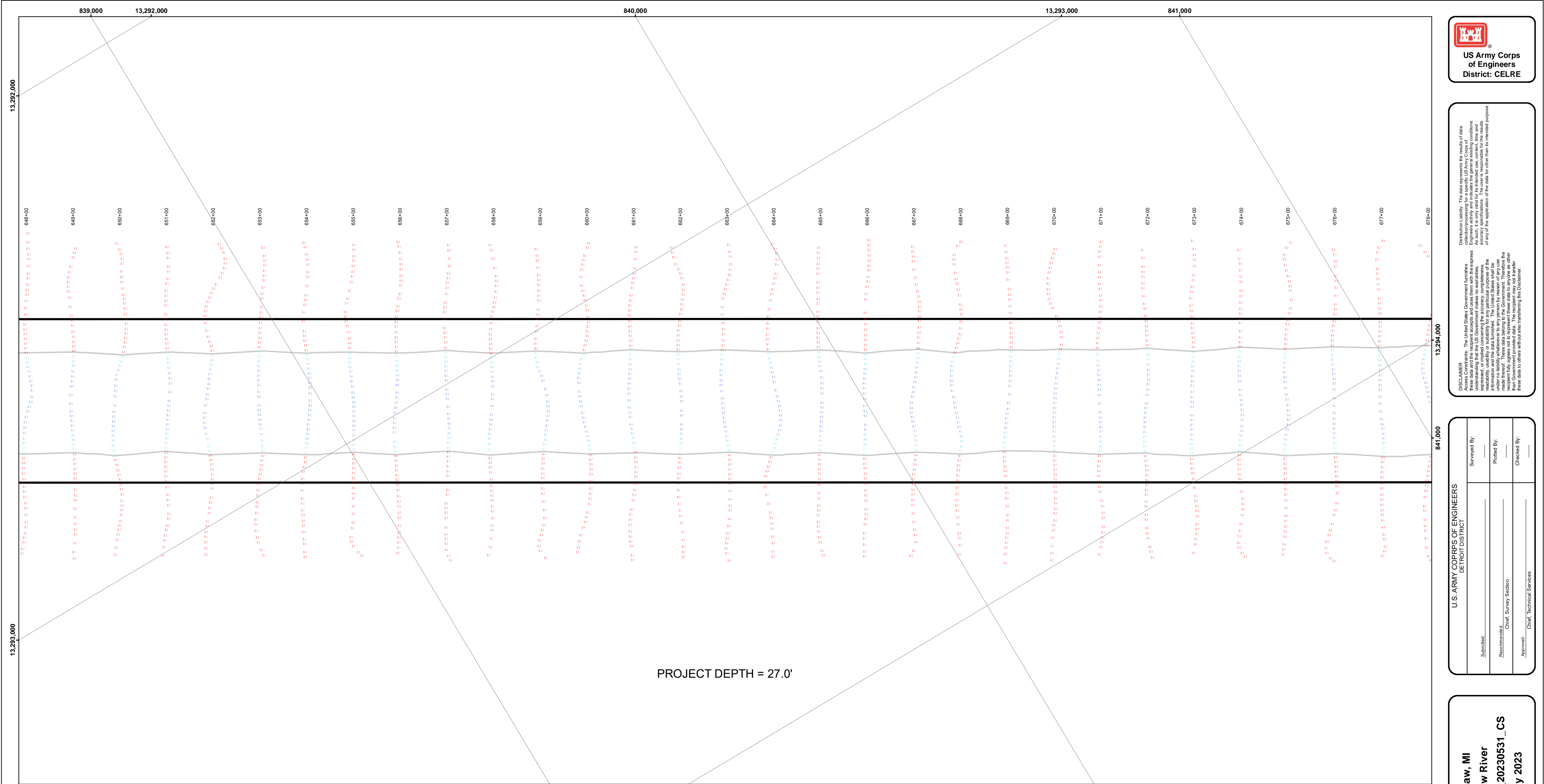
Revision Number:  
4.2-2023060420











**LEGEND**

- Cable Submarine
- - - Cable Overhead
- Placement Area
- ⊥ Beacon, General
- Contour Lines
- ▭ Channel\_Limits

**SOUNDING LEGEND**

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Feet

0 100 200 300 400

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SOFTWARE: HYPACK

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

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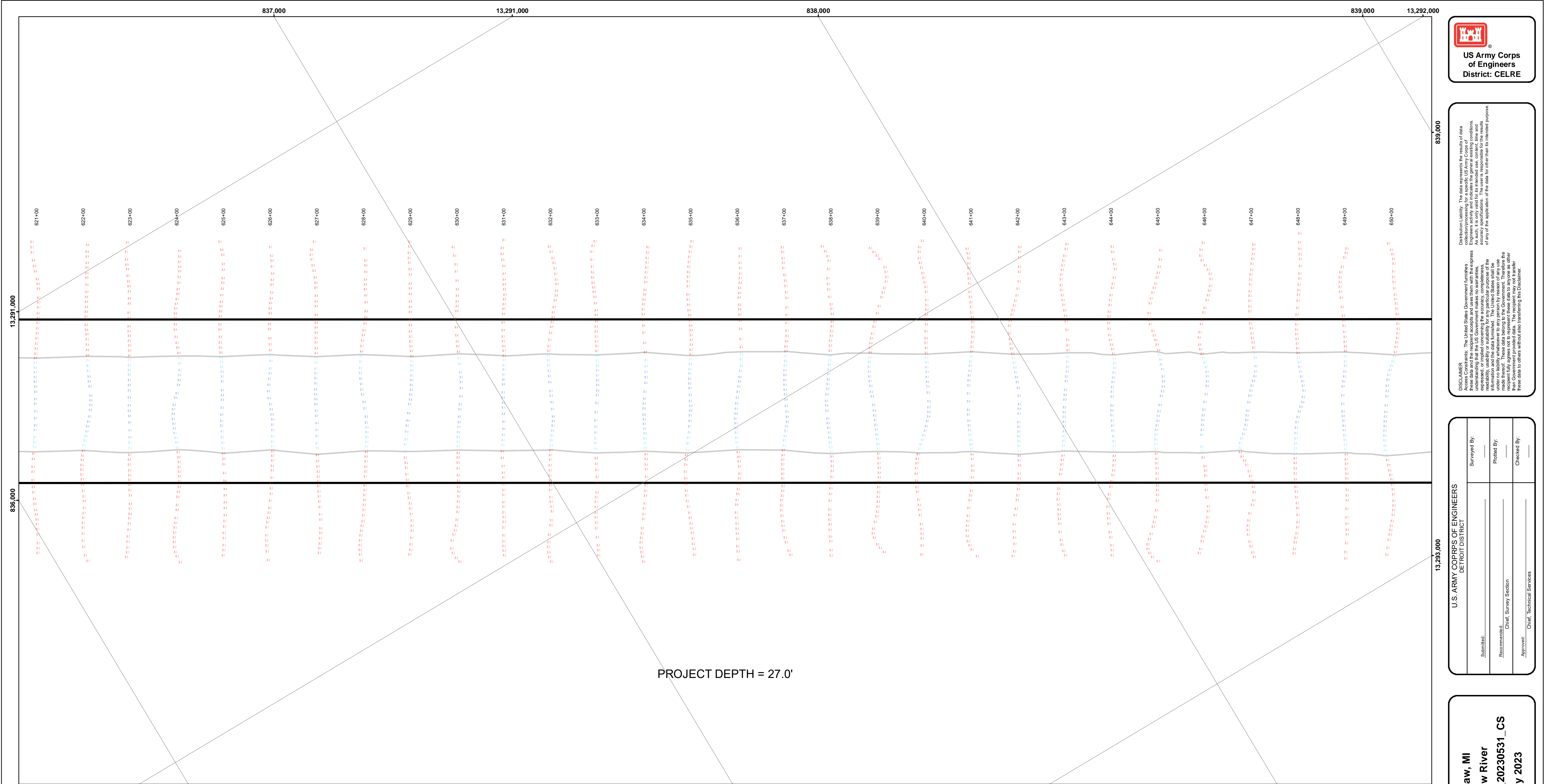
**U.S. ARMY CORPS OF ENGINEERS**  
DETROIT DISTRICT

Submitted:	Surveyed By:
	Plotted By:
	Checked By:

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20230531\_CS**  
**31 May 2023**

**Sheet Reference Number**  
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**VICINITY MAP**

**LEGEND**

- Cable Submarine
- - - Cable Overhead
- Placement Area
- Beacon, General
- Contour Lines
- Channel\_Limits

**SOUNDING LEGEND**

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- PROJECT DEPTH
- PROJECT DEPTH +1'
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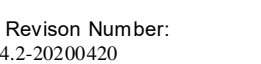
**U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT**

**SagInaw, MI**  
**SagInaw River**  
**SH\_01\_SAG\_20230531\_CS**  
**31 May 2023**

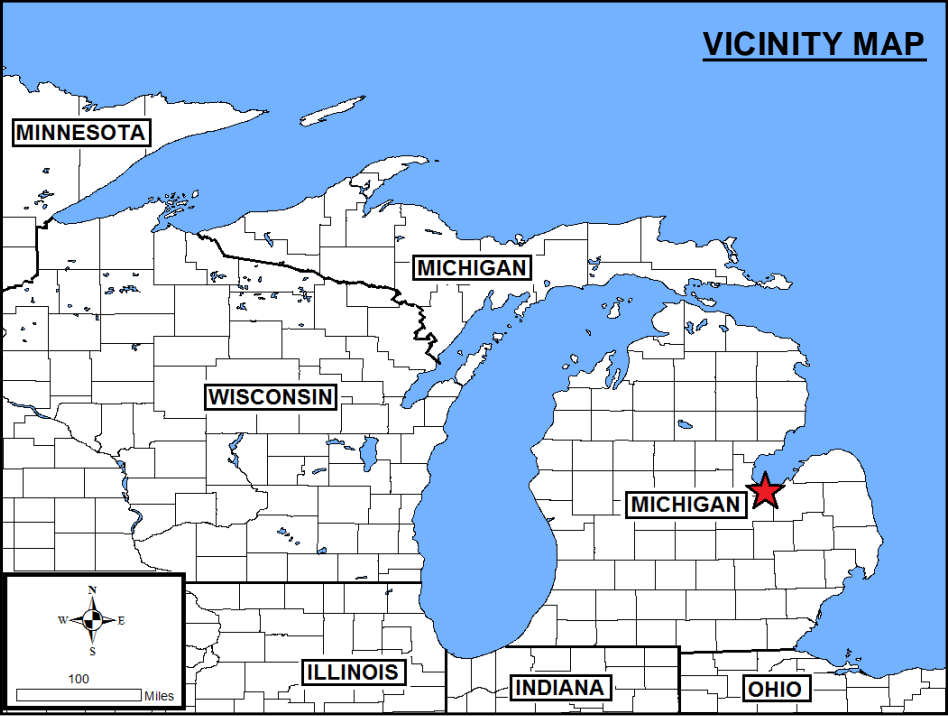
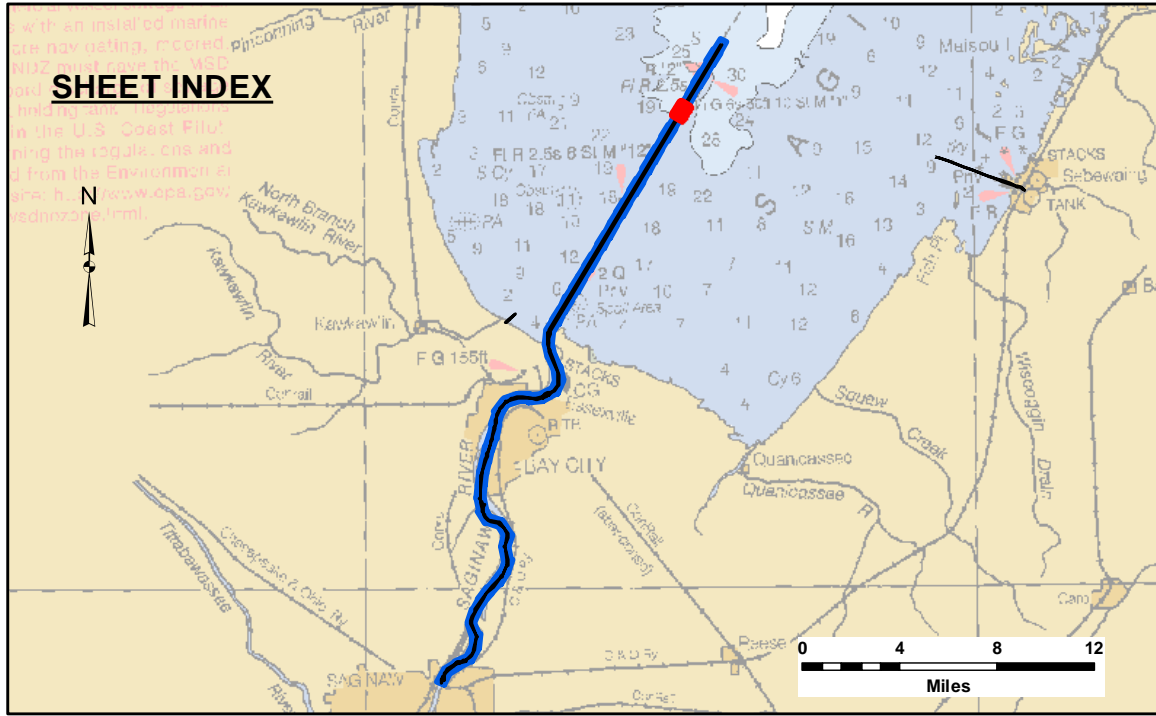
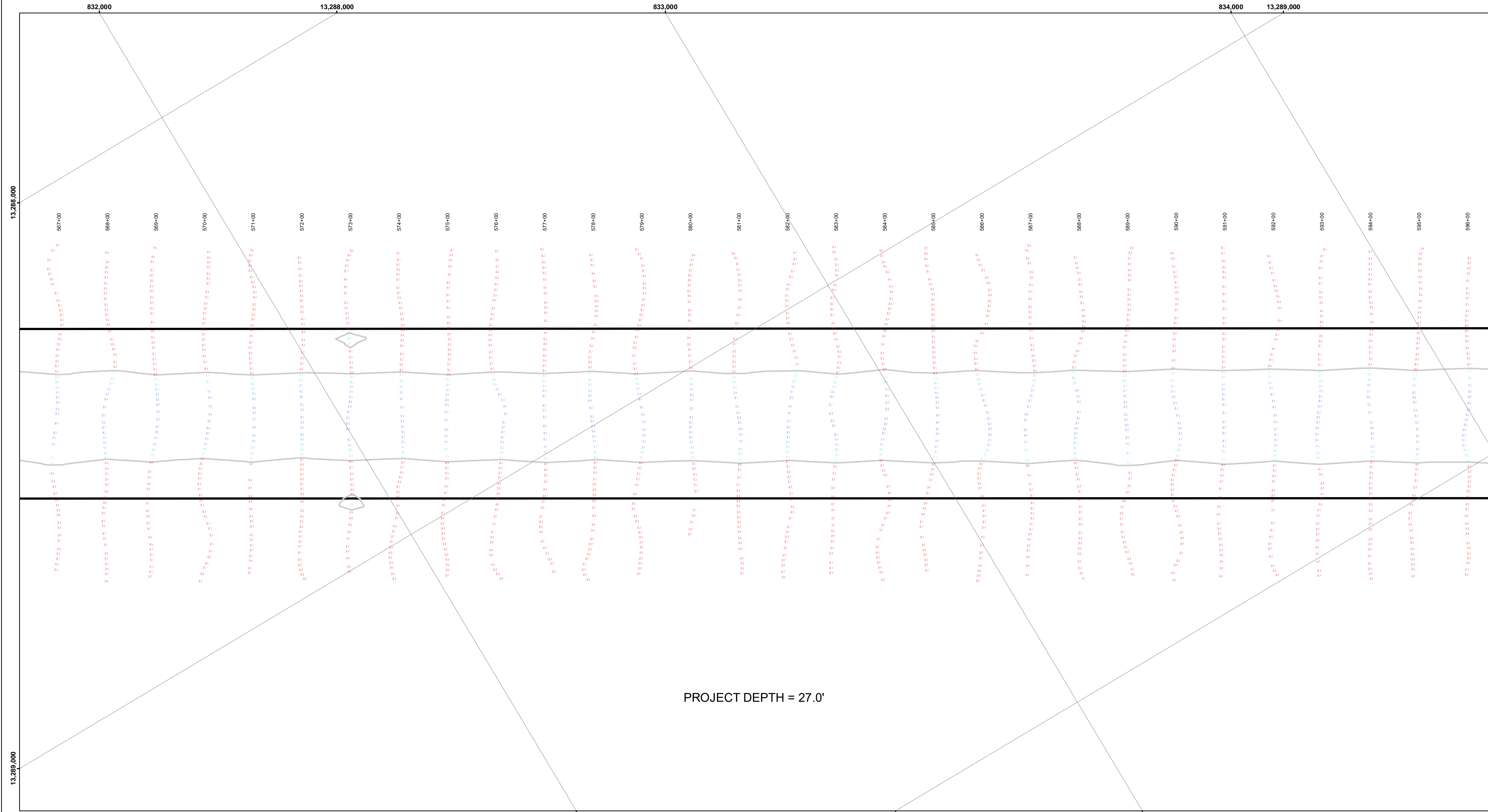
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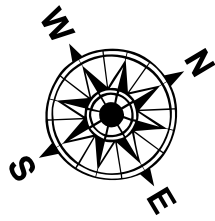




