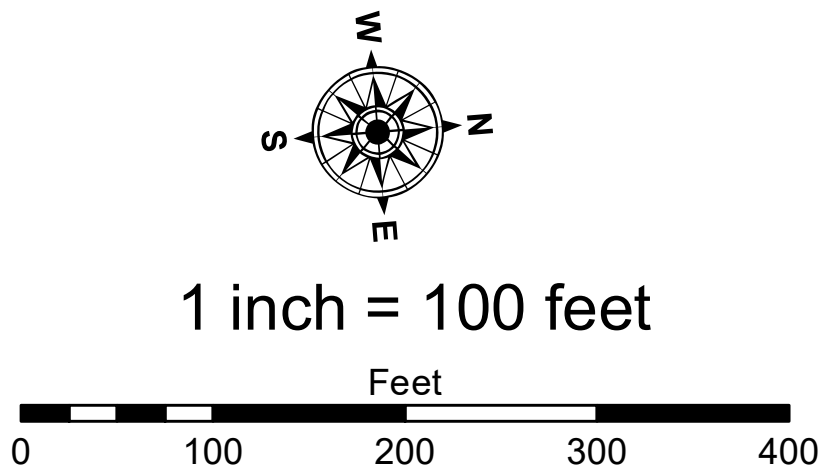


- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - └ Beacon, General
  - Contour Lines
  - Channel Limits

- 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 (#9075038) 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 TGS BM HL MON 25 SE], G. BOARD ON THE DOWNSTREAM END OF THE CENTER PIER OF THE LAKE STATE RAILROAD BRIDGE (ESTABLISHED FROM TGS BM HL MON 16 USE (PID 00534)), 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: RSONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)  
SOFTWARE: HYPACK

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



By this activity, the data represents the results of data collection/surveying for a specific US Army Corps of Engineers activity and indicates the general existing conditions. The user is responsible for the accuracy of the results and the application of the data for other than its intended purpose.

