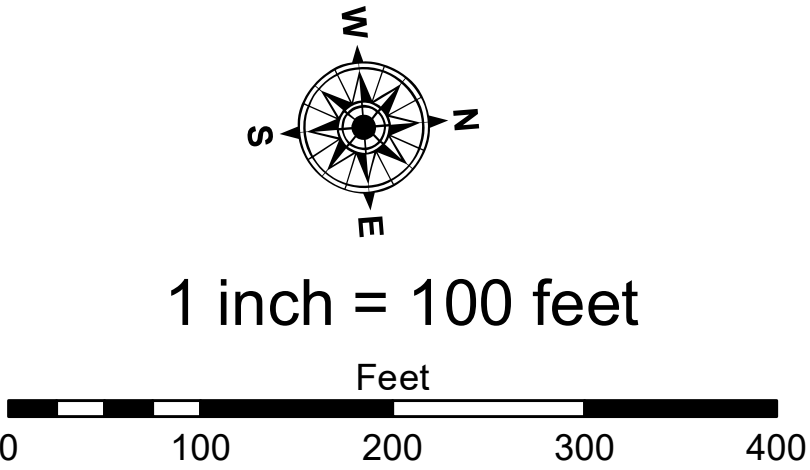


- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ⊥ Beacon, General
  - Contour Lines
  - ▭ Channel\_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
  - PROJECT DEPTH +2'
  - PROJECT DEPTH +3'
  - PROJECT DEPTH +4'
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MOTION COMPENSATION: APPLANIX POS-MV4  
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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:

Plotted By:

Checked By:

Saginaw, MI

Saginaw River

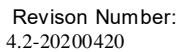
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31 May 2023

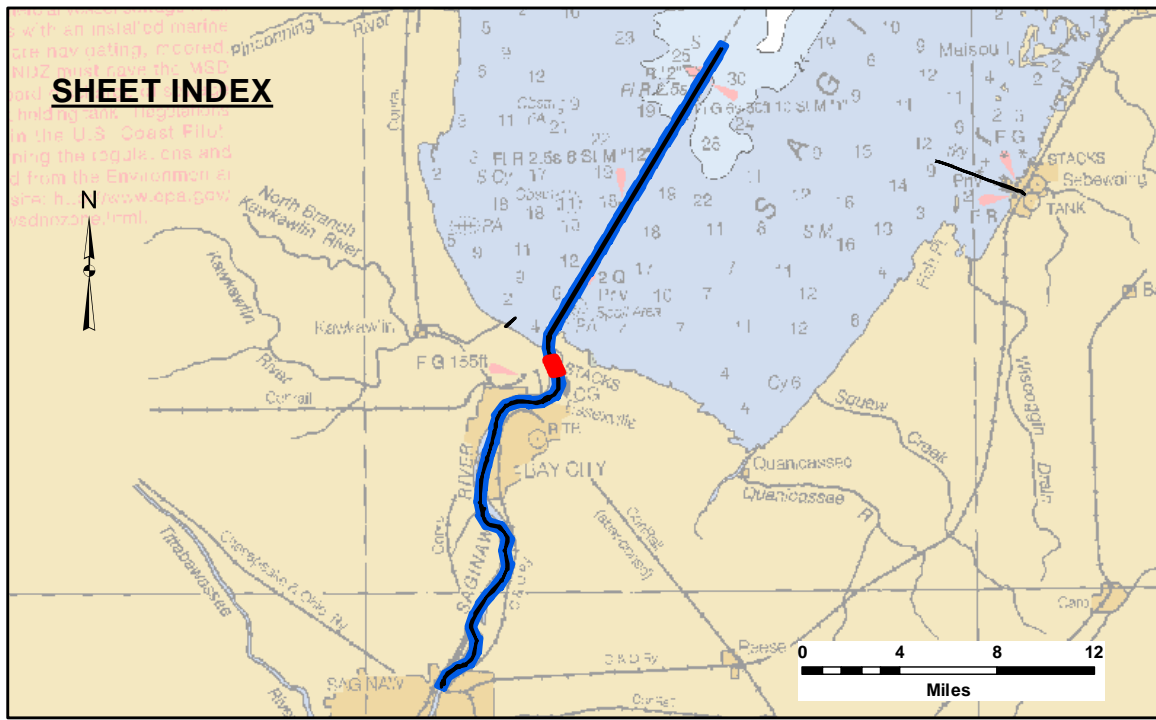
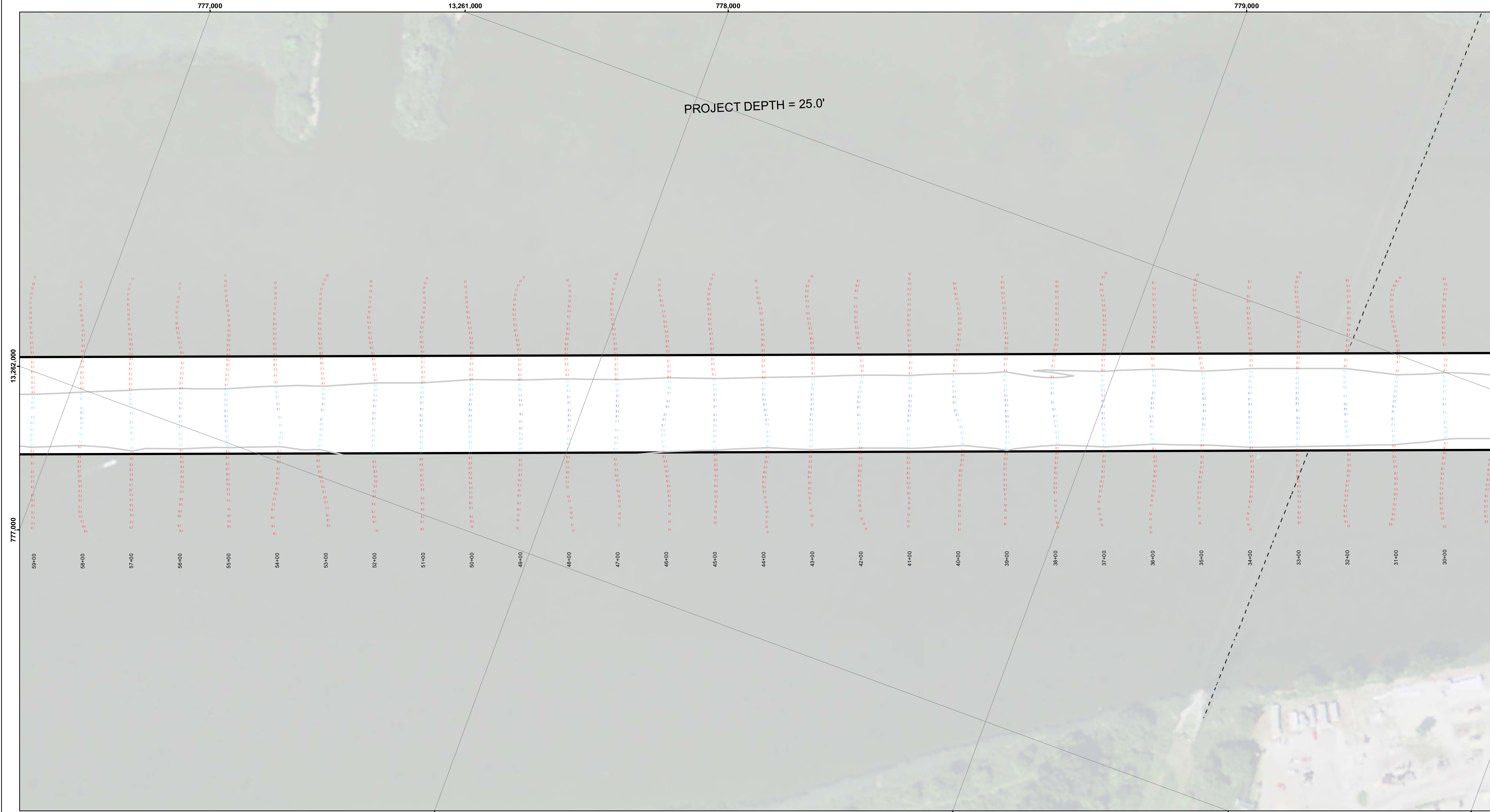
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Revision Number:  
4.2-2023060420



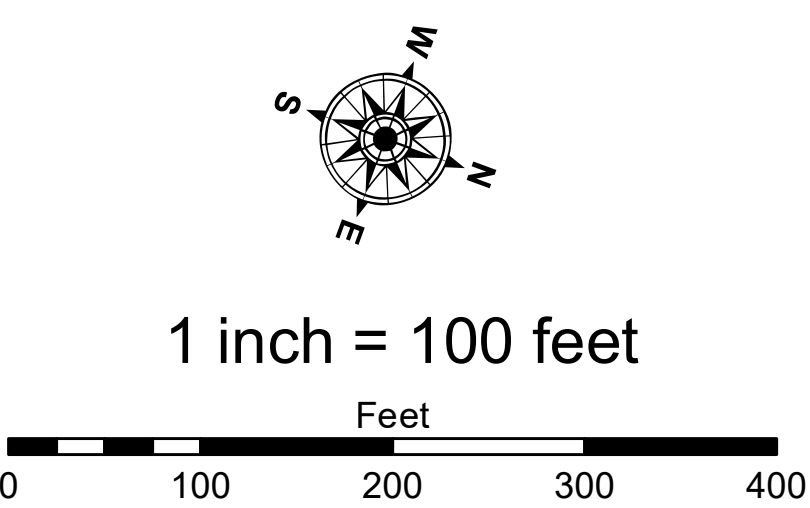






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

- SOUNDING LEGEND**
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  - PROJECT DEPTH
  - PROJECT DEPTH +1'
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SOFTWARE: HYPACK

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS  
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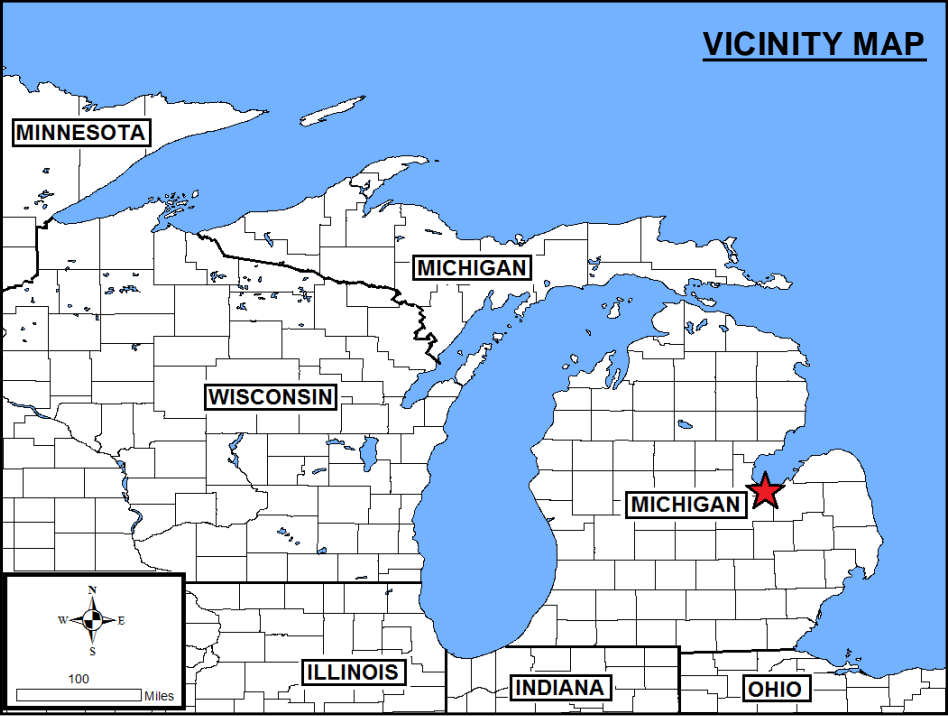
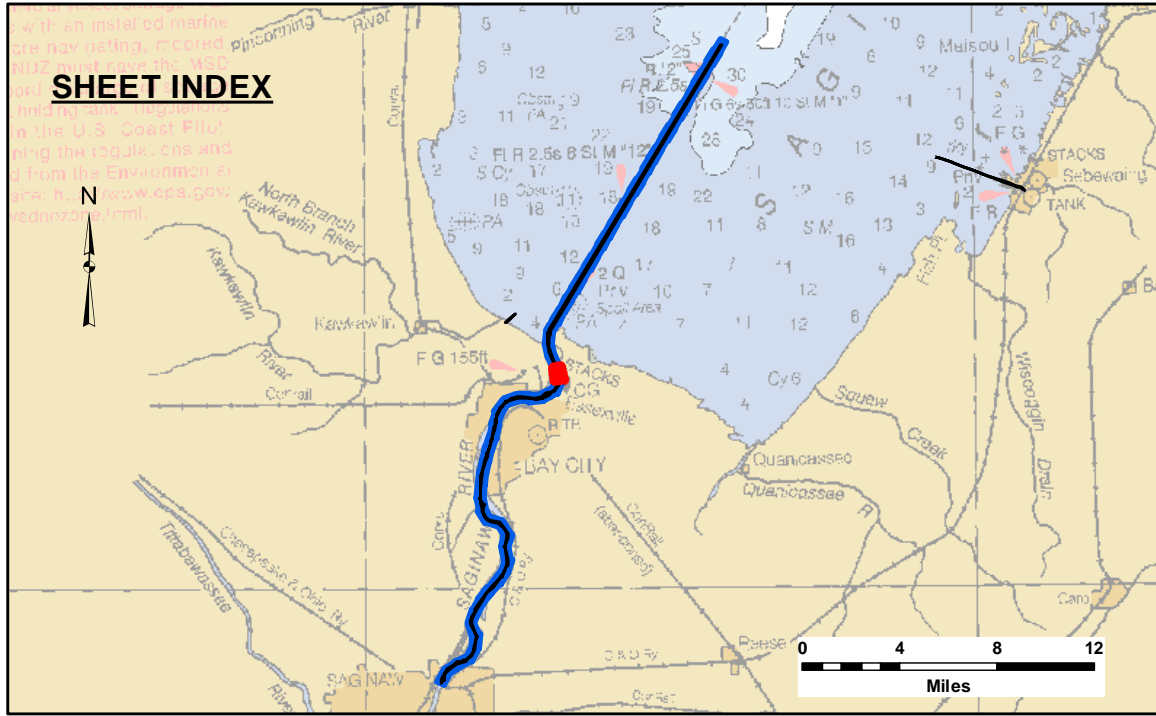
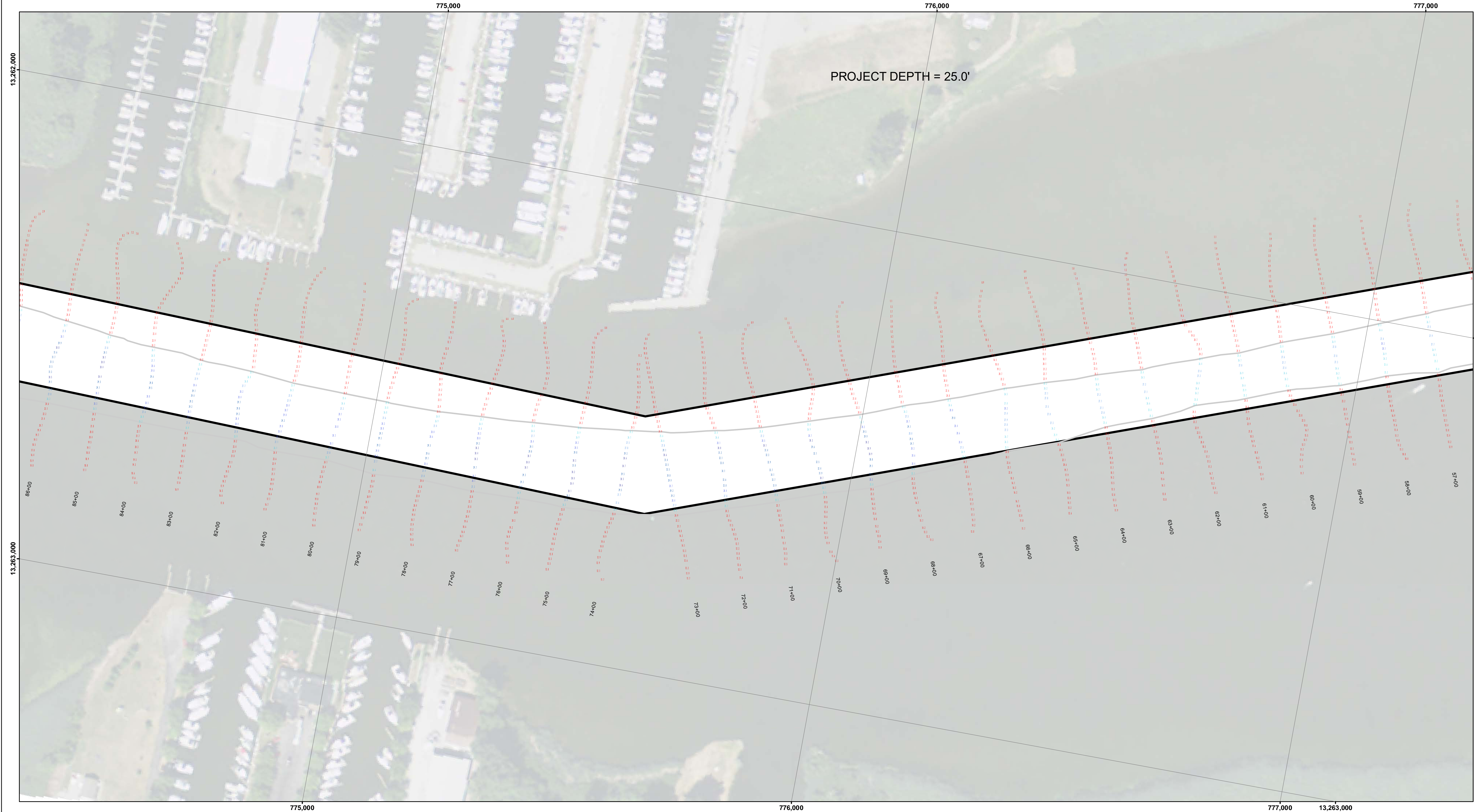
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Submitted:	Surveyed By:
	Plotted By:
	Checked By:

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

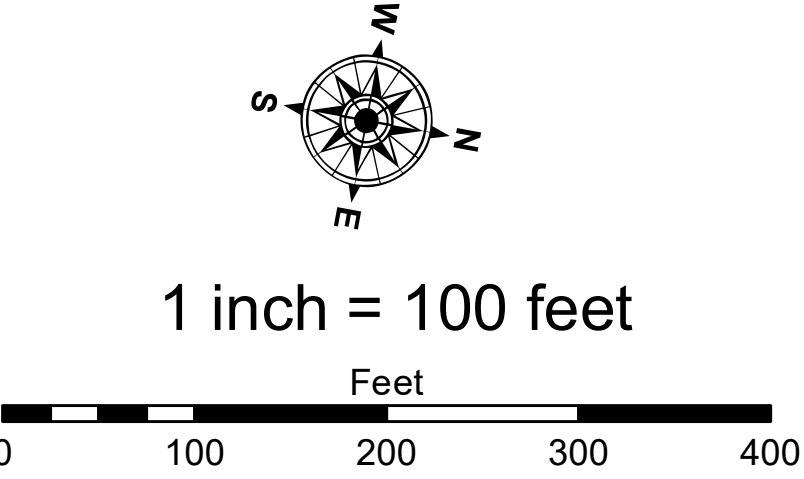
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Reference  
Number  
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- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ⊥ Beacon, General
  - Contour Lines
  - ▭ Channel\_Limits