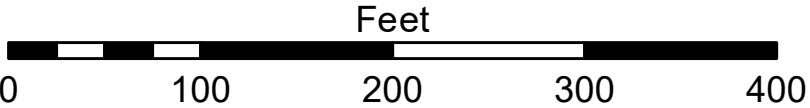


- LEGEND**
- ..... Cable Submarine
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**U.S. ARMY CORPS OF ENGINEERS**  
**DETROIT DISTRICT**

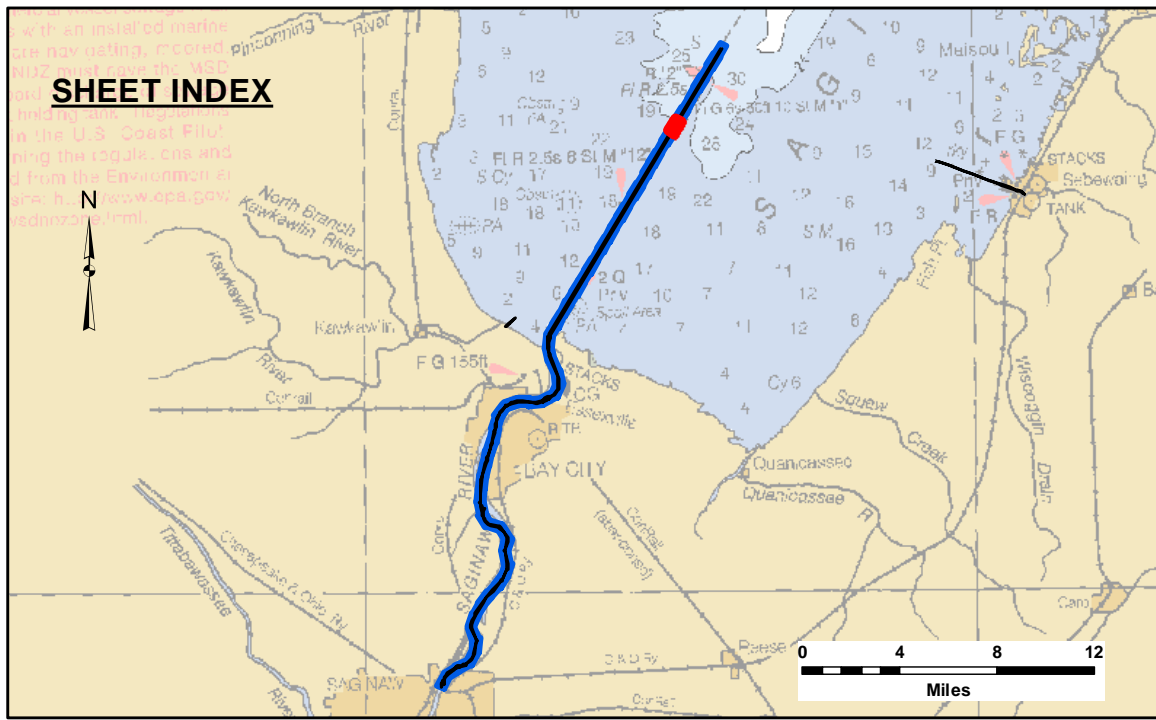
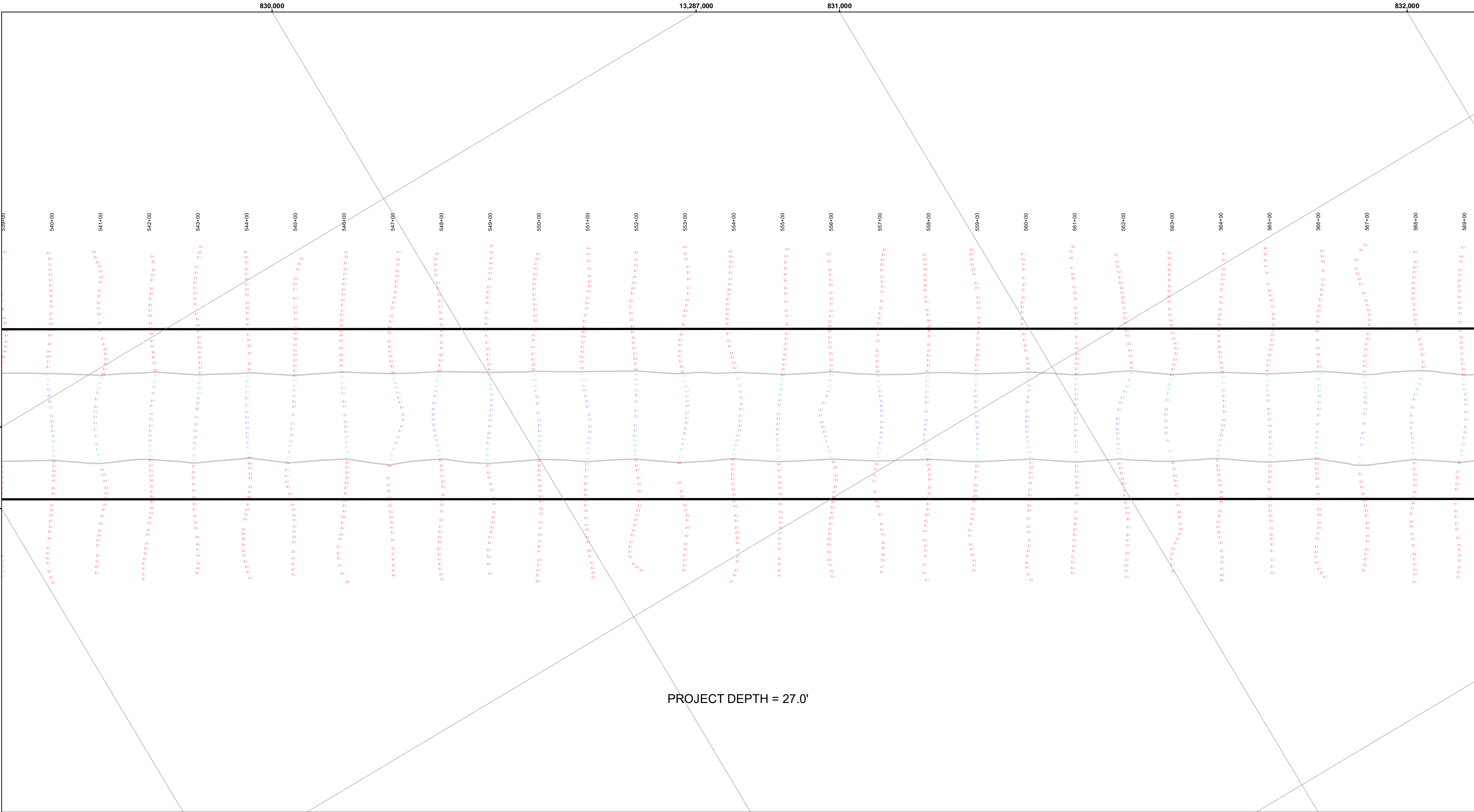
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**Saginaw, MI**  
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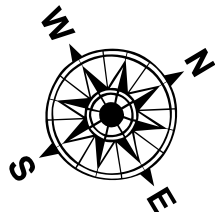
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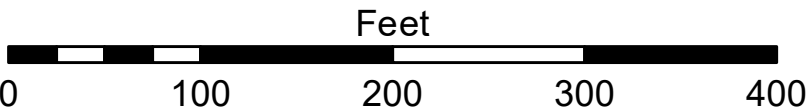


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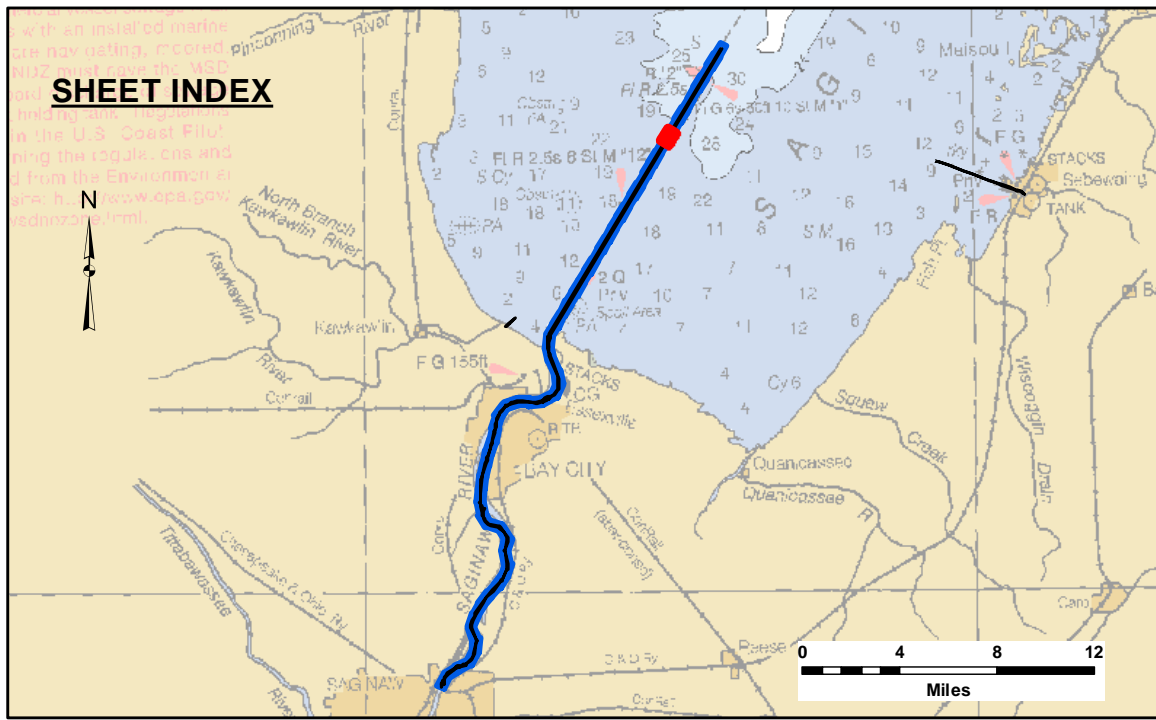
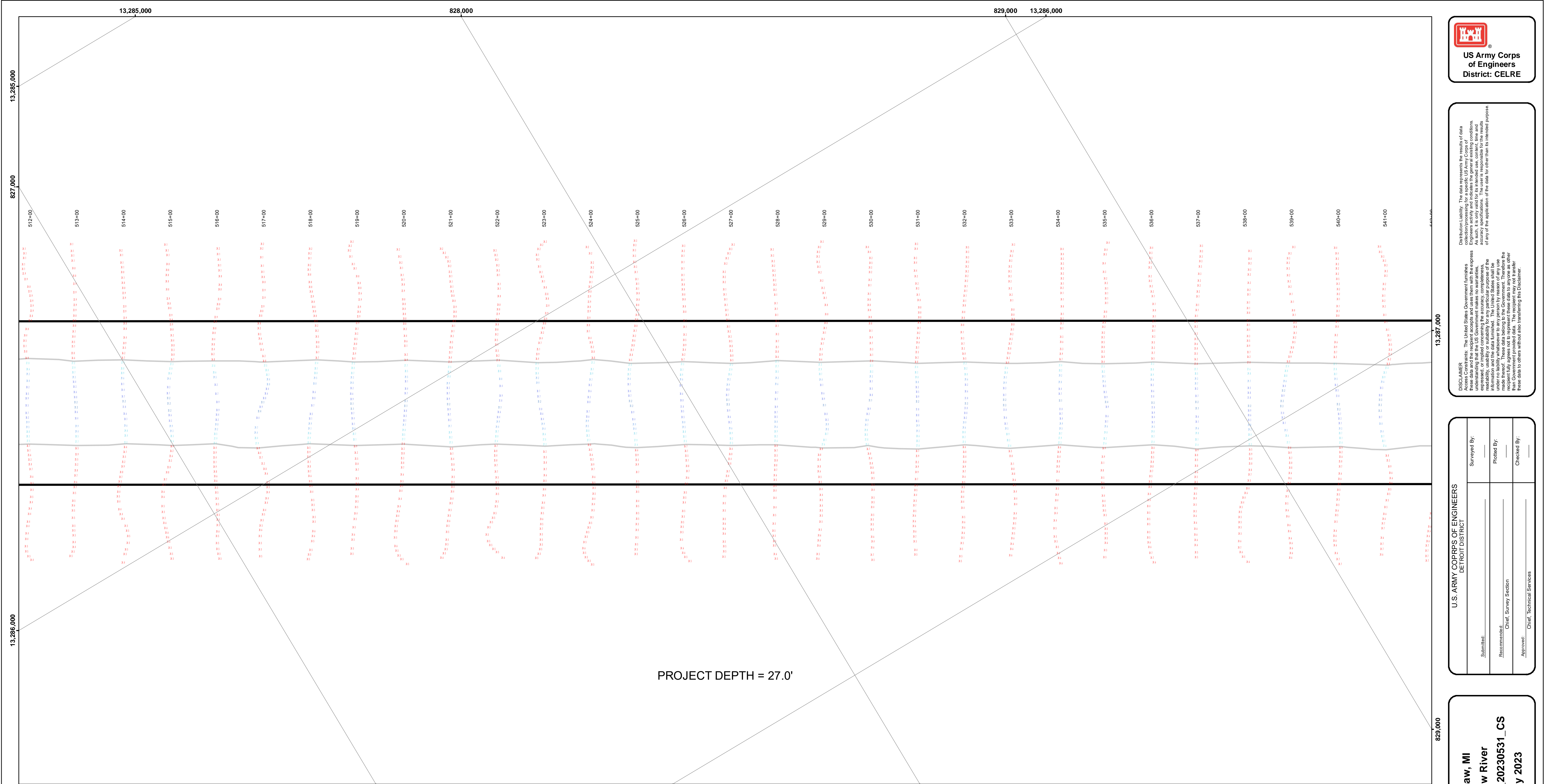
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted By: _____	Surveyed By: _____
	Recommended By: _____	Plotted By: _____
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**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20230531\_CS**  
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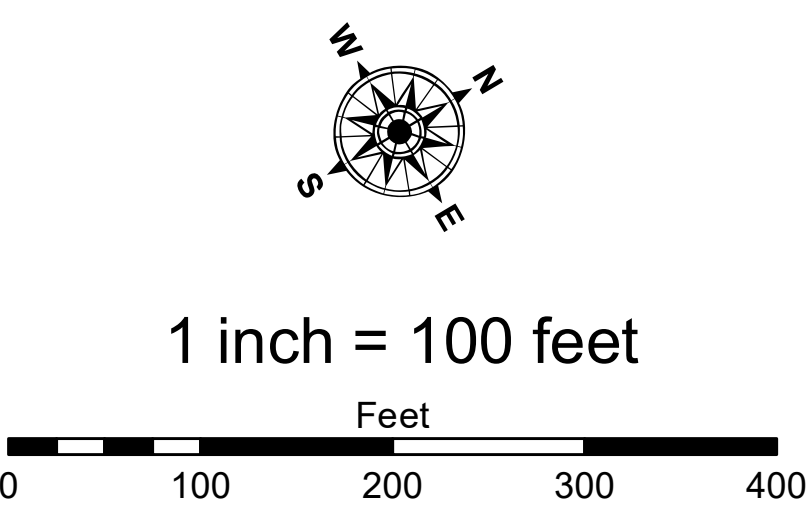
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POSITIONING: APPLANIX POS-MV4 W/ VRS/RTK OR MARINESTAR GNSS.  
MOTION COMPENSATION: APPLANIX POS-MV4  
SONAR: R2SONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)  
SOFTWARE: HYPACK