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

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

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

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

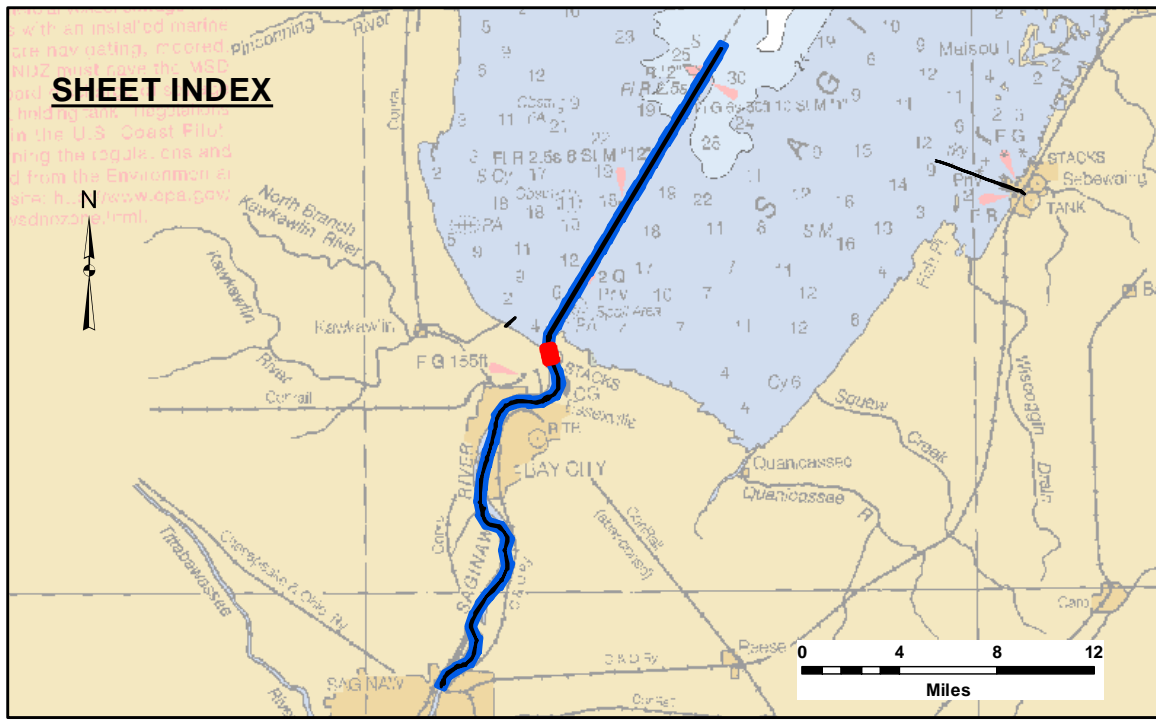
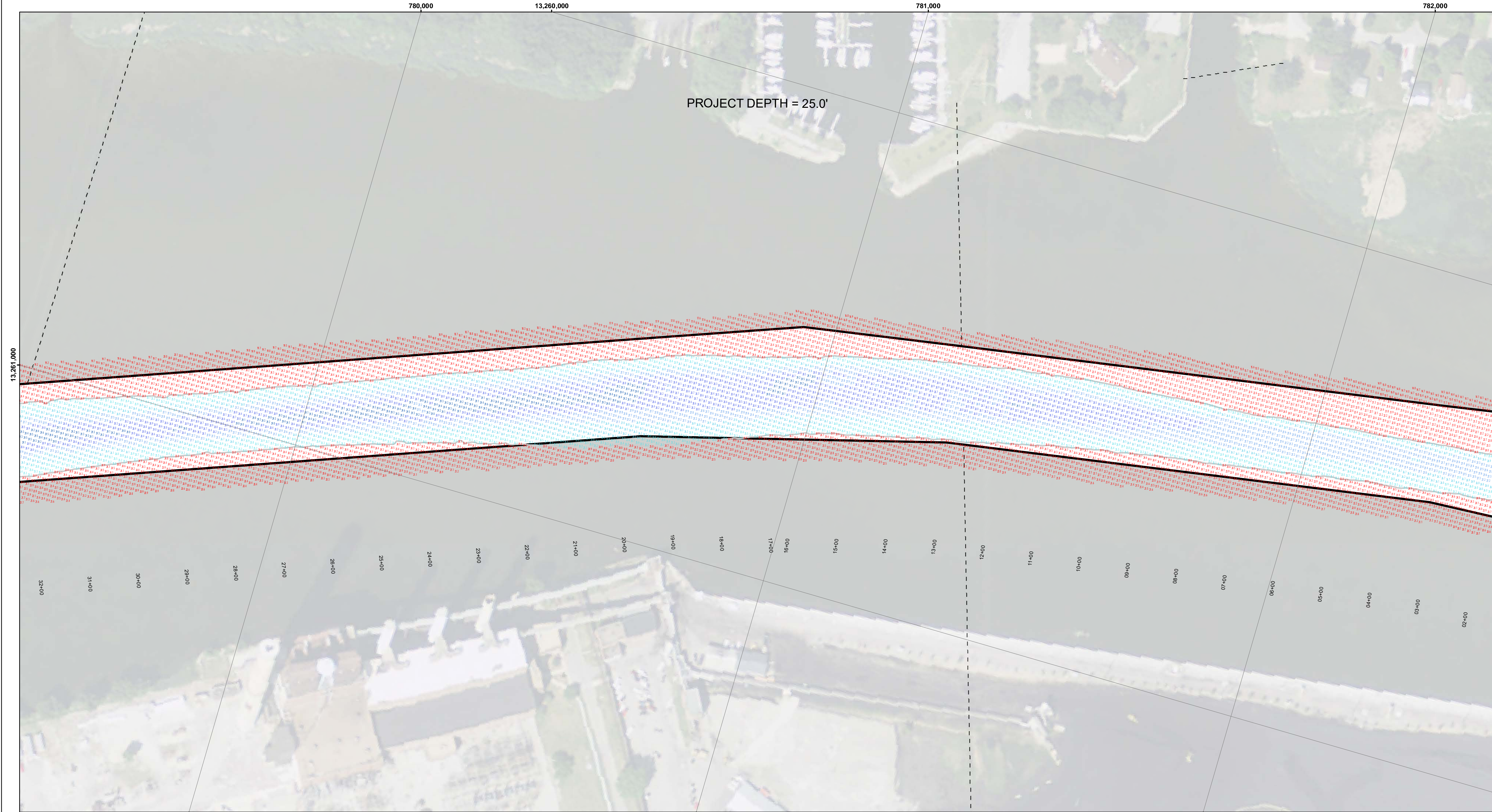
Recommended: Chief, Survey Section

