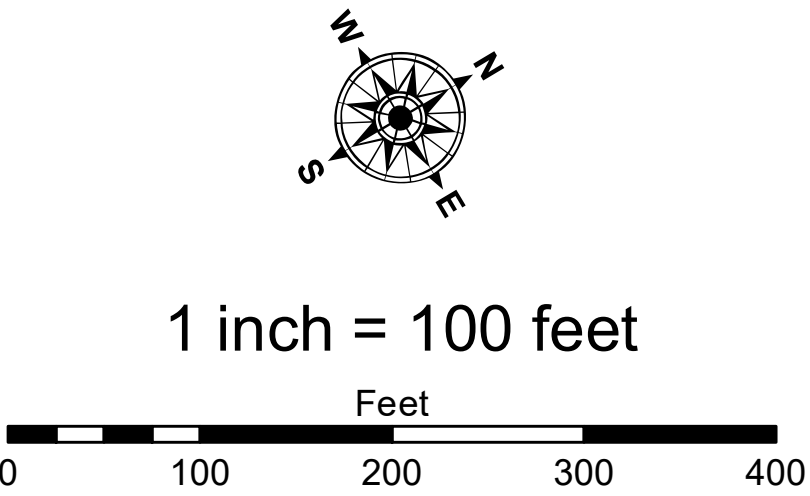


- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

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



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



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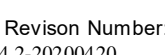
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Submitted: _____	Surveyed By: _____
Recommended: _____	Plotted By: _____
Approved: _____	Checked By: _____

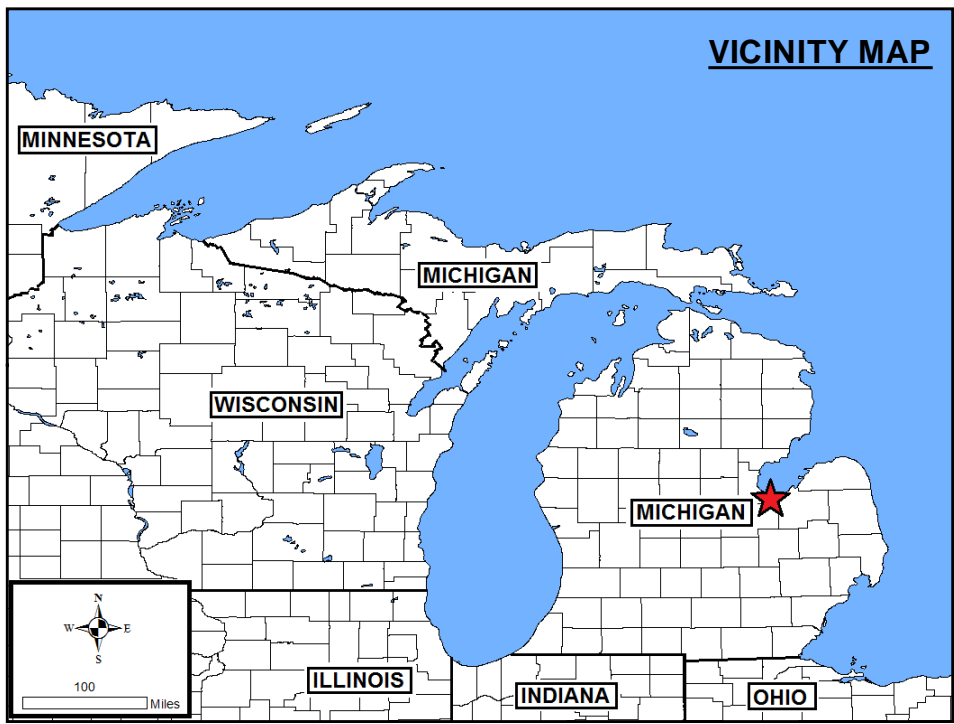
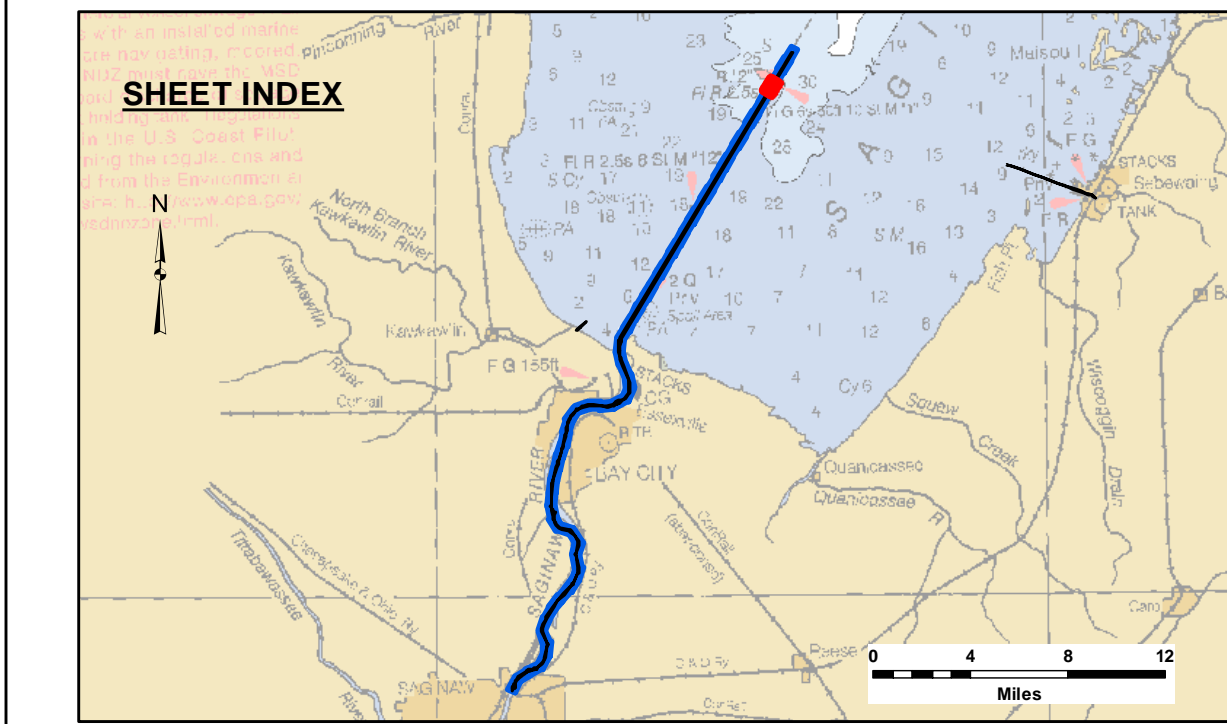
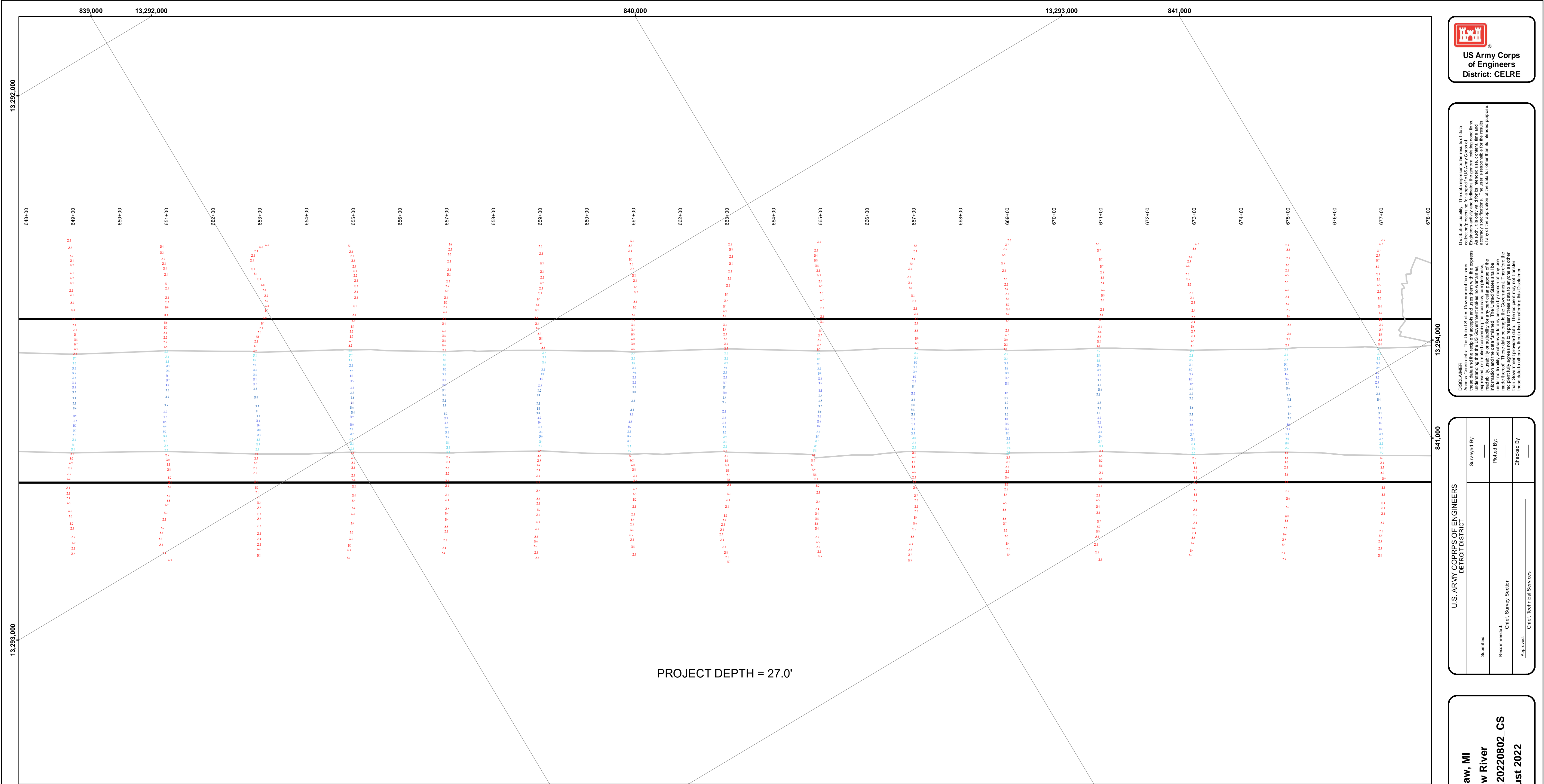
Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20220802\_CS  
02 August 2022

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Revision Number:  
4.2-202/004.20







**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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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**  
DETROIT DISTRICT

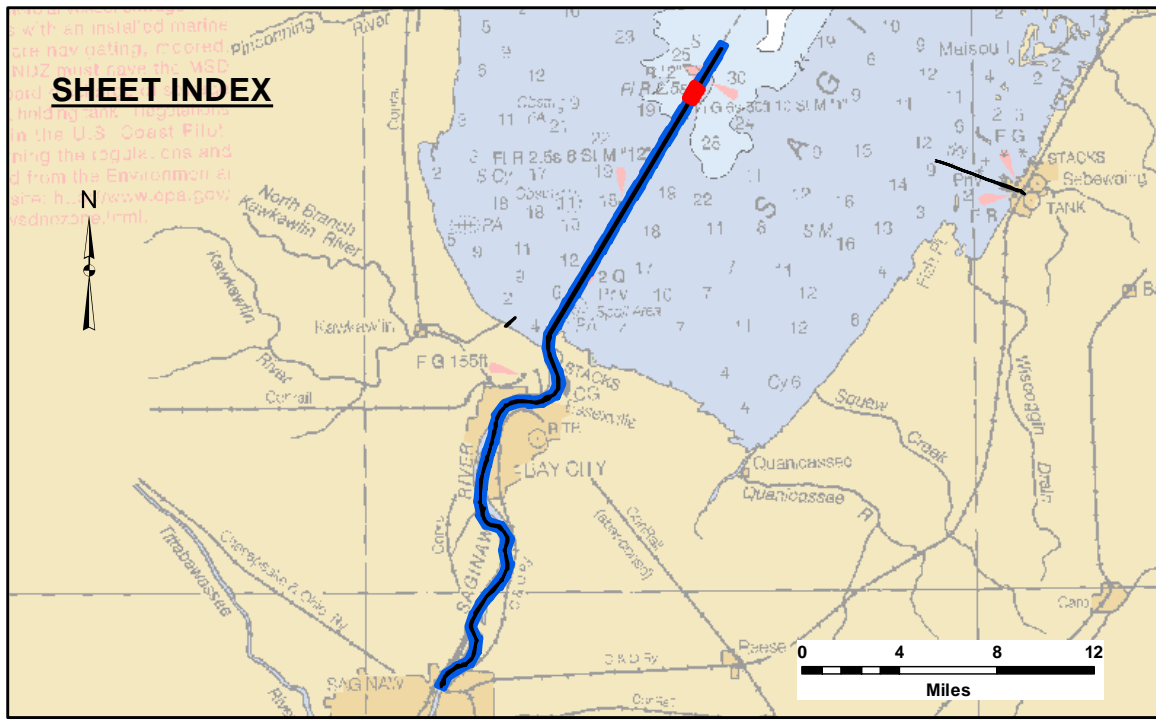
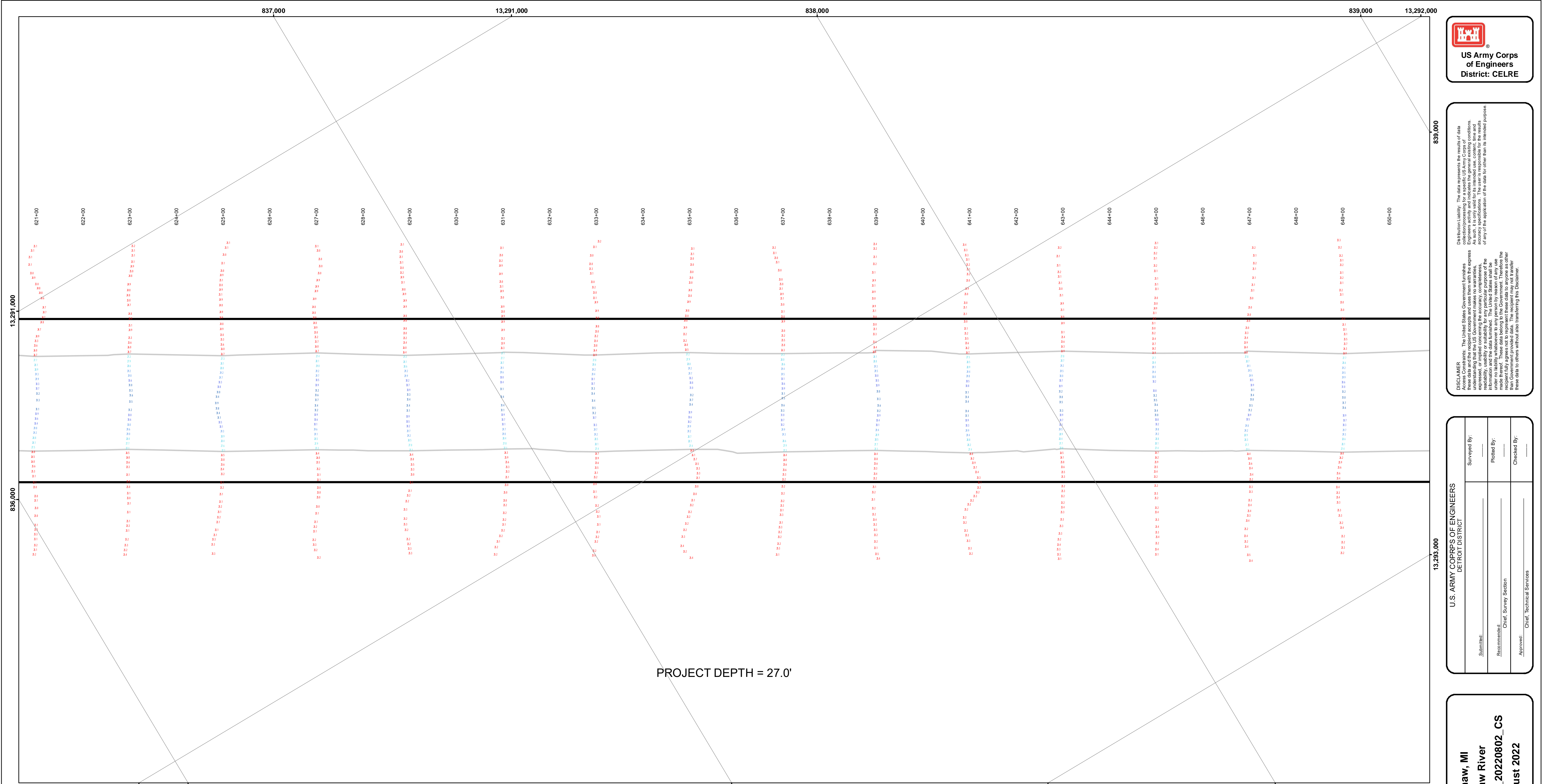
Submitted:	Surveyed By:
Recommended:	Plotted By:
Approved:	Checked By:

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
**02 August 2022**

**Sheet Reference Number**  
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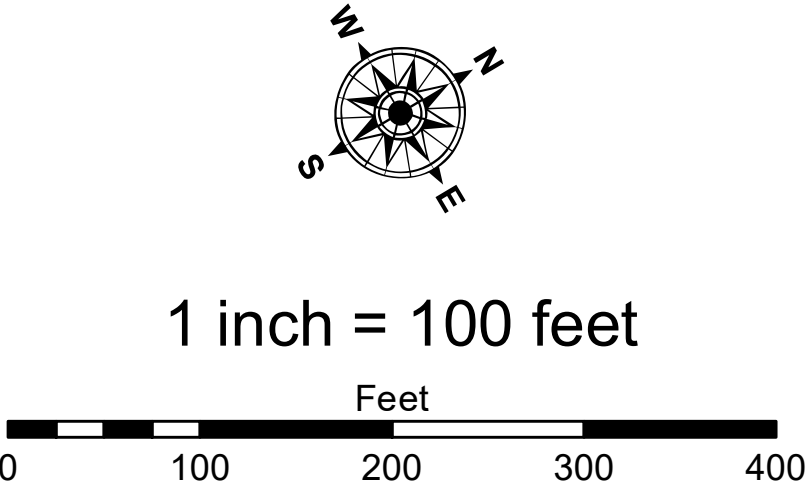
Revision Number: 4.2-2022/08/20