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS  
ALL COORDINATES ARE IN U.S. SURVEY FEET.

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

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20230531\_CS**  
**31 May 2023**

**Sheet Reference Number**  
**9 of 62**

Revision Number:  
4.2-2023060430

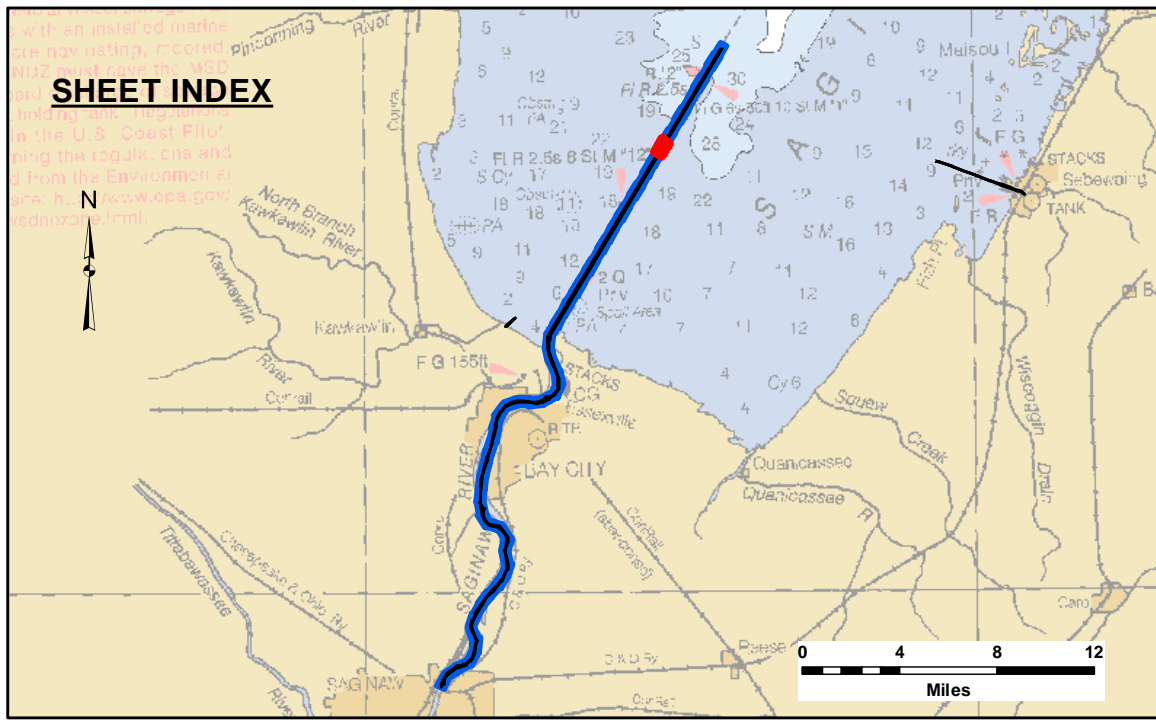
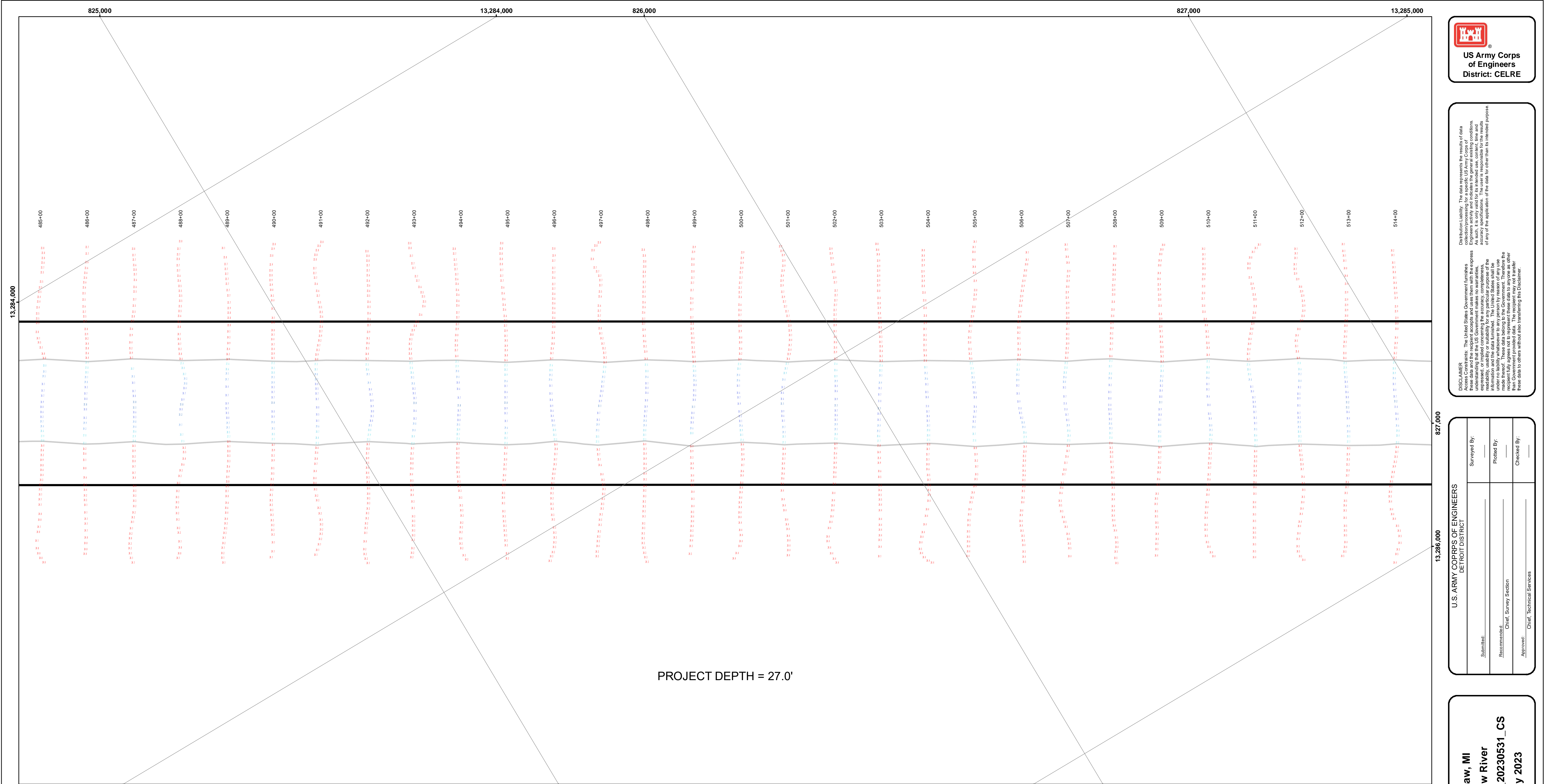


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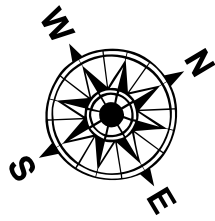
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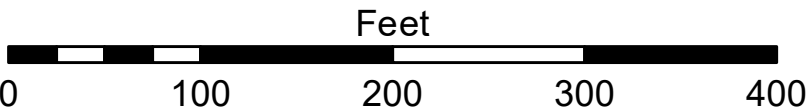


- LEGEND**
- Cable Submarine
  - - - Cable Overhead
  - Placement Area
  - ┆ Beacon, General
  - Contour Lines
  - ▭ Channel\_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
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  - PROJECT DEPTH +4'
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**U.S. ARMY CORPS OF ENGINEERS**  
**DETROIT DISTRICT**

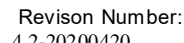
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Recommended:	Plotted By:
Approved:	Checked By:

Chief, Survey Section  
Chief, Technical Services

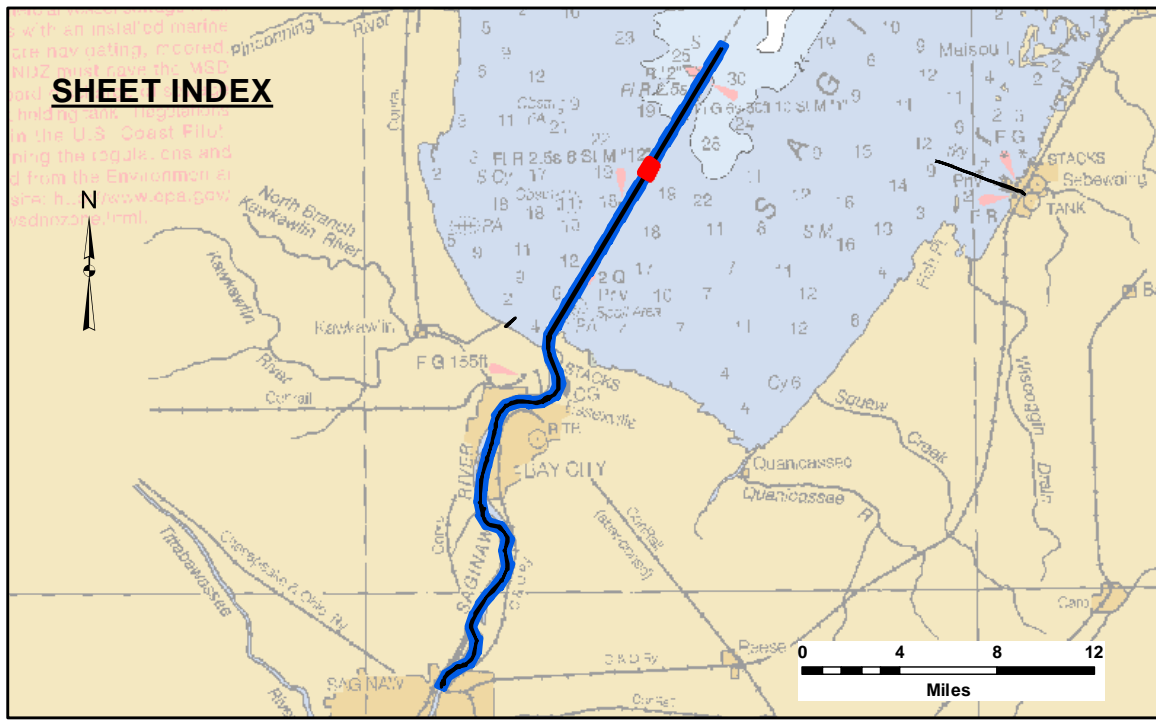
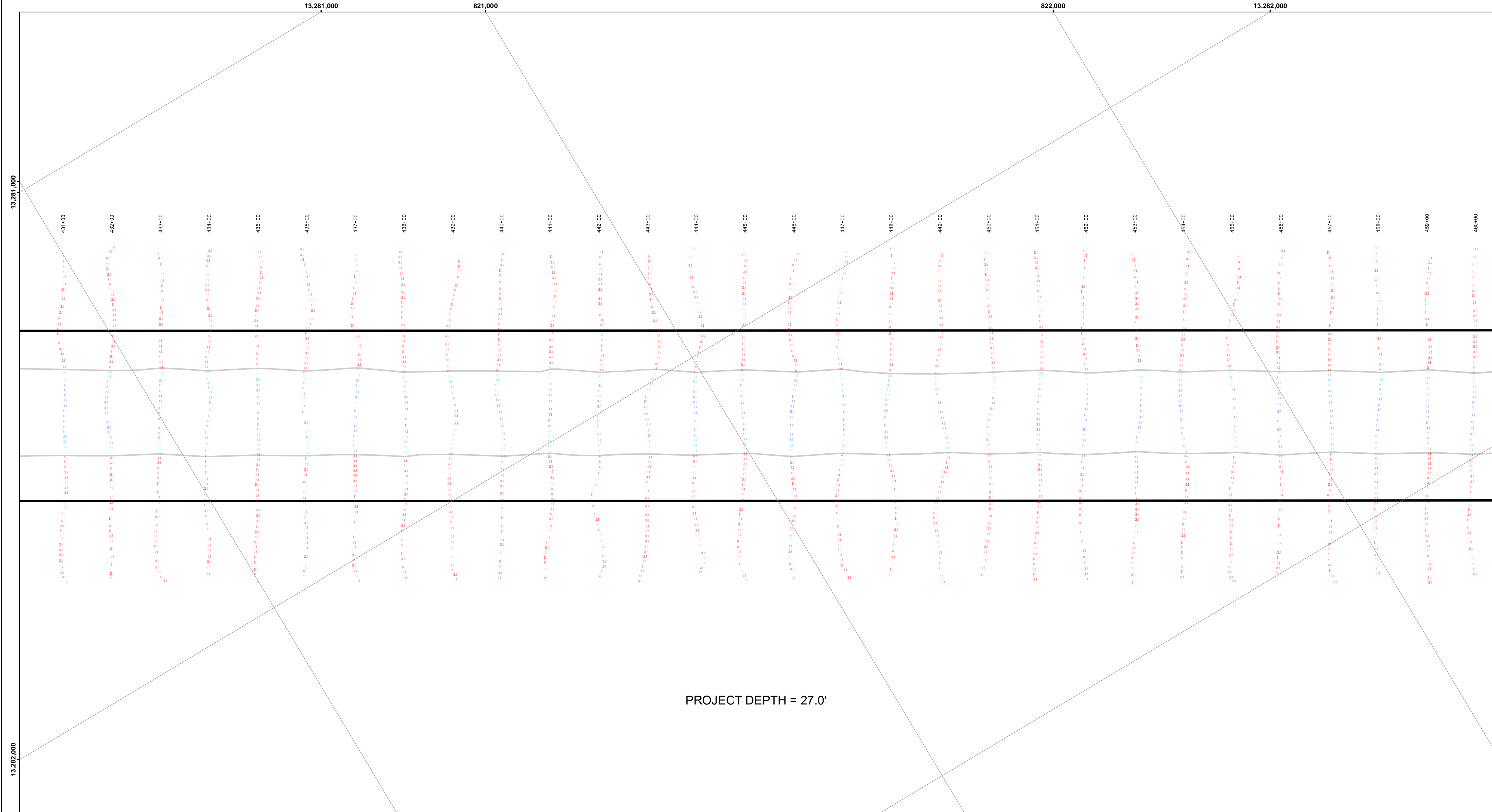
**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20230531\_CS**  
**31 May 2023**