Approved: Chief, Technical Services

Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20220822\_BD  
22 August 2022

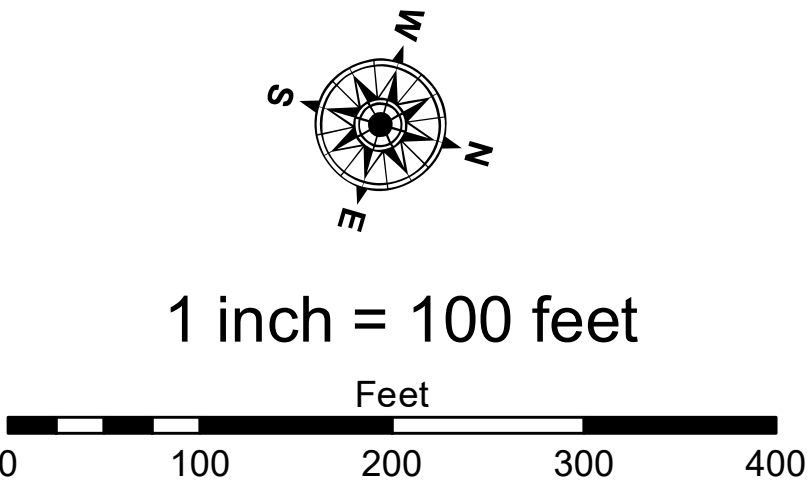
Sheet  
Reference  
Number  
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- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ⊥ Beacon, General
  - Contour Lines
  - Channel\_Limits