- SOUNDING LEGEND**
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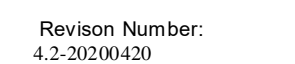
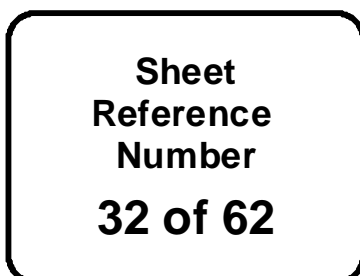
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	Plotted By:
	Checked By:

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

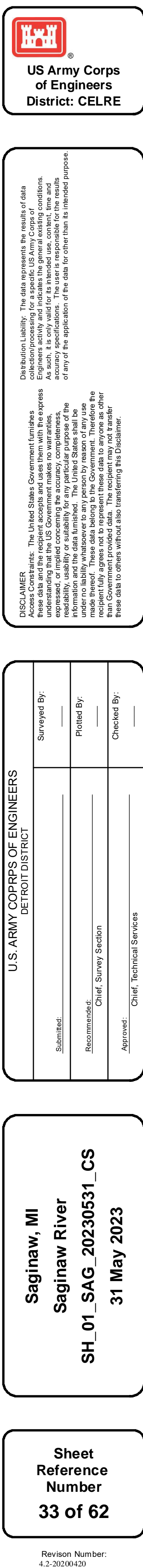
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4.2-2023060420

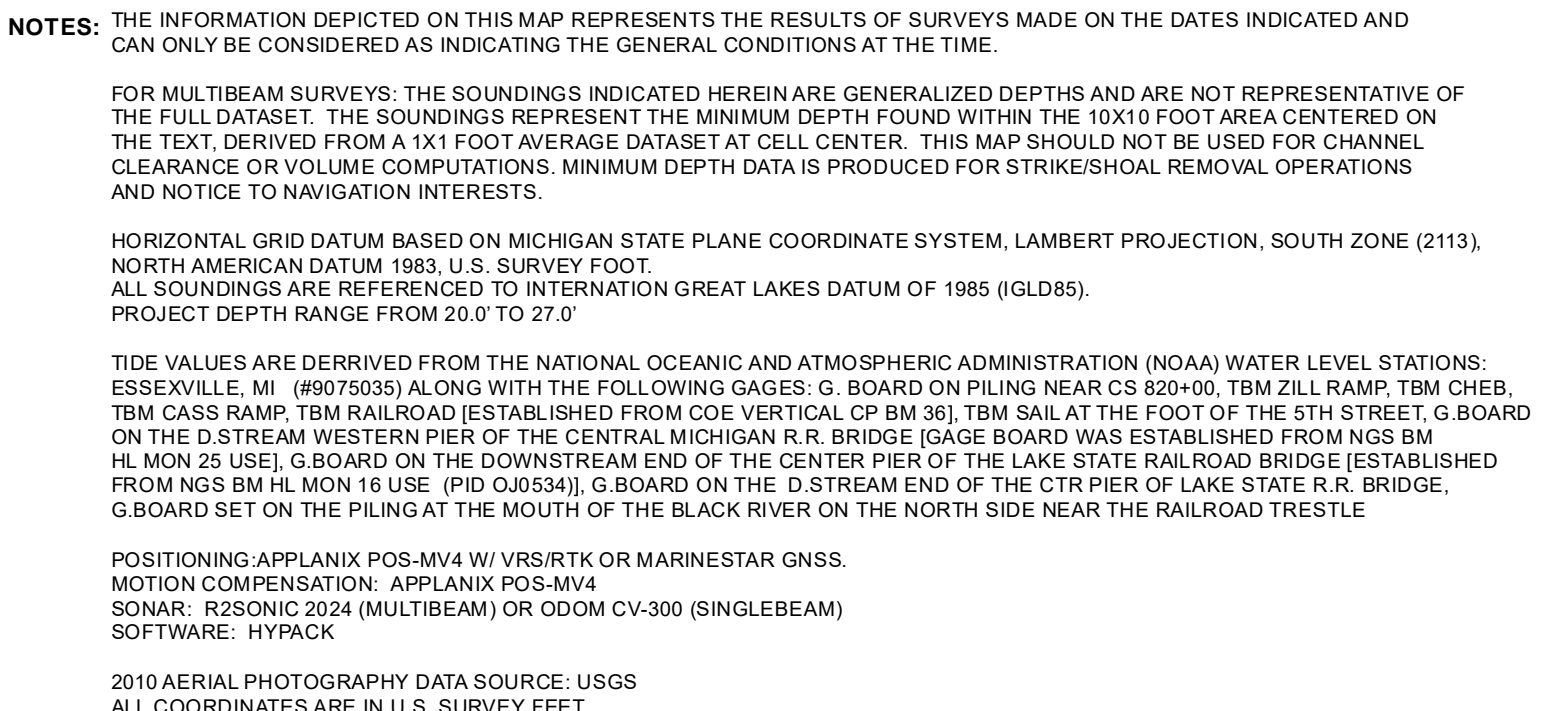
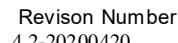




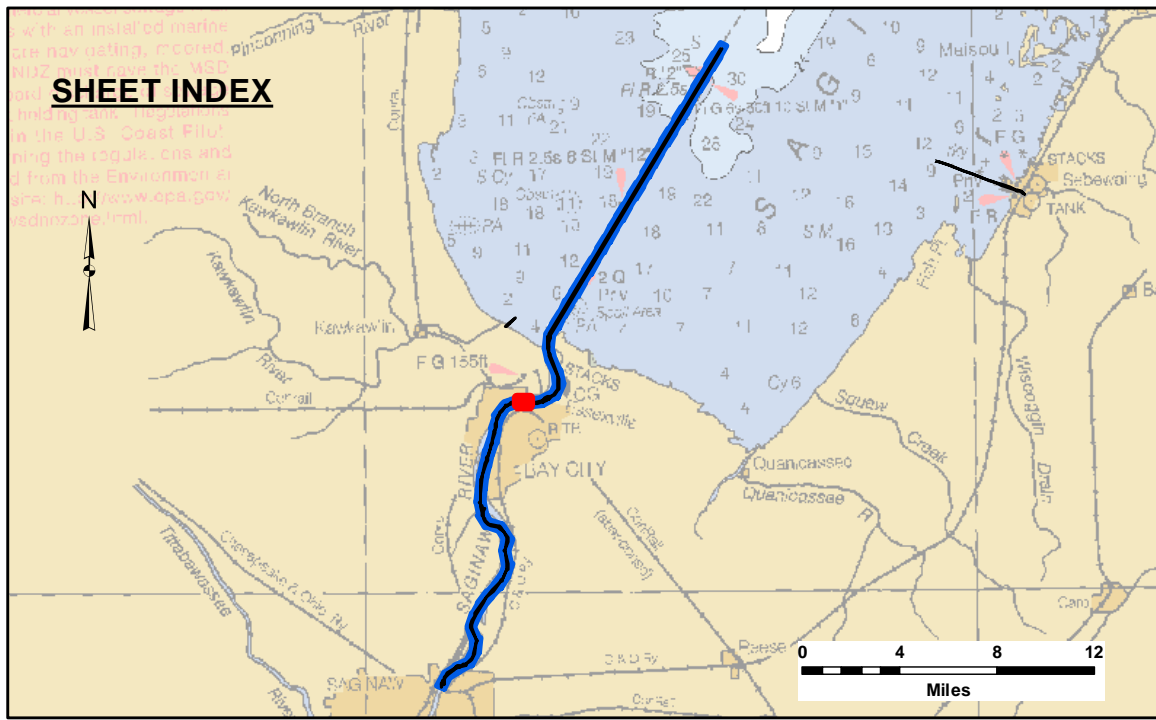
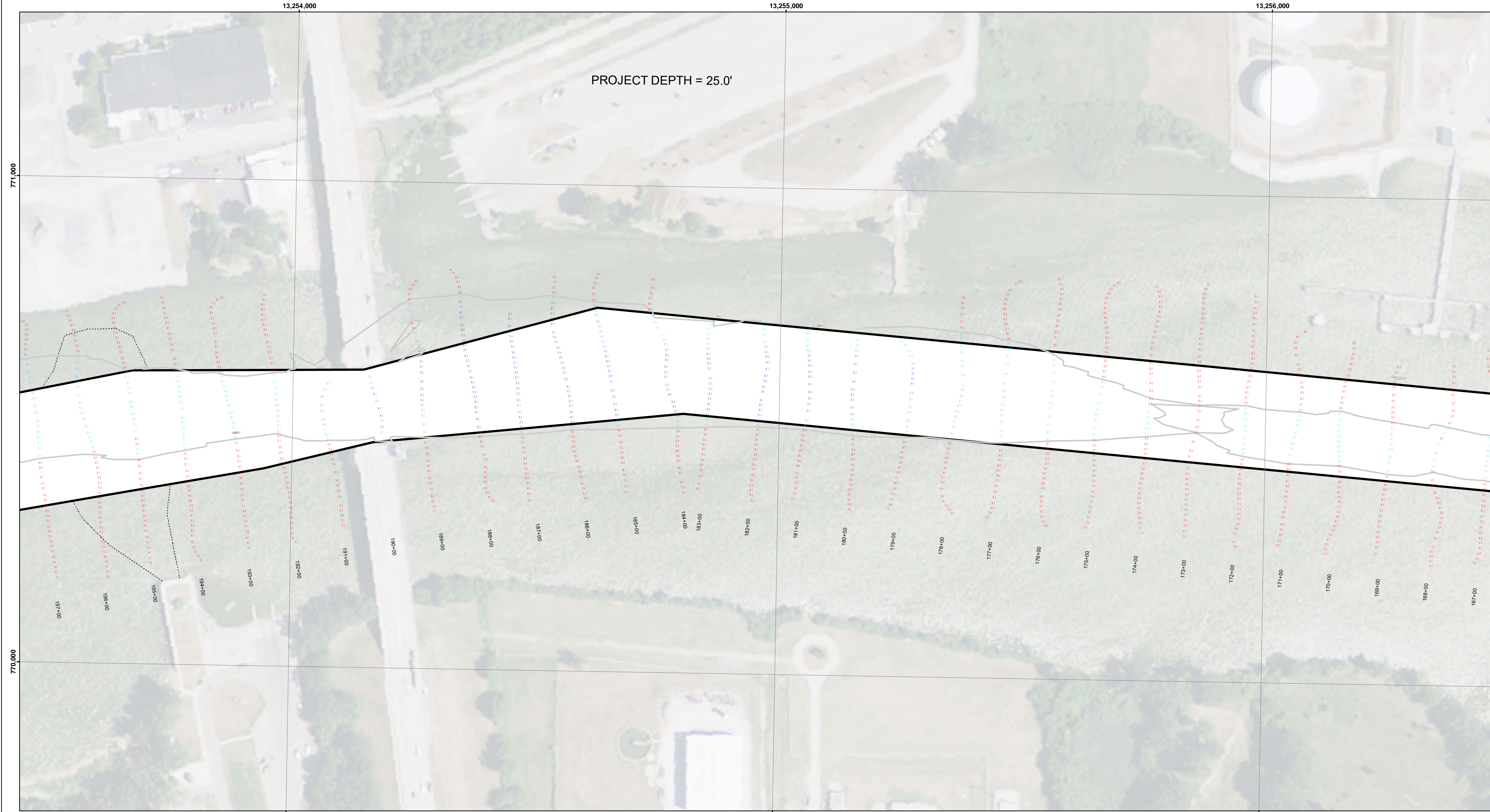






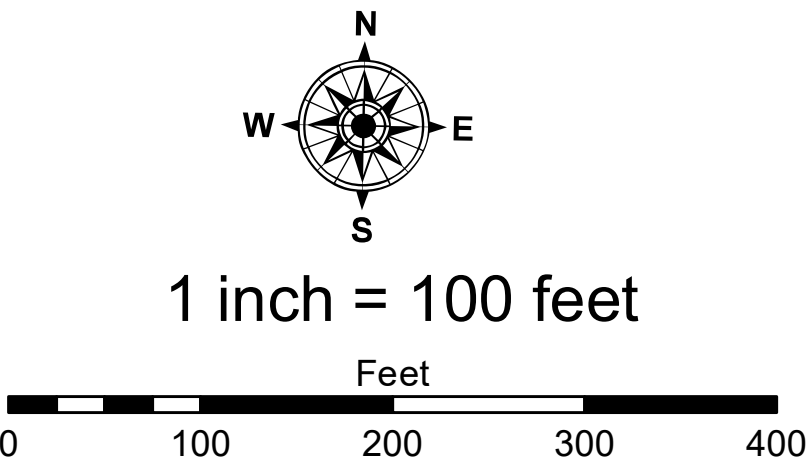






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
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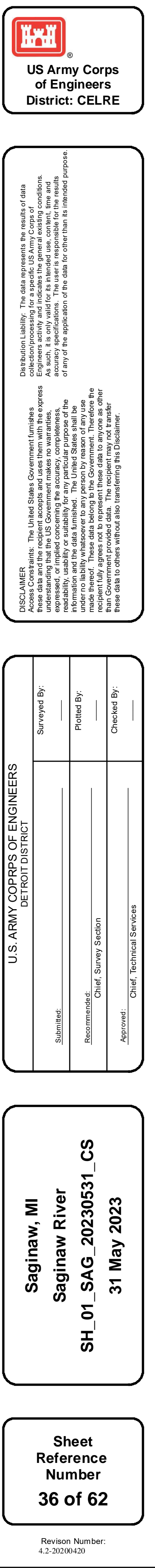
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	Recommended:	Plotted By:
	Chief, Survey Section	
	Approved:	Checked By:
	Chief, Technical Services	

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

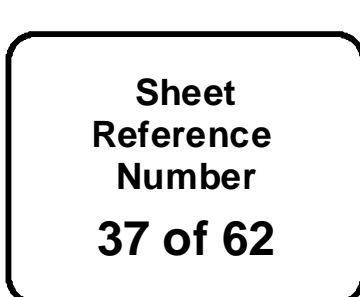
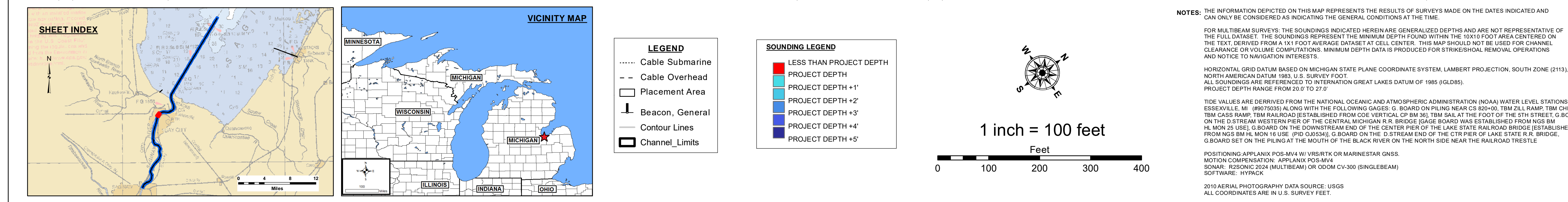
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4.2-2023060420



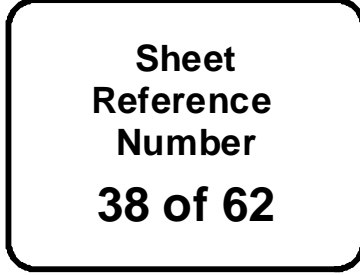
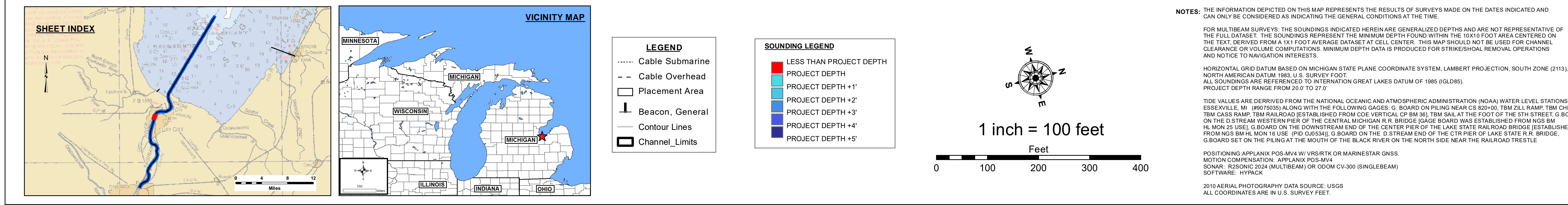