- 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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2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS  
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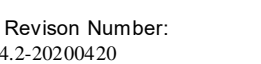
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Submitted By: _____	Surveyed By: _____
Recommended By: _____	Plotted By: _____
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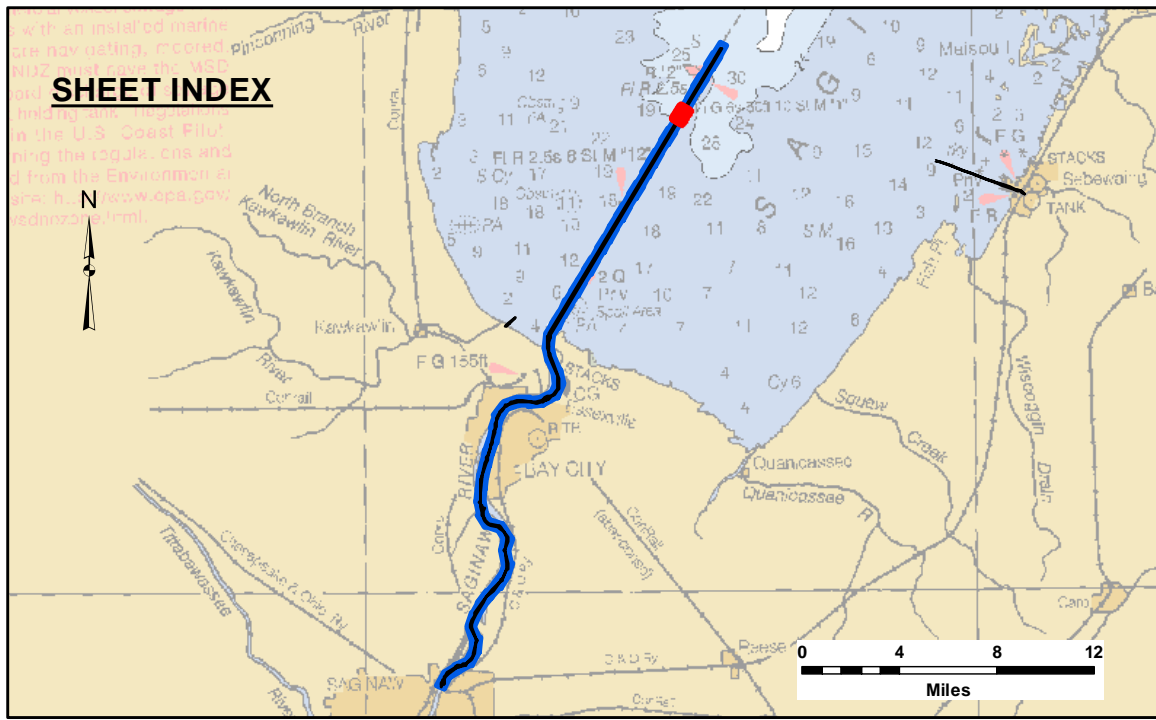
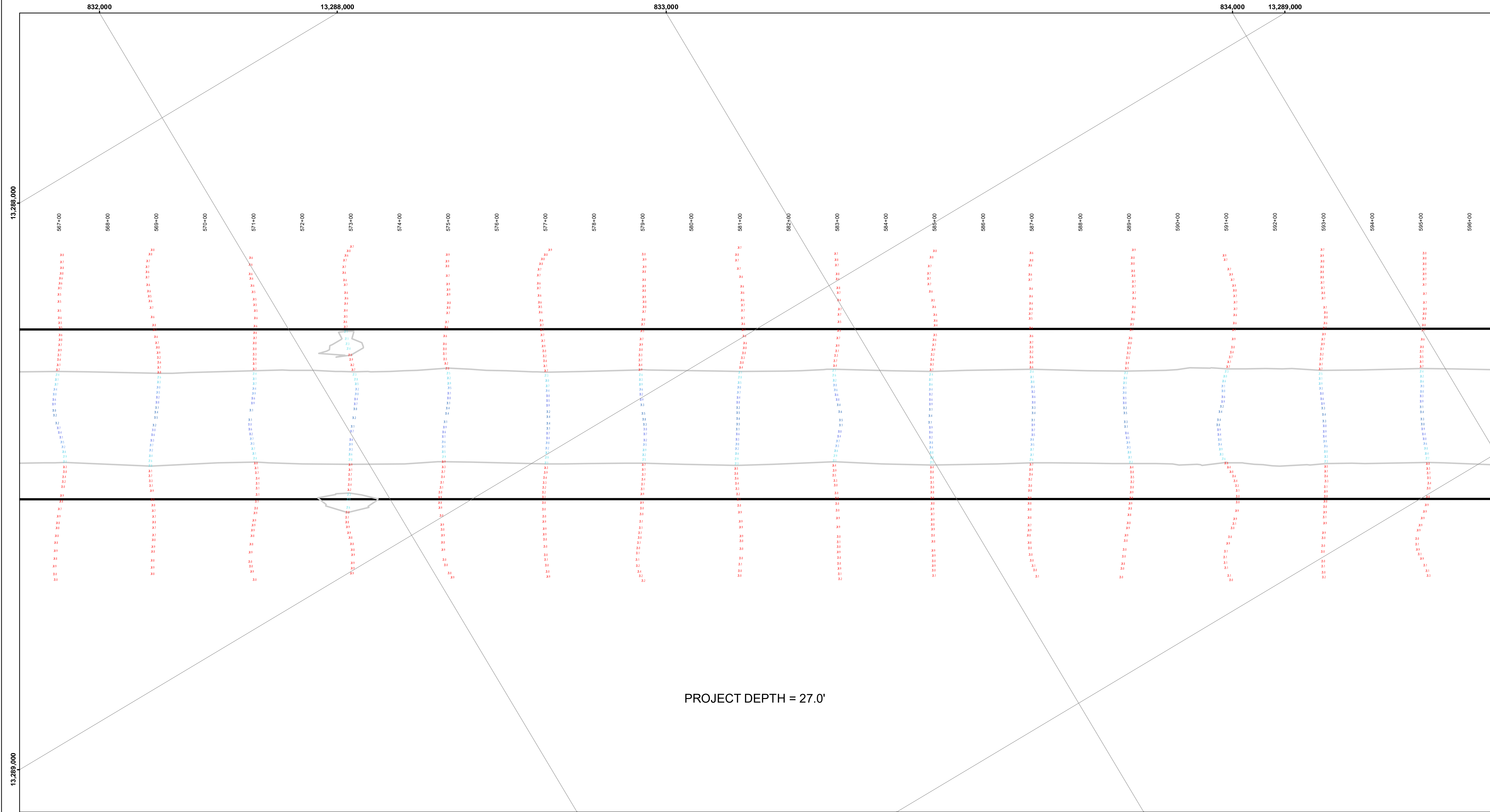
Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20220802\_CS  
02 August 2022

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Reference  
Number  
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Revision Number:  
4.2-2022/04/20







**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'
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Feet

0 100 200 300 400

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

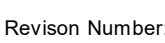
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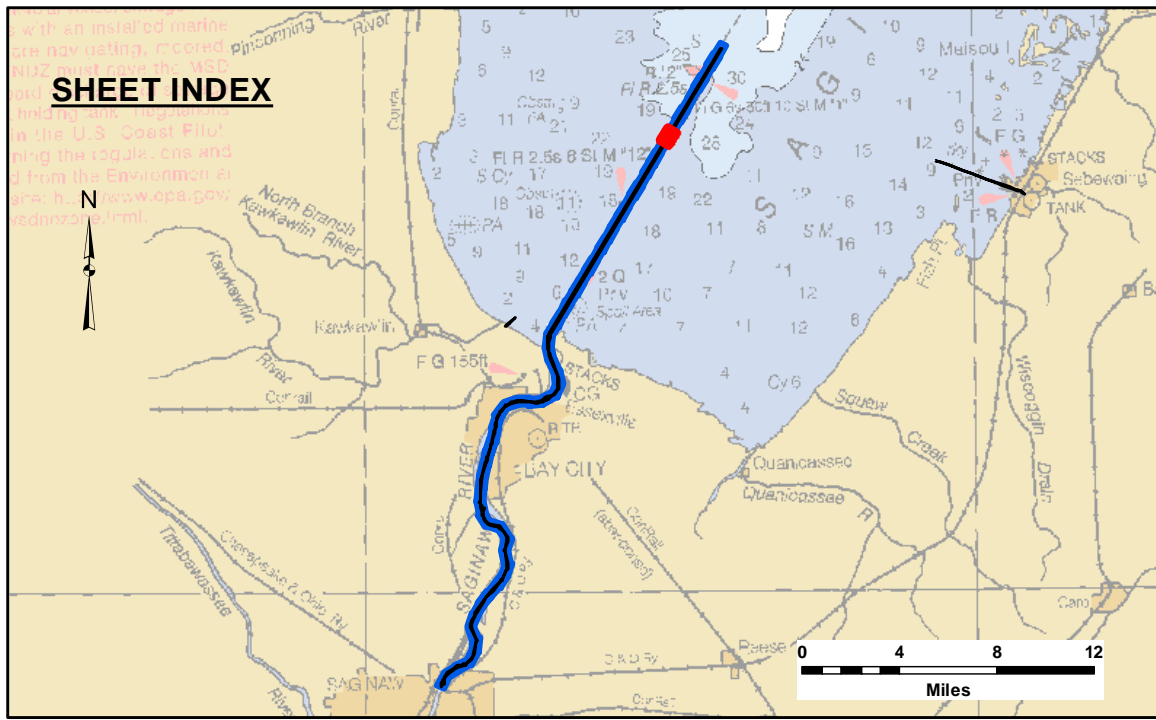
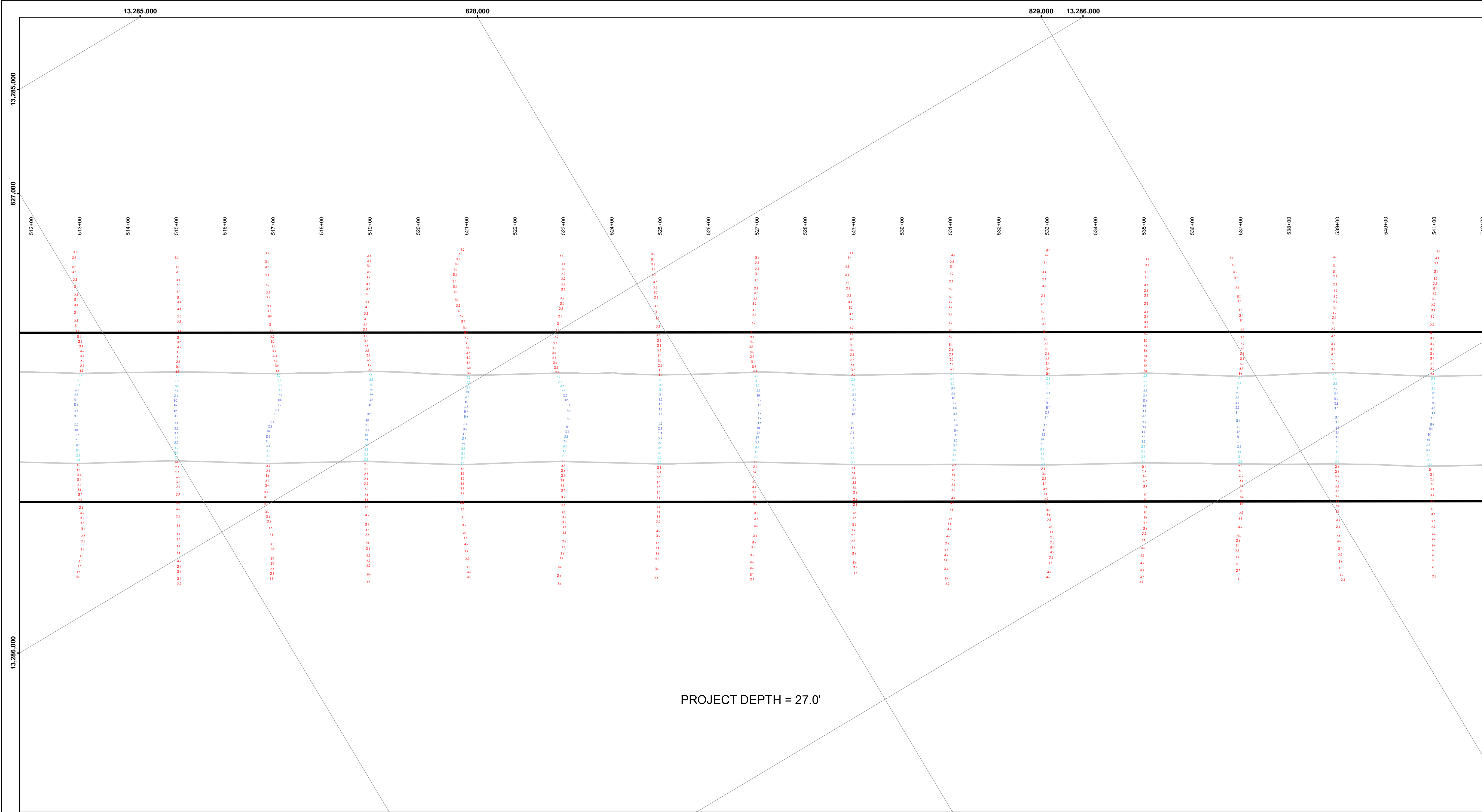
Submitted: _____	Surveyed By: _____
	Plotted By: _____
	Checked By: _____