**Sheet Reference Number**  
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**LEGEND**

- ..... Cable Submarine
- - Cable Overhead
- Placement Area
- ┆ Beacon, General
- Contour Lines
- ▭ Channel\_Limits

**SOUNDING LEGEND**

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- PROJECT DEPTH
- PROJECT DEPTH +1'
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Feet

0 100 200 300 400

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

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**U.S. ARMY CORPS OF ENGINEERS**  
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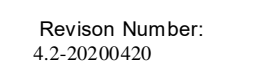
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Recommended:	Plotted By:
Approved:	Checked By:

Chief, Survey Section  
Chief, Technical Services

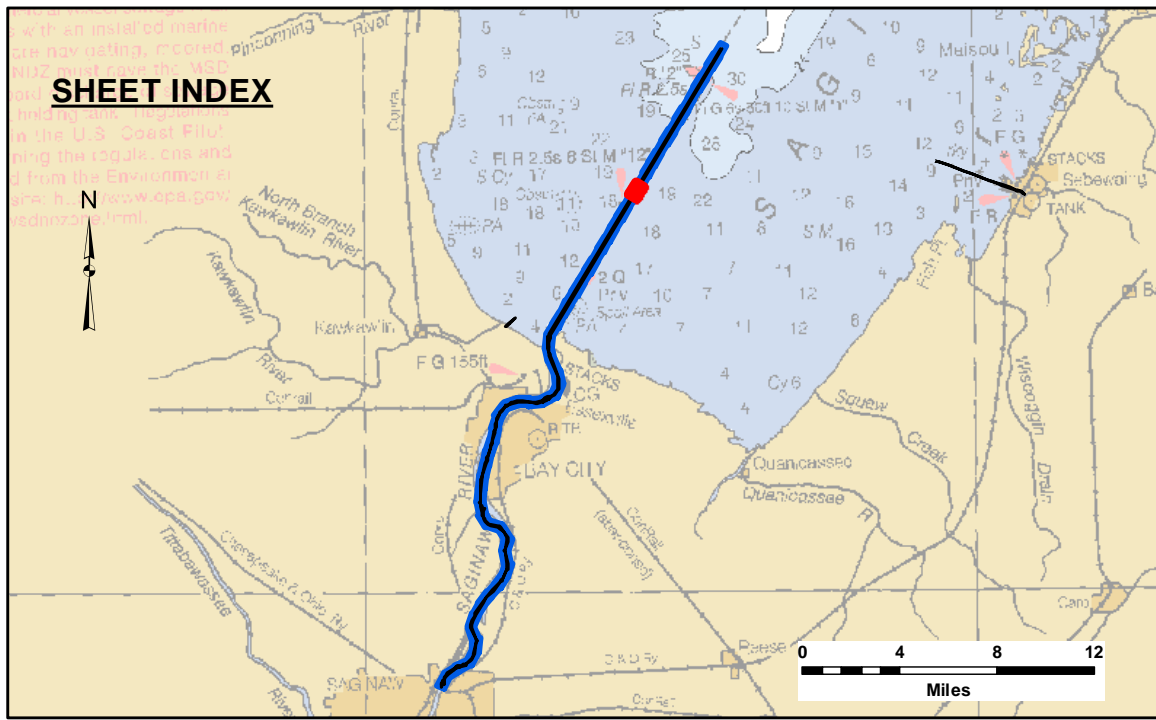
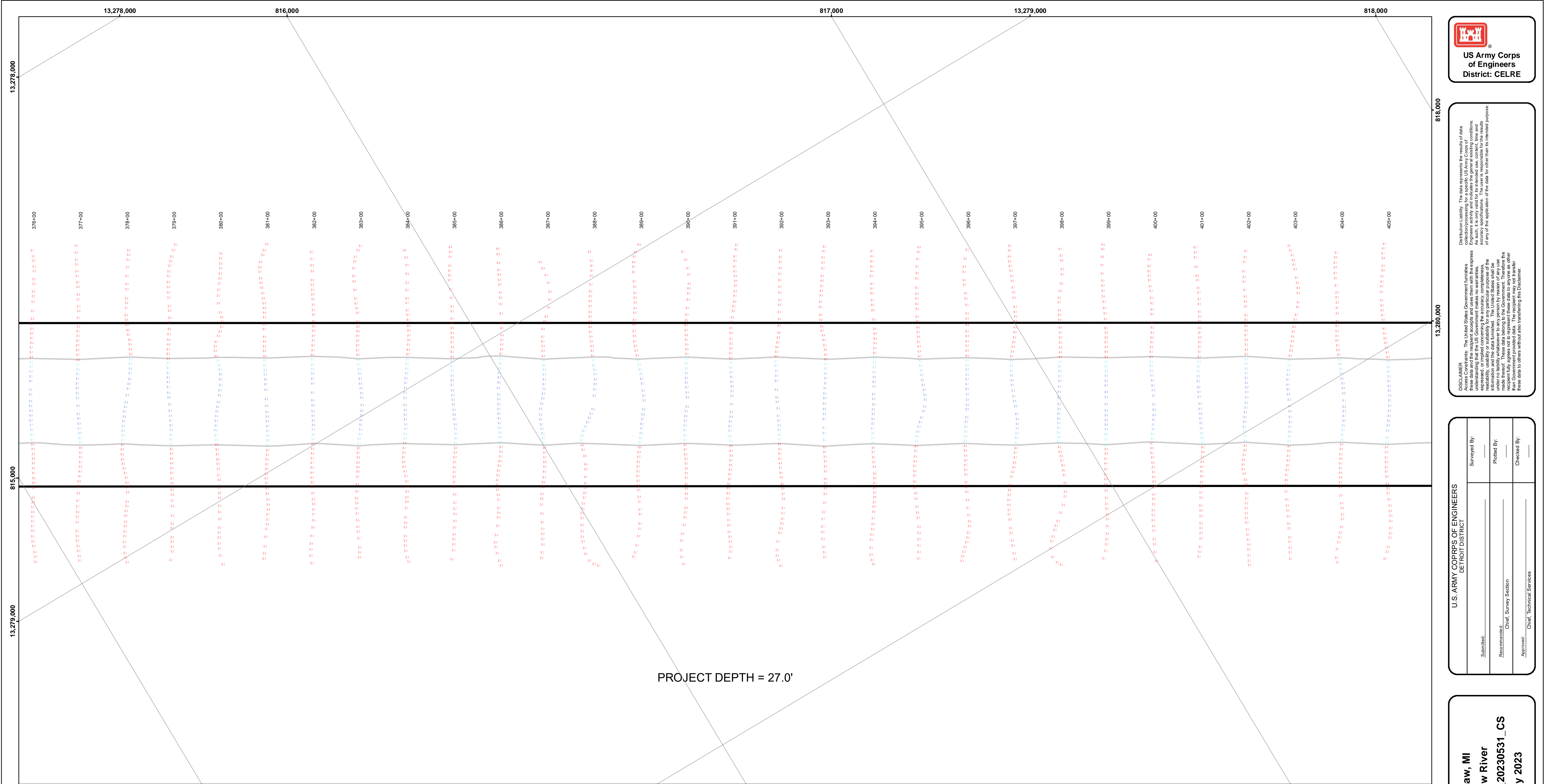
**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20230531\_CS**  
**31 May 2023**

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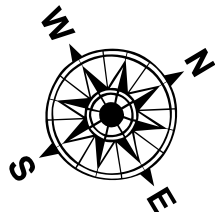




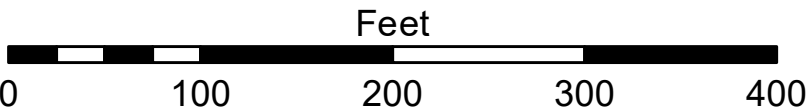


- LEGEND**
- Cable Submarine
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  - Placement Area
  - ⊥ Beacon, General
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  - Channel\_Limits

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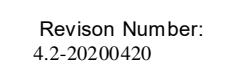
Submitted:	Surveyed By:
	Plotted By:
	Checked By:
Recommended:	Chief, Survey Section
Approved:	Chief, Technical Services

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20230531\_CS**  
**31 May 2023**

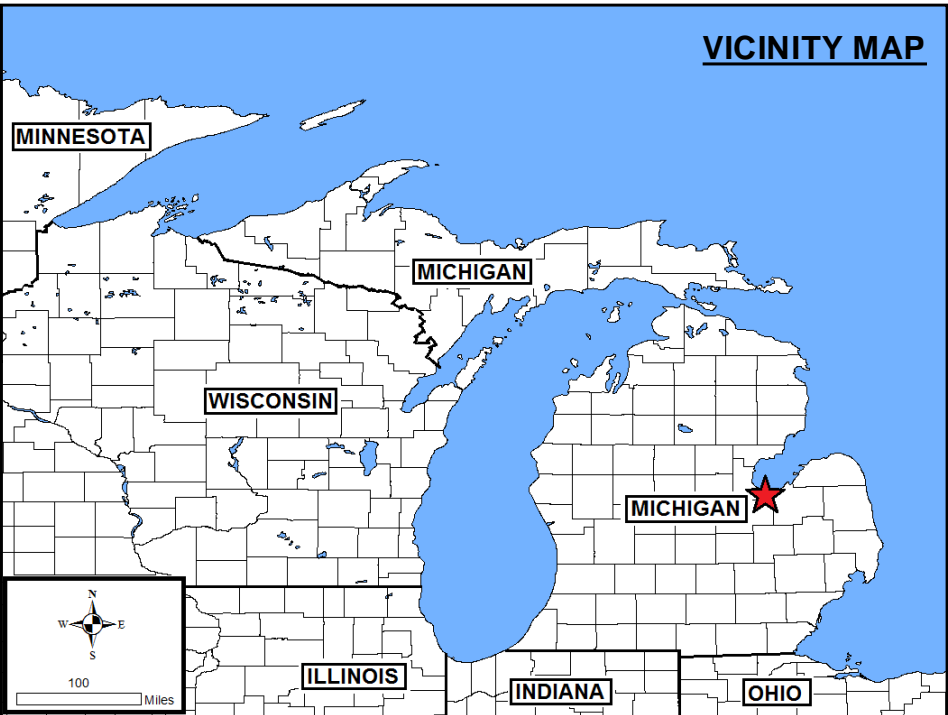
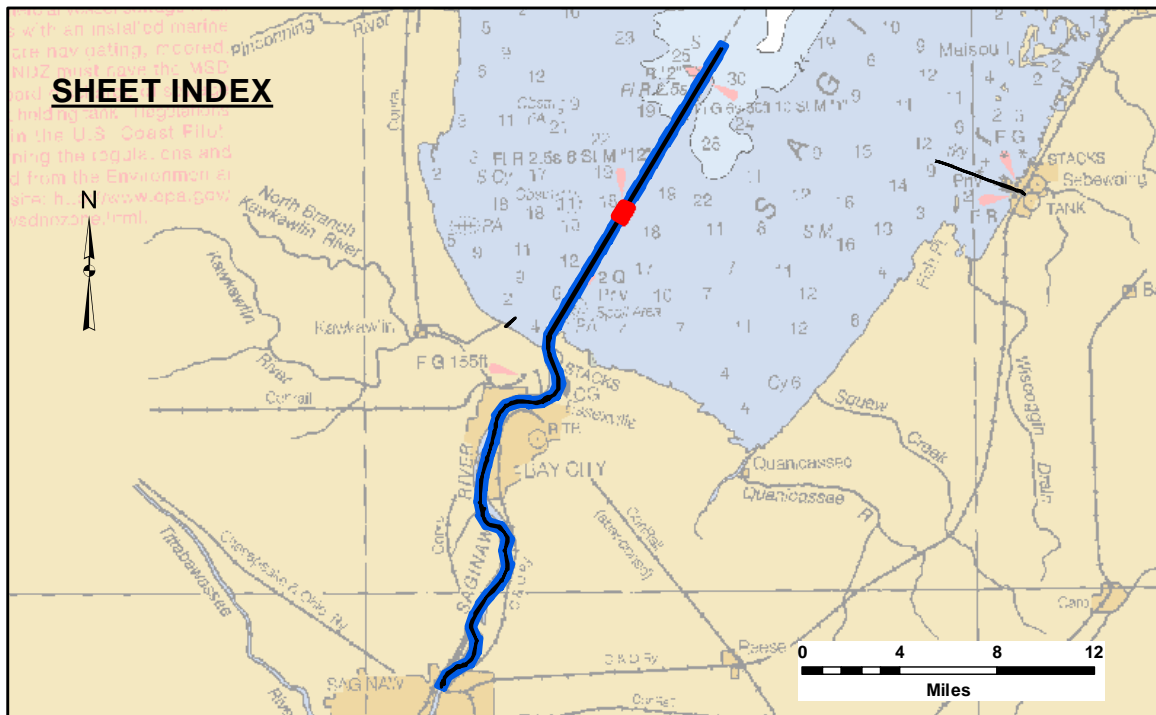
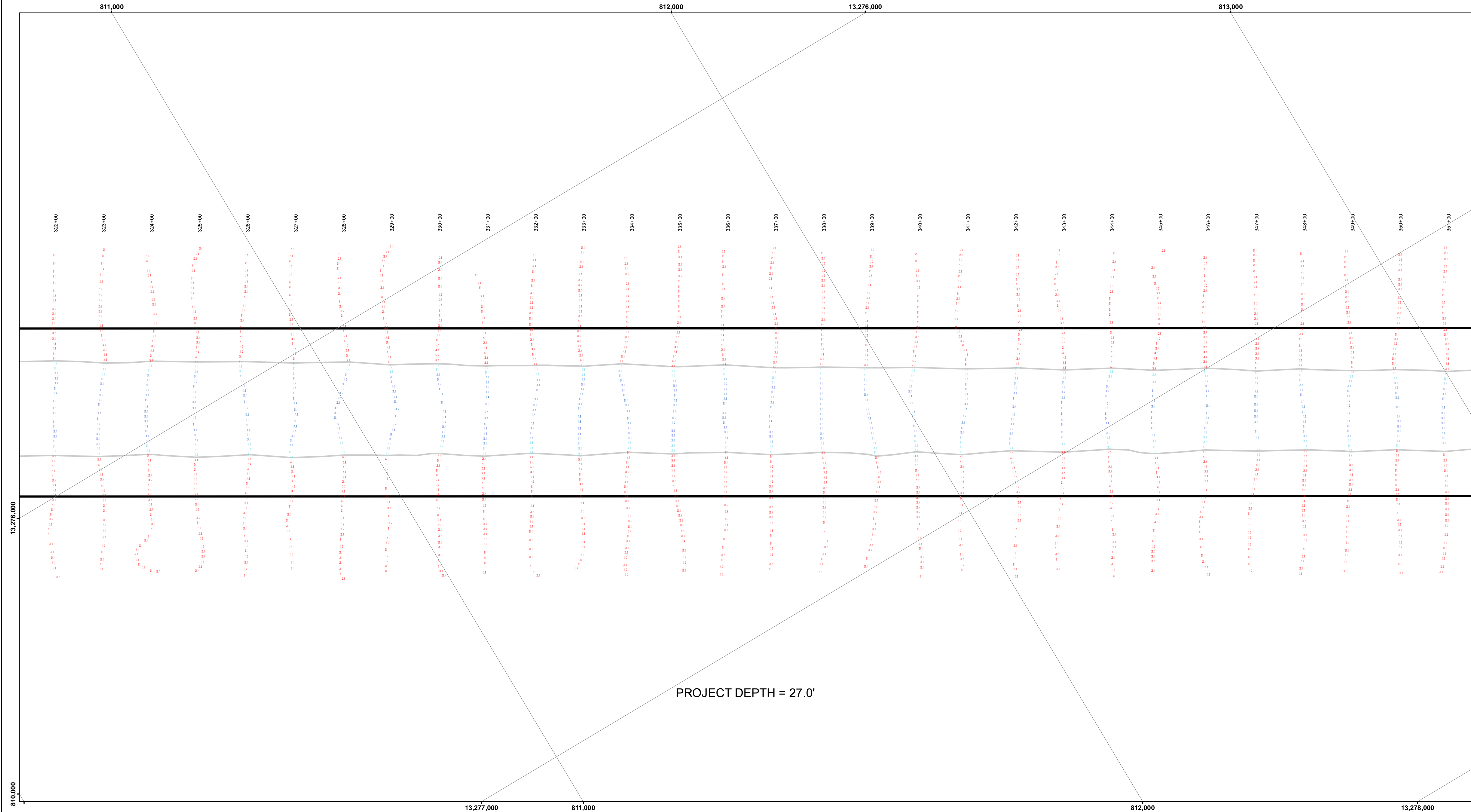
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Revision Number: 4.2-2023060420