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



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POSITIONING: APPLANIX POS-MV4 W/ VRS/IRTK OR MARINESTAR GNSS. MOTION COMPENSATION: APPLANIX POS-MV4. SONAR: RS200C 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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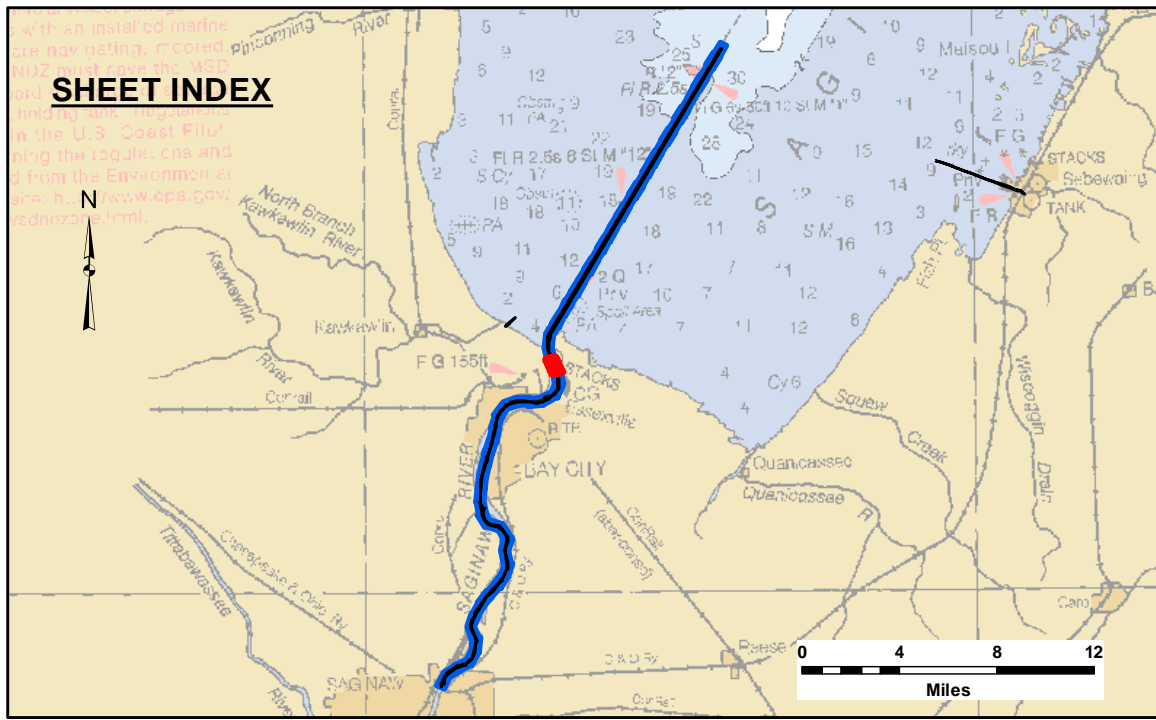
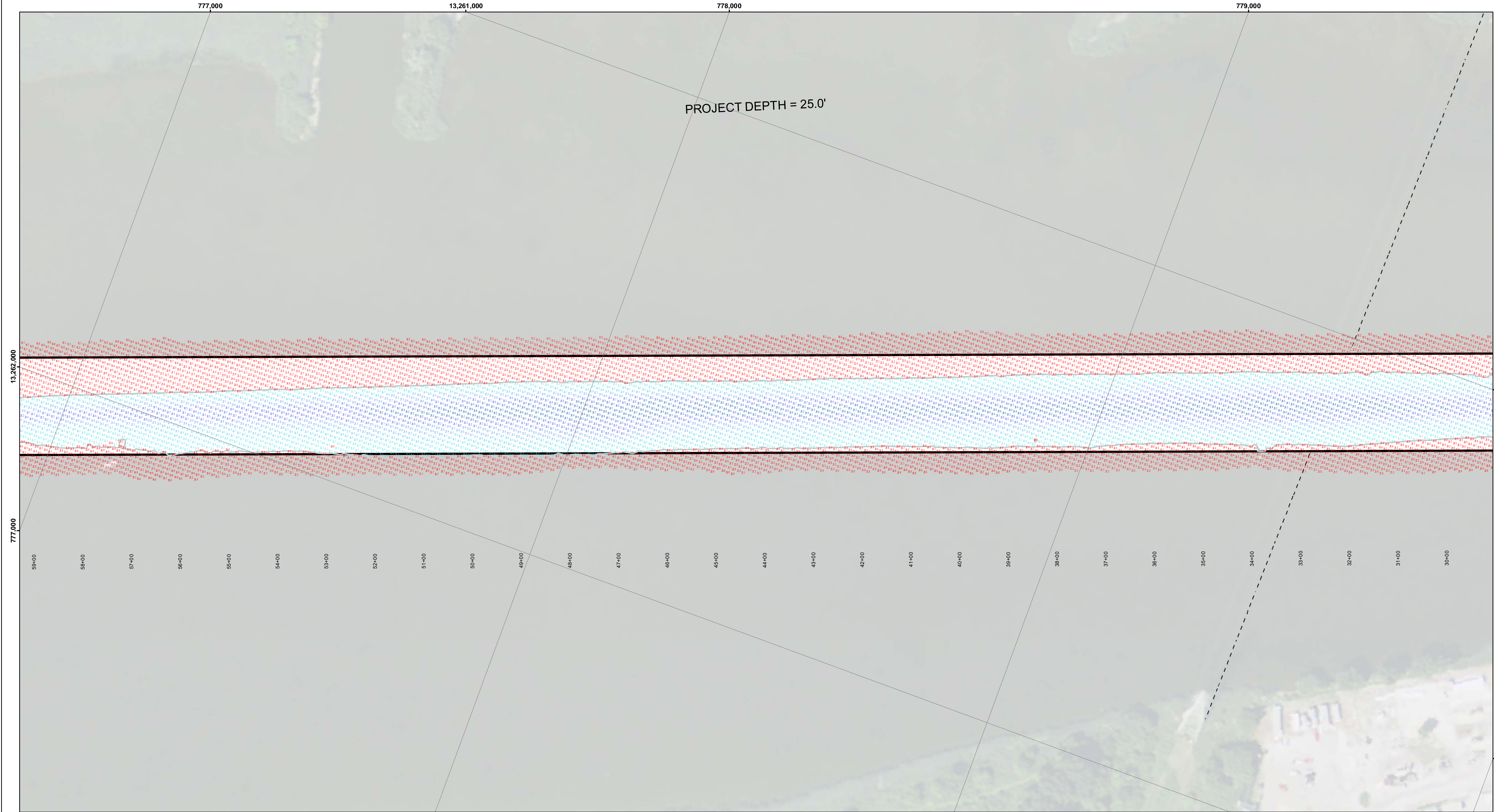
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted:	Surveyed By:
	Recommended:	Plotted By:
	Approved:	Checked By:

Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20220822\_BD  
22 August 2022

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Reference  
Number  
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Revision Number:  
4.2-2002/04/20





**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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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.