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
**02 August 2022**

**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
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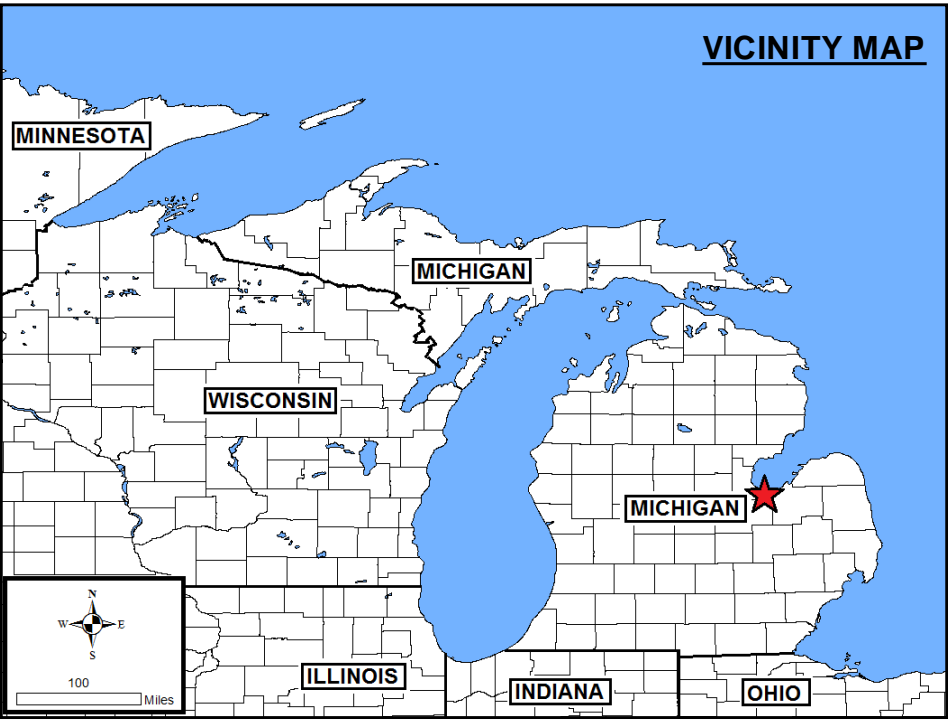
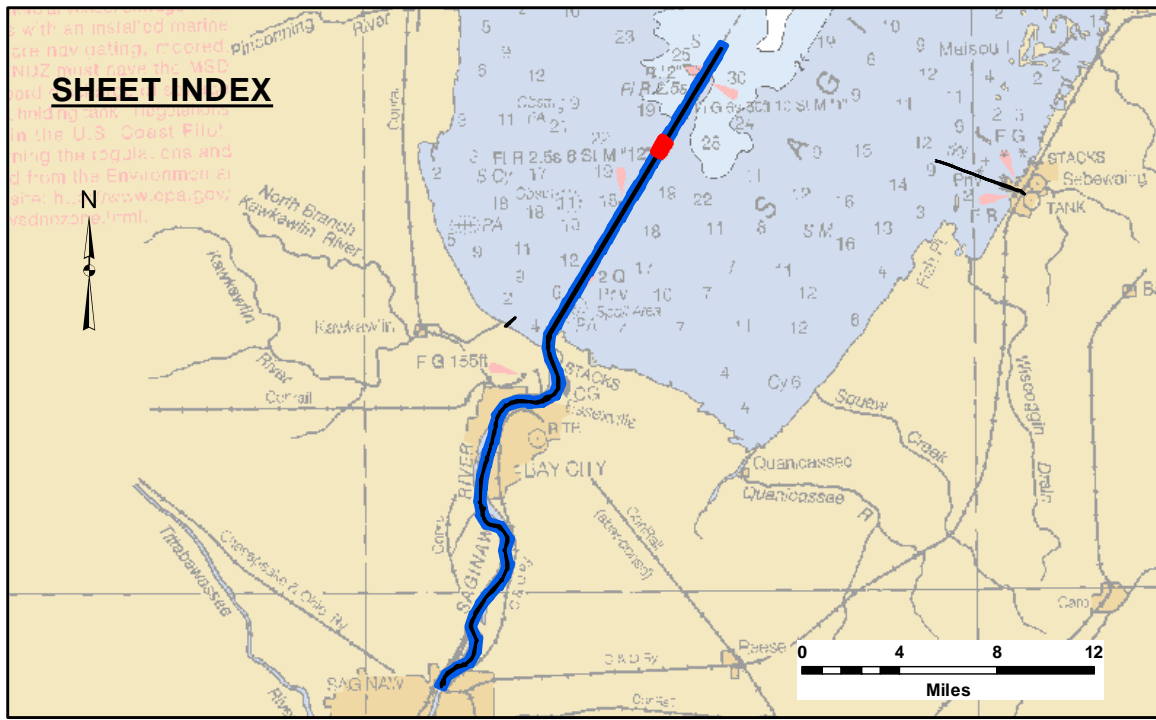
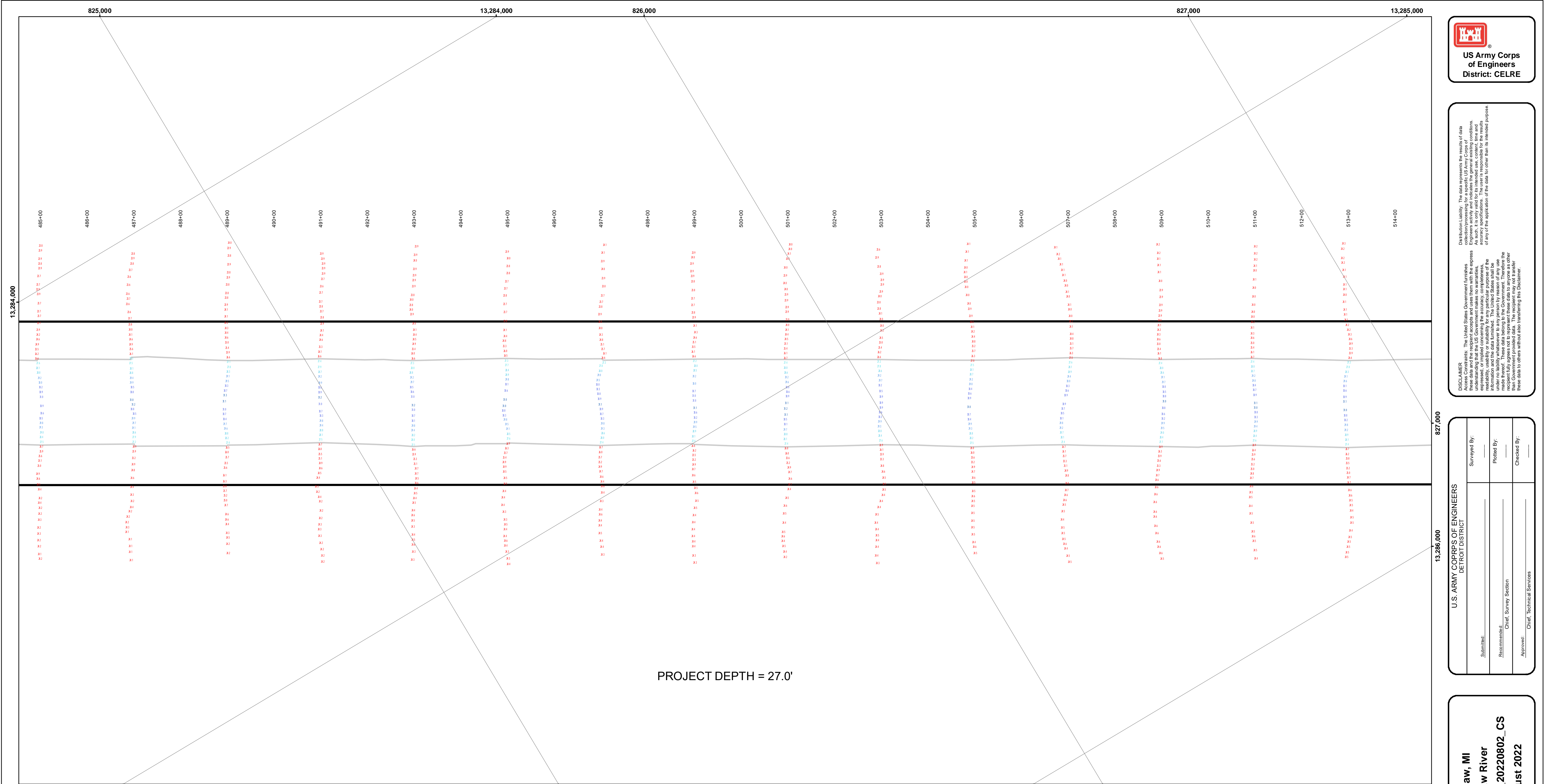
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Surveyed By: _____
	Plotted By: _____
	Checked By: _____

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
**02 August 2022**

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**LEGEND**

- ..... Cable Submarine
- - Cable Overhead
- Placement Area
- ┆ Beacon, General
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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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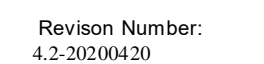
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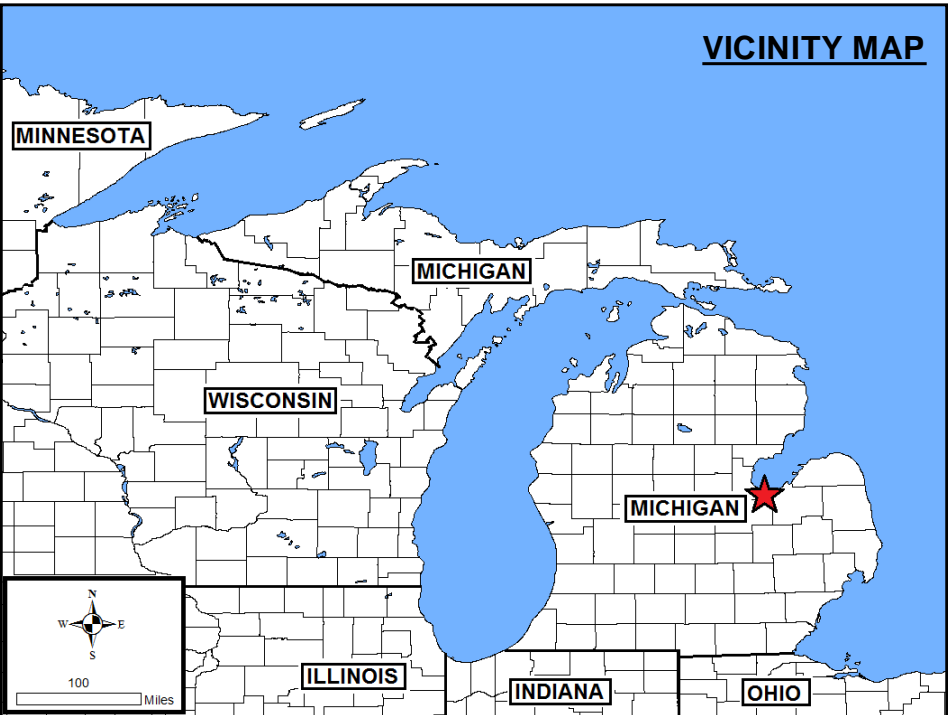
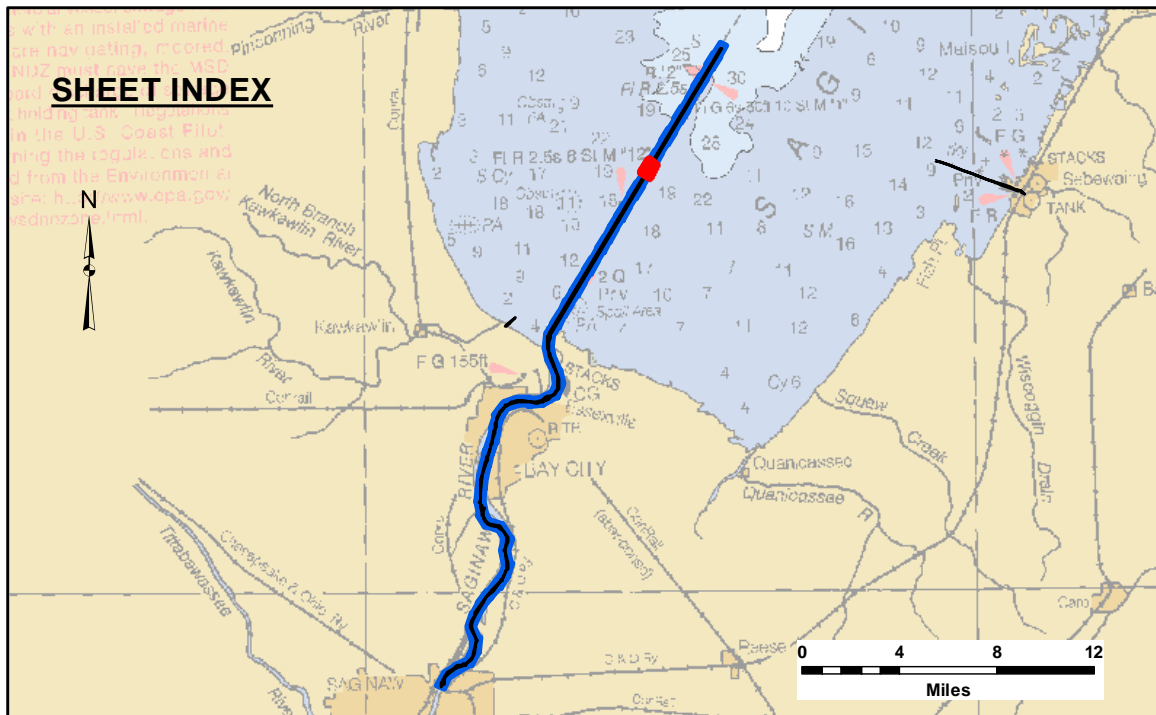
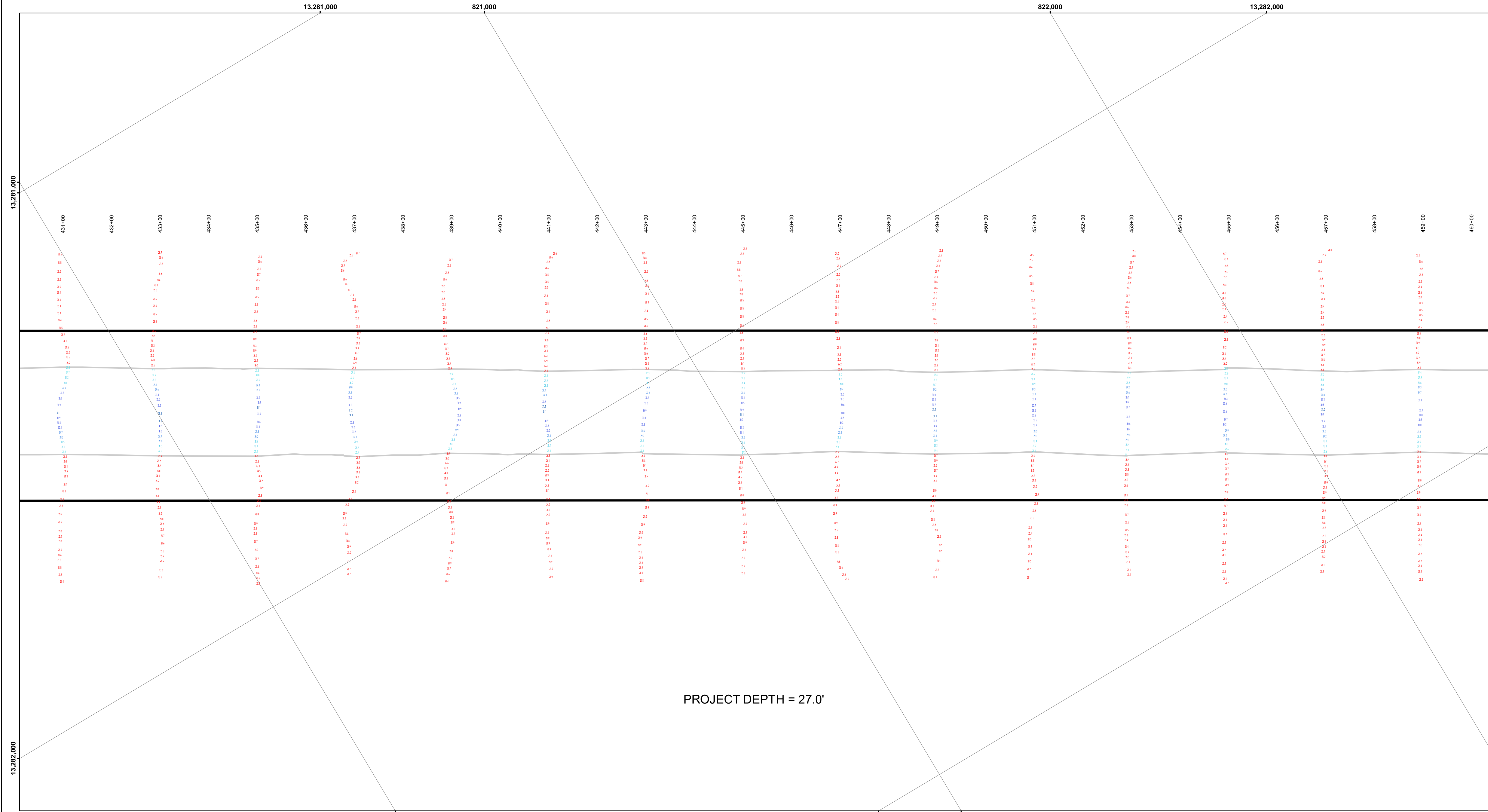
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Surveyed By: _____
	Plotted By: _____
	Checked By: _____
Submitted: _____	Recommended: _____
Chief, Survey Section	
Chief, Technical Services	

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
**02 August 2022**

**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'

1 inch = 100 feet

Feet

0 100 200 300 400

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

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DETROIT DISTRICT

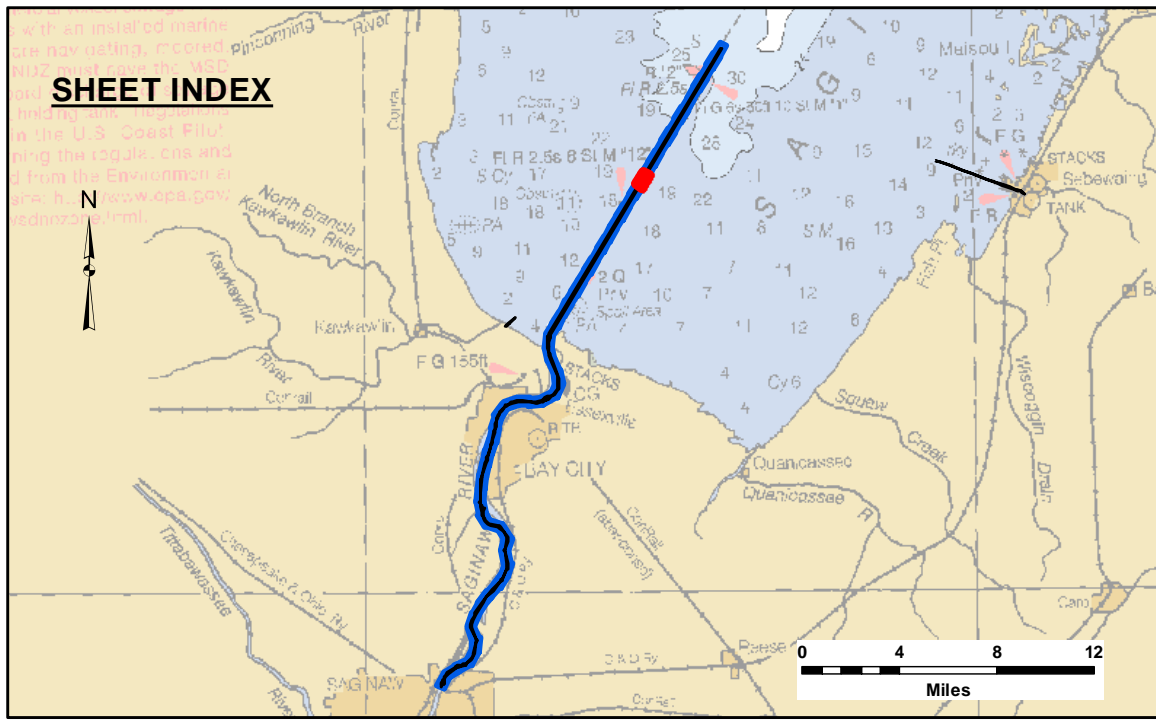
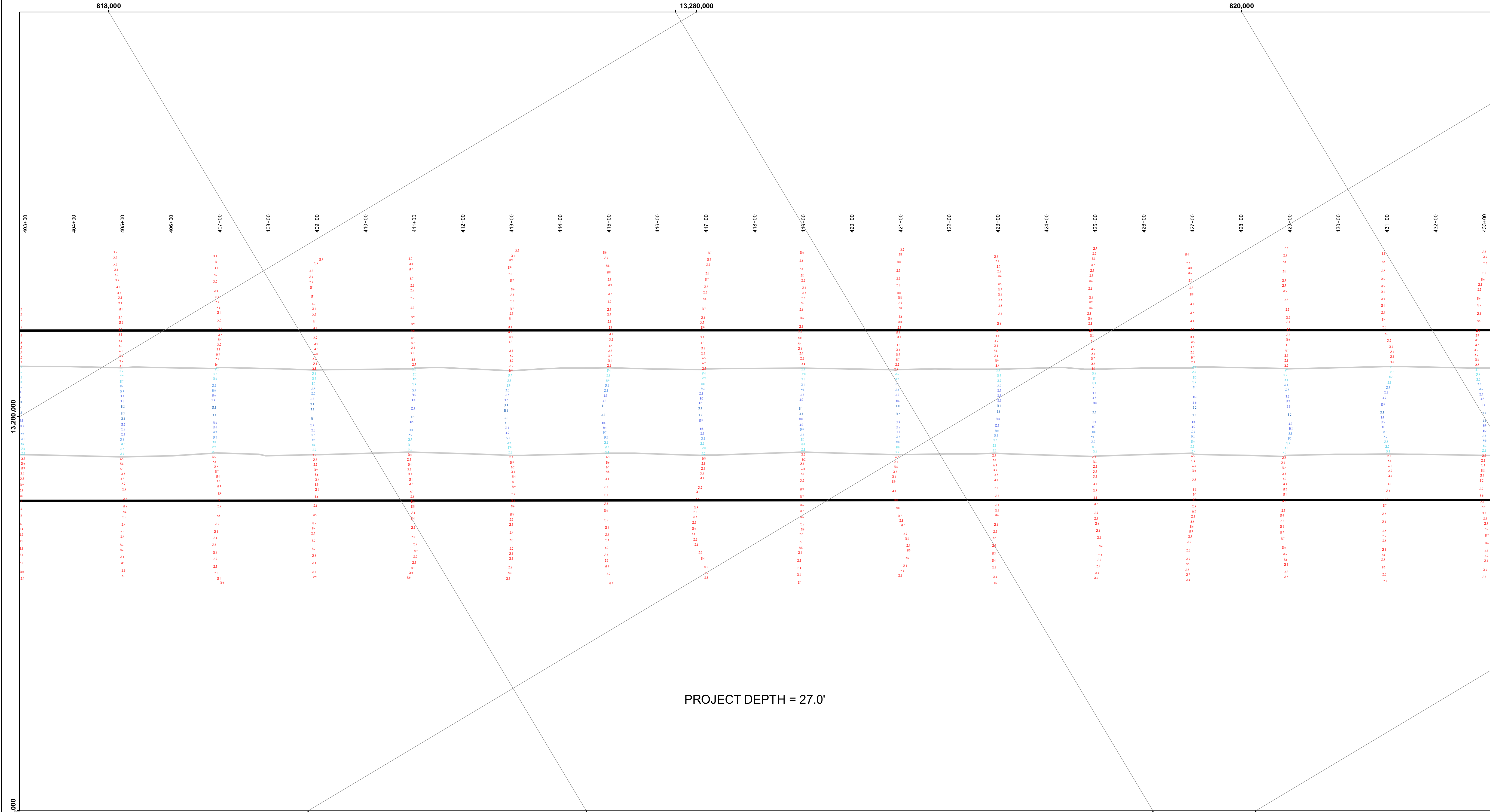
Submitted:	Surveyed By:
Recommended:	Plotted By:
Approved:	Checked By:

Chief, Survey Section  
Chief, Technical Services

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
**02 August 2022**

**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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0 100 200 300 400

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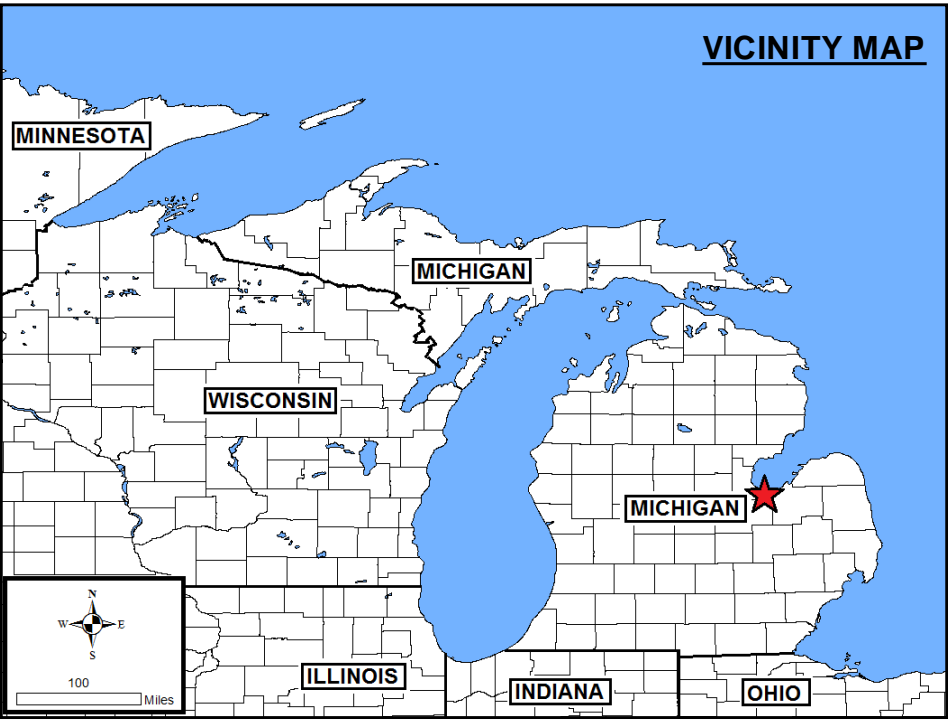
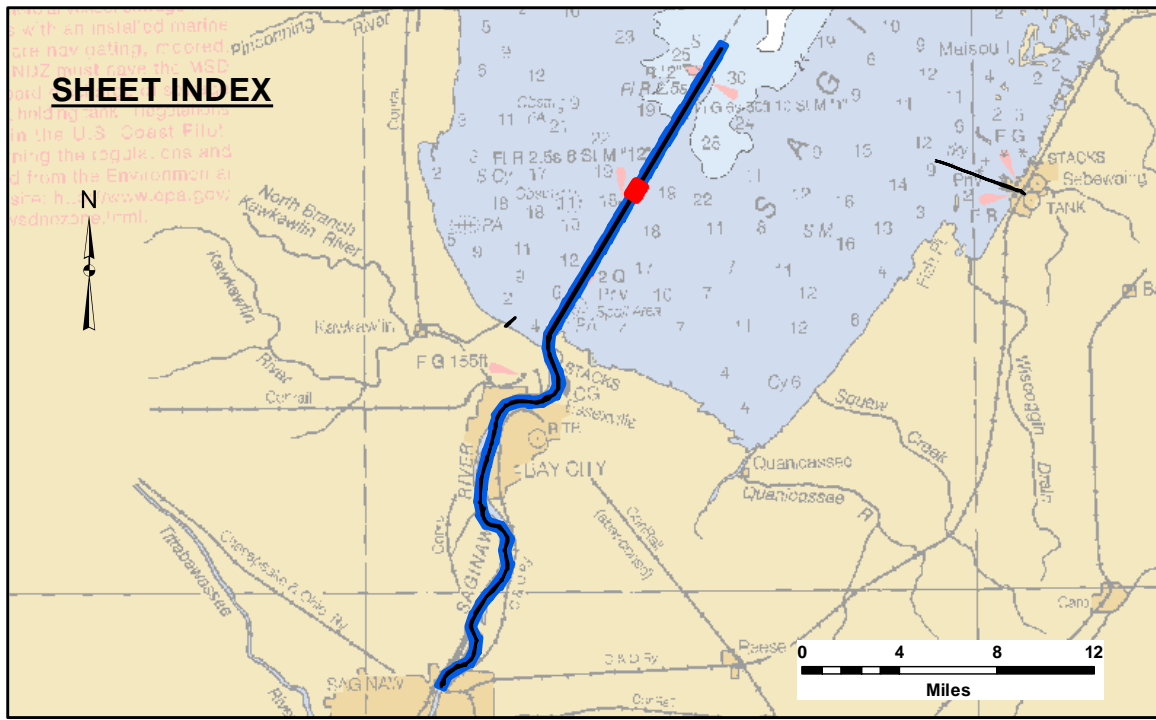
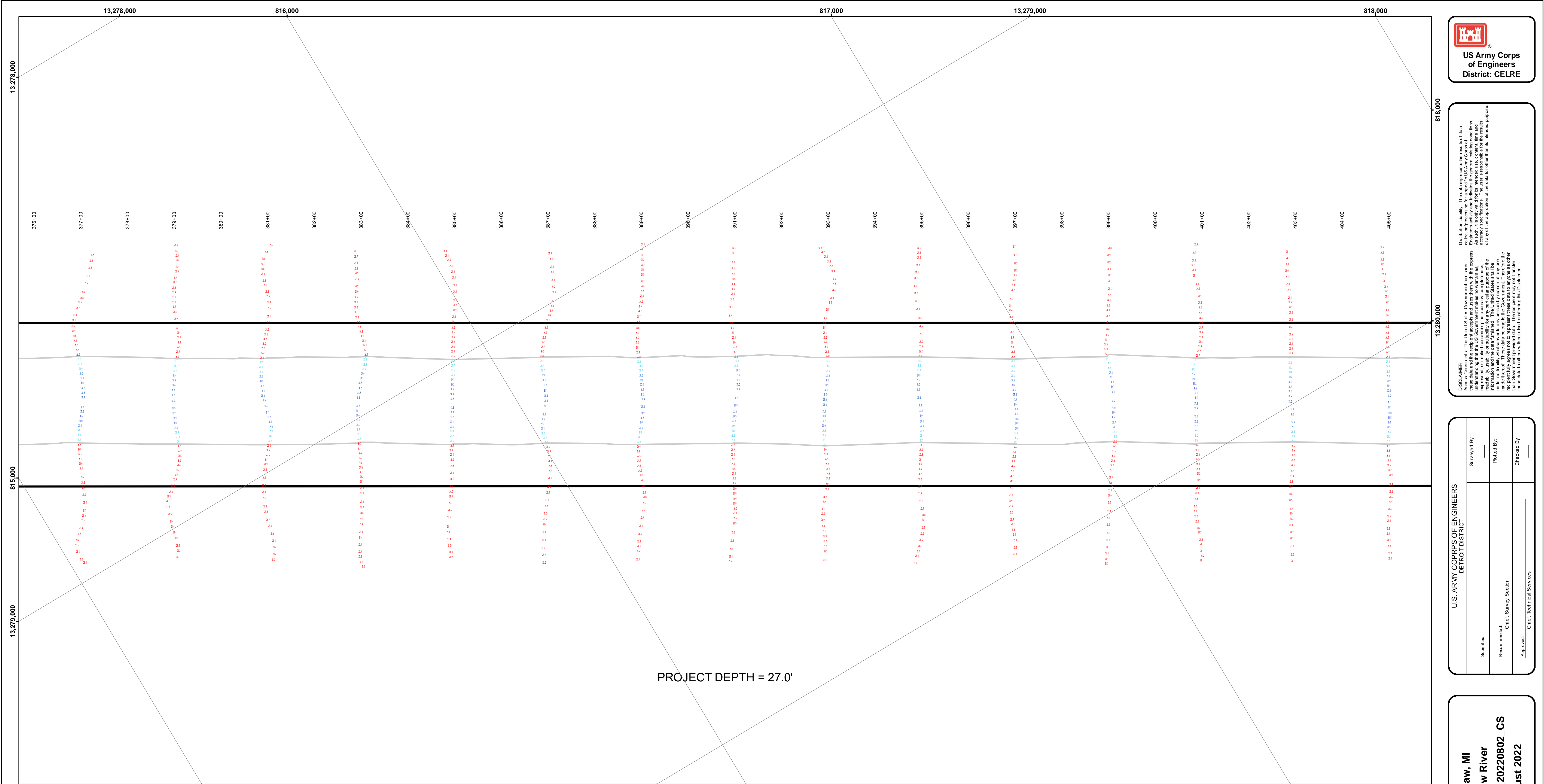
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted By: _____	Surveyed By: _____
	Recommended By: _____	Plotted By: _____
	Approved: _____	Checked By: _____

Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20220802\_CS  
02 August 2022

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Reference  
Number  
13 of 62

Revision Number:  
4.2-2022/04/20



**LEGEND**

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

**SOUNDING LEGEND**

- LESS THAN PROJECT DEPTH
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MOTION COMPENSATION: APPLANIX POS-MV4

SONAR: RESONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)

SOFTWARE: HYPACK

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS

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**US Army Corps  
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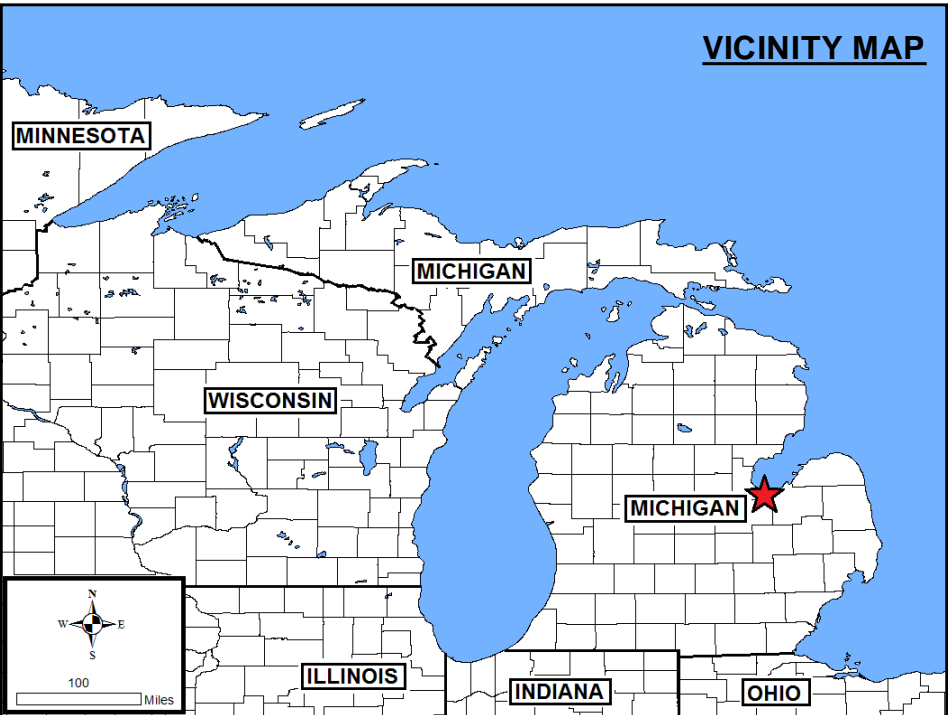
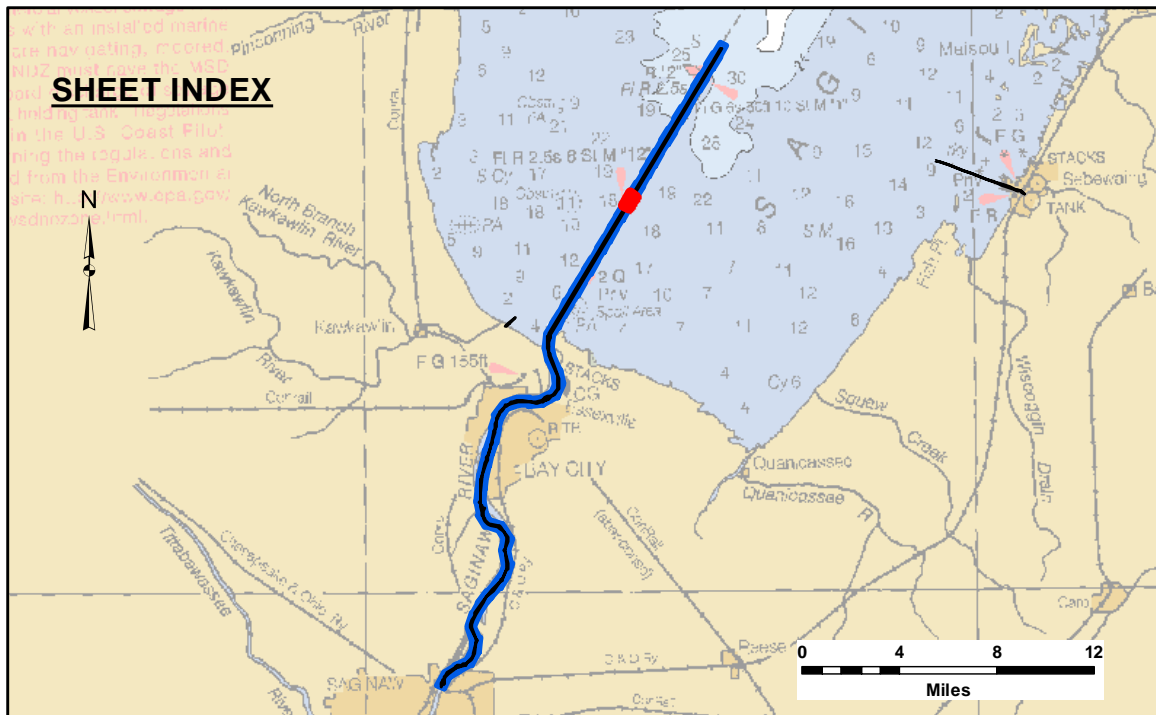
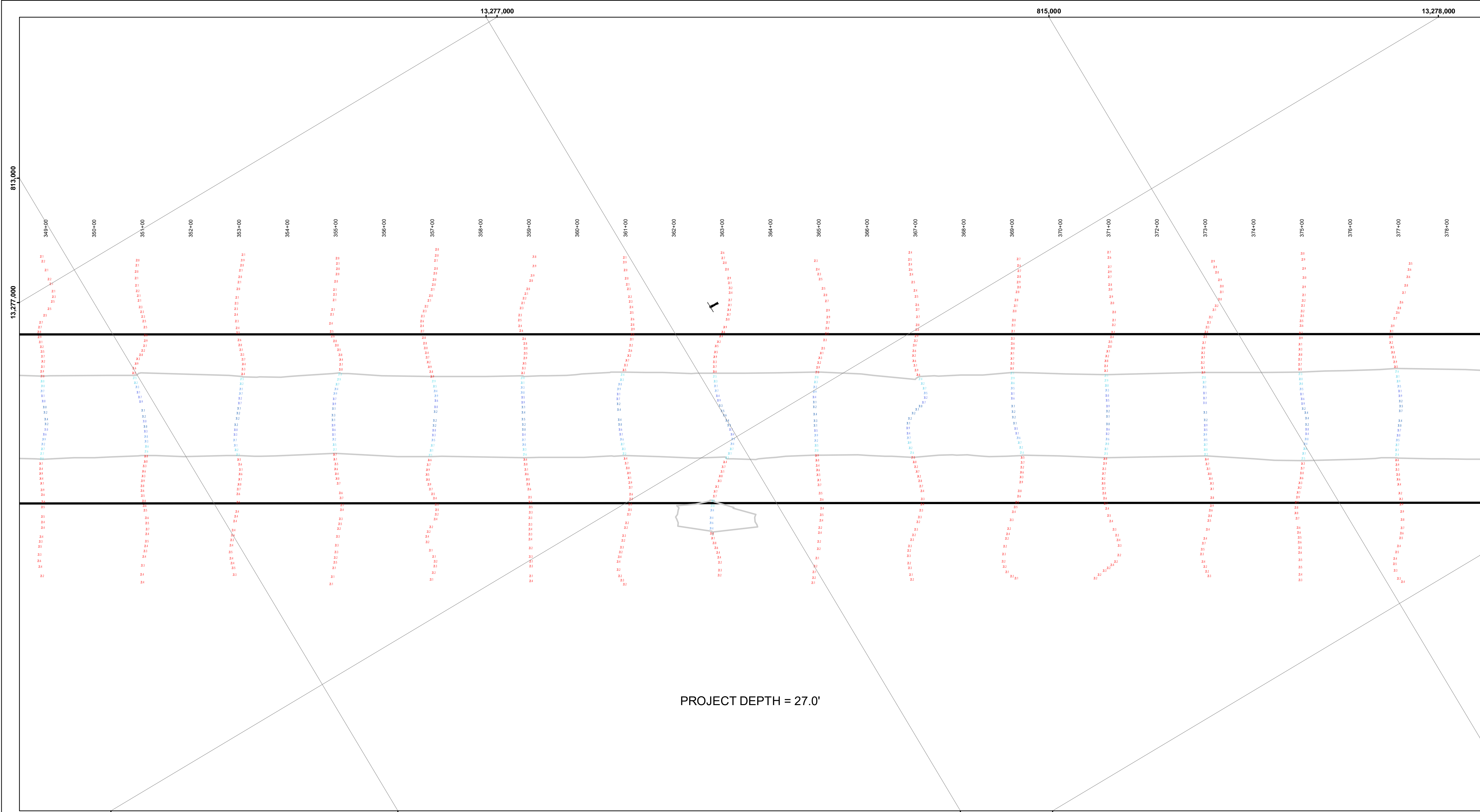
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Surveyed By:
	Plotted By:
	Checked By:

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
**02 August 2022**

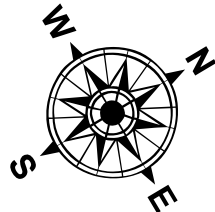
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Reference  
Number**  
**14 of 62**



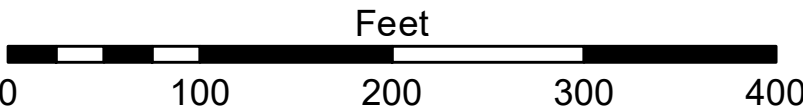


- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ┆ Beacon, General
  - Contour Lines
  - ▭ Channel\_Limits

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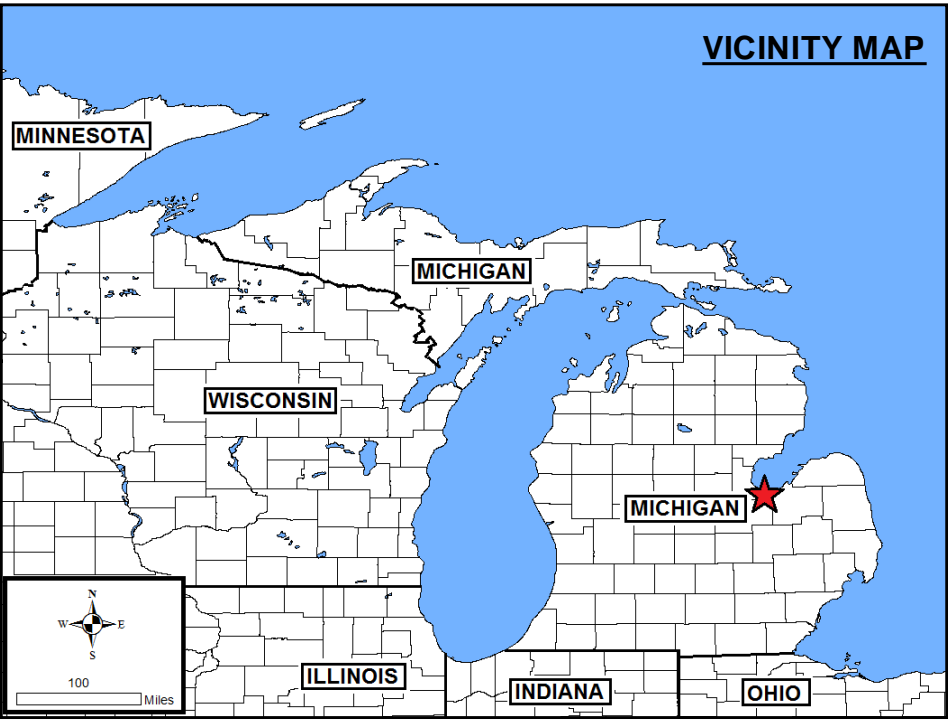
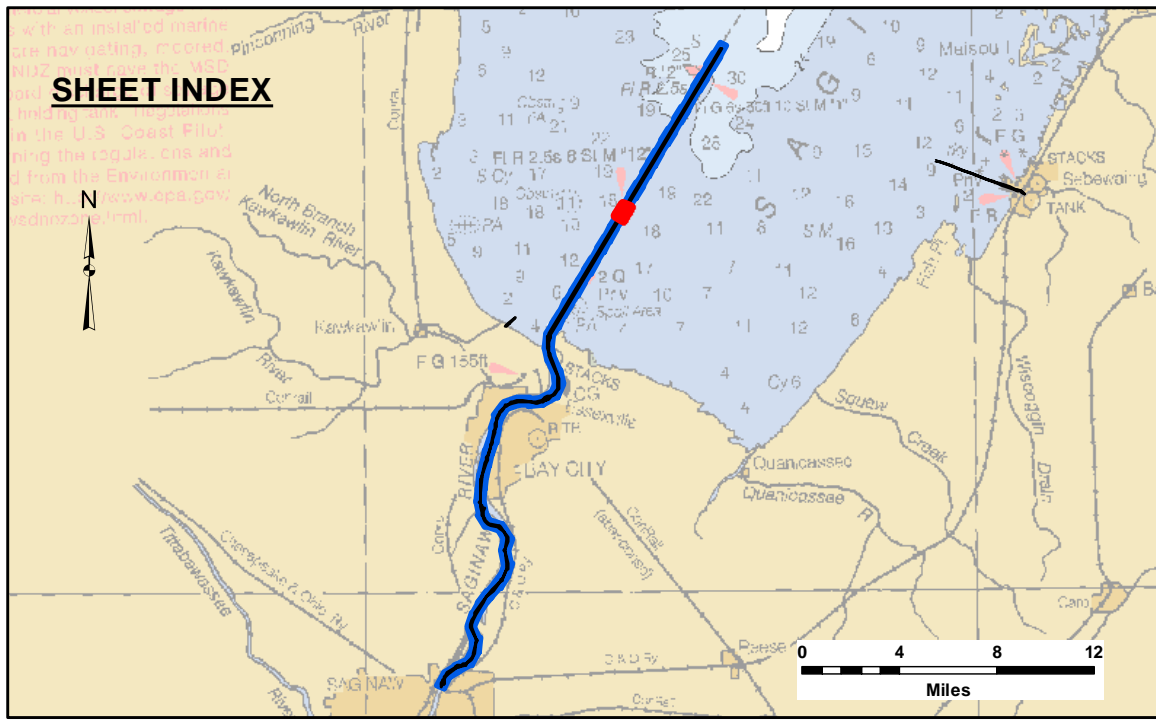
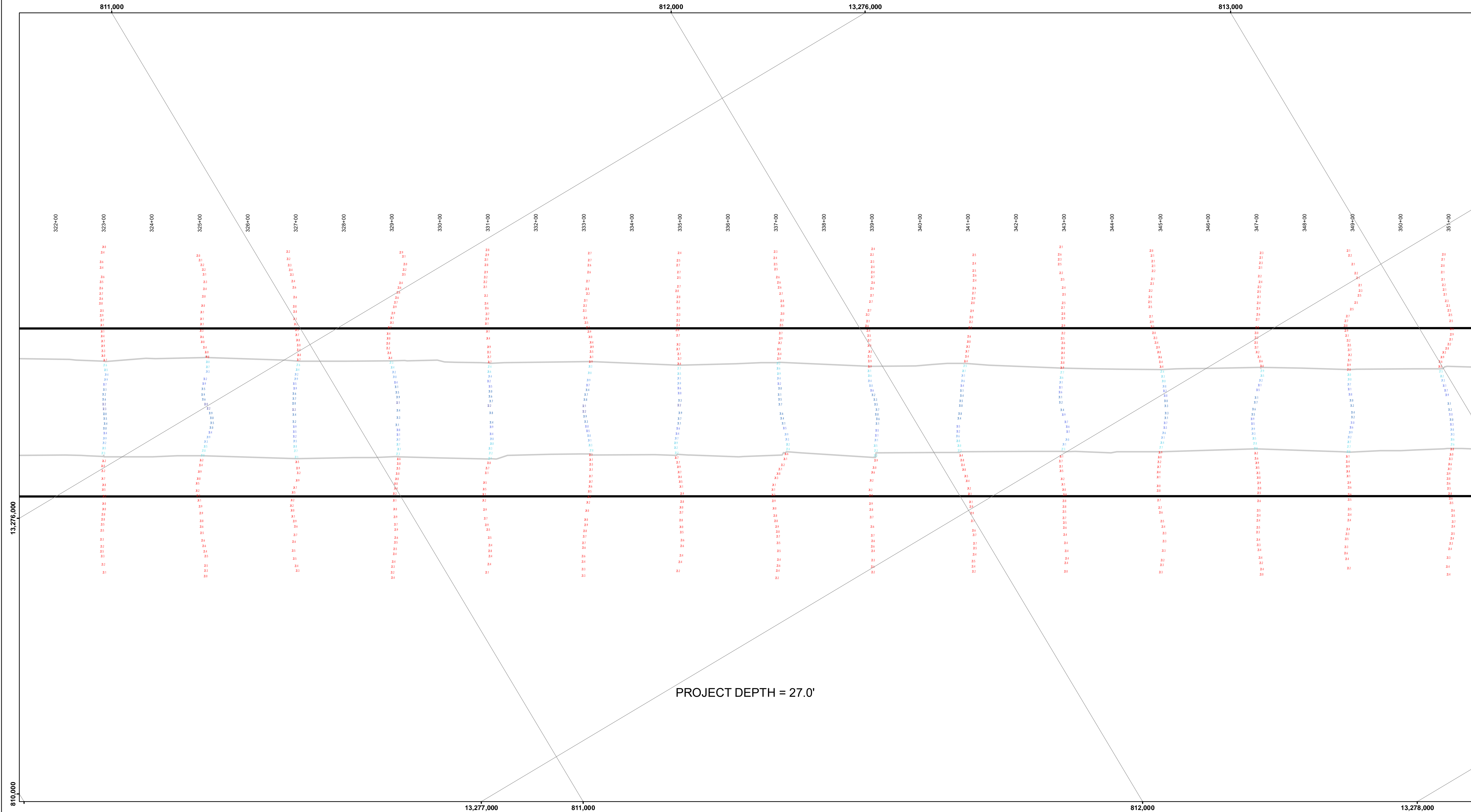
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	
Submitted By: _____	Surveyed By: _____
Recommended By: _____ Chief, Survey Section	Plotted By: _____
Approved By: _____ Chief, Technical Services	Checked By: _____

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
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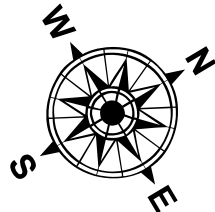
**Sheet Reference Number**  
**15 of 62**

Revision Number:  
4.2-2022/04/20

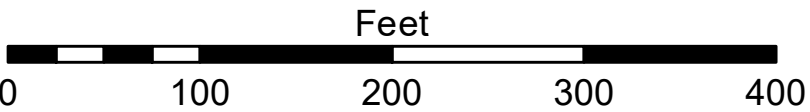


- LEGEND**
- ..... Cable Submarine
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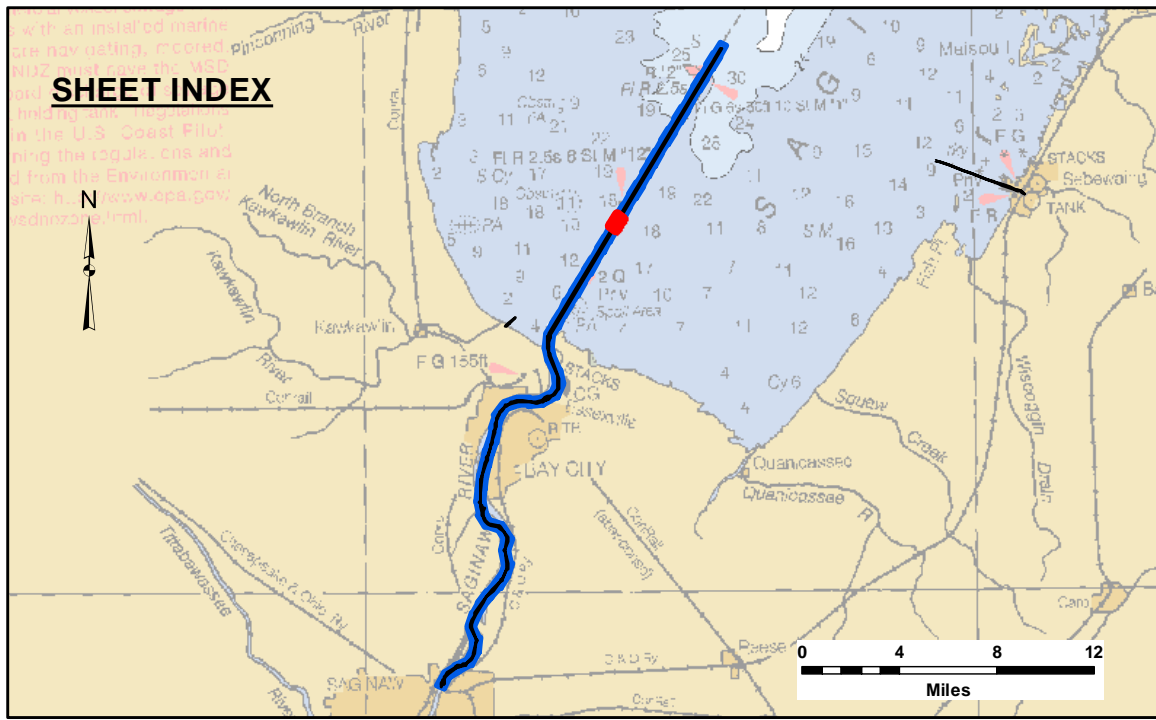
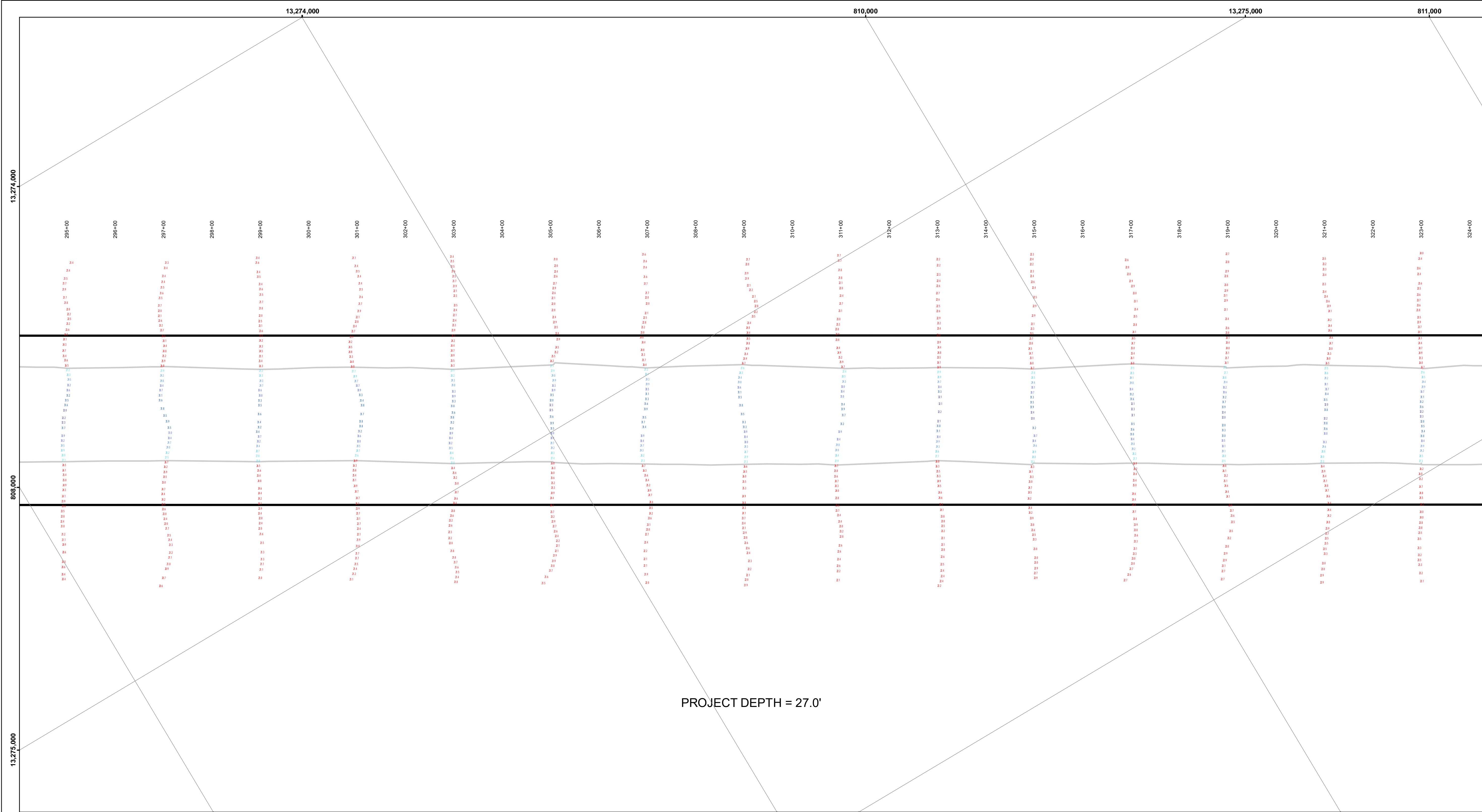
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Surveyed By:
	Submitted:
	Plotted By:
Saginaw, MI Saginaw River SH_01_SAG_20220802_CS 02 August 2022	Recommended: Chief, Survey Section
	Checked By:
	Approved: Chief, Technical Services

Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20220802\_CS  
02 August 2022

Sheet  
Reference  
Number  
16 of 62

Revision Number:  
4.2-202/004.20





**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**

Feet

0 100 200 300 400

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POSITIONING: APPLANIX POS-MV4 W/ VRS/RTK OR MARINESTAR GNSS. MOTION COMPENSATION: APPLANIX POS-MV4 SONAR: RS2SONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM) SOFTWARE: HYPACK

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



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

**Saginaw, MI**

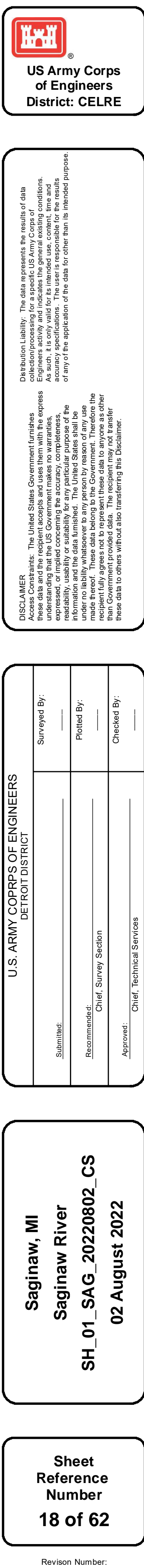
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**SH\_01\_SAG\_20220802\_CS**

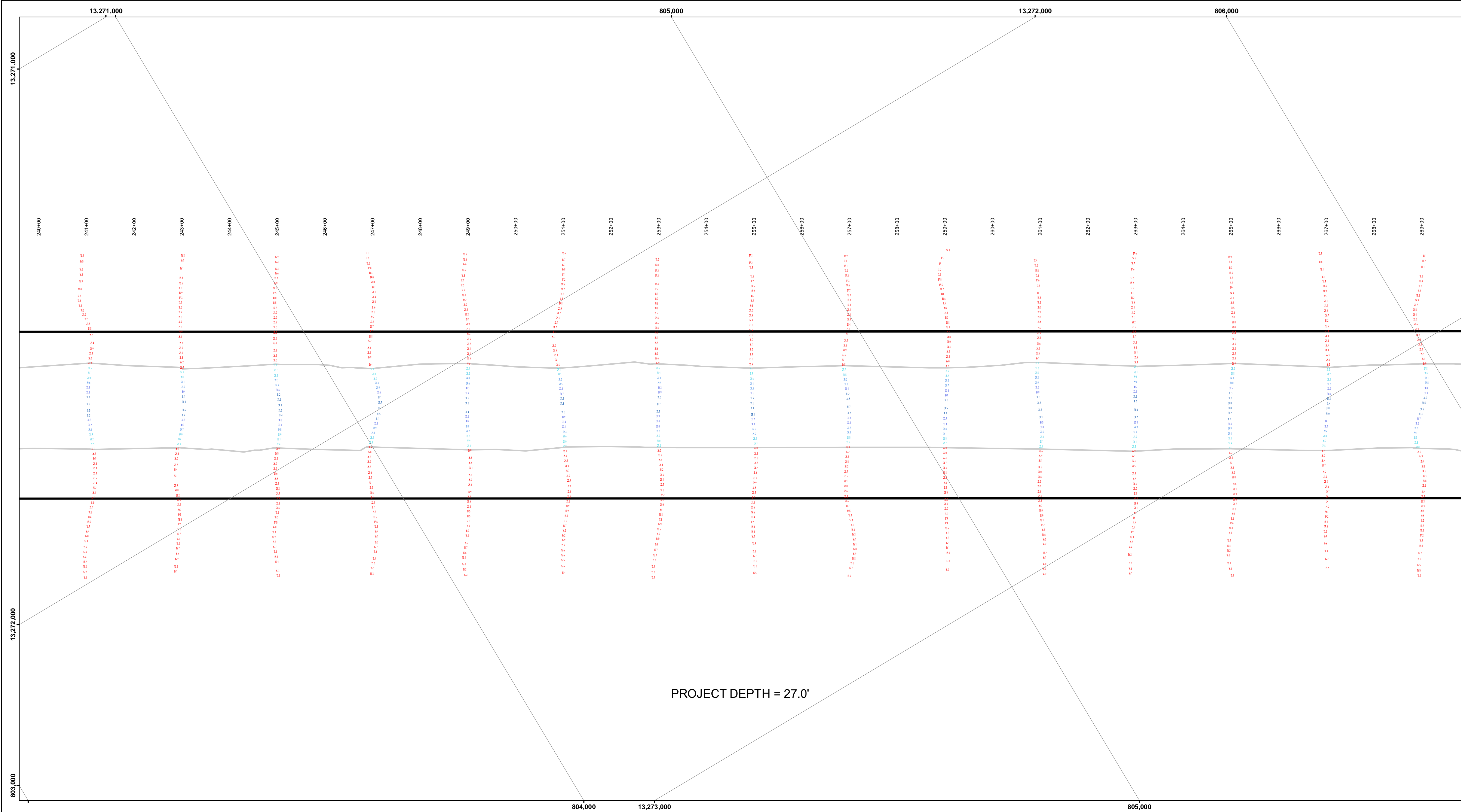
**02 August 2022**

**Sheet Reference Number**

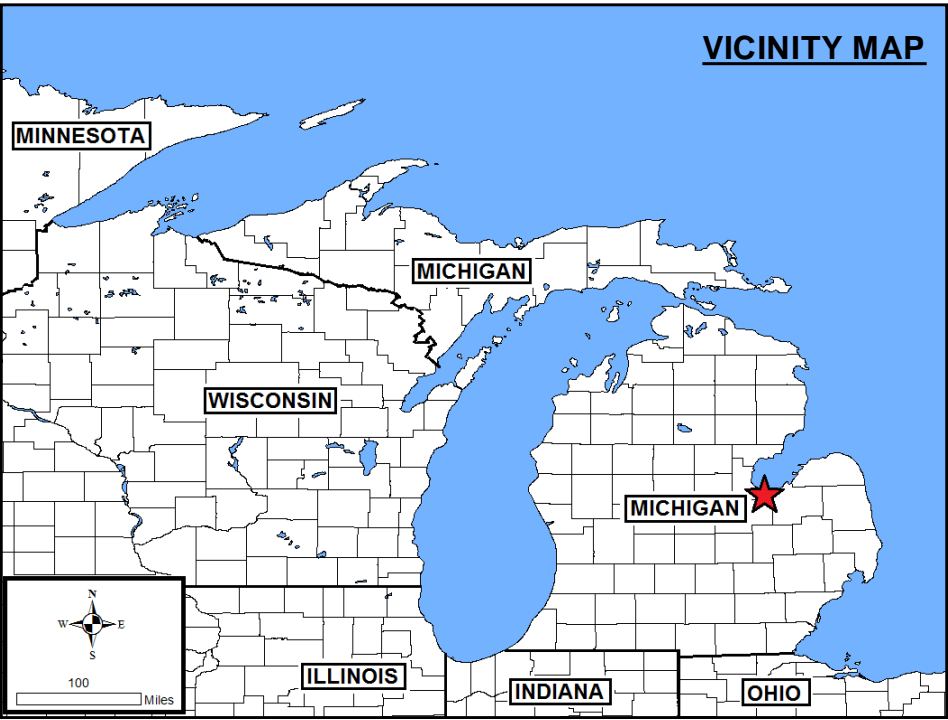
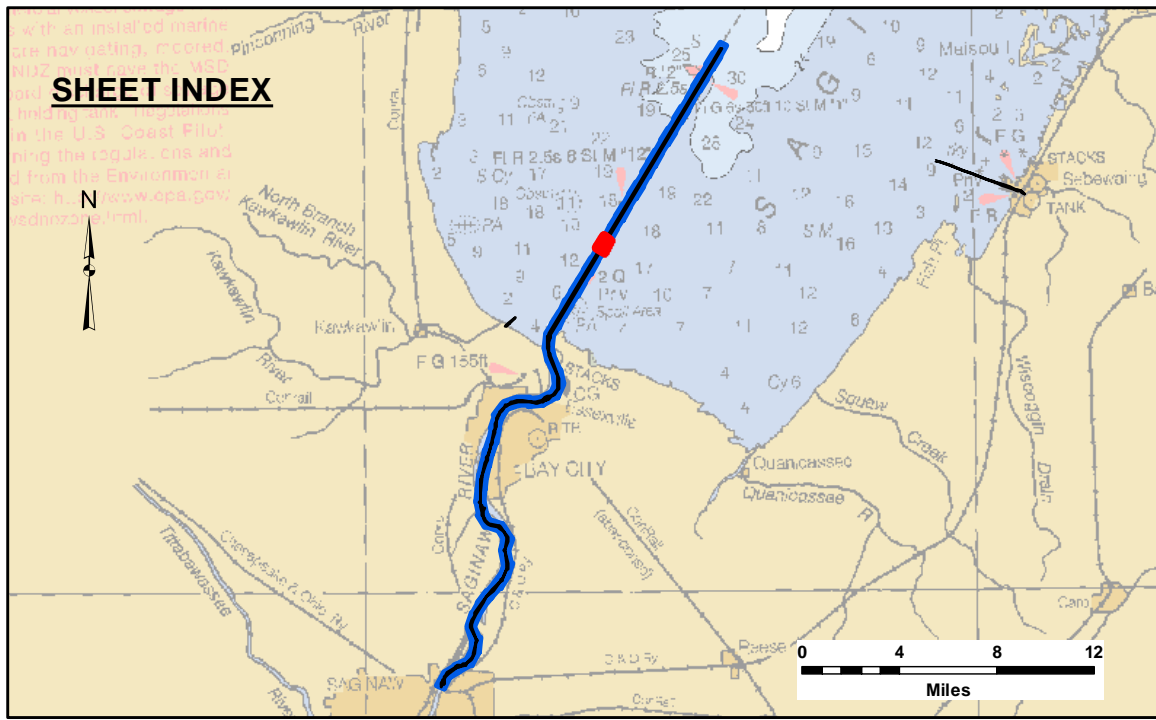
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PROJECT DEPTH = 27.0'

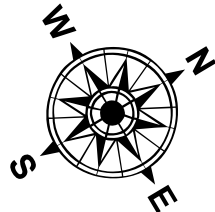


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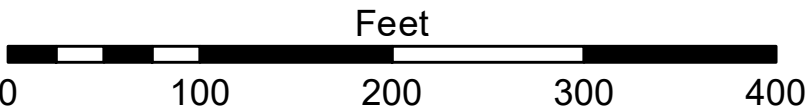
- ..... Cable Submarine
- - Cable Overhead
- Placement Area
- Beacon, General
- Contour Lines
- Channel\_Limits

**SOUNDING LEGEND**

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



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

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U.S. ARMY CORPS OF ENGINEERS  
DETROIT DISTRICT

Surveyed By:

Plotted By:

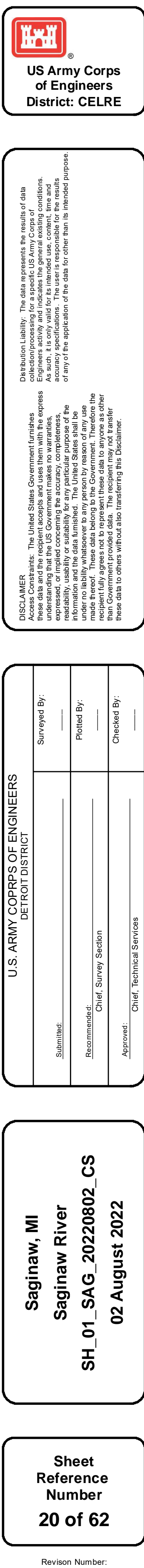
Checked By:

Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20220802\_CS

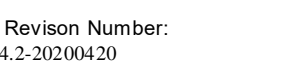
02 August 2022

Sheet  
Reference  
Number  
19 of 62

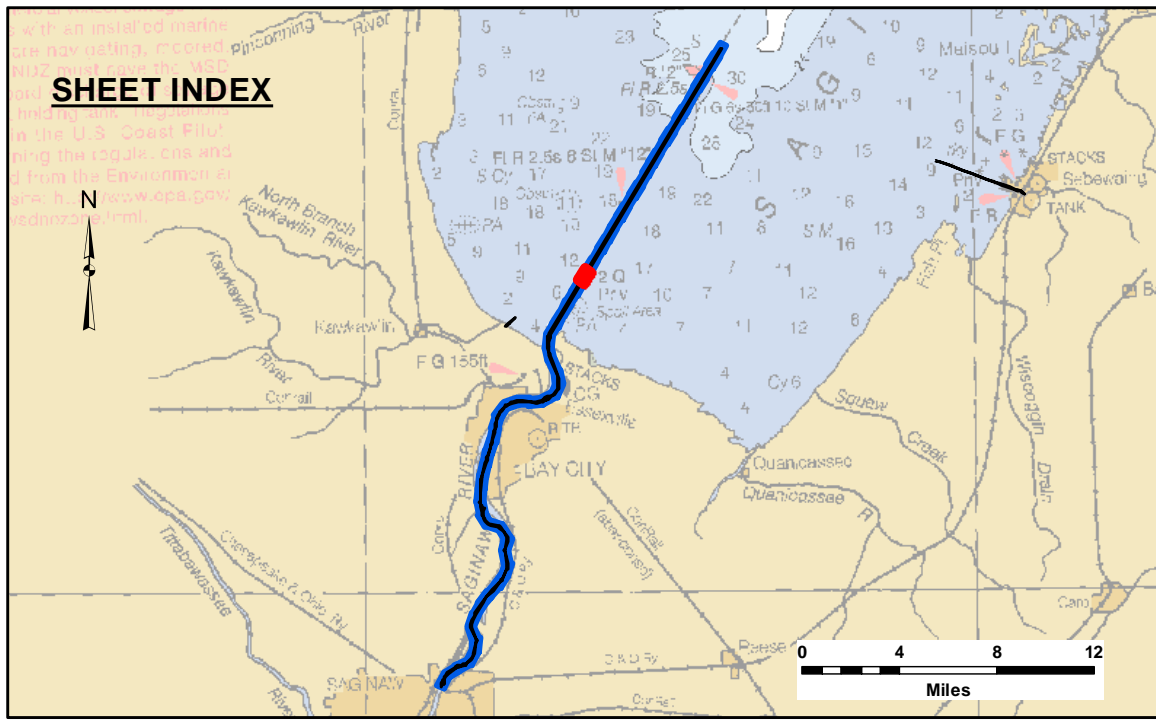
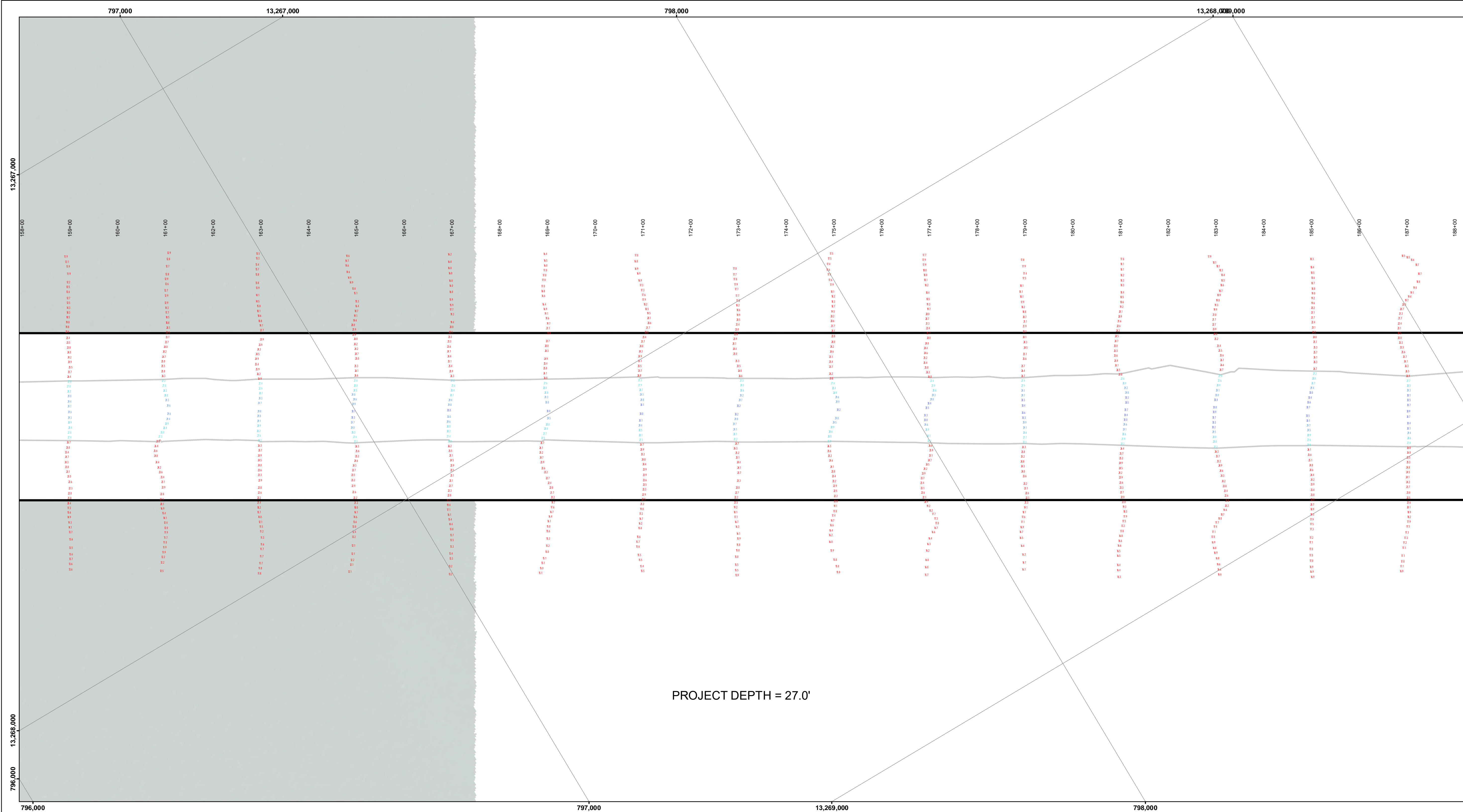
Revision Number:  
4.2-2022/04/20