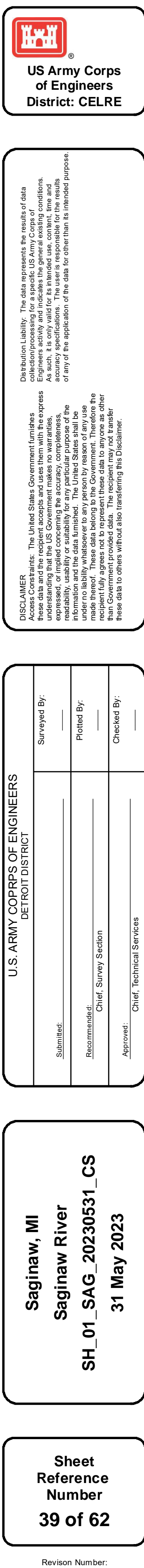


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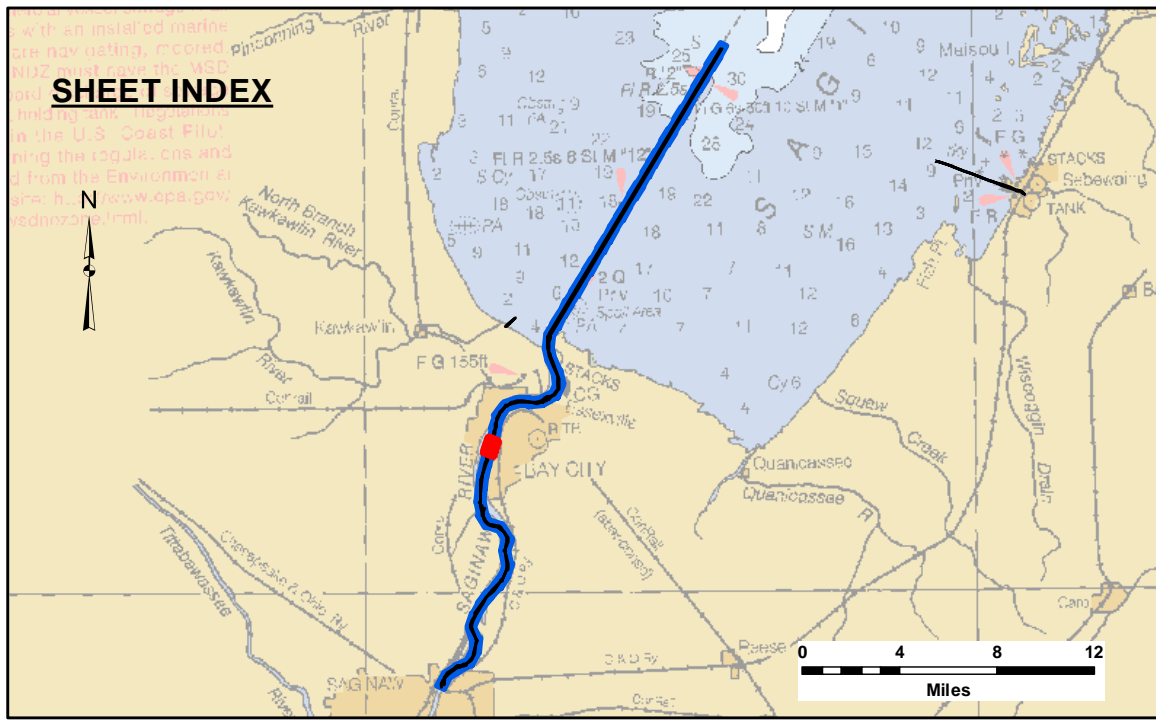
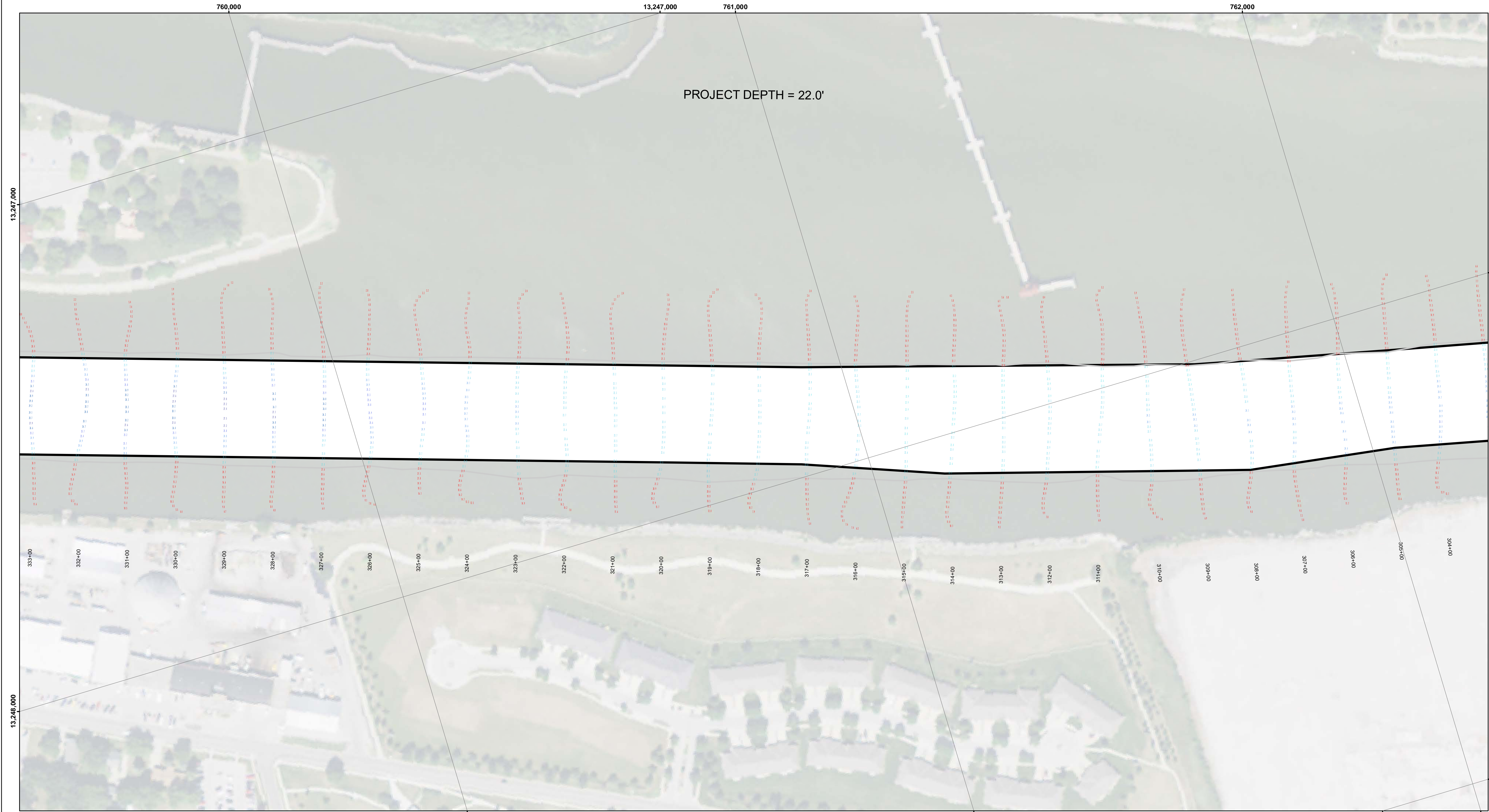






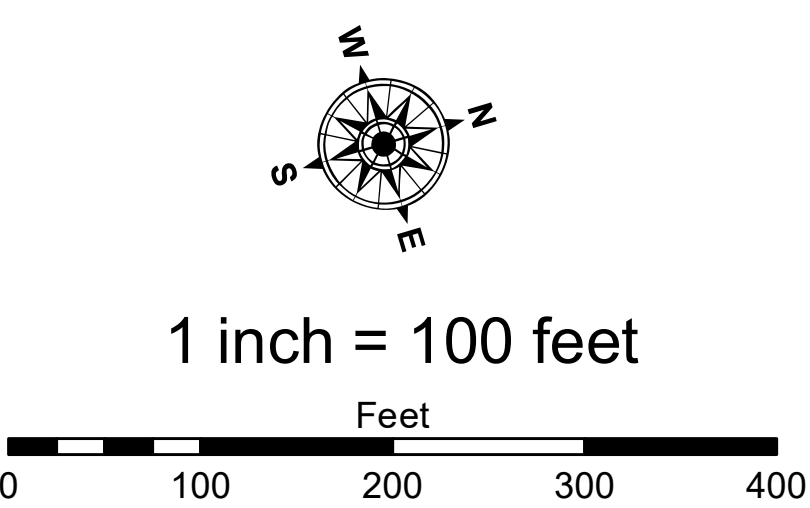






- LEGEND**
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2016 AERIAL PHOTOGRAPHY DATA SOURCE: USGS

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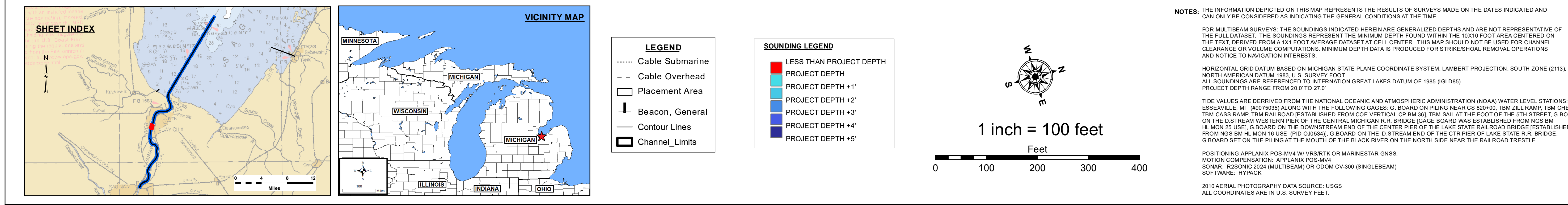
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Surveyed By: _____
	Submitted: _____
	Recommended: _____ Chief, Survey Section
	Plotted By: _____
	Checked By: _____
	Approved: _____ Chief, Technical Services

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

**Sheet Reference Number**  
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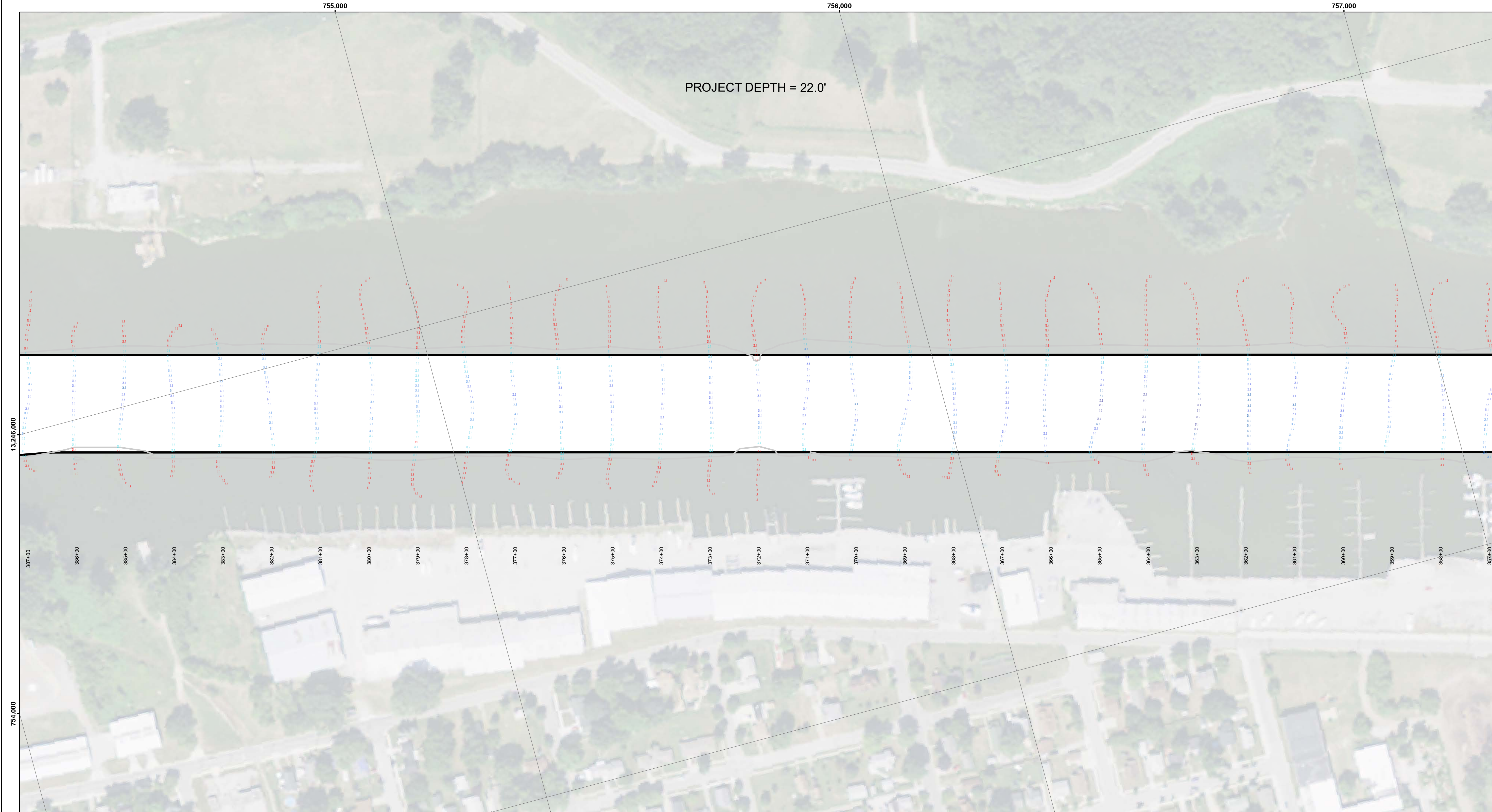
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Submitted: _____	Surveyed By: _____
Recommended: Chief, Survey Section _____	Plotted By: _____
Approved: _____	Checked By: _____
	Chief, Technical Services _____

**Saginaw, MI  
Saginaw River  
SAG\_202305  
31 May 2023**

Sheet  
Reference  
Number  
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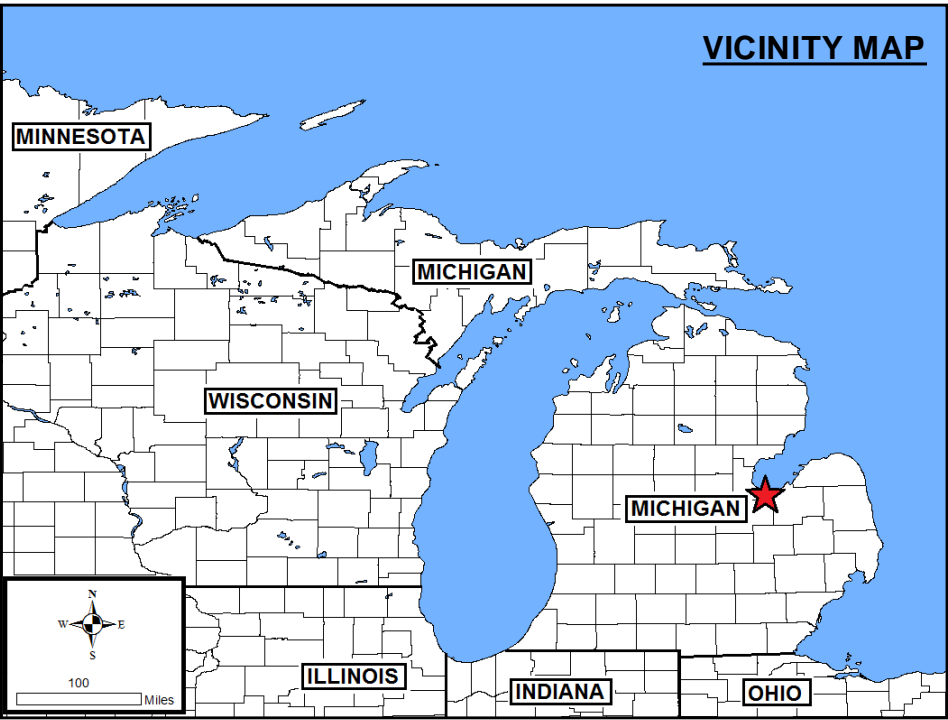
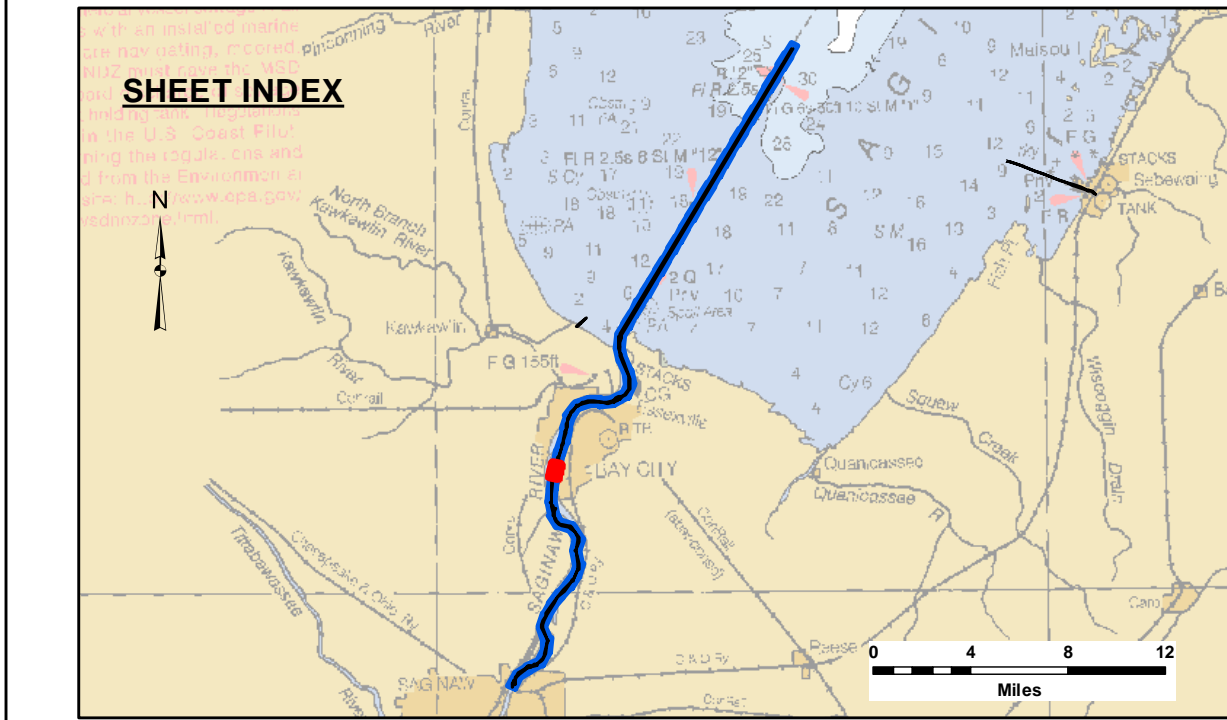




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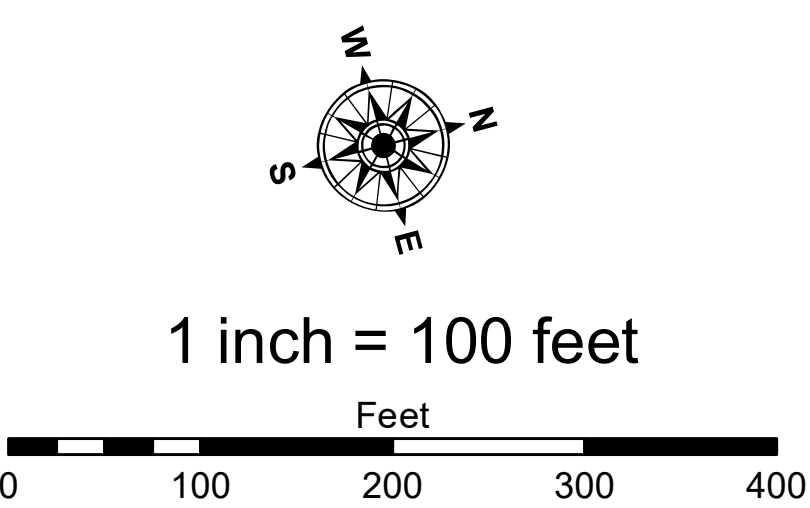
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754,000



- 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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2016 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:

Plotted By:

Checked By:

Recommended:  
Chief, Survey Section

Approved:  
Chief, Technical Services

Saginaw, MI

Saginaw River

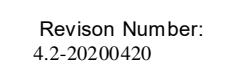
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31 May 2023