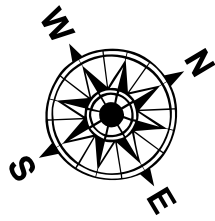




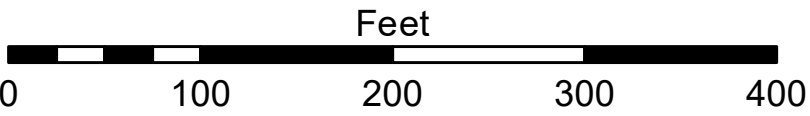


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  - Placement Area
  - Beacon, General
  - Contour Lines
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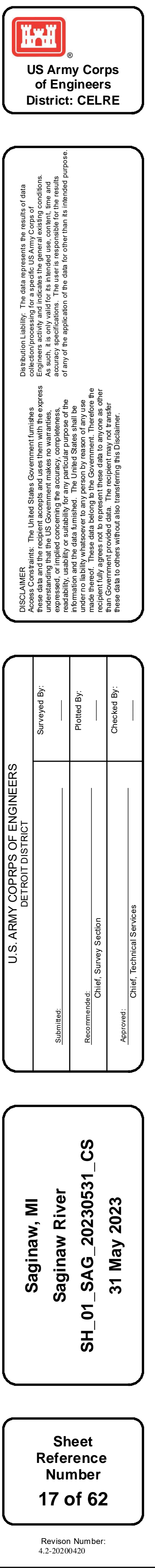
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Submitted:	Surveyed By:
	Plotted By:
	Checked By:

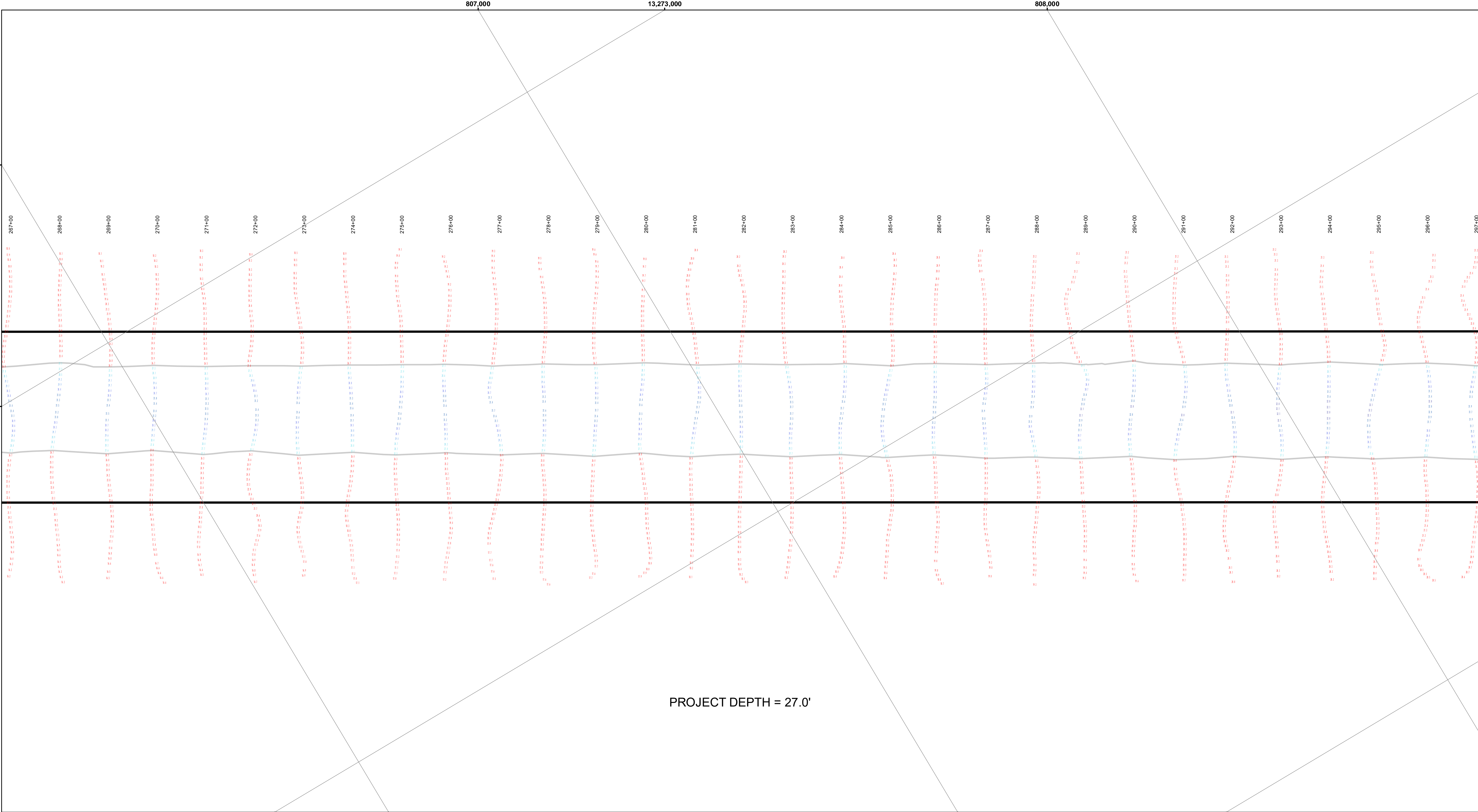
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Saginaw River  
SH\_01\_SAG\_20230531\_CS  
31 May 2023

Sheet  
Reference  
Number  
16 of 62

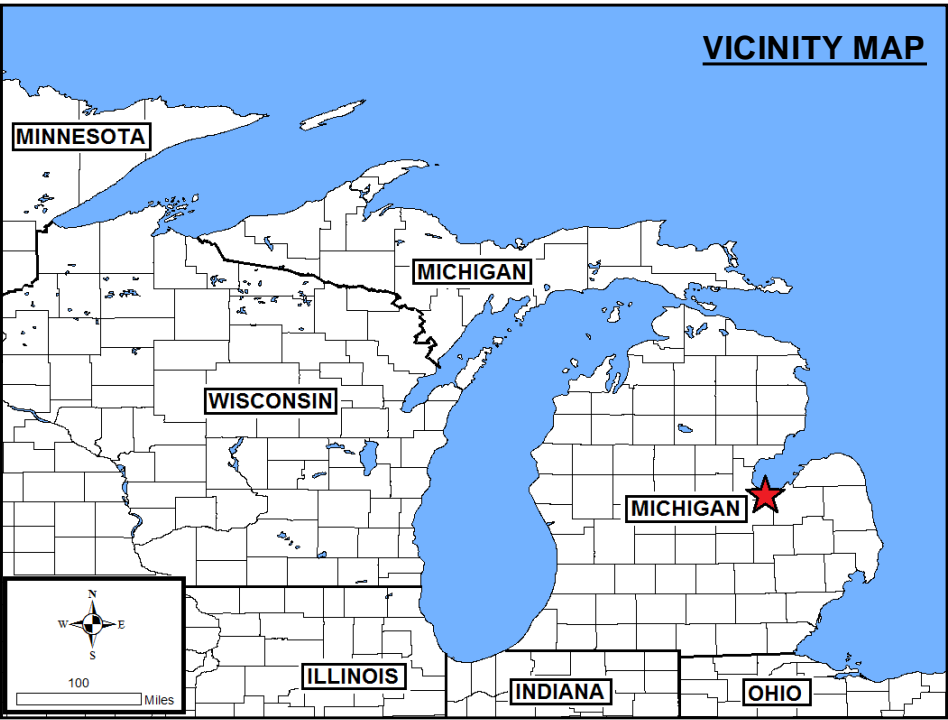
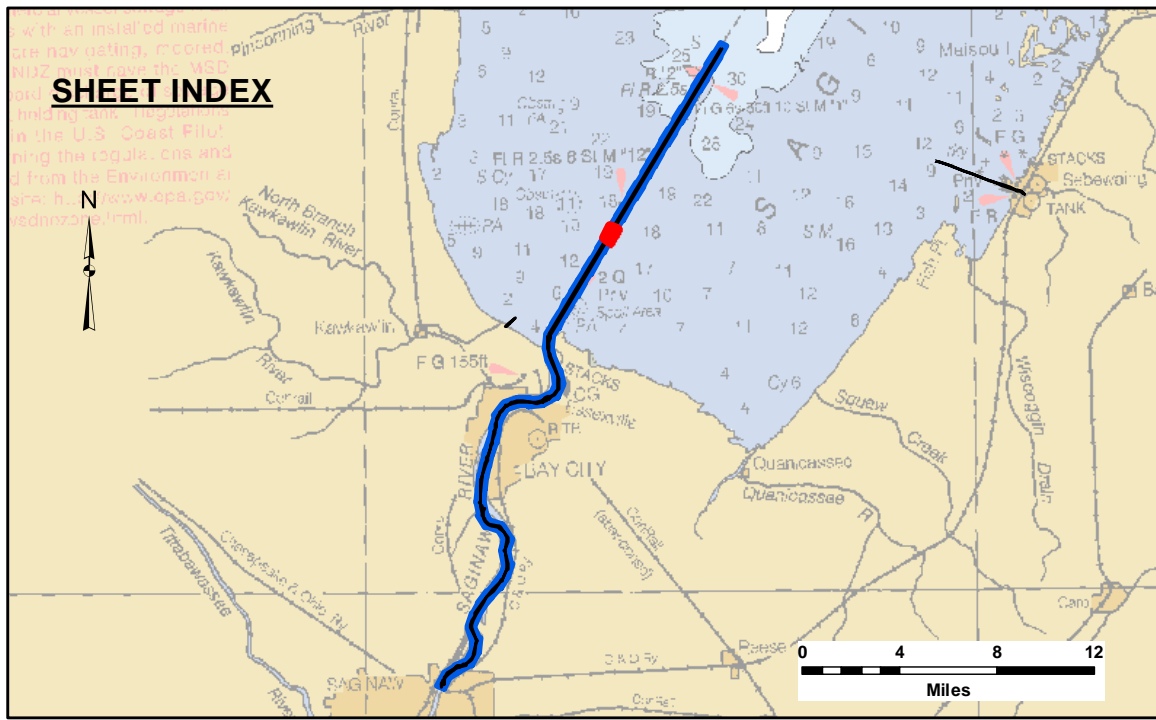






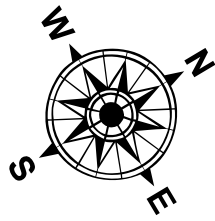


PROJECT DEPTH = 27.0'

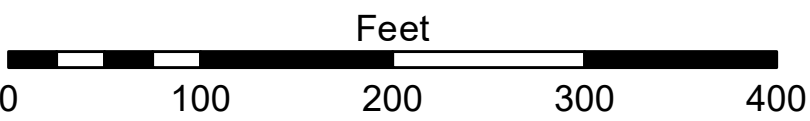


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POSITIONING: APPLINX POS-MV4 W/ VRS/RTK OR MARINESTAR GNSS. MOTION COMPENSATION: APPLINX POS-MV4 SONAR: R2SONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM) SOFTWARE: HYPACK

2016 AERIAL PHOTOGRAPHY DATA SOURCE: USGS ALL COORDINATES ARE IN U.S. SURVEY FEET.



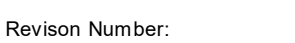
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Submitted:	Surveyed By:
	Plotted By:
	Checked By:

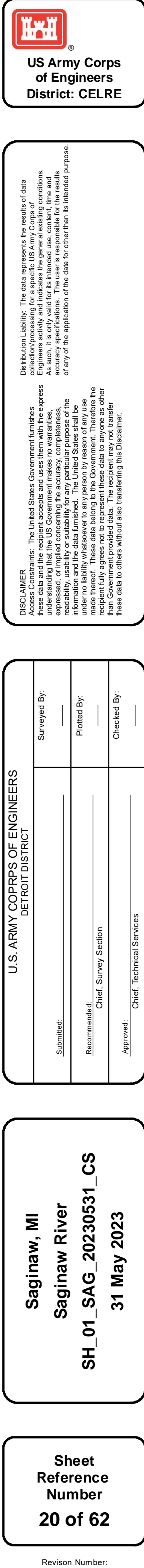
Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20230531\_CS  
31 May 2023