**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

Feet

0 100 200 300 400

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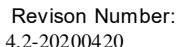
**U.S. ARMY CORPS OF ENGINEERS**  
DETROIT DISTRICT

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

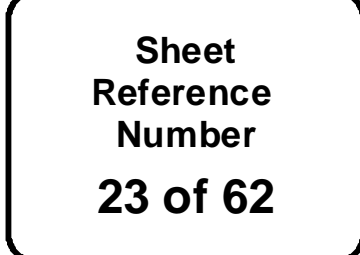
**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
**02 August 2022**

**Sheet Reference Number**  
**22 of 62**

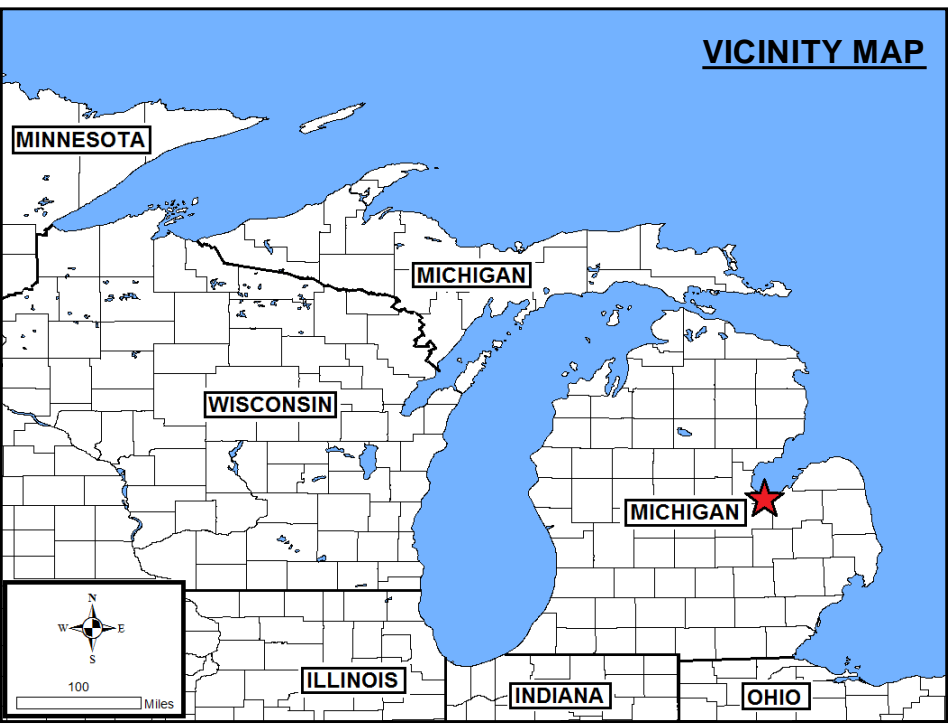
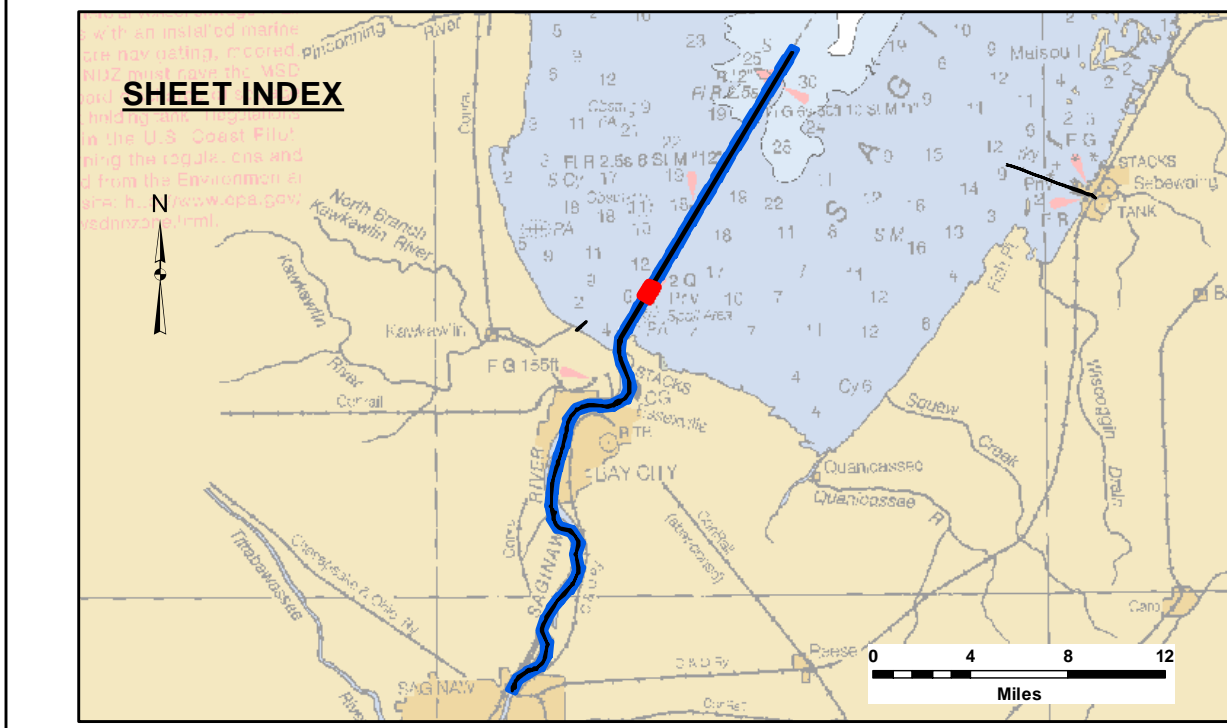
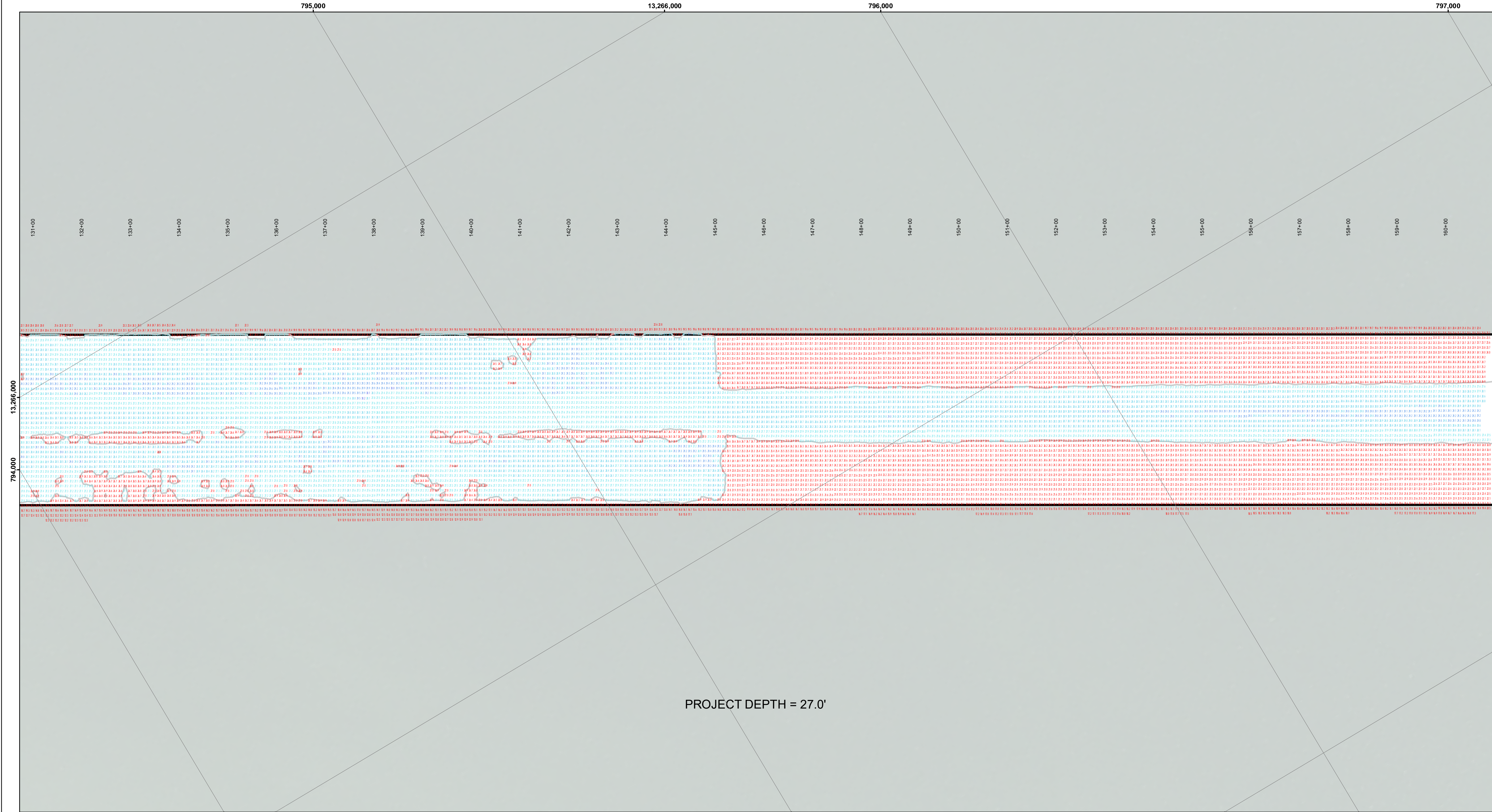






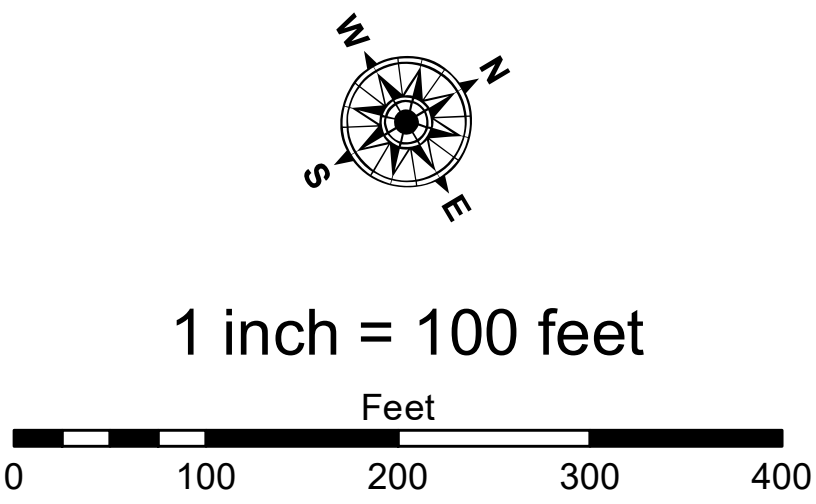






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ⊥ Beacon, General
  - Contour Lines
  - Channel Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
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POSITIONING: APPLANIX POS-MV4 W/ VRS/RTK OR MARINESTAR GNS.  
MOTION COMPENSATION: APPLANIX POS-MV4  
SONAR: RSONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)  
SOFTWARE: HYPACK

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS  
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U.S. ARMY CORPS OF ENGINEERS  
DETROIT DISTRICT

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

Reviewed by: \_\_\_\_\_

Plotted by: \_\_\_\_\_

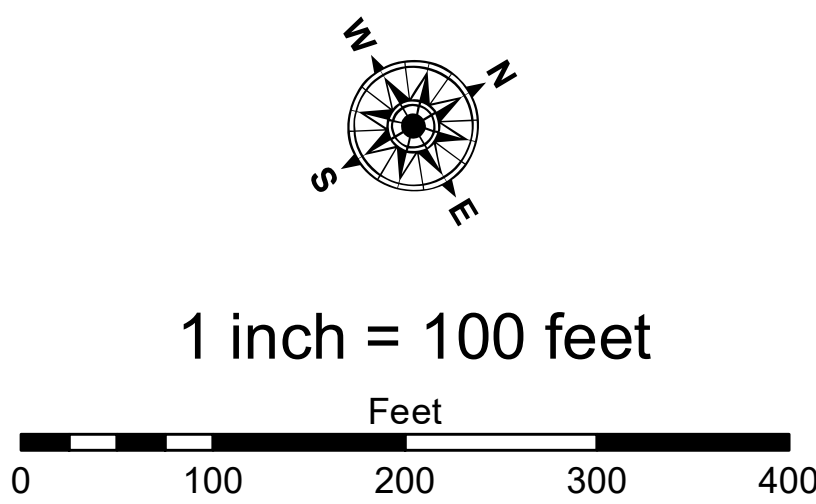
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Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20220823\_AD  
23 August 2022