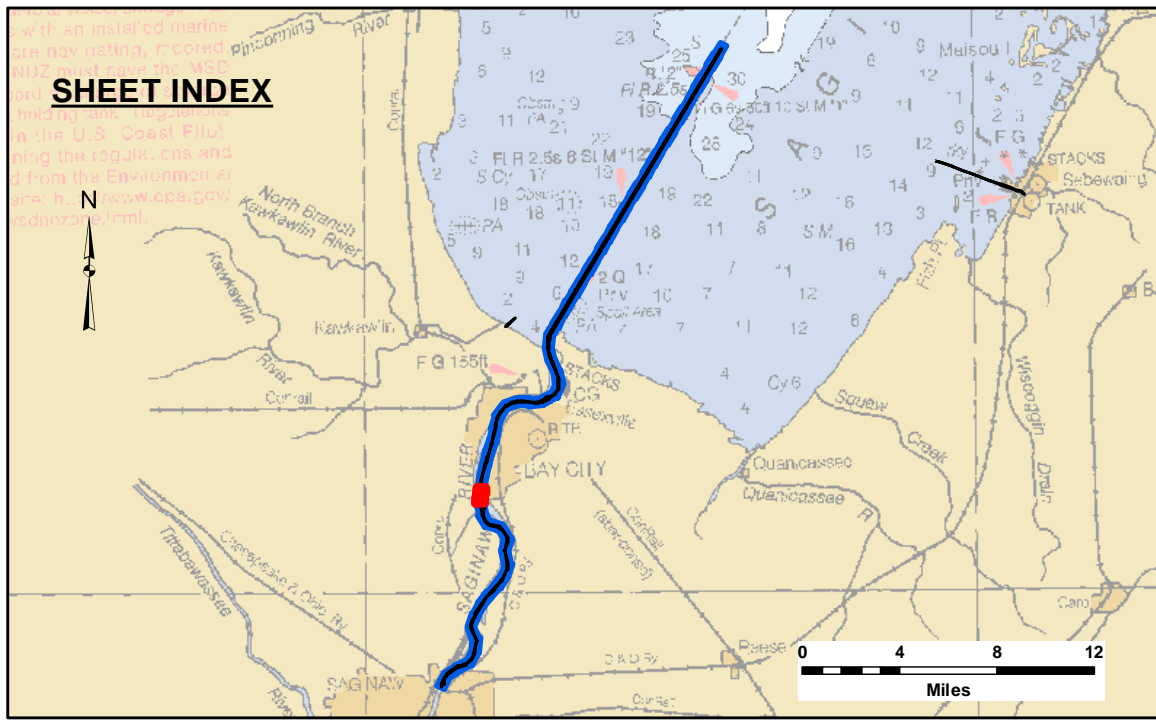
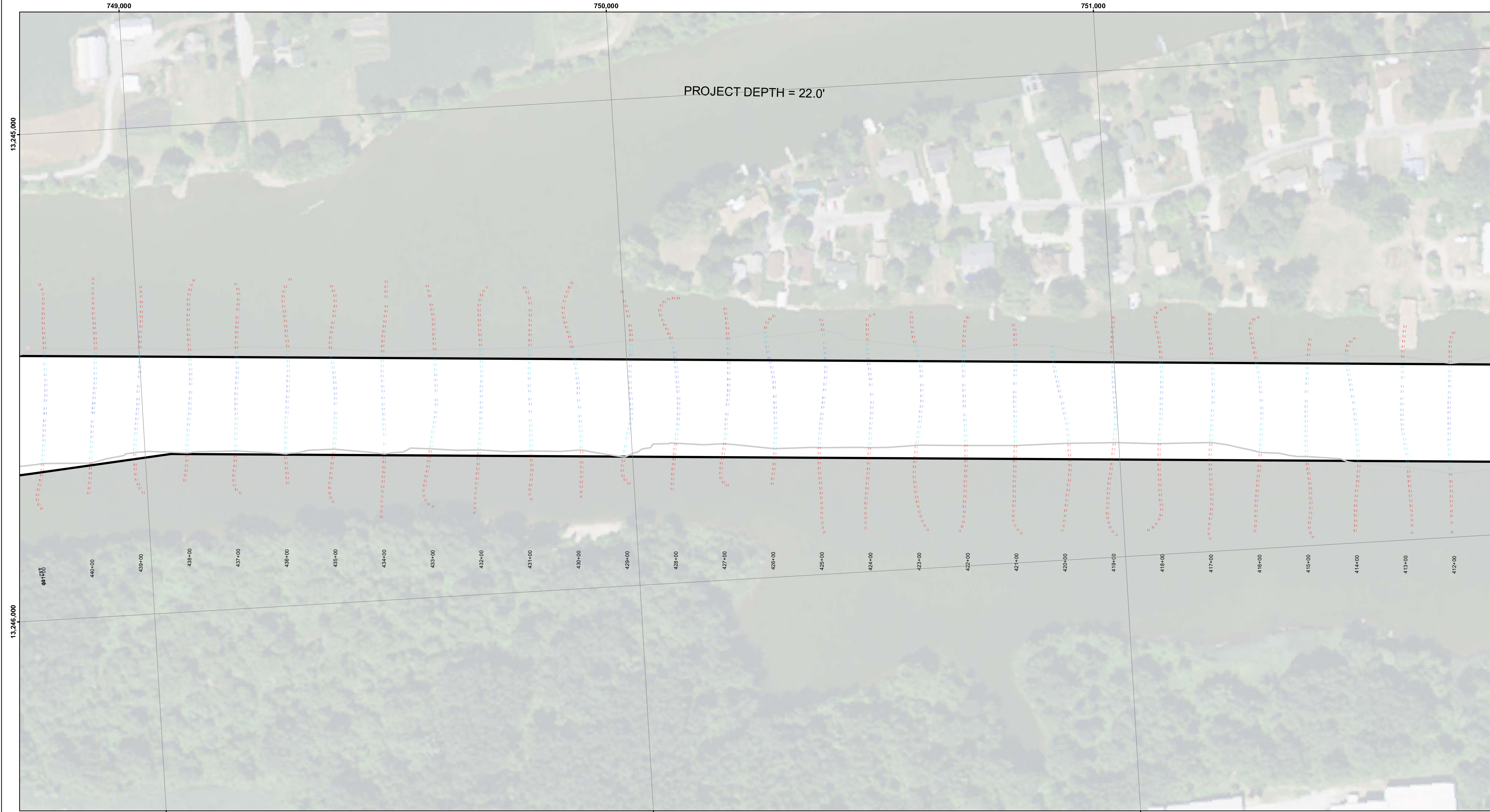
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Revision Number:  
4.2 2023060420



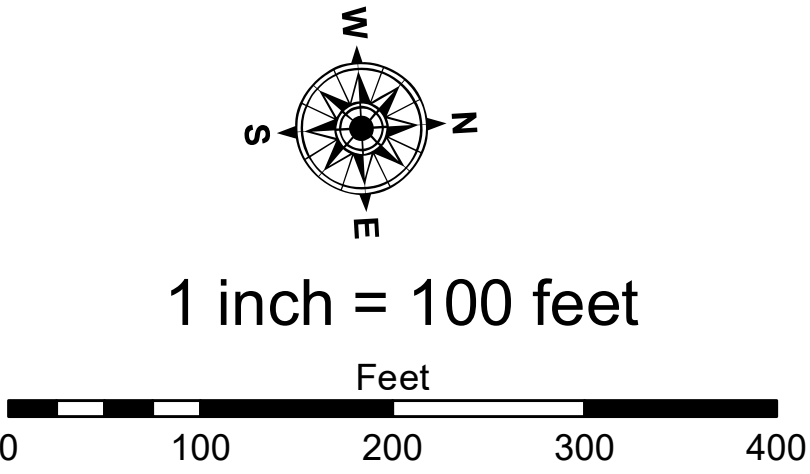






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
  - PROJECT DEPTH +2'
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2016 AERIAL PHOTOGRAPHY DATA SOURCE: USGS ALL COORDINATES ARE IN U.S. SURVEY FEET.



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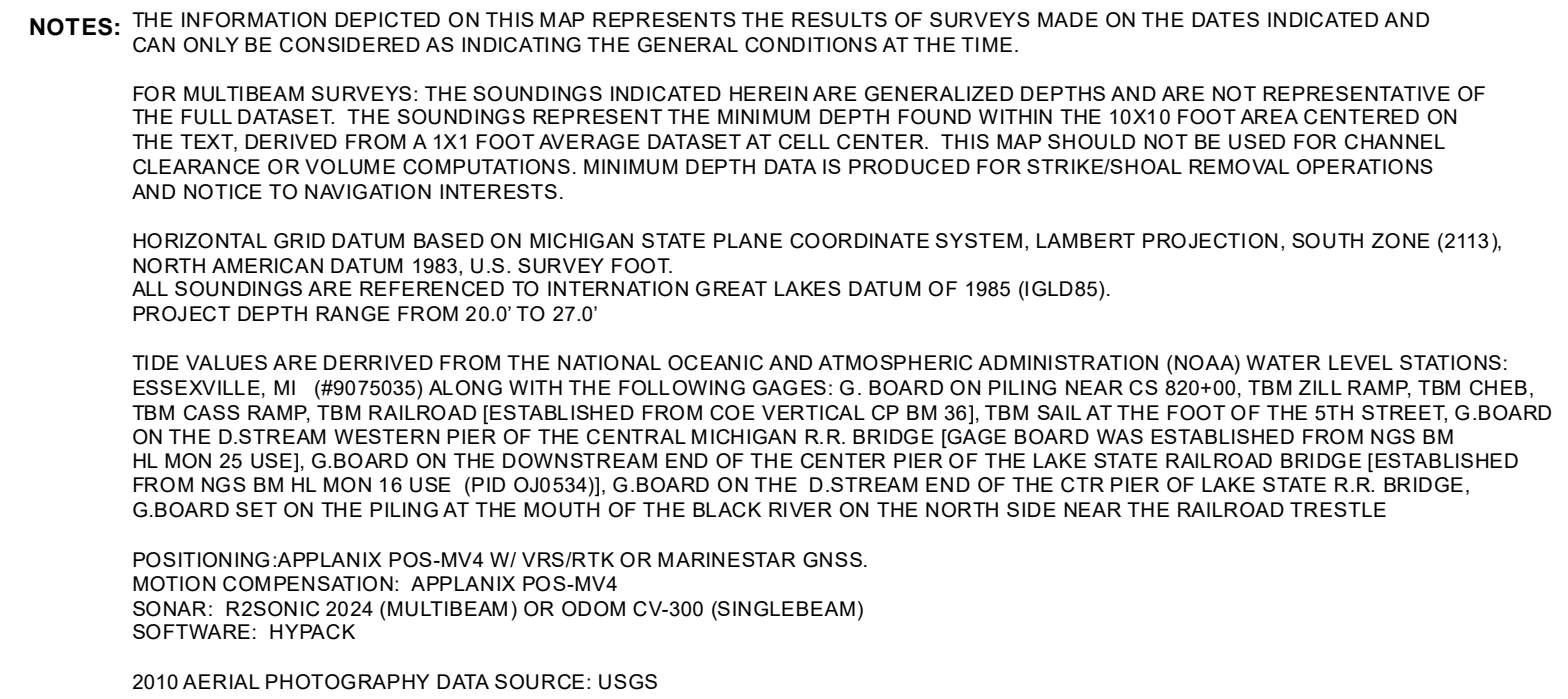
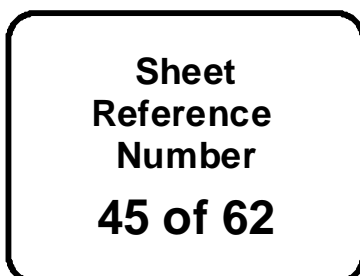
Submitted:	Surveyed By:
	Plotted By:
	Checked By:

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

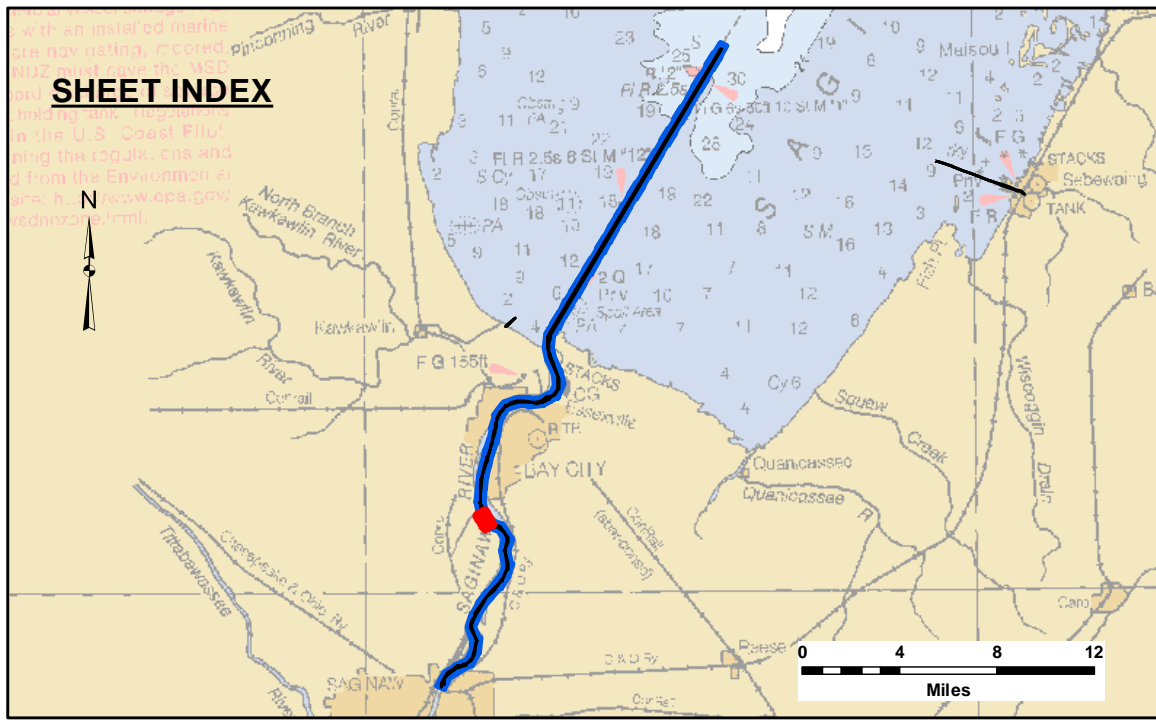
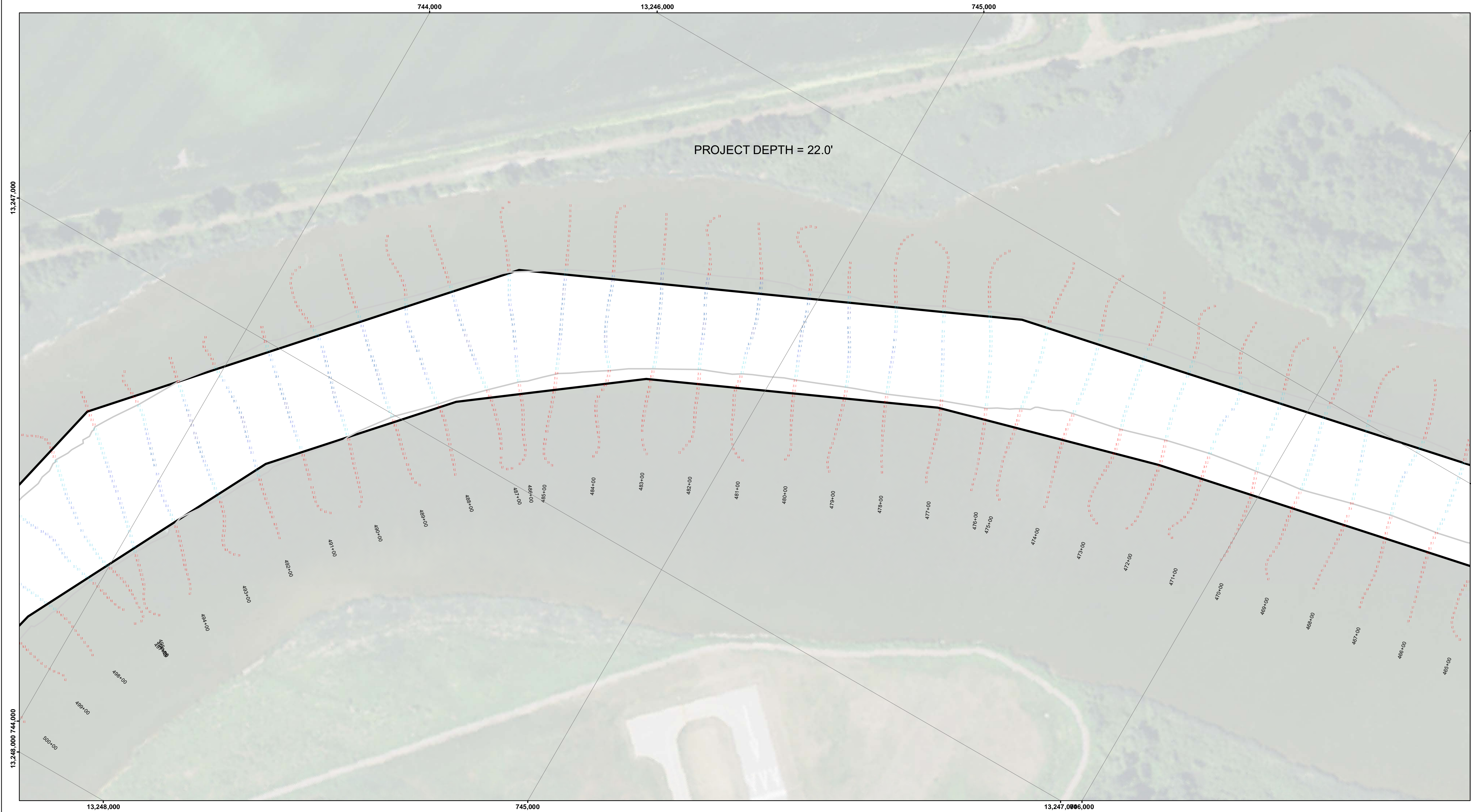
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Reference  
Number  
44 of 62

Revision Number:  
4.2-2023060420



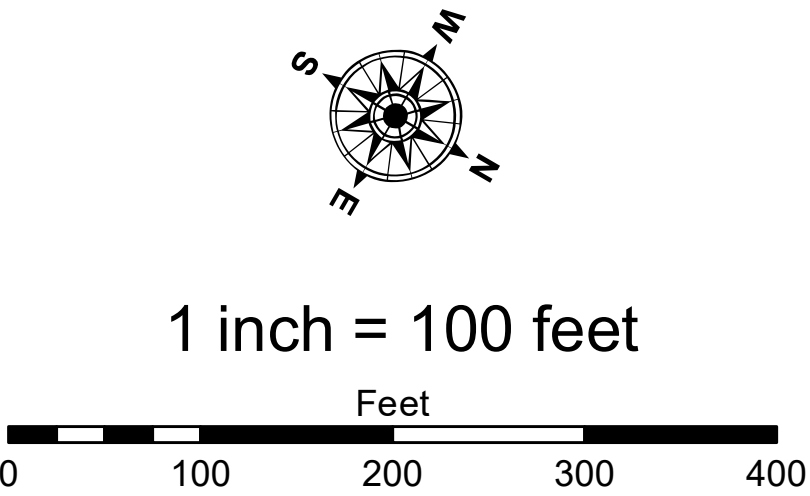






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ┆ Beacon, General
  - Contour Lines
  - ▭ Channel\_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
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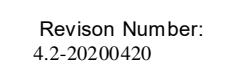
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By:	
Recommended:	Plotted By:	
Approved:	Chief, Survey Section	
	Chief, Technical Services	