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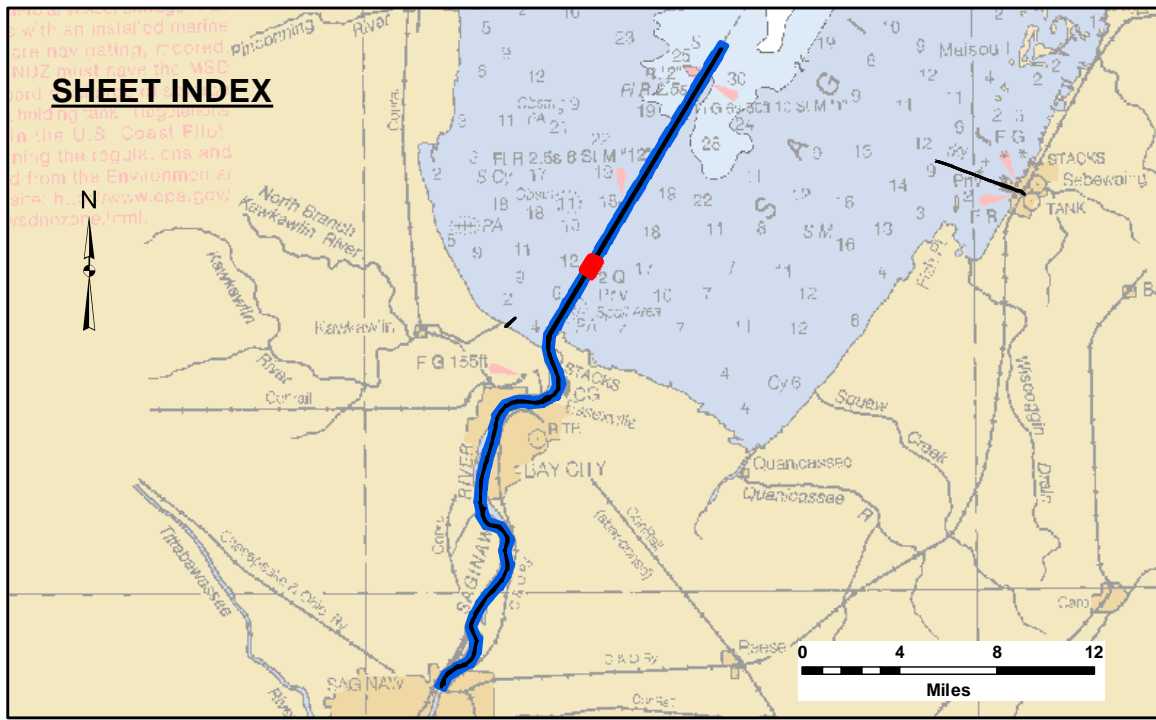
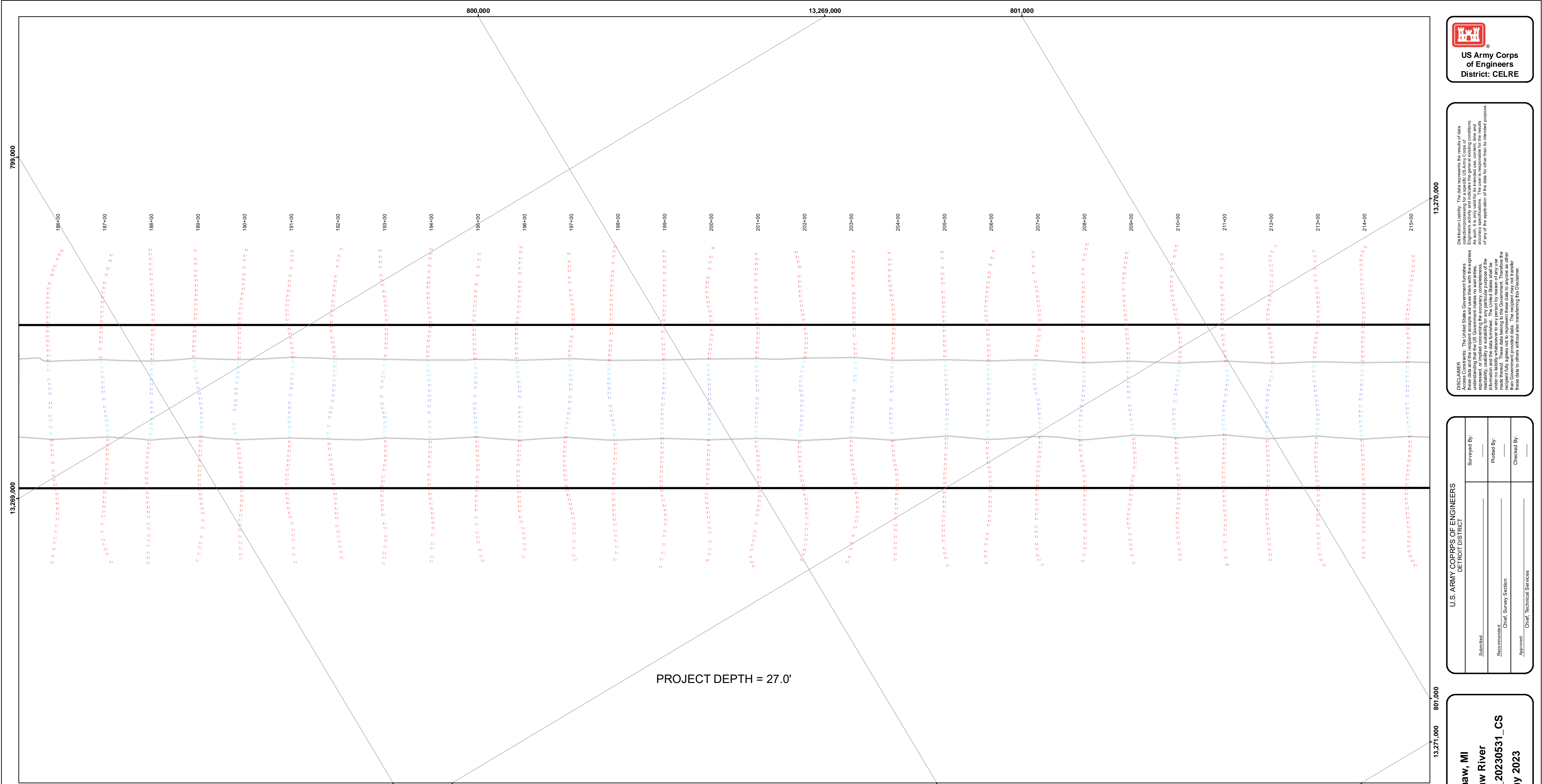






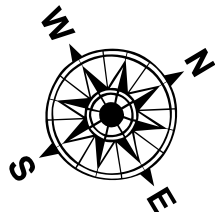




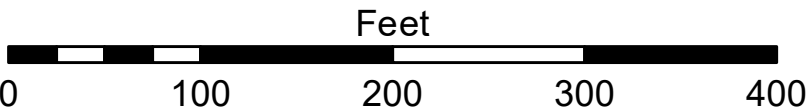


- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

- 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



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2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS ALL COORDINATES ARE IN U.S. SURVEY FEET.



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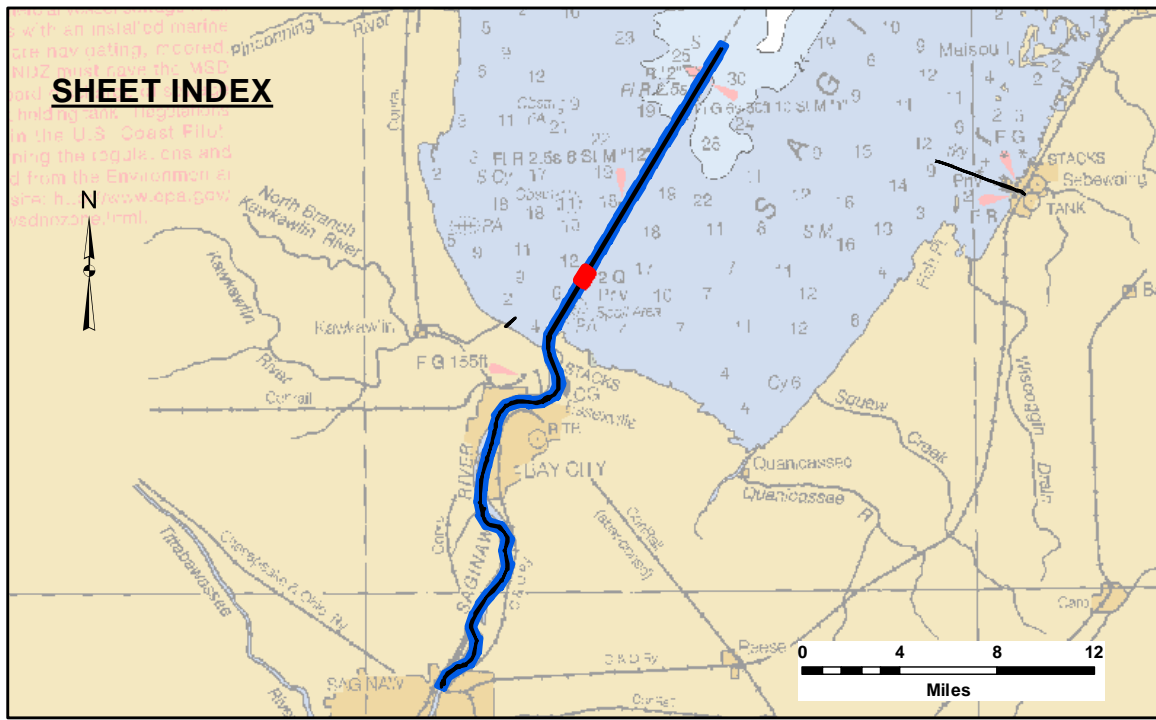
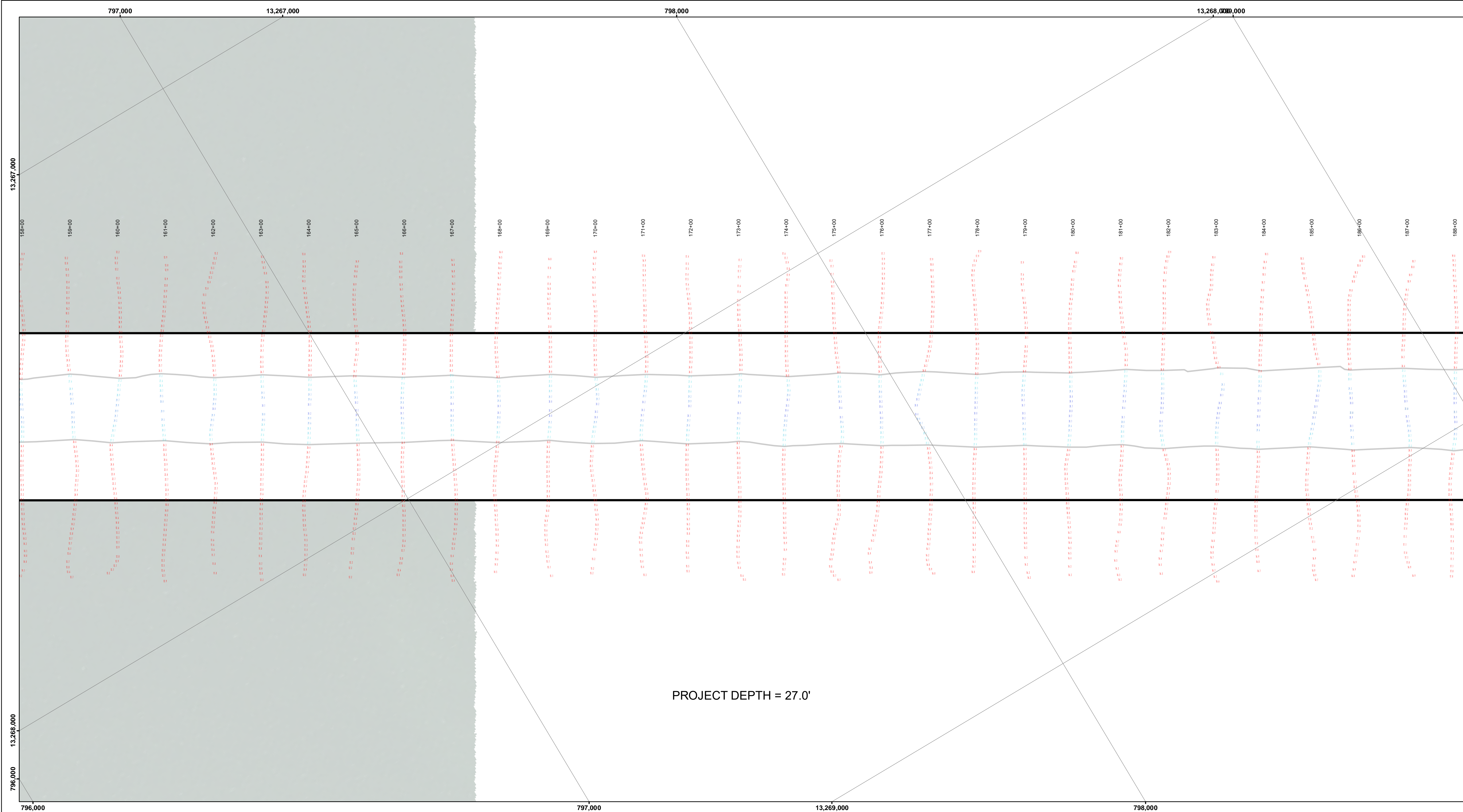
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Submitted:	Surveyed By:
	Plotted By:
	Checked By:

Saginaw, MI
Saginaw River
SH_01_SAG_20230531_CS
31 May 2023

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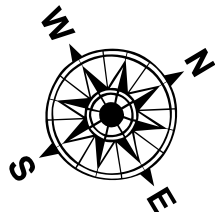


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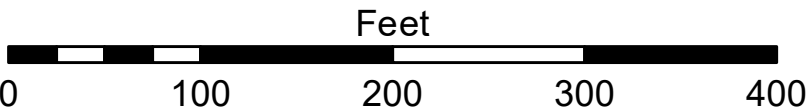
- ..... Cable Submarine
- - Cable Overhead
- Placement Area
- Beacon, General
- Contour Lines
- Channel\_Limits

**SOUNDING LEGEND**

- LESS THAN PROJECT DEPTH
- PROJECT DEPTH
- PROJECT DEPTH +1'
- PROJECT DEPTH +2'
- PROJECT DEPTH +3'
- PROJECT DEPTH +4'
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POSITIONING APPLIXAN POS-MV4 W/ VRS/RTK OR MARINESTAR GNSS. MOTION COMPENSATION: APPLIXAN POS-MV4 SONAR: R2SONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM) SOFTWARE: HYPACK

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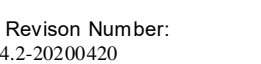
Submitted:	Surveyed By:
	Plotted By:
	Checked By:

Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20230531\_CS  
31 May 2023

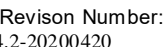
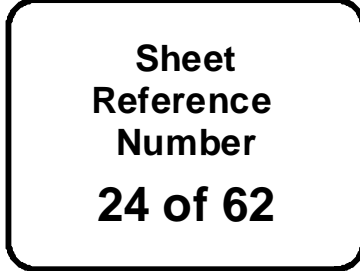
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Revision Number:  
4.2-2023060420