Sheet  
Reference  
Number  
23 of 62

Revision Number:  
4.2-20240620

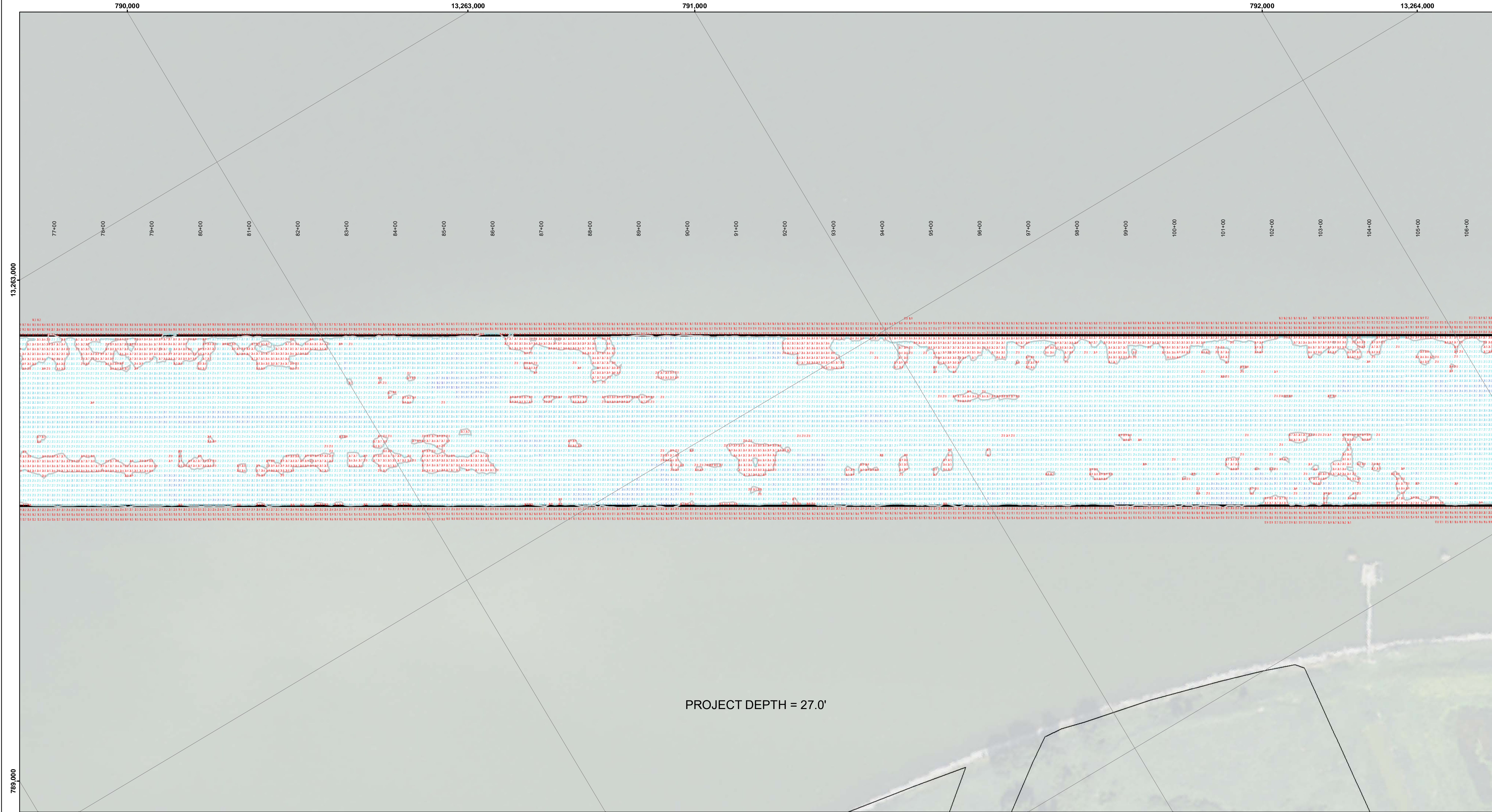




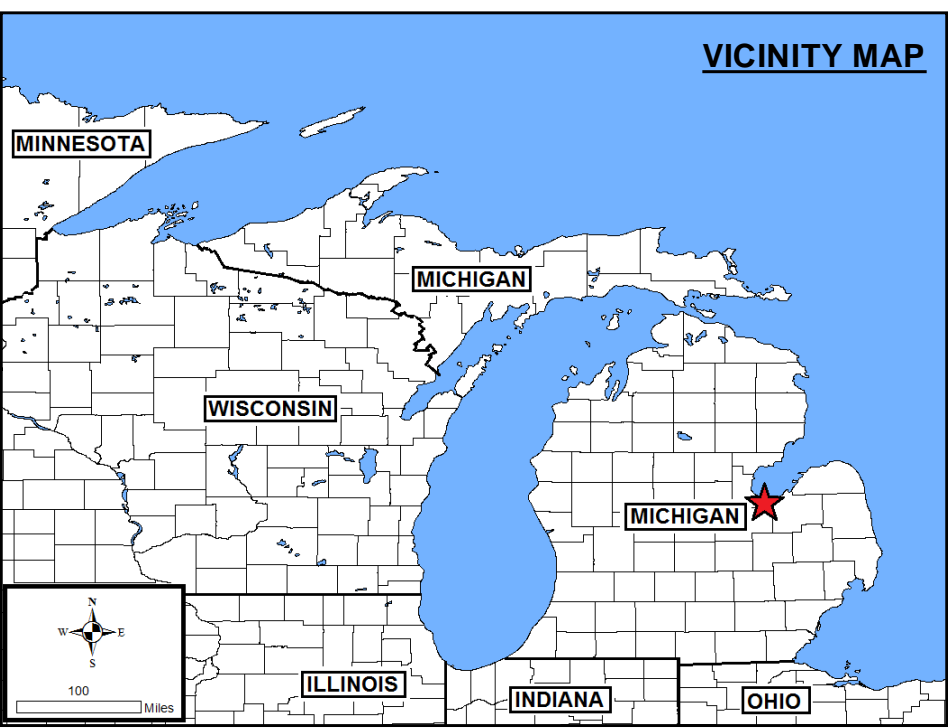
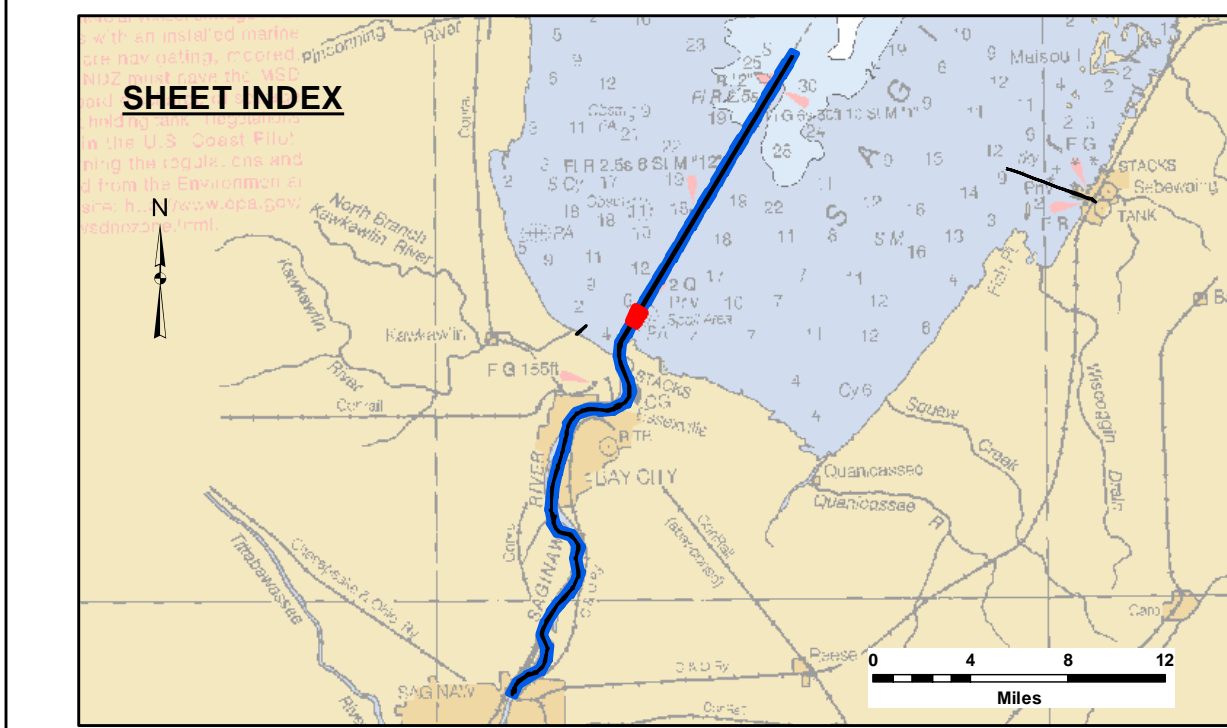
2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS  
ALL COORDINATES ARE IN U.S. SURVEY FEET.

Sheet  
Reference  
Number  
**24 of 62**



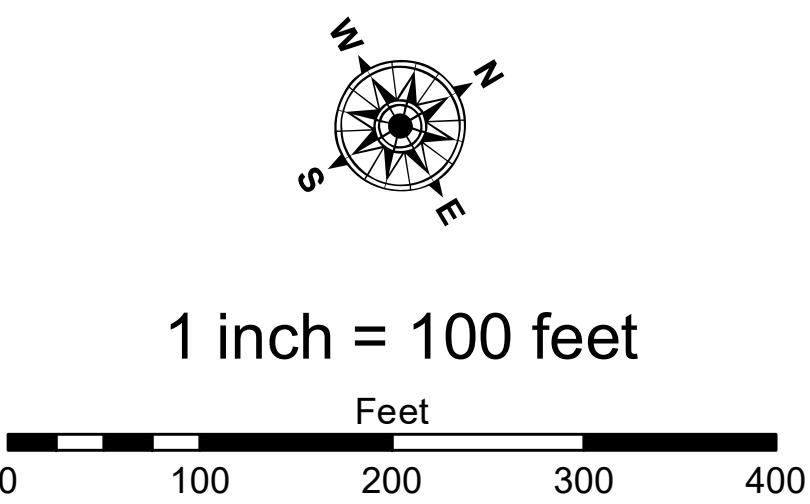


PROJECT DEPTH = 27.0'



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

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
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MOTION COMPENSATION: APPLANIX POS-MV4  
SONAR: RS20N1C 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)  
SOFTWARE: HYPACK

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

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

Reviewed by: \_\_\_\_\_

Chief, Survey Section

Checked by: \_\_\_\_\_

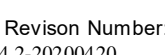
Chief, Technical Services

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220823\_AD**  
**23 August 2022**

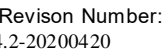
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4.2-202/08/20

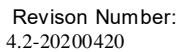




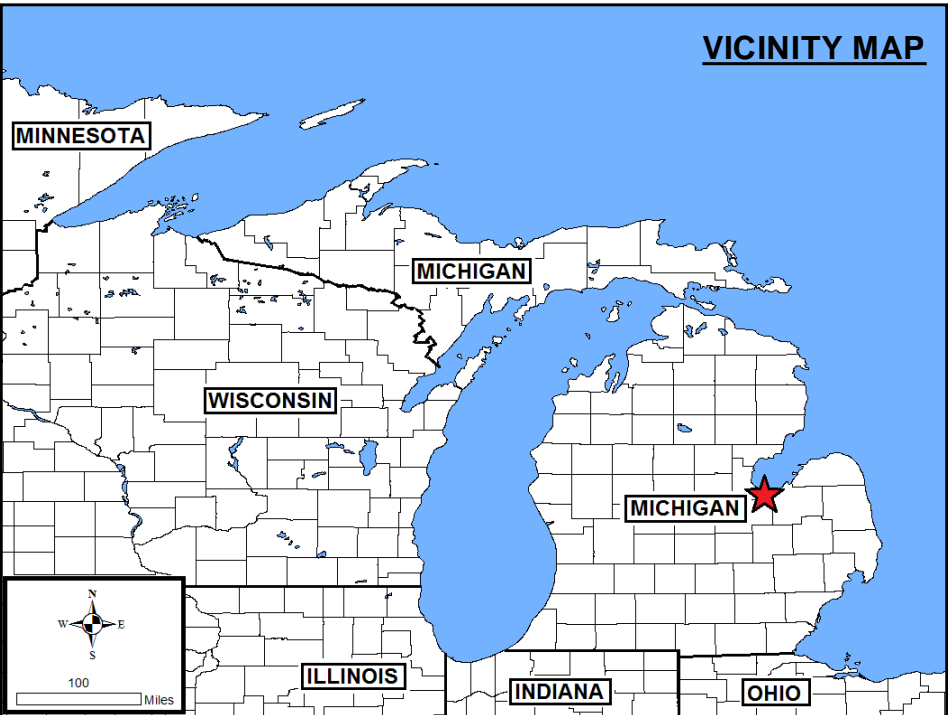
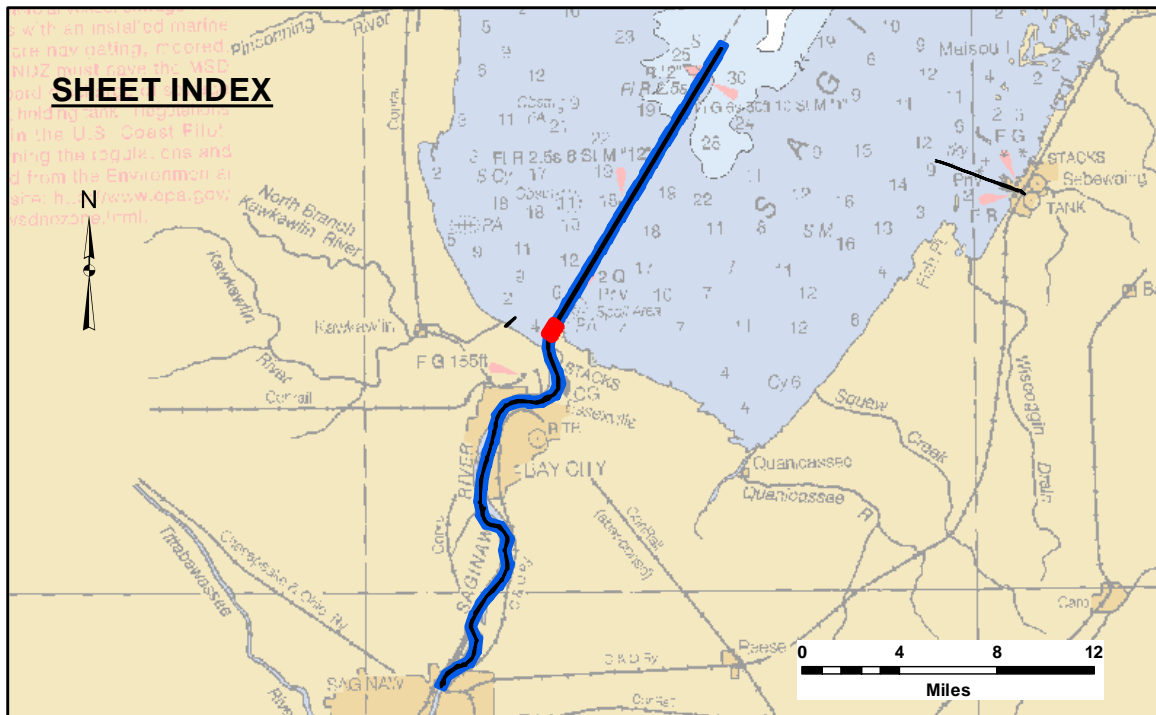
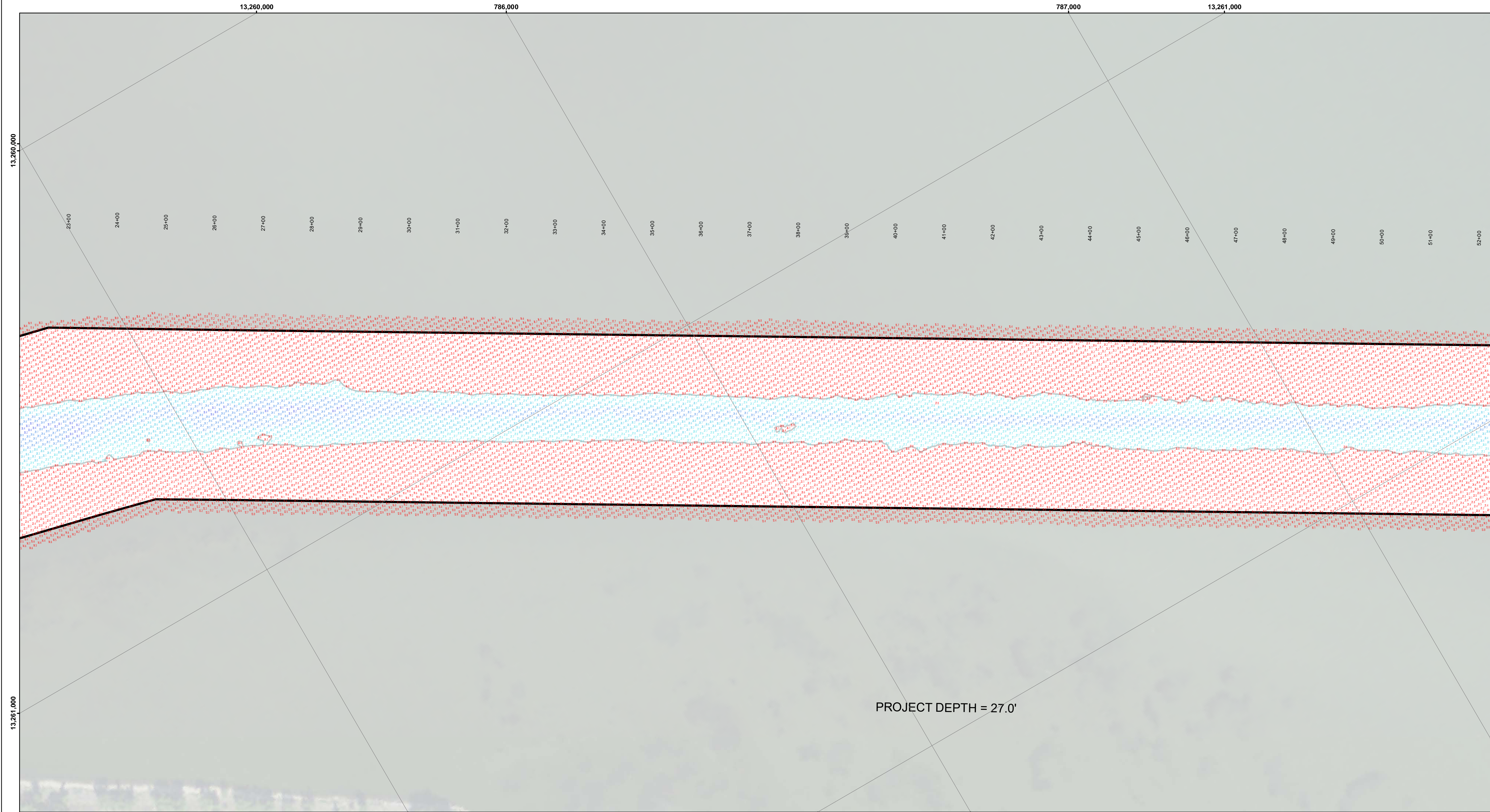






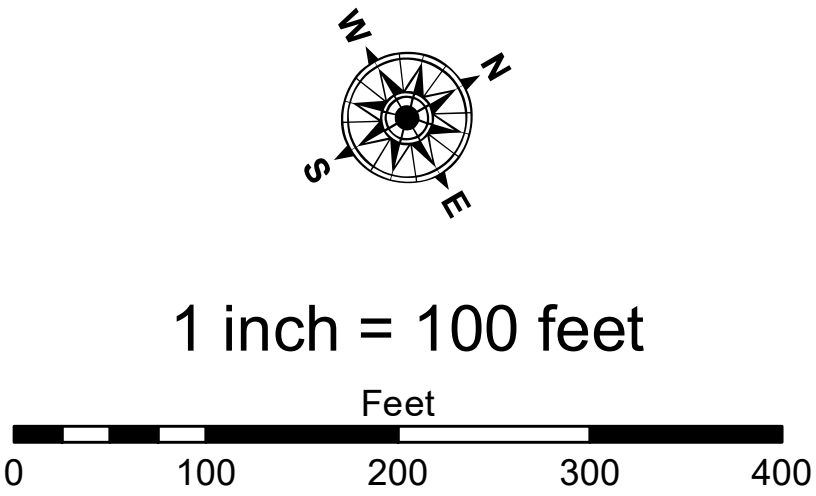






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

- 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 820+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/RTK OR MARINESTAR GNSS. MOTION COMPENSATION: APPLANIX POS-MV4. SONAR: RESONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM). SOFTWARE: HYPACK

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



DISCLAIMER: The data presented in the results of data collection represents the general conditions of the project. Engineers actively and indicates the general existing conditions. The user is responsible for the results of any of the application of the data for other than its intended purpose. 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 provided. The recipient may not transfer these data to others without transferring the Disclaimer.

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

Saginaw, MI  
Saginaw River  
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