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

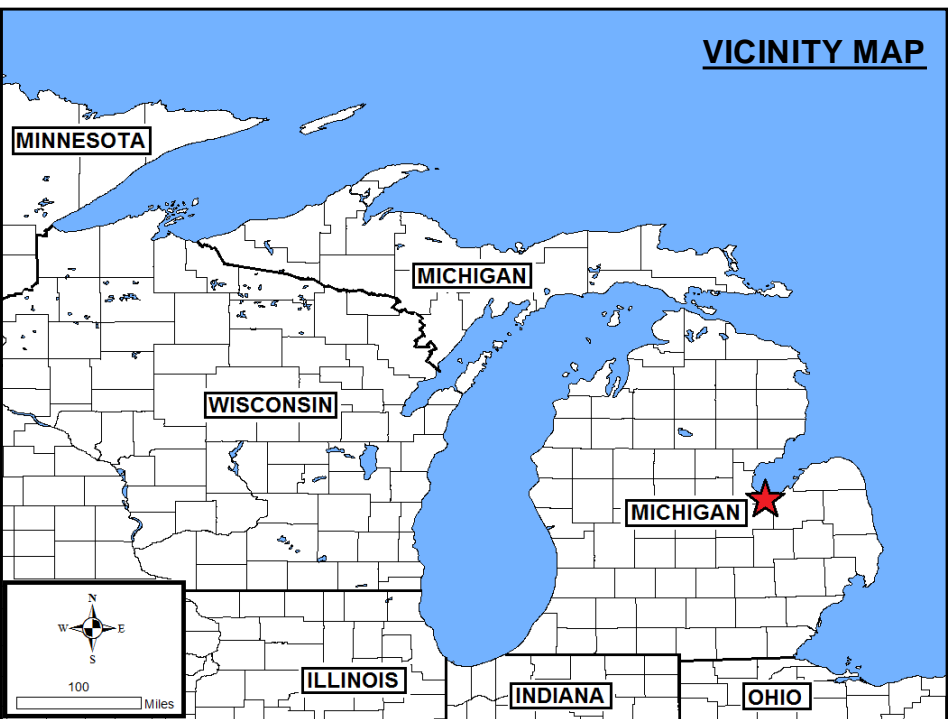
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Number  
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Revision Number:  
4.2-2023060420









**LEGEND**

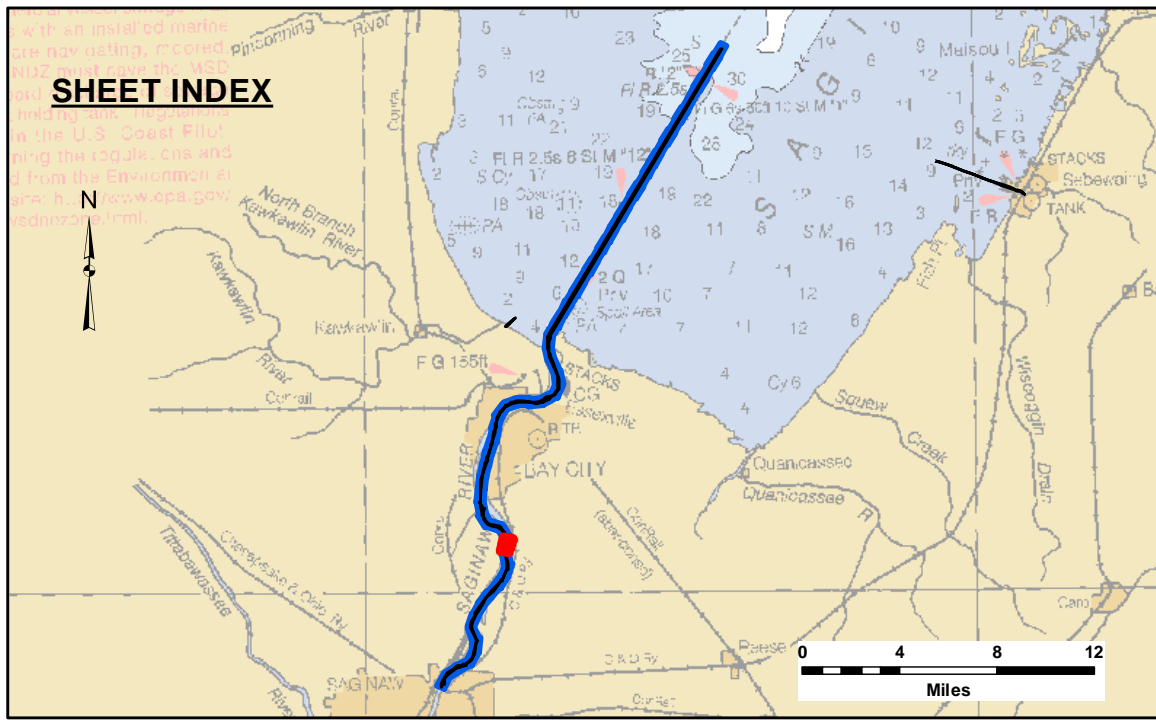
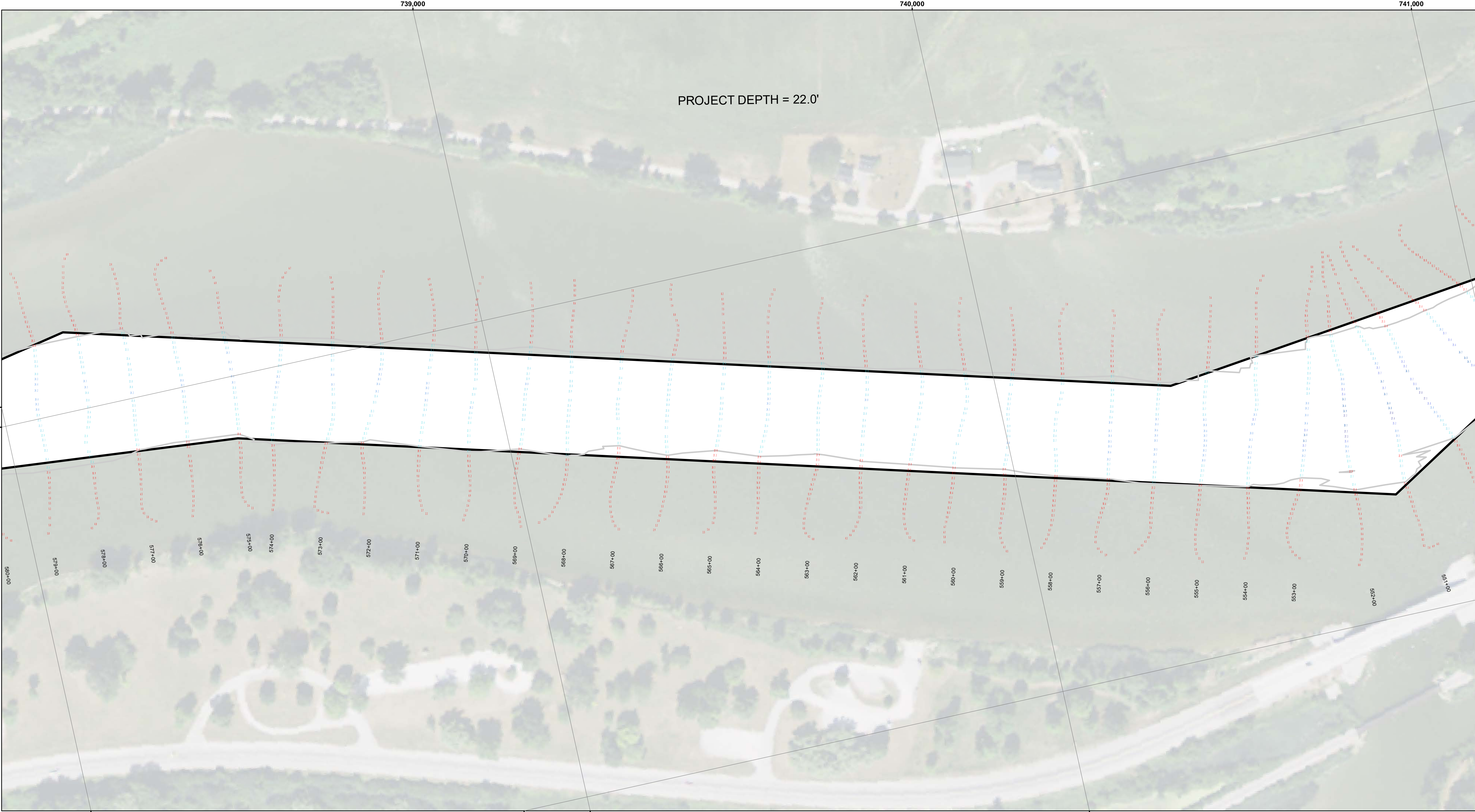
- ..... Cable Submarine
- - Cable Overhead
- Placement Area
- ┃ Beacon, General
- Contour Lines
- ▭ Channel\_Limits

A horizontal number line is shown with the word "Feet" centered above it. The line has major tick marks at 0, 100, 200, 300, and 400. A solid black bar is drawn above the line, starting at the 200 mark and ending at the 300 mark.

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS  
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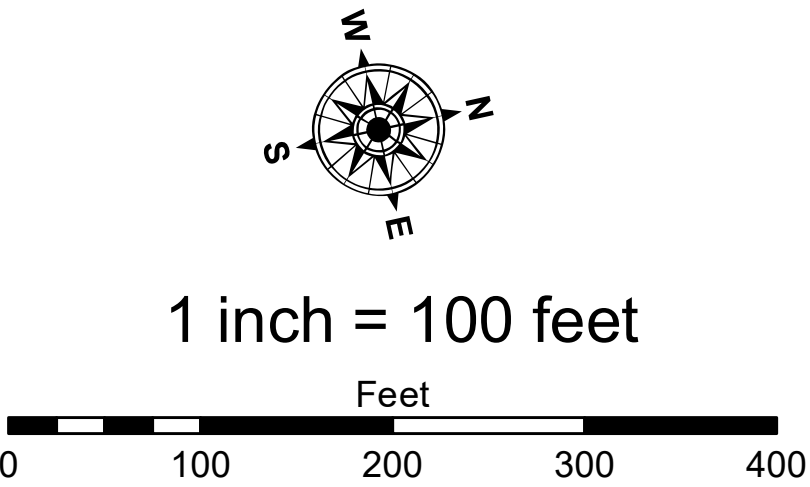
Revision Number:  
4.2-20200420





- 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: R2SONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)  
SOFTWARE: HYPACK

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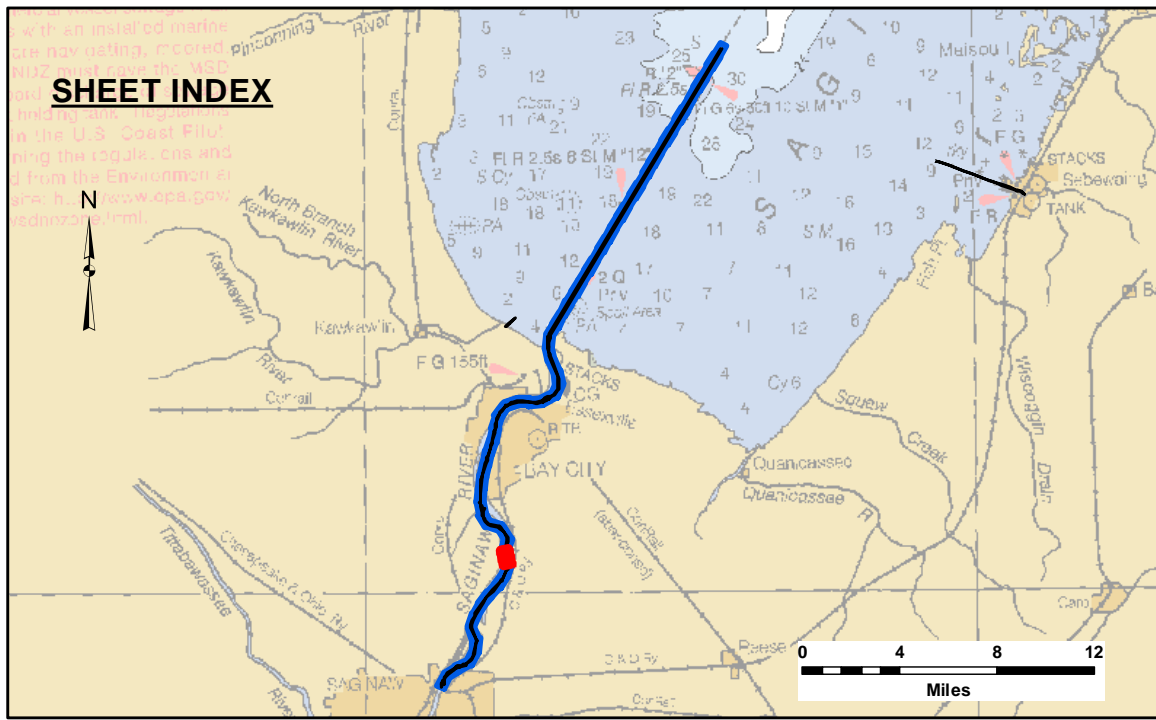
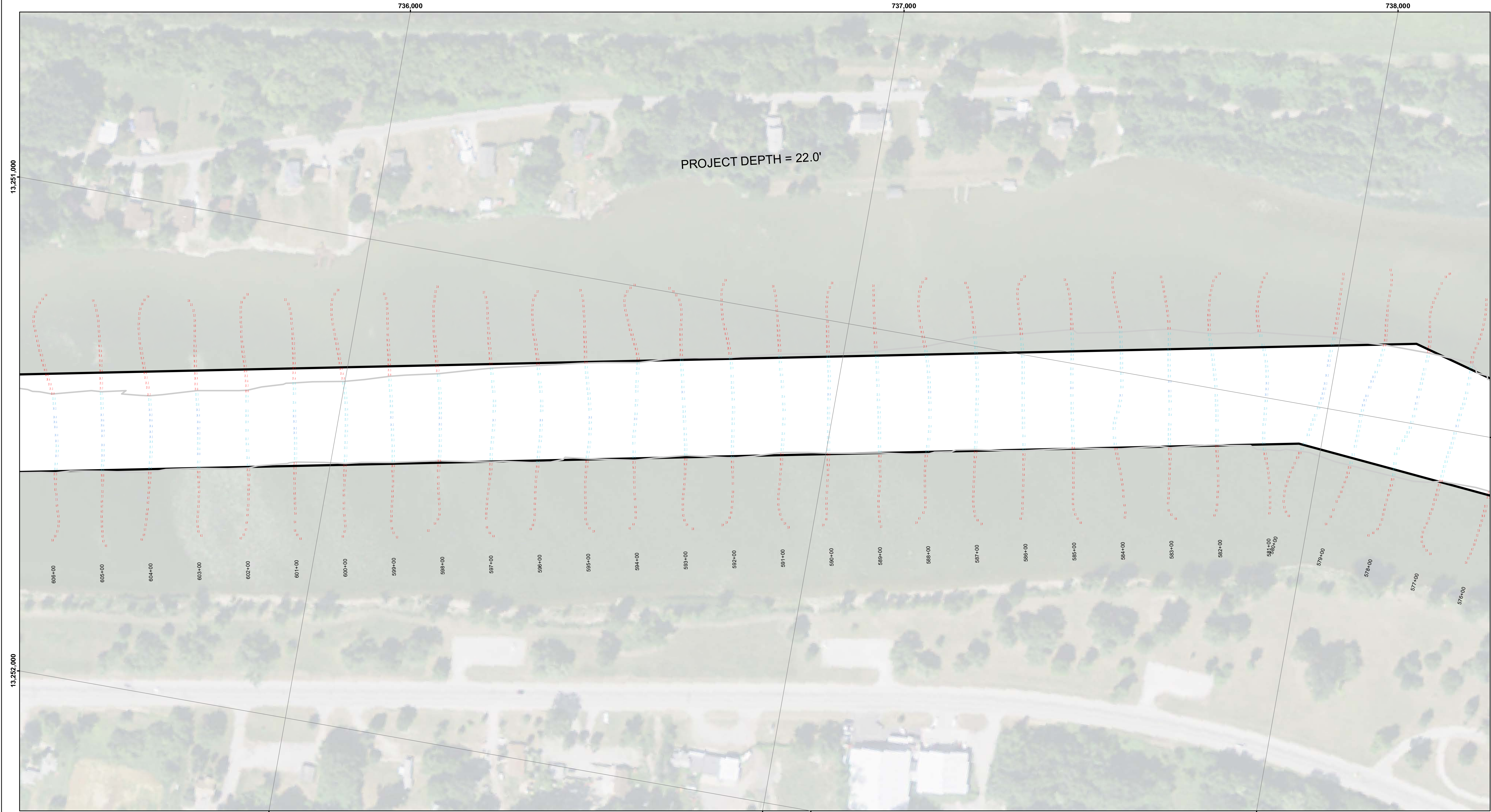
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted By: _____	Surveyed By: _____
	Recommended By: _____	Plotted By: _____
	Approved: _____	Checked By: _____

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

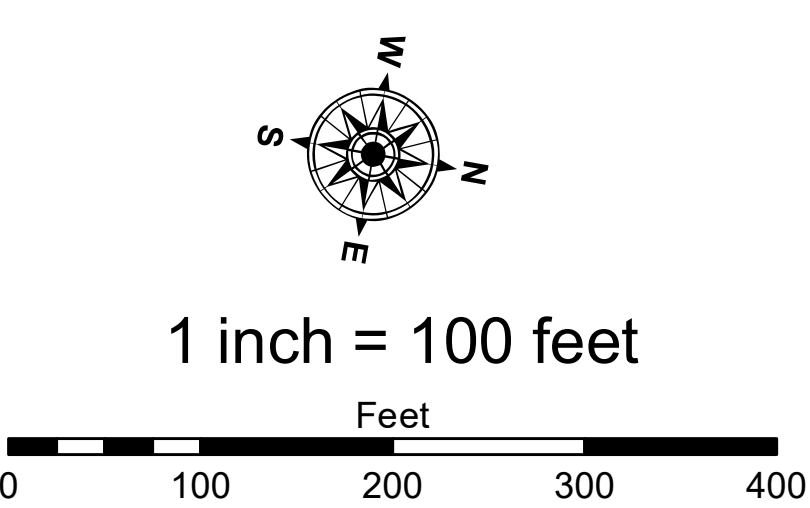
**Sheet Reference Number**  
**49 of 62**





- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
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- SOUNDING LEGEND**
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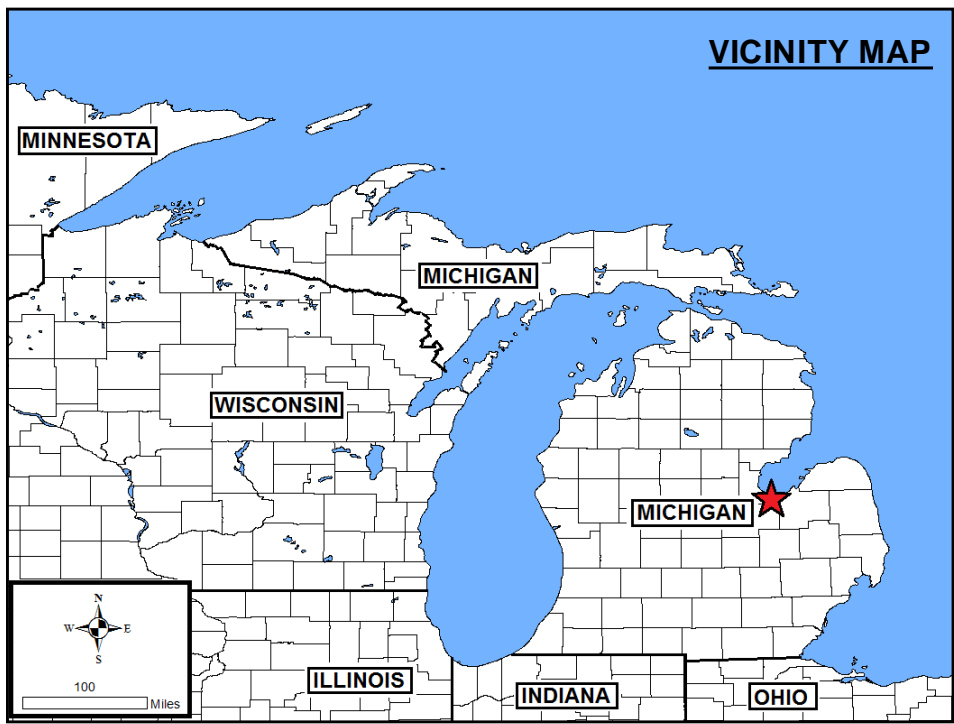
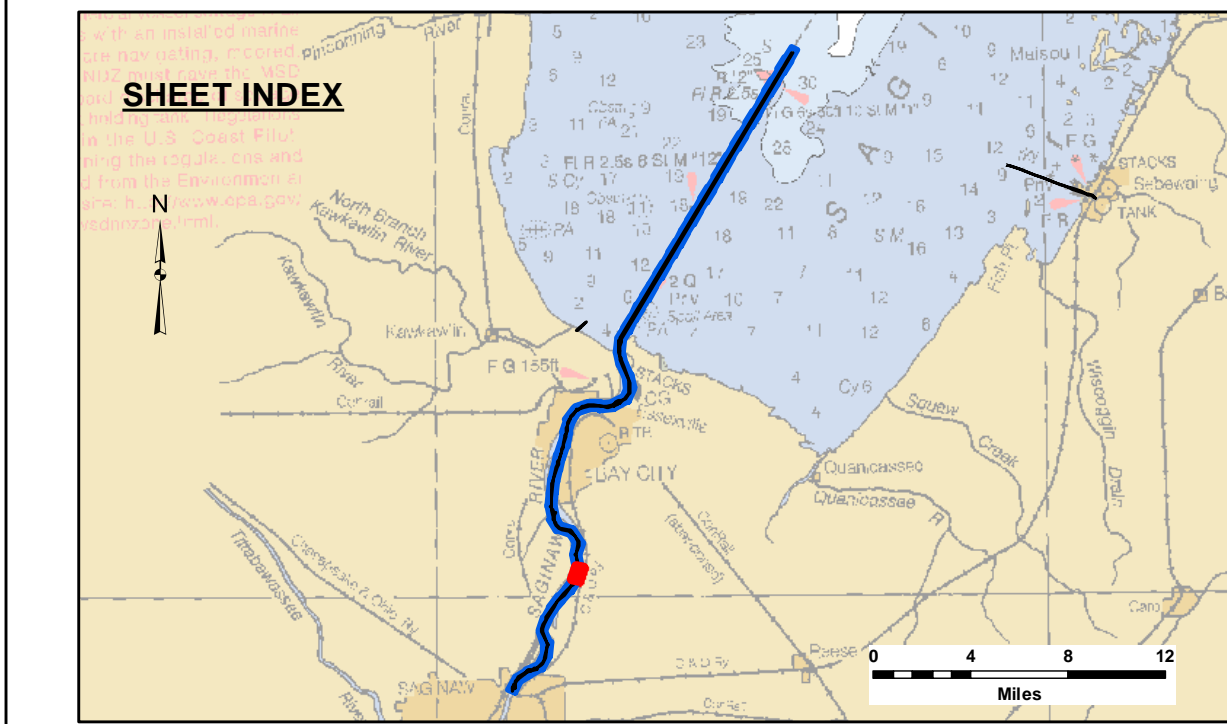
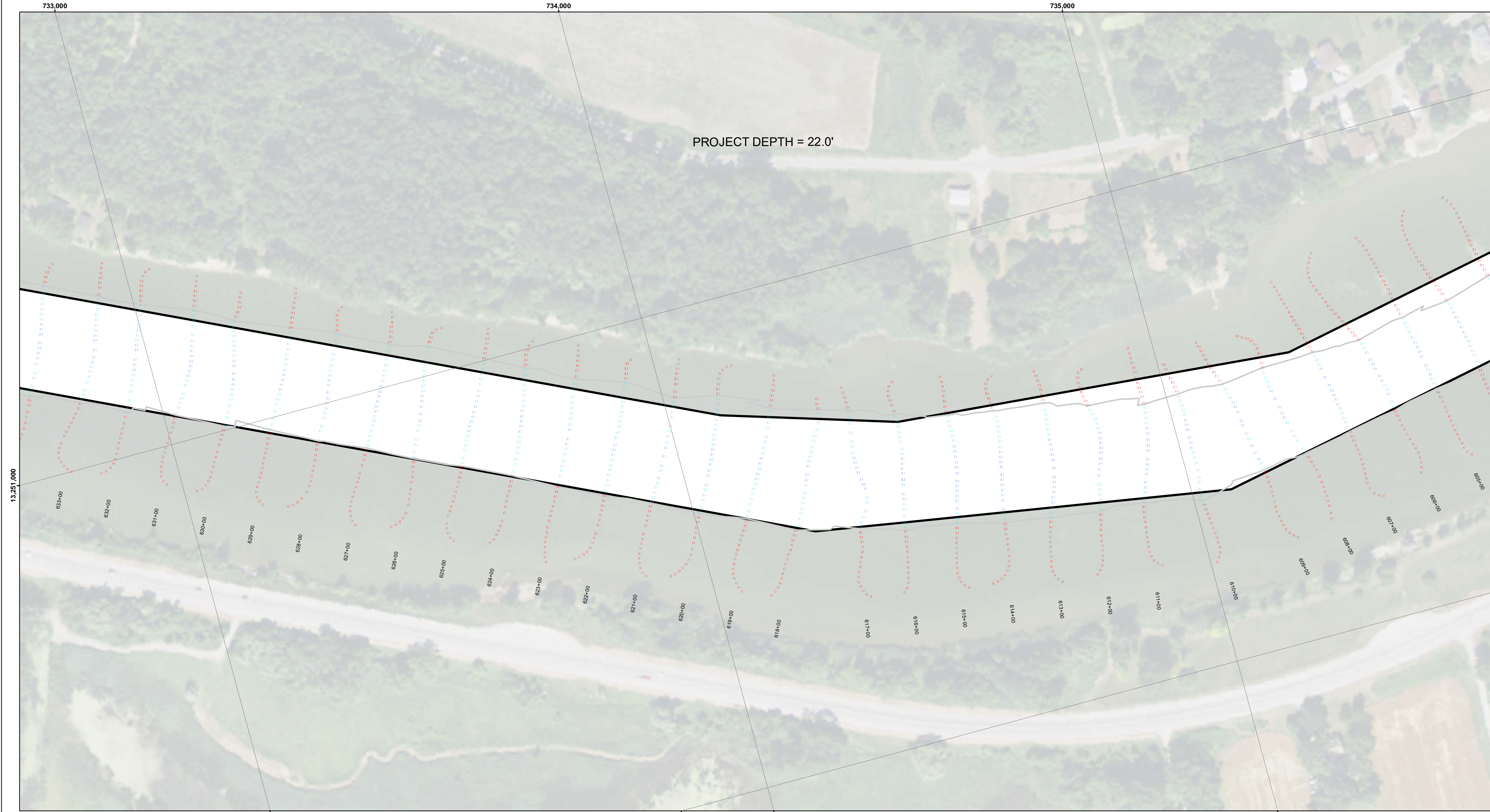
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By:	
Recommended:	Plotted By:	
Approved:	Chief, Survey Section	
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Number  
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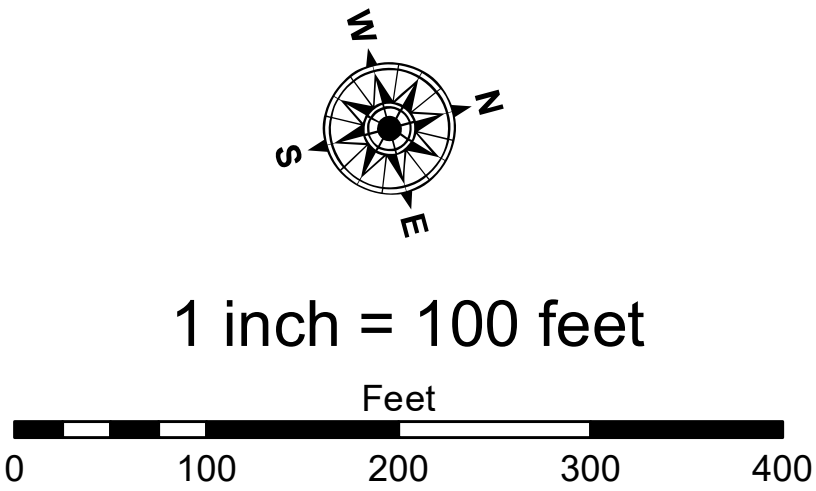
Revision Number:  
4.2-2023060420





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

- SOUNDING LEGEND**
- 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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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

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



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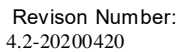
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By:	
Recommended:	Plotted By:	
Approved:	Chief, Survey Section	
	Chief, Technical Services	

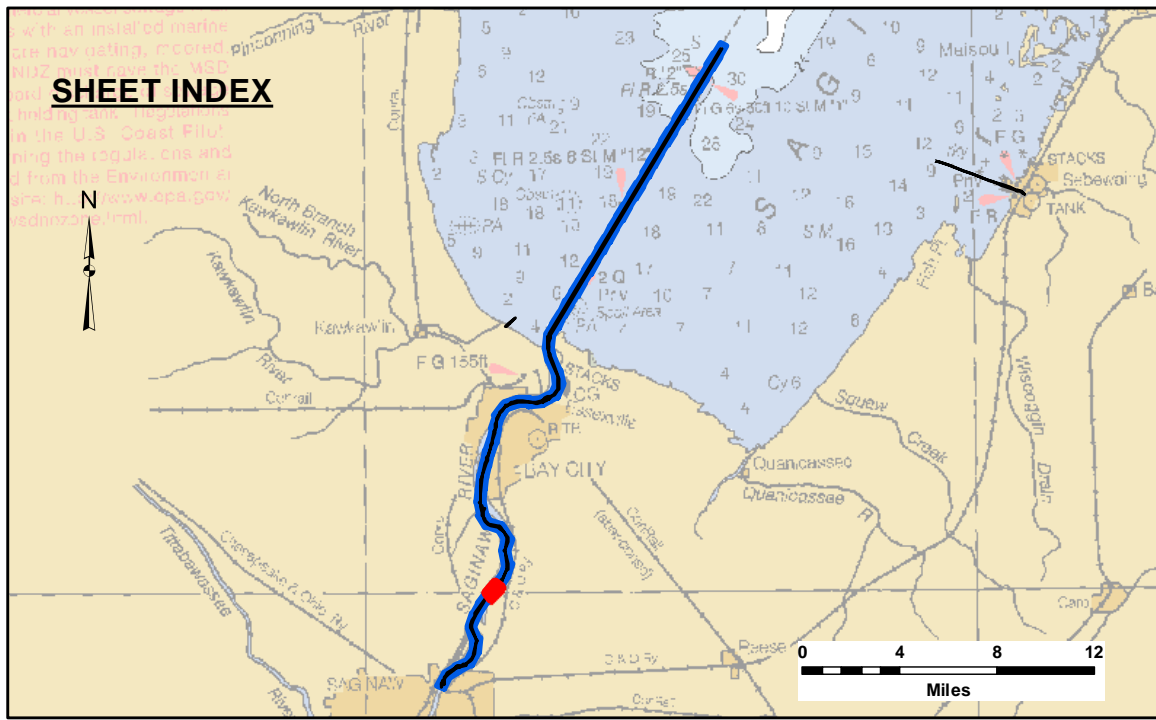
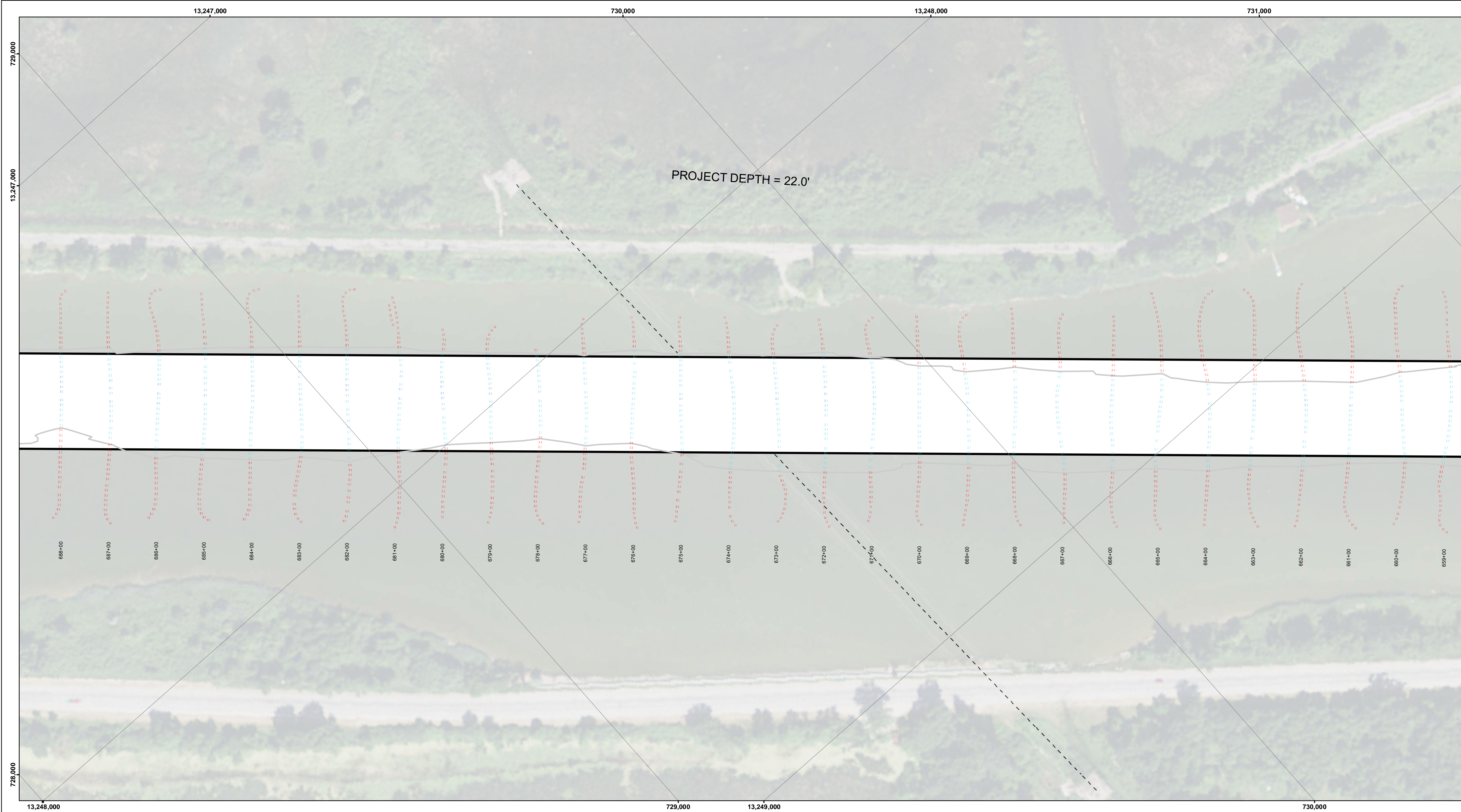
Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20230531\_CS  
31 May 2023