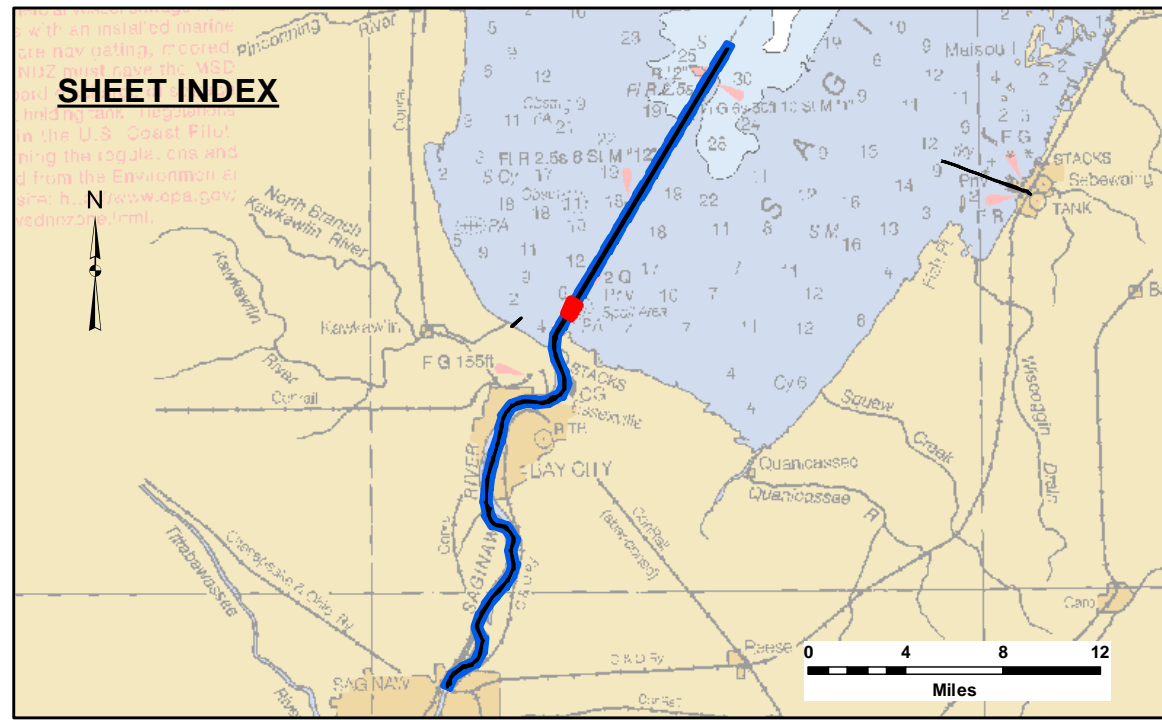
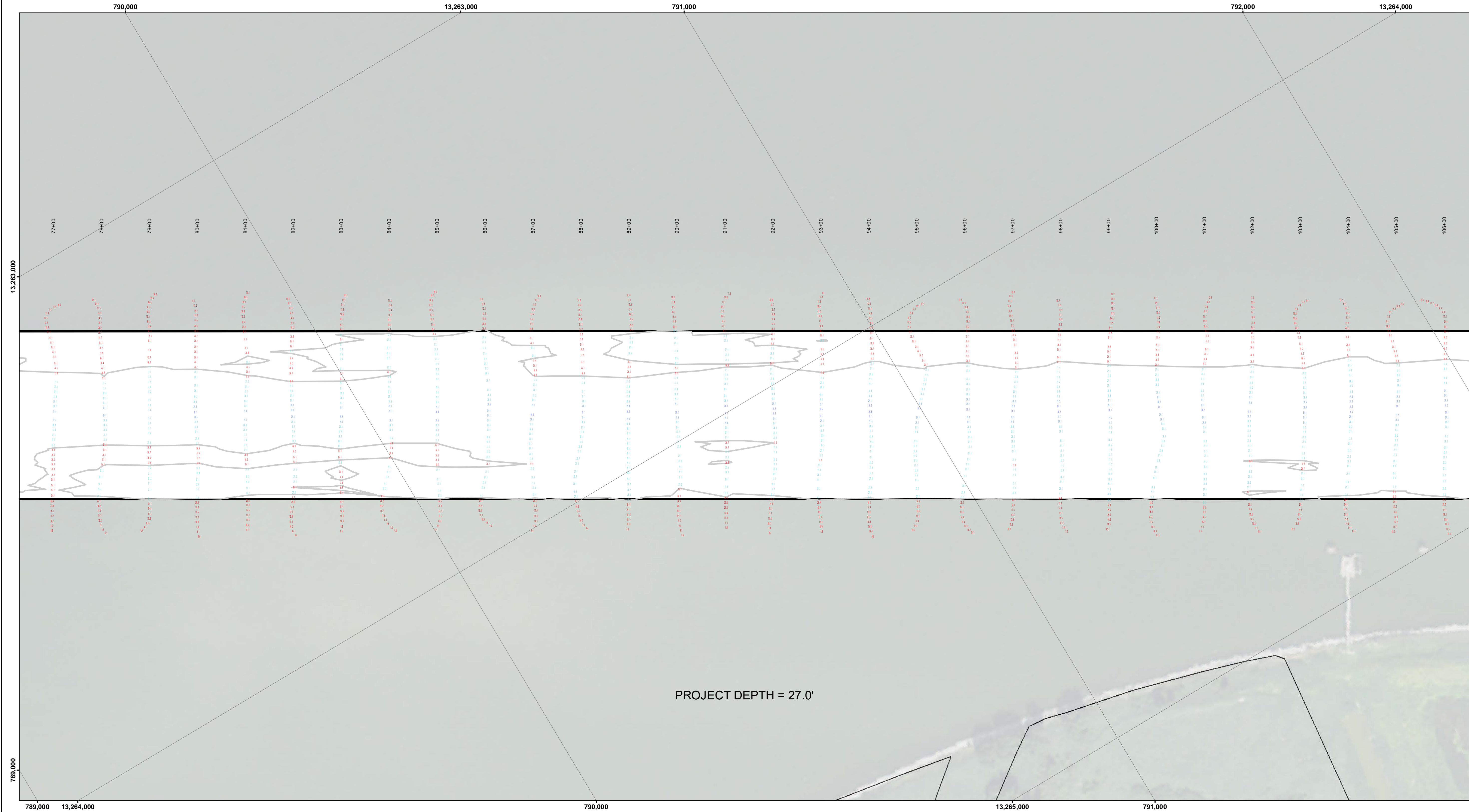






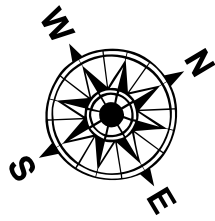




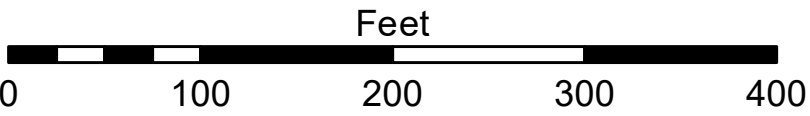


- LEGEND**
- Cable Submarine
  - - - Cable Overhead
  - Placement Area
  - ┆ Beacon, General
  - Contour Lines
  - ▭ Channel\_Limits

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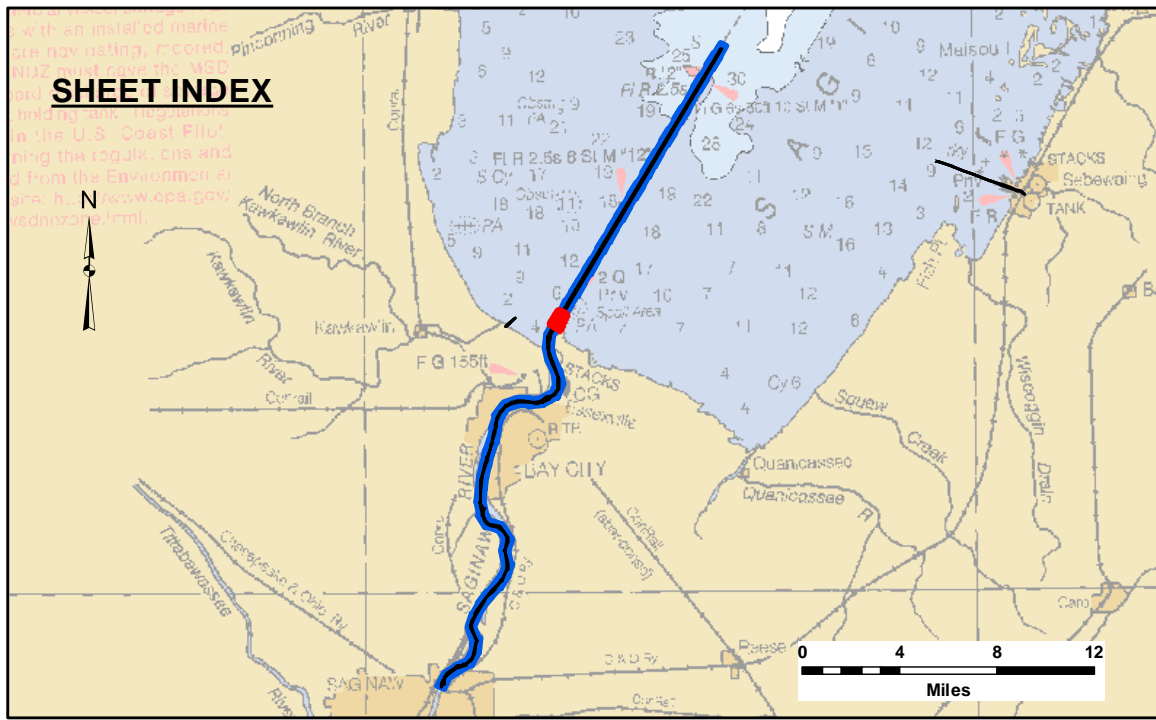
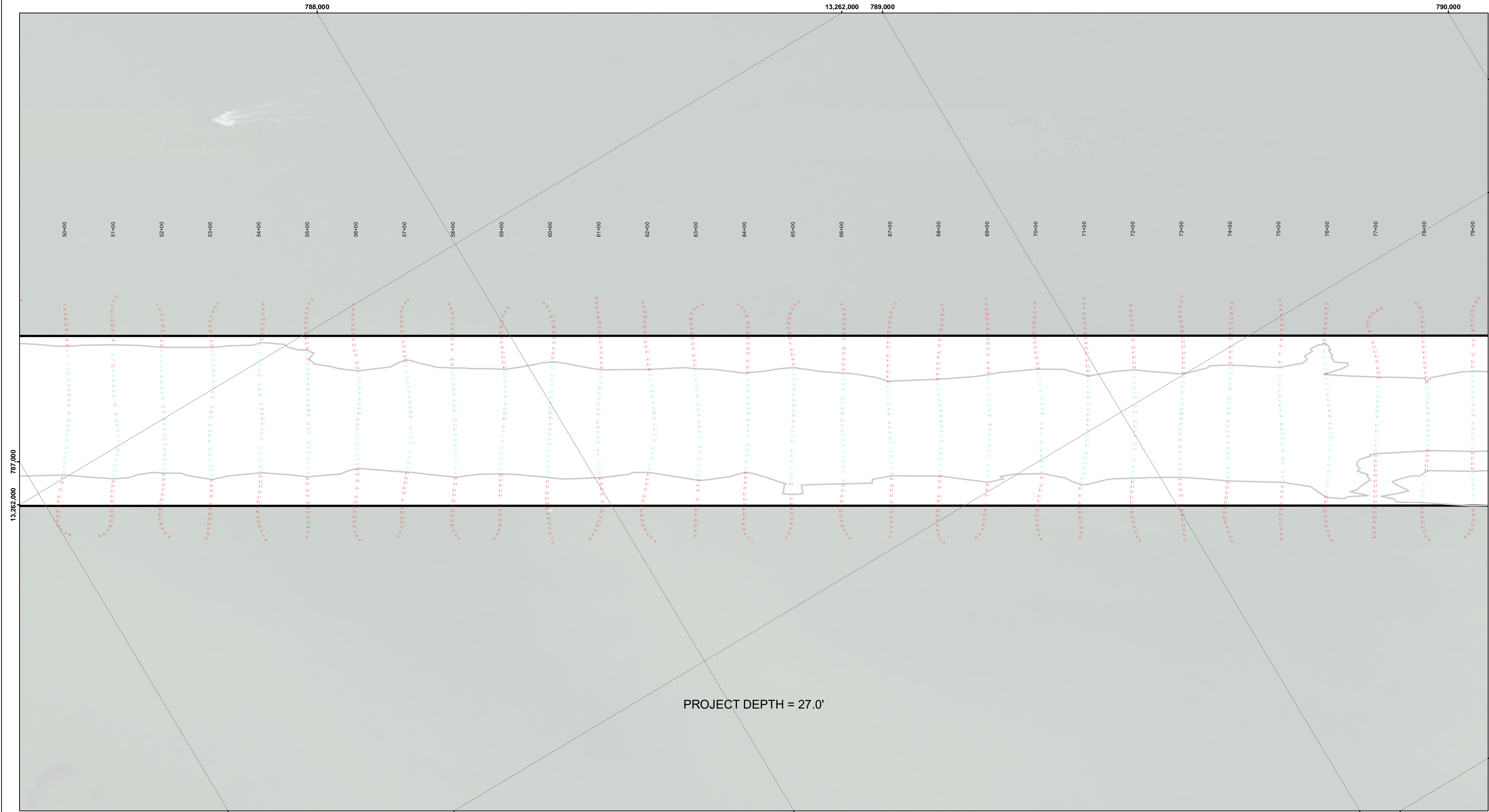
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted:	Surveyed By:
	Recommended:	Plotted By:
	Approved:	Checked By:

Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20230531\_CS  
31 May 2023

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Revision Number:  
4.2-2023060420





**LEGEND**

- Cable Submarine
- - - Cable Overhead
- Placement Area
- ┆ Beacon, General
- Contour Lines
- ▭ Channel\_Limits

**SOUNDING LEGEND**

- LESS THAN PROJECT DEPTH
- PROJECT DEPTH
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Feet

0 100 200 300 400

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SOFTWARE: HYPACK

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS  
ALL COORDINATES ARE IN U.S. SURVEY FEET.