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

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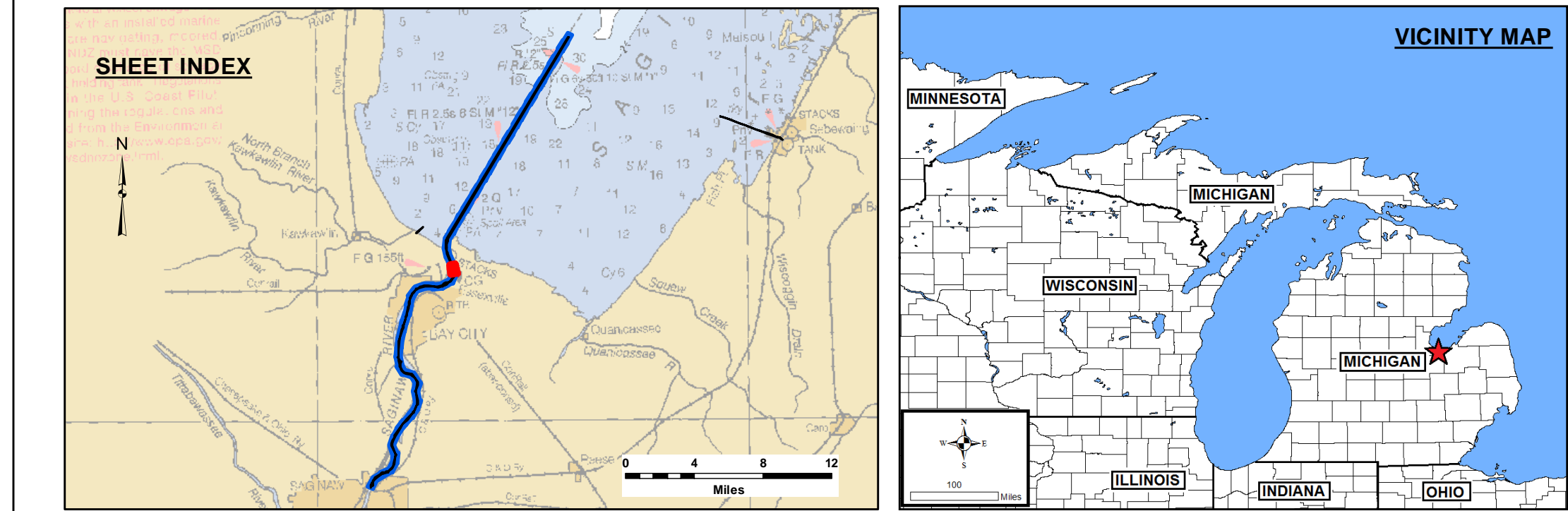
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	
Submitted By: _____	Surveyed By: _____
Recommended By: _____	Plotted By: _____
Approved By: _____	Checked By: _____

**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220822\_BD**  
**22 August 2022**

**Sheet Reference Number**  
**30 of 62**





PROJECT DEPTH = 25.0'



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

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

Saginaw, MI

# Saginaw River

SH\_01\_SAG\_20220822\_BD  
22 August 2022

Sheet  
Reference  
Number  
**31 of 62**

Revision Number:  
4.2-20200420

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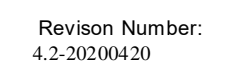
HORIZONTAL GRID DATUM BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, LAMBERT PROJECTION, SOUTH ZONE (211).  
NORTH AMERICAN DATUM 1983, U.S. SURVEY FOOT.  
ALL SOUNDINGS ARE REFERENCED TO INTERNATIONAL GREAT LAKES DATUM OF 1985 (IGLD85).