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Reference  
Number  
51 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'
- 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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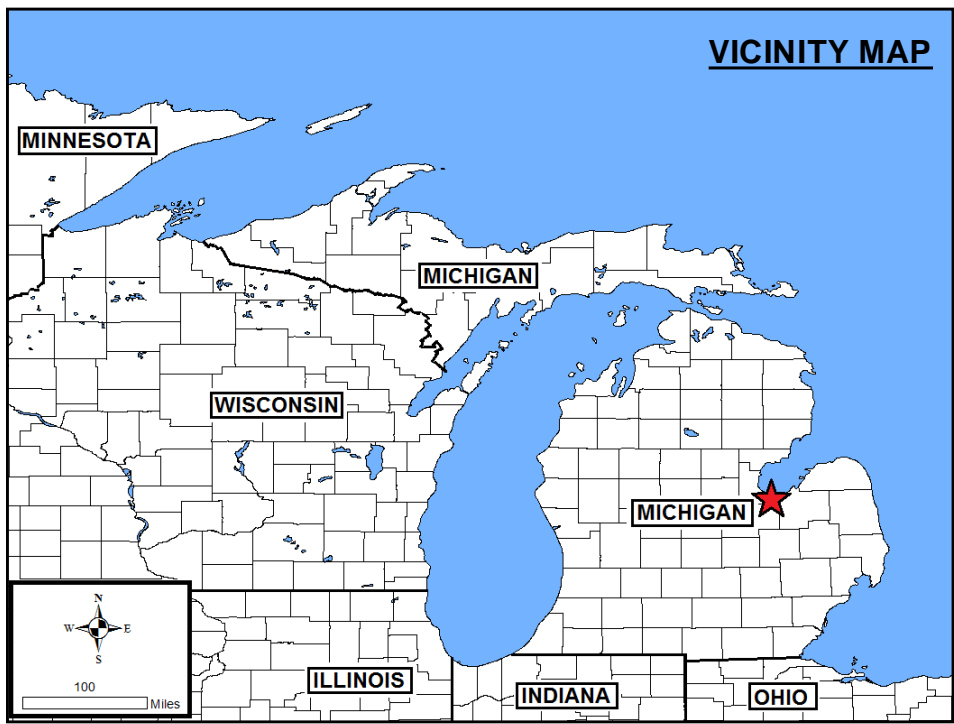
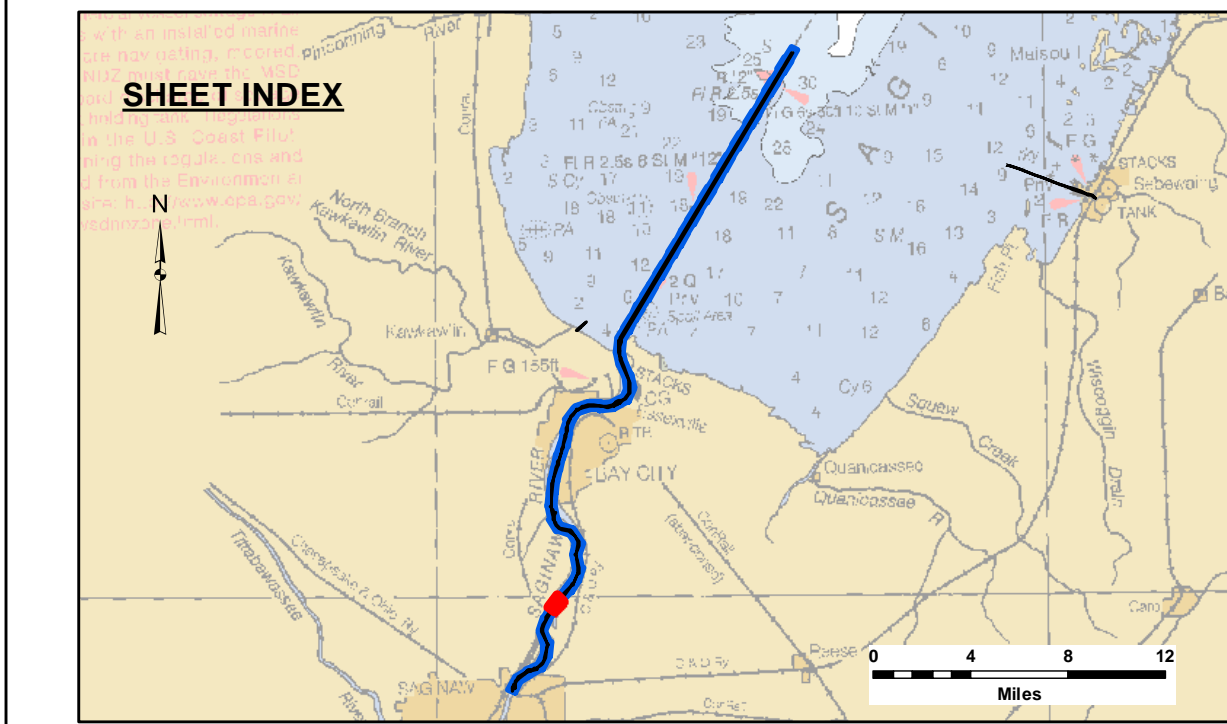
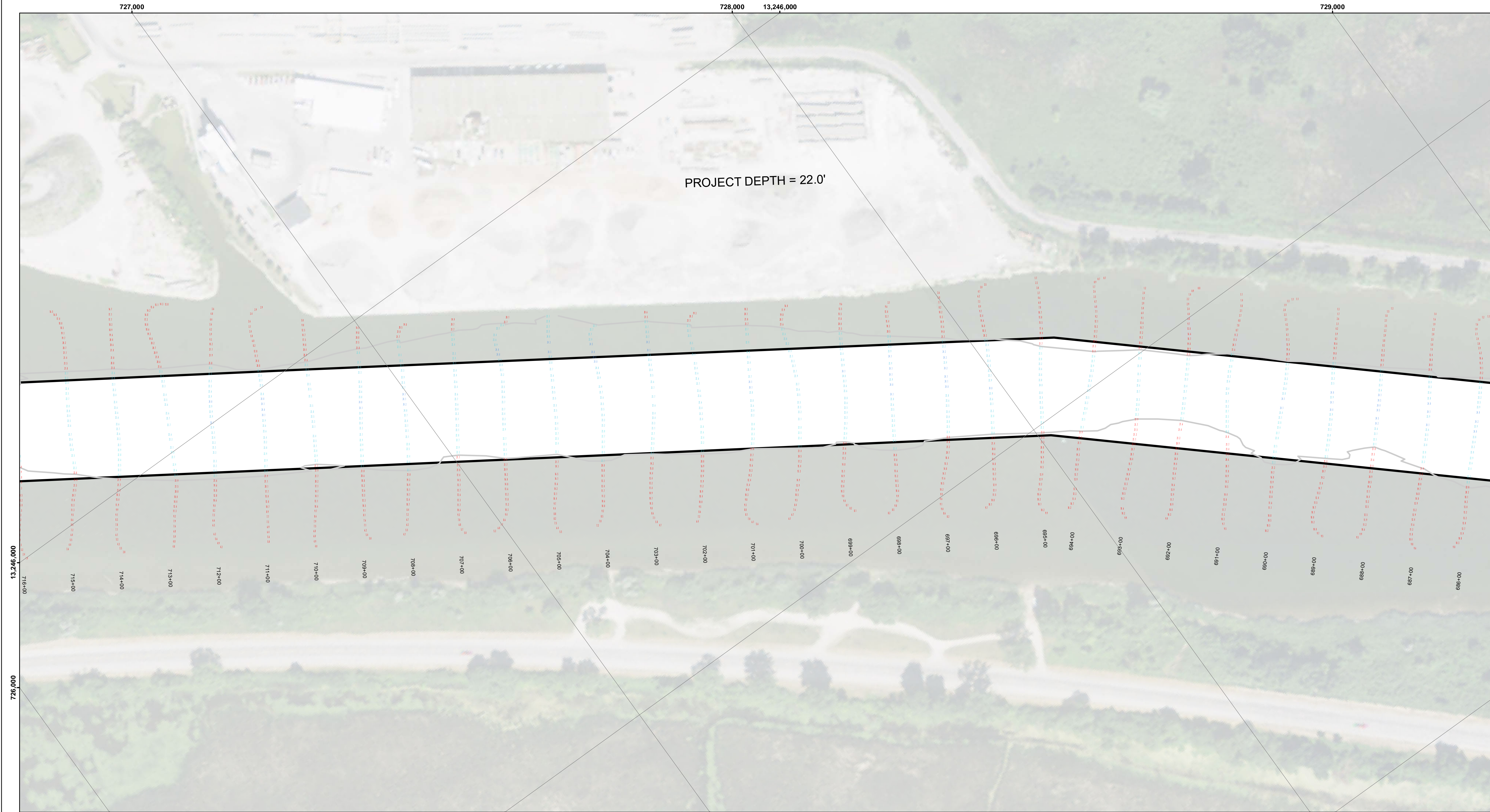
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted: _____	Surveyed By: _____
	Recommended: _____	Plotted By: _____
	Approved: _____	Checked By: _____
	Chief, Survey Section	

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

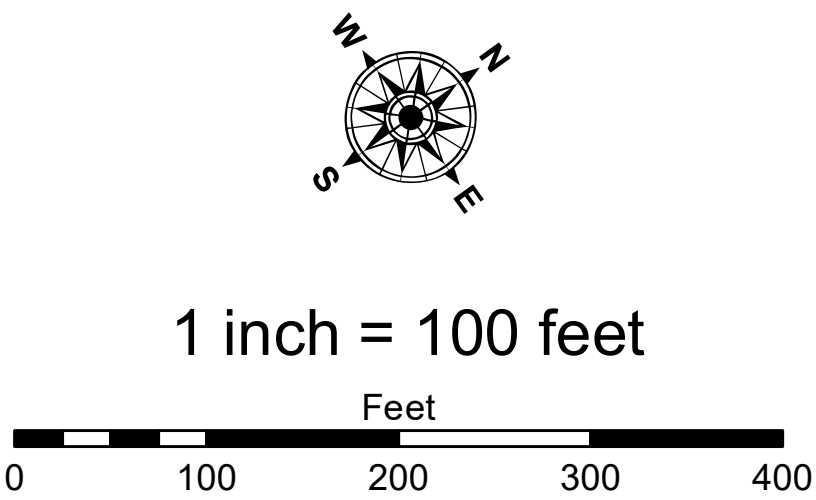
**Sheet Reference Number**  
**53 of 62**





- 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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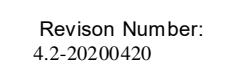
Submitted:	Surveyed By:
	Plotted By:
	Checked By:

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

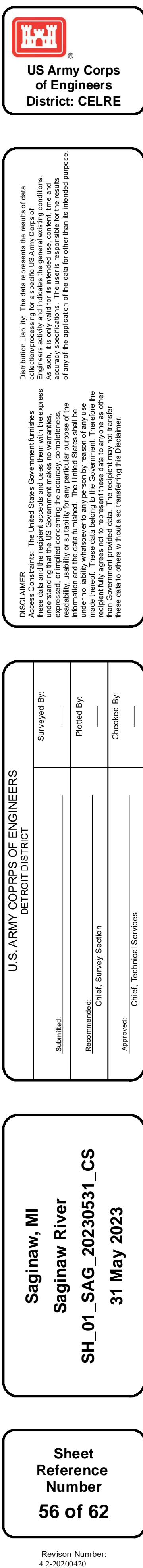
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Reference  
Number  
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Revision Number:  
4.2-2023060420

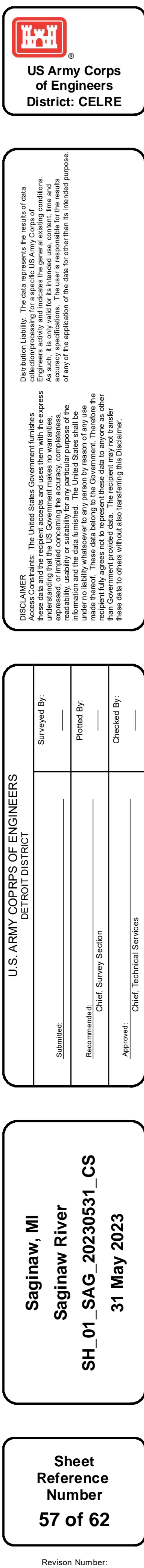




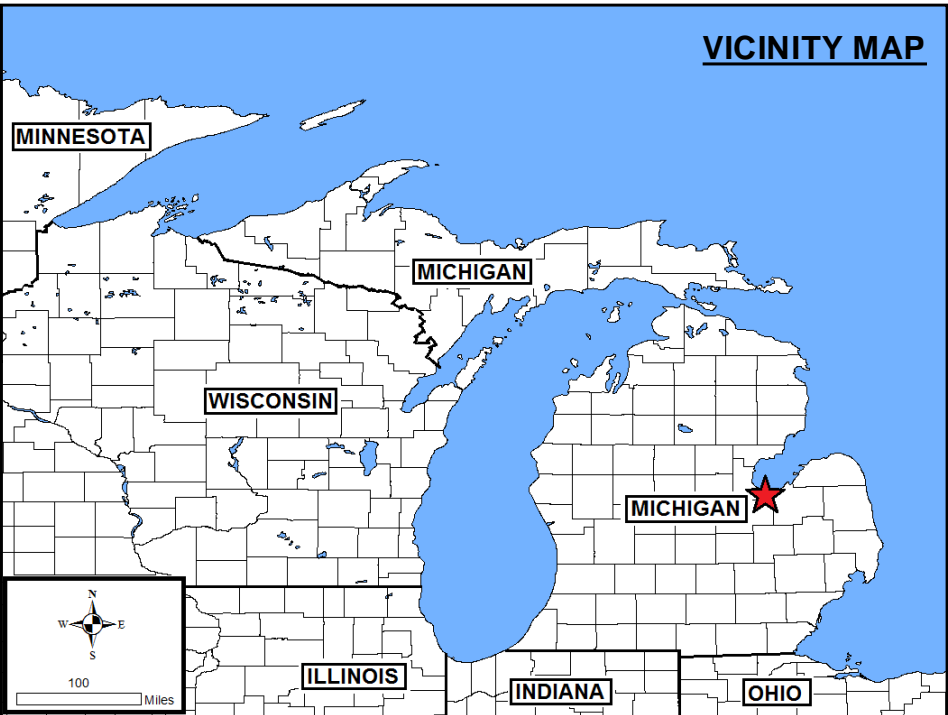
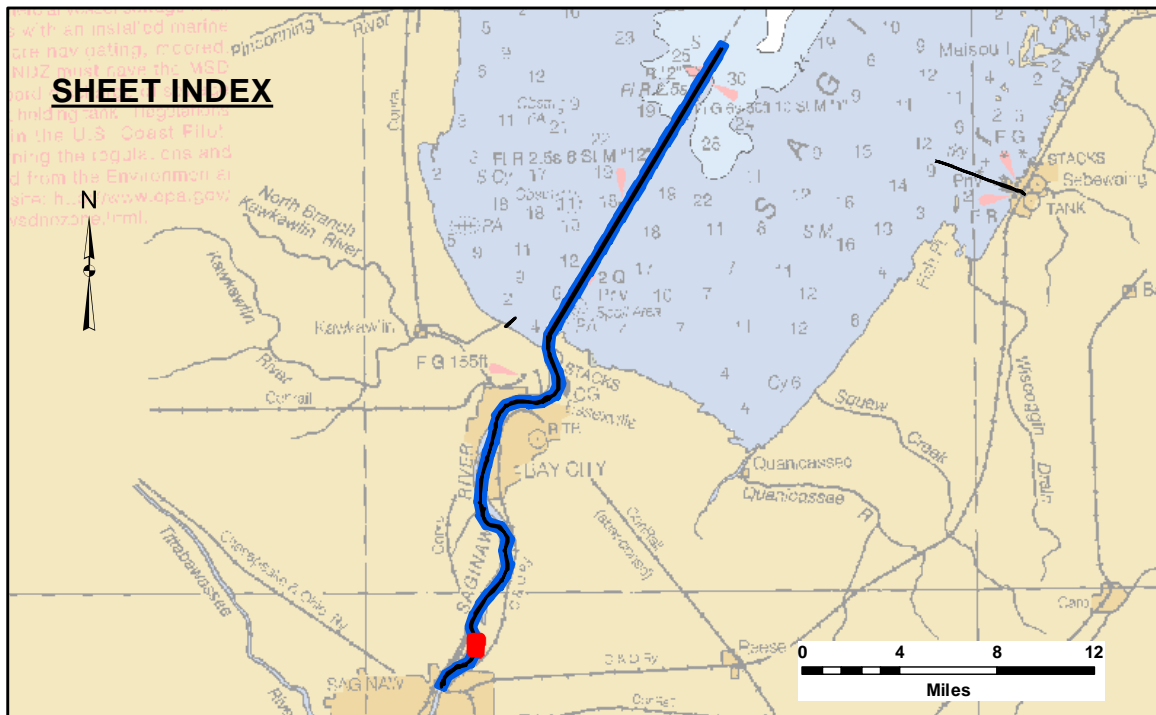
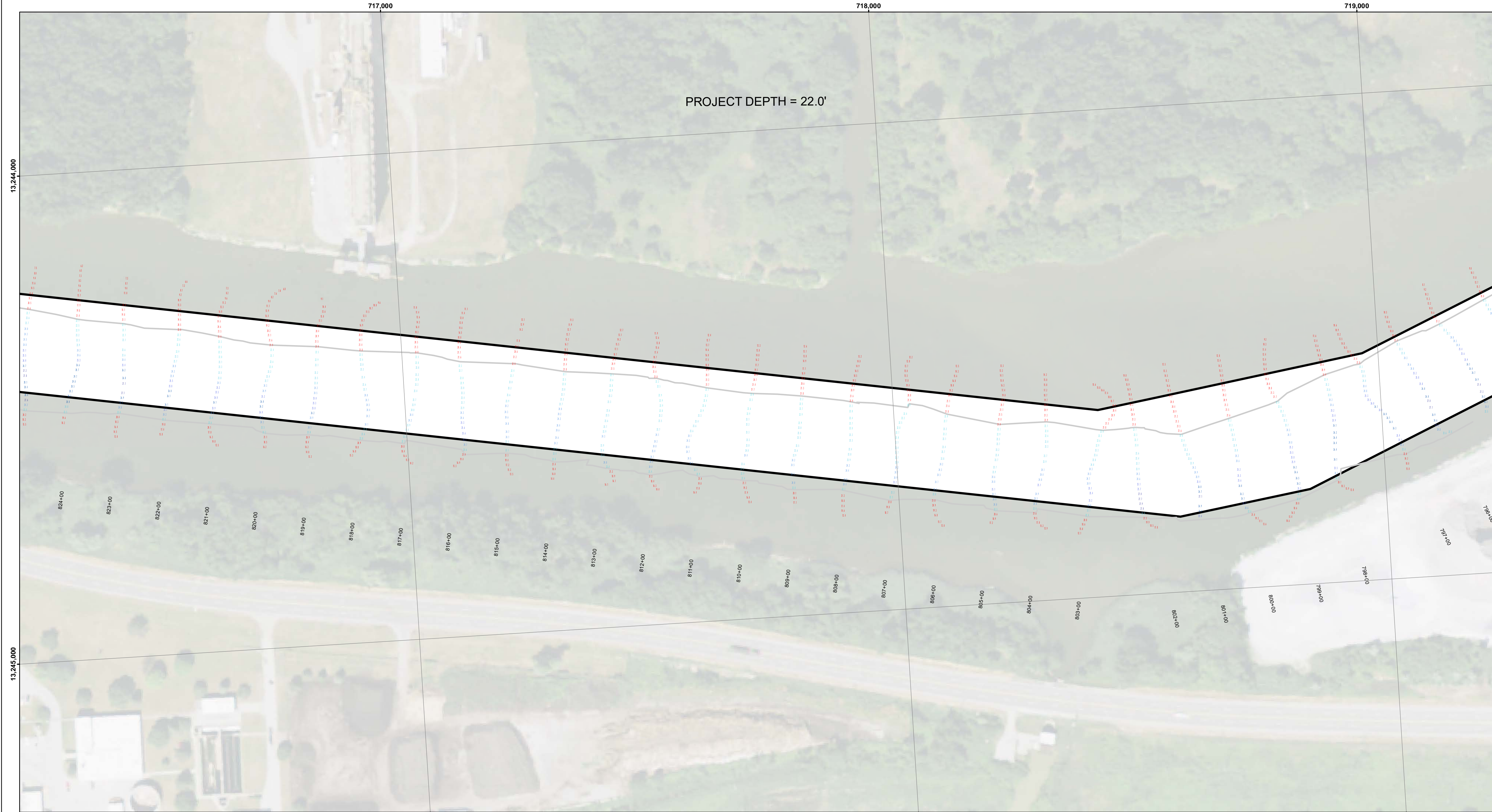