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

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

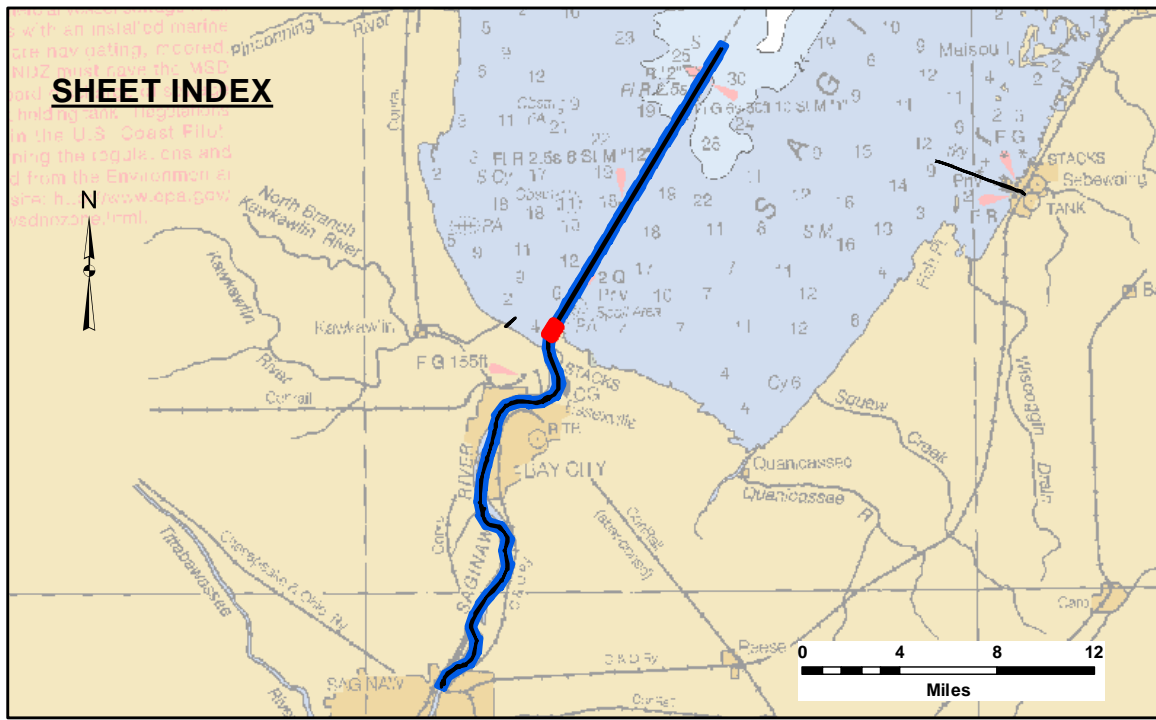
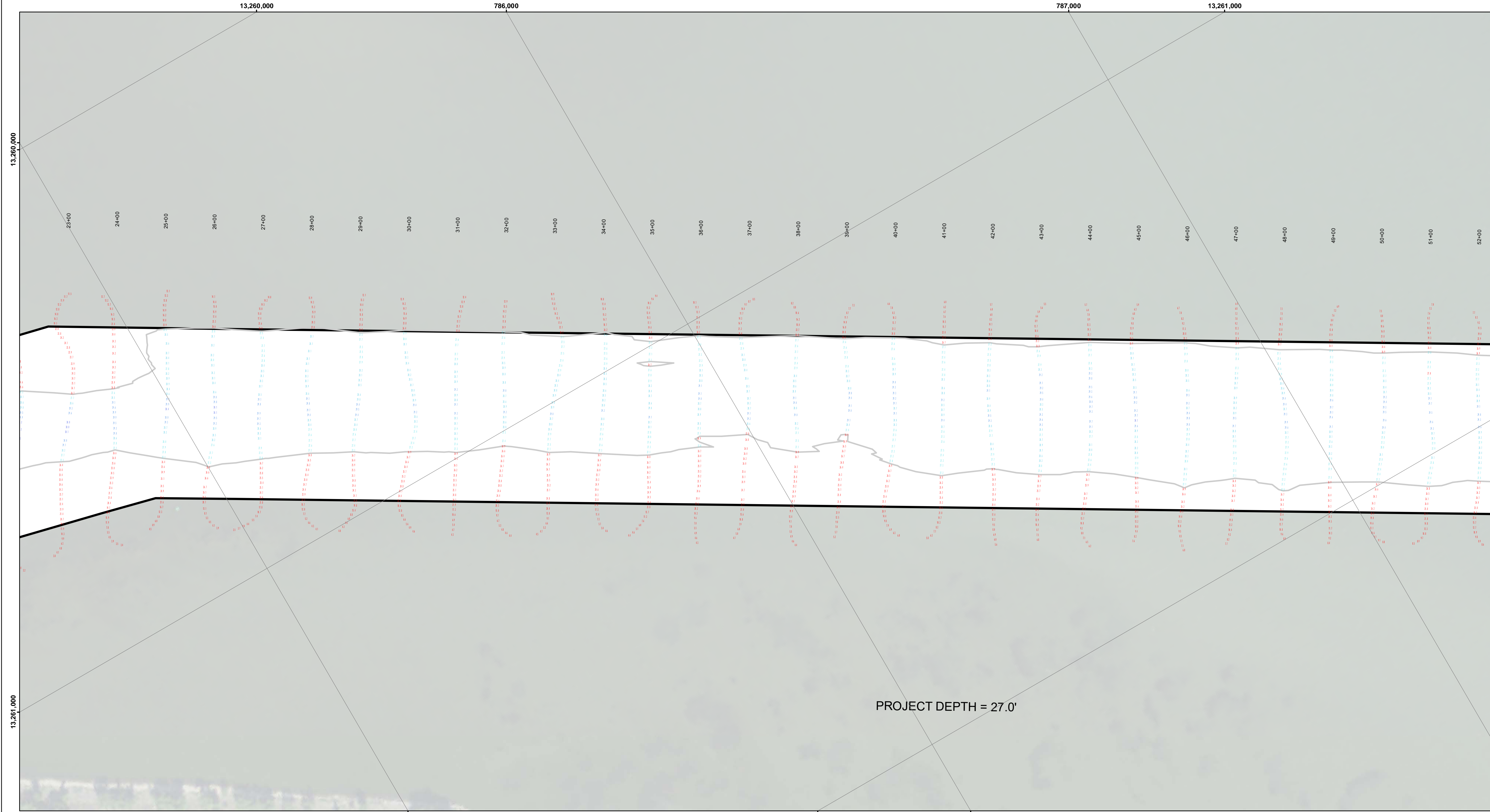
Submitted:	Surveyed By:
Recommended:	Plotted By:
Approved:	Checked By:

Chief, Survey Section  
Chief, Technical Services

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20230531\_CS**  
**31 May 2023**

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**LEGEND**

- Cable Submarine
- - - Cable Overhead
- Placement Area
- ⊥ Beacon, General
- Contour Lines
- Channel\_Limits

**SOUNDING LEGEND**

- LESS THAN PROJECT DEPTH
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SOFTWARE: HYPACK

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS  
ALL COORDINATES ARE IN U.S. SURVEY FEET.

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

The data on this map represents the results of data collection and processing for a specific US Army Corps of Engineers activity and indicates the general existing conditions. The data is not intended to be used for navigation, engineering, or other purposes. The user is responsible for the results of any of the application of the data for other than its intended purpose.

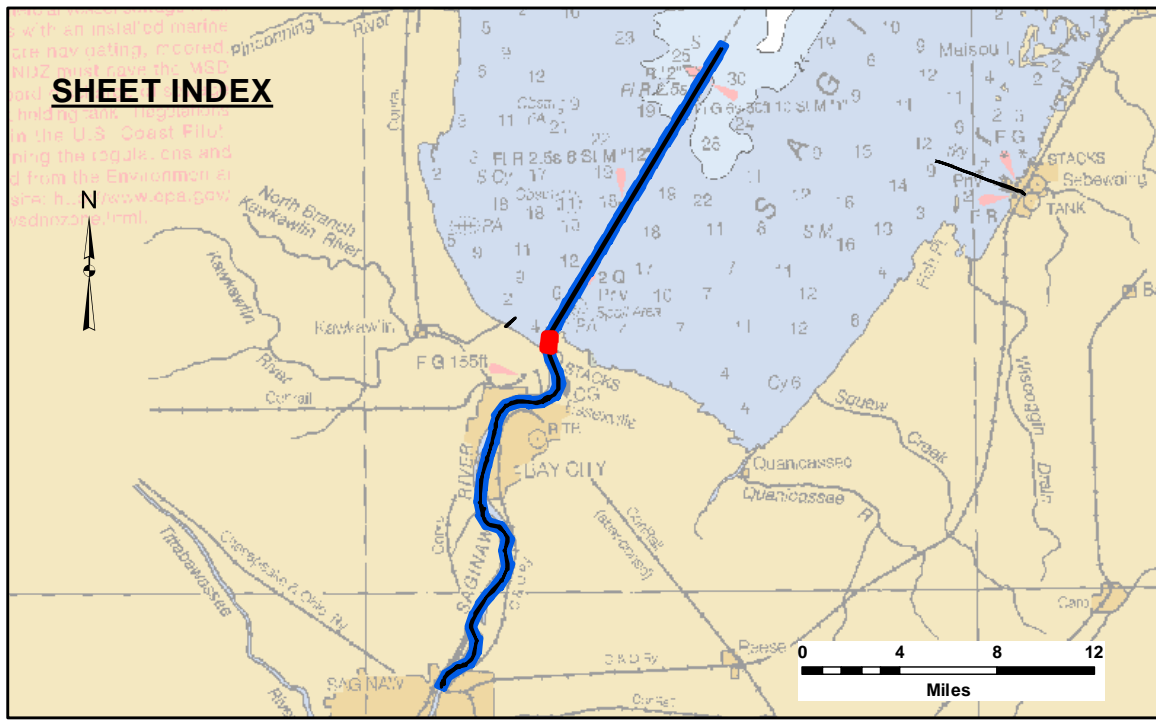
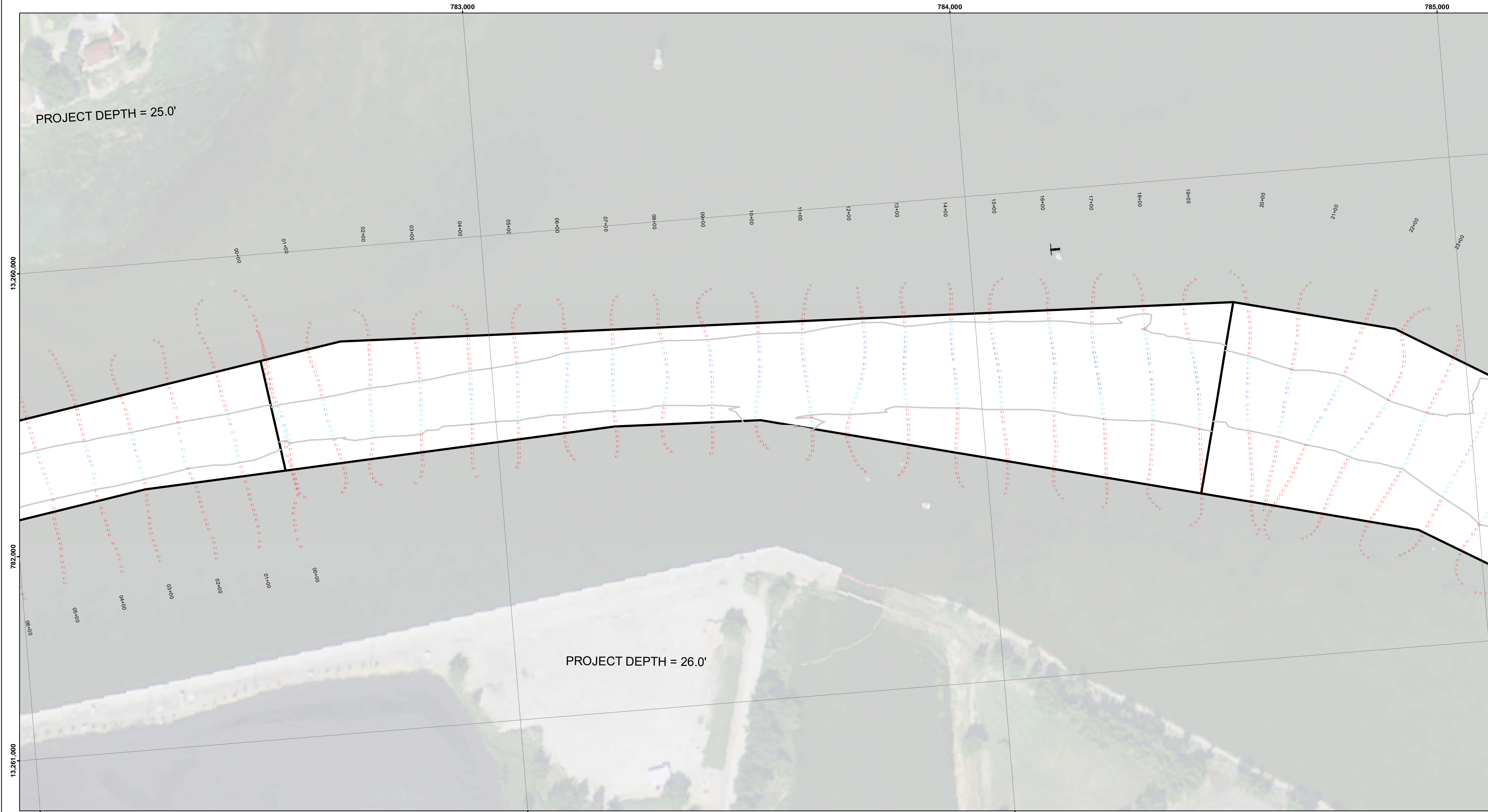
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted: _____	Surveyed By: _____
	Recommended: _____	Plotted By: _____
	Approved: _____	Checked By: _____

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20230531\_CS**  
**31 May 2023**

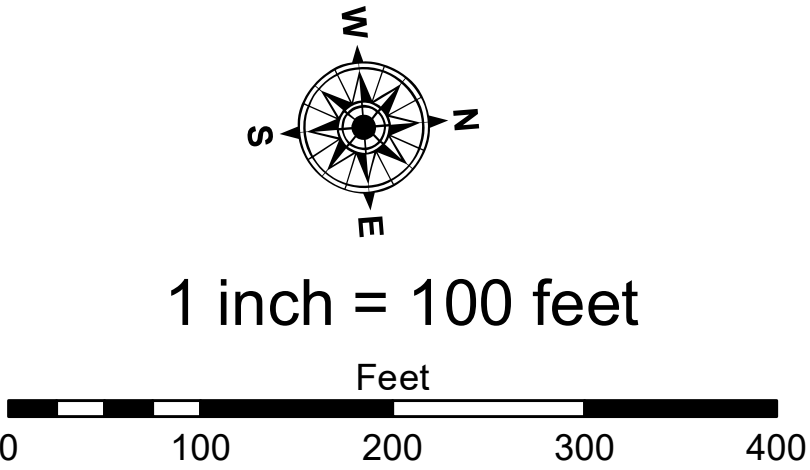
**Sheet Reference Number**  
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- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ⊥ Beacon, General
  - Contour Lines
  - ▭ Channel\_Limits

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



NOTES: THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS AT THE TIME.

FOR MULTIBEAM SURVEYS: THE SOUNDINGS INDICATED HEREIN ARE GENERALIZED DEPTHS AND ARE NOT REPRESENTATIVE OF THE FULL DATASET. THE SOUNDINGS REPRESENT THE MINIMUM DEPTH FOUND WITHIN THE 10X10 FOOT AREA CENTERED ON THE TEXT, DERIVED FROM A 1X1 FOOT AVERAGE DATASET AT CELL CENTER. THIS MAP 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.

HORIZONTAL GRID DATUM BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, LAMBERT PROJECTION, SOUTH ZONE (2113), NORTH AMERICAN DATUM 1983, U.S. SURVEY FOOT.  
ALL SOUNDINGS ARE REFERENCED TO INTERNATIONAL GREAT LAKES DATUM OF 1985 (IGLD85).  
PROJECT DEPTH RANGE FROM 20.0' TO 27.0'

TIDE VALUES ARE DERIVED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) WATER LEVEL STATIONS: ESSEXVILLE, MI (#9075035) ALONG WITH THE FOLLOWING GAGES: G. BOARD ON PILING NEAR CS 620+00, TBM ZILL RAMP, TBM CHEB, TBM CASS RAMP, TBM RAILROAD (ESTABLISHED FROM COE VERTICAL CP BM 36), TBM SAIL AT THE FOOT OF THE 5TH STREET, G. BOARD ON THE D-STREAM WESTERN PIER OF THE CENTRAL MICHIGAN R.R. BRIDGE [GAGE BOARD WAS ESTABLISHED FROM NGS BM HL MON 25 USE], G. BOARD ON THE DOWNSTREAM END OF THE CENTER PIER OF THE LAKE STATE RAILROAD BRIDGE [ESTABLISHED FROM NGS BM HL MON 16 USE (PID QJ0534)], G. BOARD ON THE D-STREAM END OF THE CTR PIER OF LAKE STATE R.R. BRIDGE, G. BOARD SET ON THE PILING AT THE MOUTH OF THE BLACK RIVER ON THE NORTH SIDE NEAR THE RAILROAD TRESTLE

POSITIONING: APPLANIX POS-MV4 W/ VRS/IRTK OR MARINESTAR GNSS.  
MOTION COMPENSATION: APPLANIX POS-MV4  
SONAR: R2SONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)  
SOFTWARE: HYPACK

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Submitted:	Surveyed By:
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Saginaw, MI

Saginaw River

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31 May 2023

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Revision Number:  
4.2-2023060420