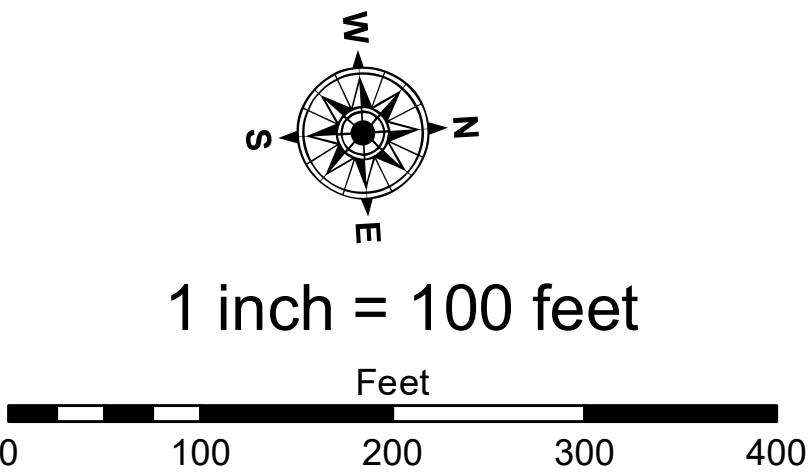






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
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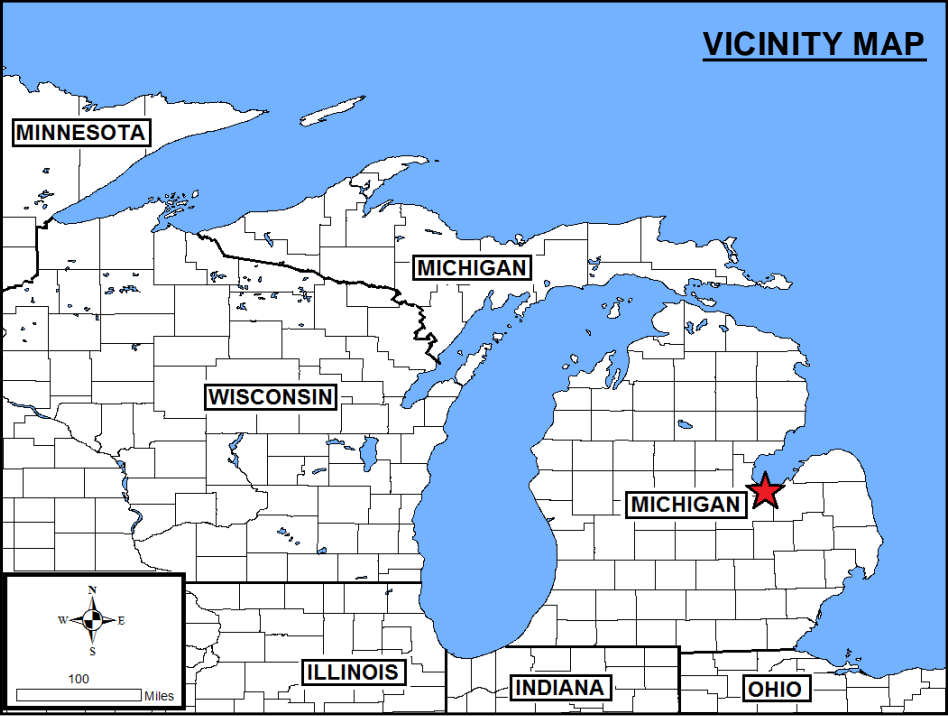
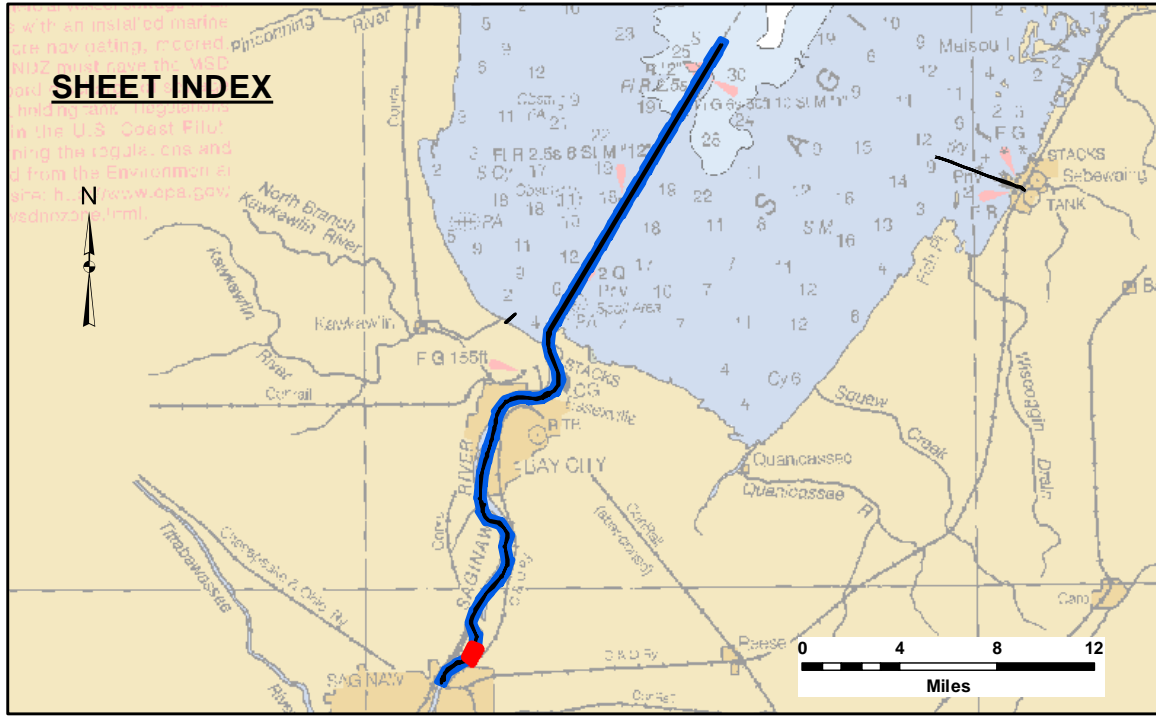
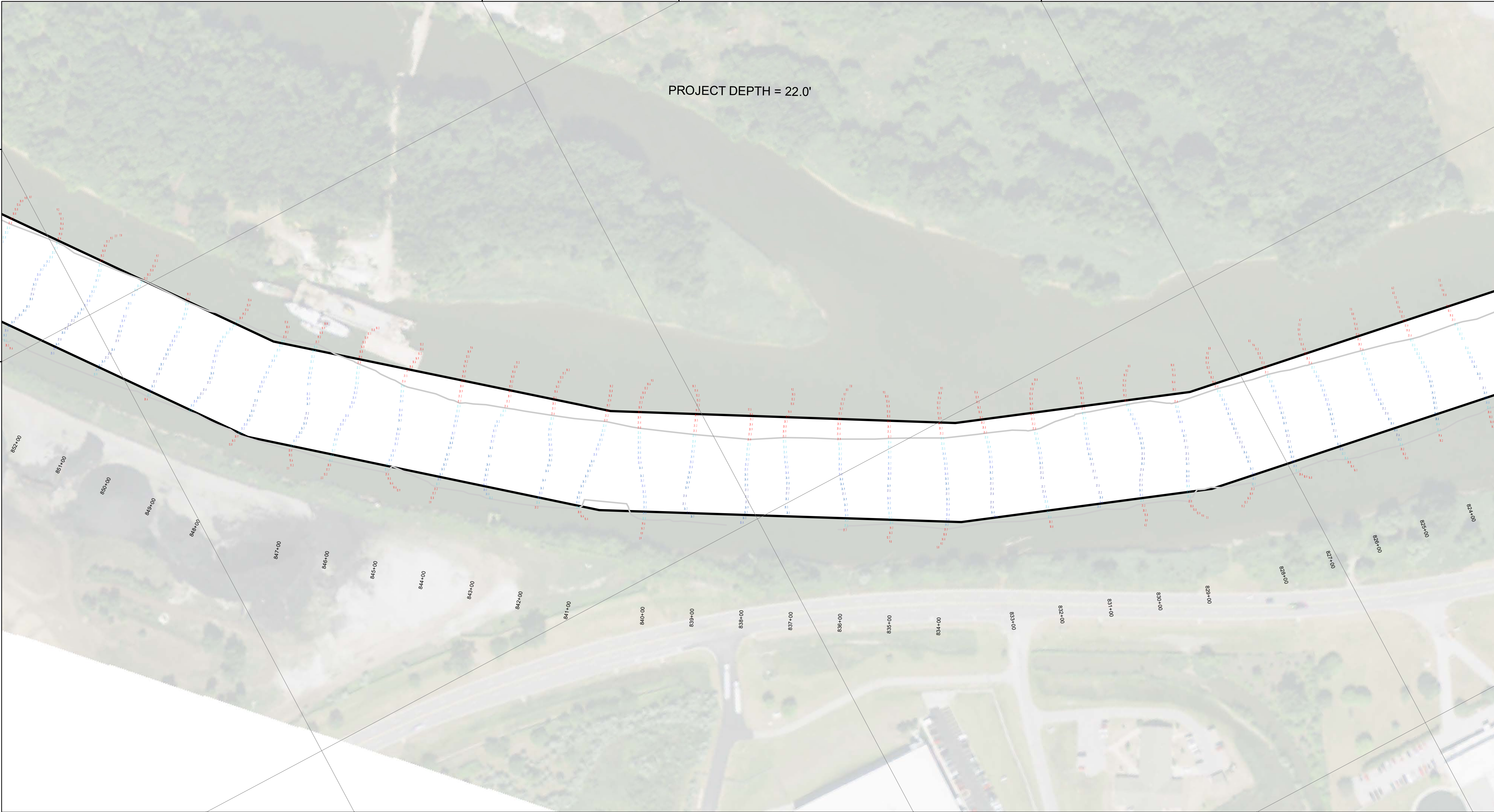
Submitted:	Surveyed By:
	Plotted By:
	Checked By:
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	

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

Sheet  
Reference  
Number  
58 of 62

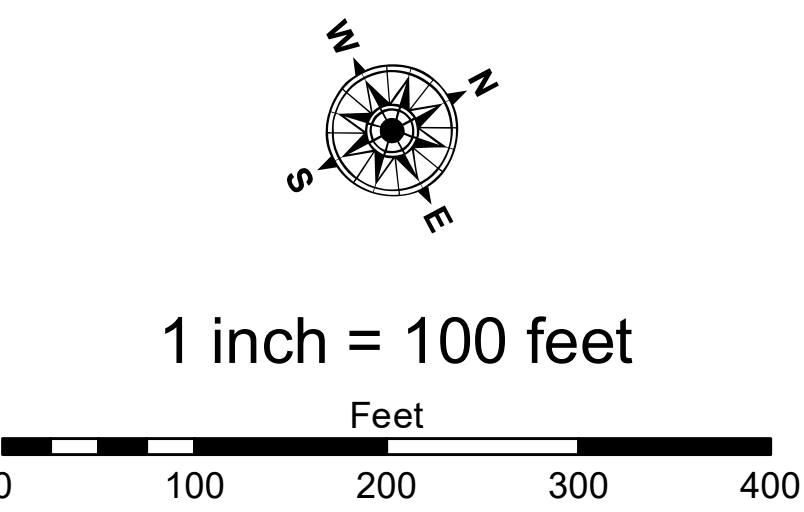
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4.2-200206030





- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
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MOTION COMPENSATION: APPLANIX POS-MV4

SONAR: R2SONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)

SOFTWARE: HYPACK

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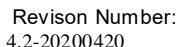
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	
Submitted:	Surveyed By:
Recommended:	Plotted By:
Approved:	Checked By:

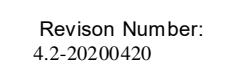
Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20230531\_CS  
31 May 2023

Sheet  
Reference  
Number  
59 of 62

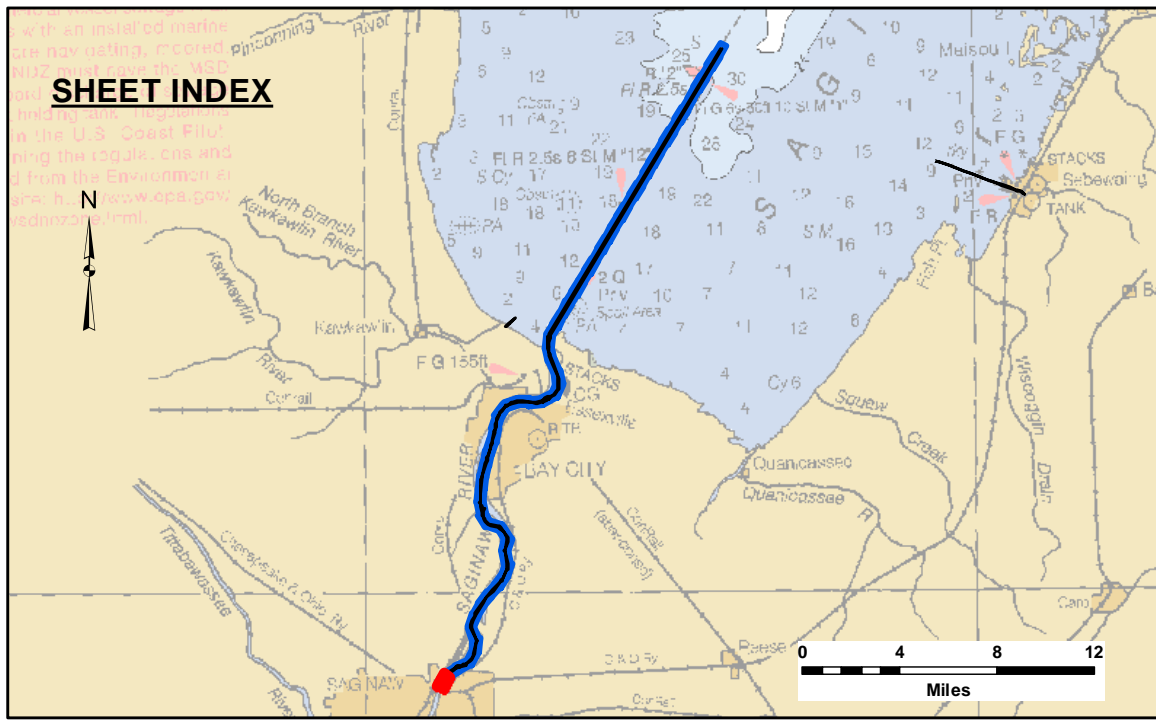
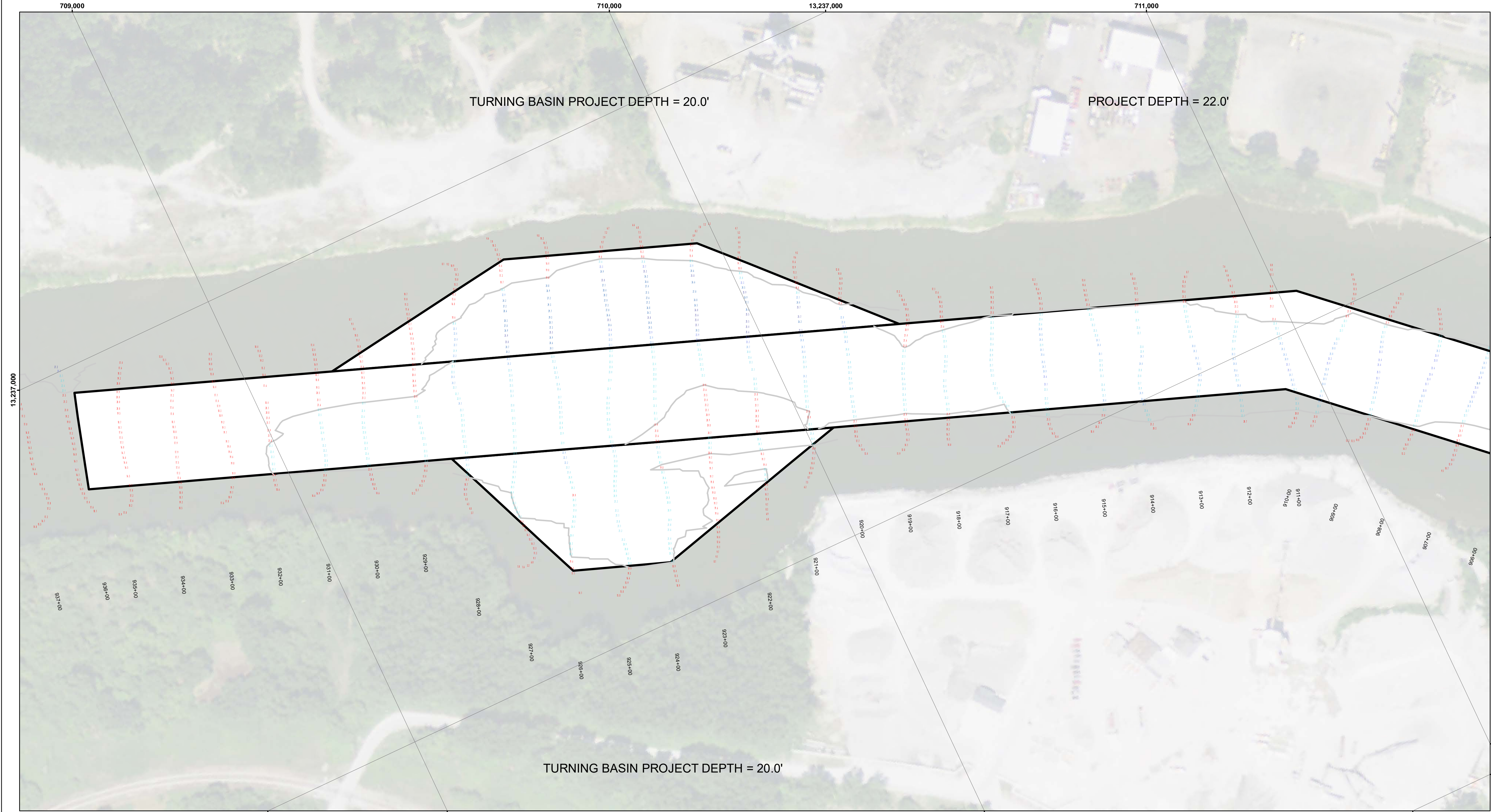






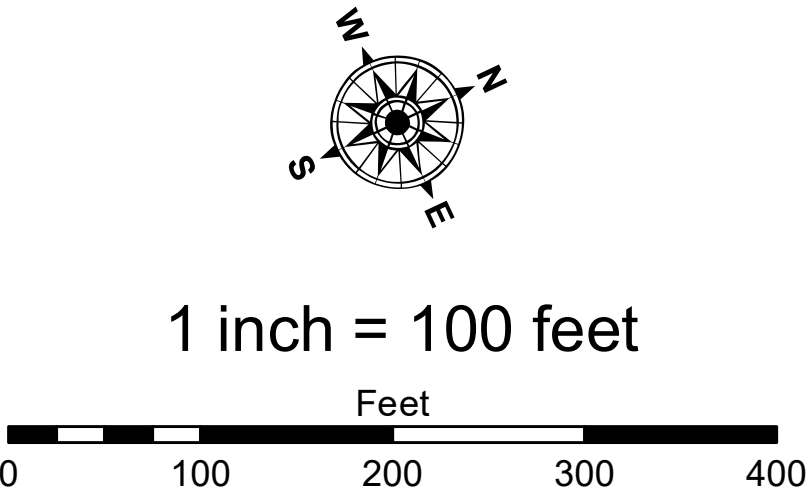






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  - PROJECT DEPTH +5'



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 DERRIVED 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/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.



DISCLAIMER: The data 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 any purpose other than the intended purpose. The user is responsible for the results of any application of the data for other than its intended purpose.

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

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