THESE VALUES ARE DERIVED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) WATER LEVEL STATION  
SIDELAKE, MI (#0970535) ALONG WITH THE FOLLOWING GAGES: G. BOARD ON PILING NEAR SC 820+00, TBM ZILL RAMP, TBM C,  
TBM CASS RAMP, TBM RAILROAD (ESTABLISHED FROM COE VERTICAL CP BM 38), TBM SAIL AT THE FOOT OF THE 5TH STREET, G.  
BOARD ON THE D'STEAM WESTERN PIER OF THE CENTRAL MICHIGAN R.R. BRIDGE [GAGE BOARD WAS ESTABLISHED FROM NGS BM  
610000 (MEL)], G.M.B. ON THE SOUTH END OF THE CENTRE PIER OF THE LAKE STATE TRUSS BRIDGE [GAGE BOARD  
FROM NGS BM 610000], G.M.B. ON THE NORTH END OF THE CENTRE PIER OF THE LAKE STATE TRUSS BRIDGE [GAGE  
BOARD SET ON THE PILING AT THE MOUTH OF THE BLACK RIVER ON THE NORTH SIDE NEAR THE RAILROAD TRESTLE

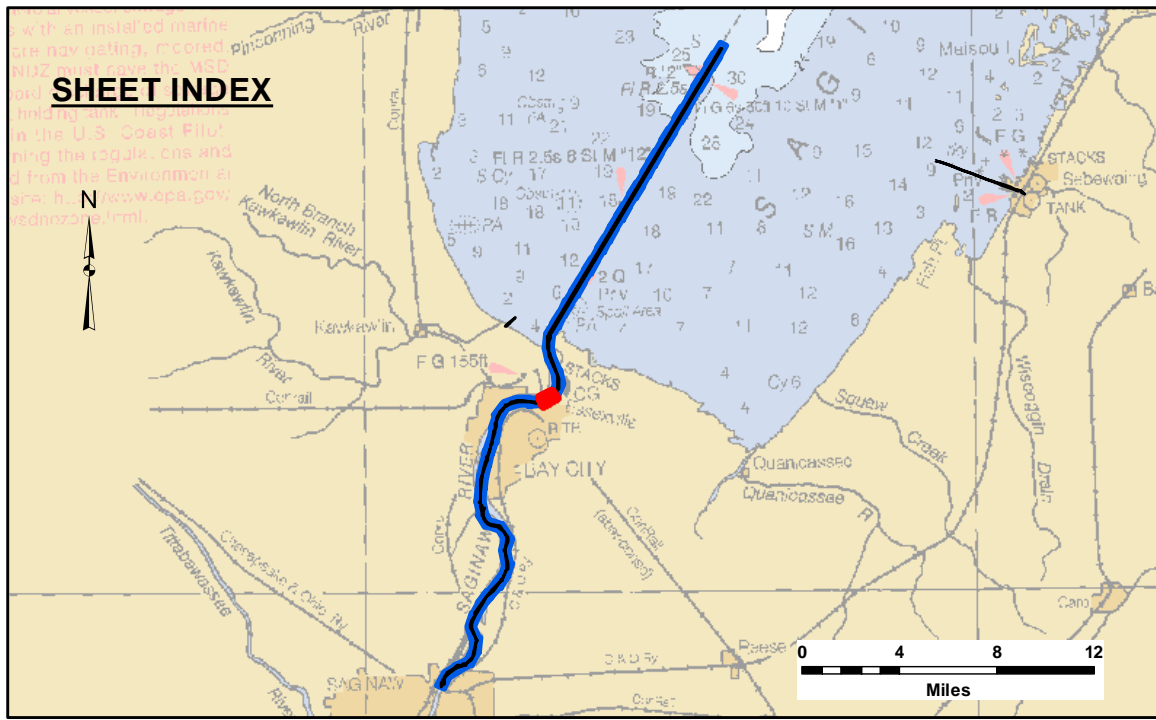
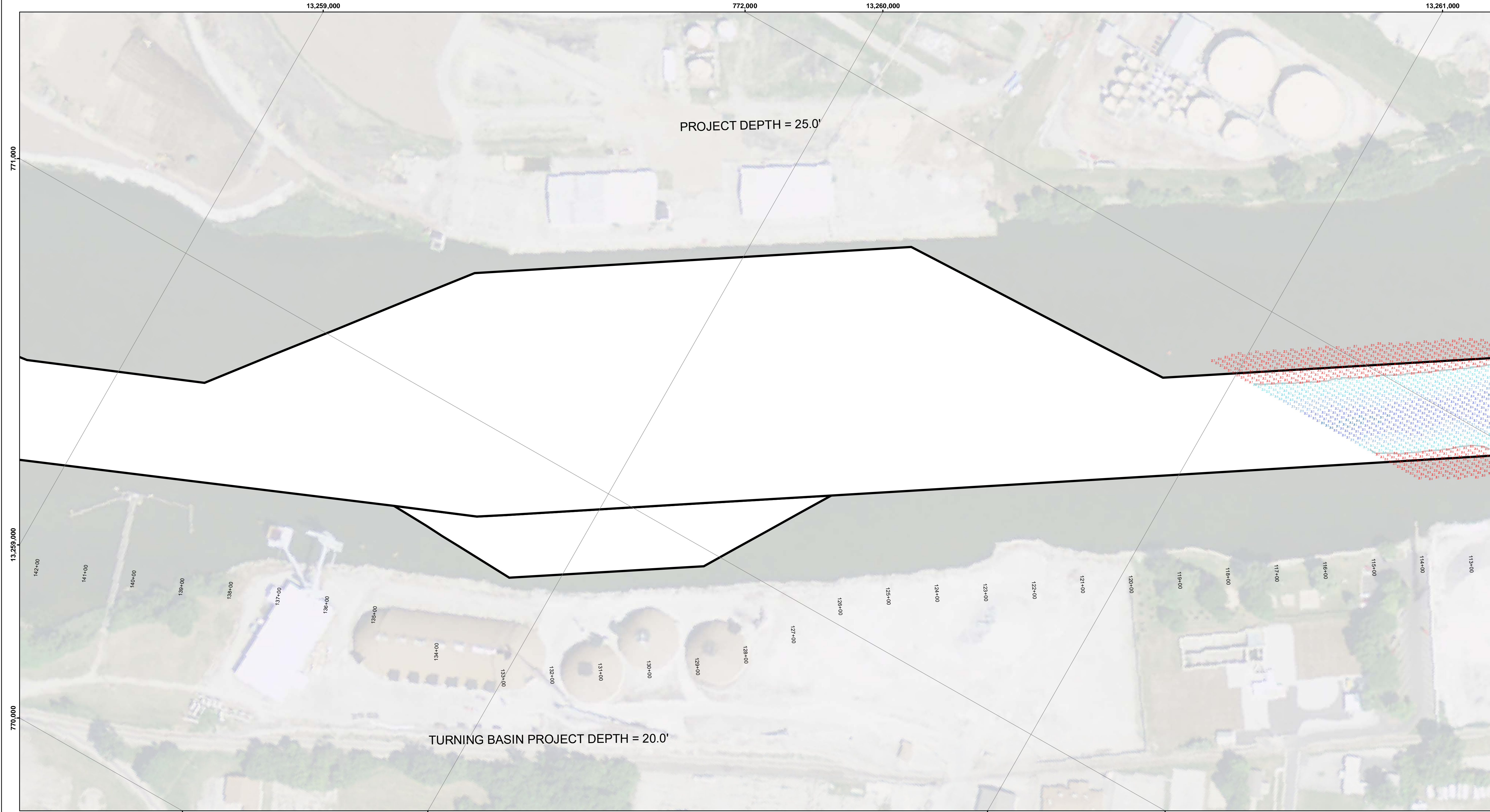
POSITIONING: APPLANIX POS-MV4 W/ VRS/RTK OR MARINESTAR GNSS  
MOTION COMPENSATION: APPLANIX POS-MV4  
SONAR: R2SONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)  
SOFTWARE: HYPACK

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



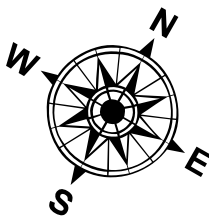




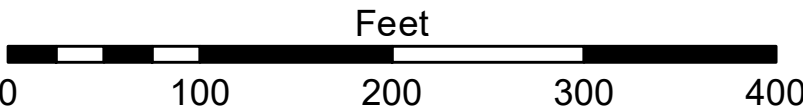


- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

- 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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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.



US Army Corps of Engineers District: CELRE

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U.S. ARMY CORPS OF ENGINEERS

DETROIT DISTRICT

Surveyed By:

Submitted:

Plotted By:

Recommended: Chief, Survey Section

Checked By:

Approved: Chief, Technical Services

Saginaw, MI

Saginaw River

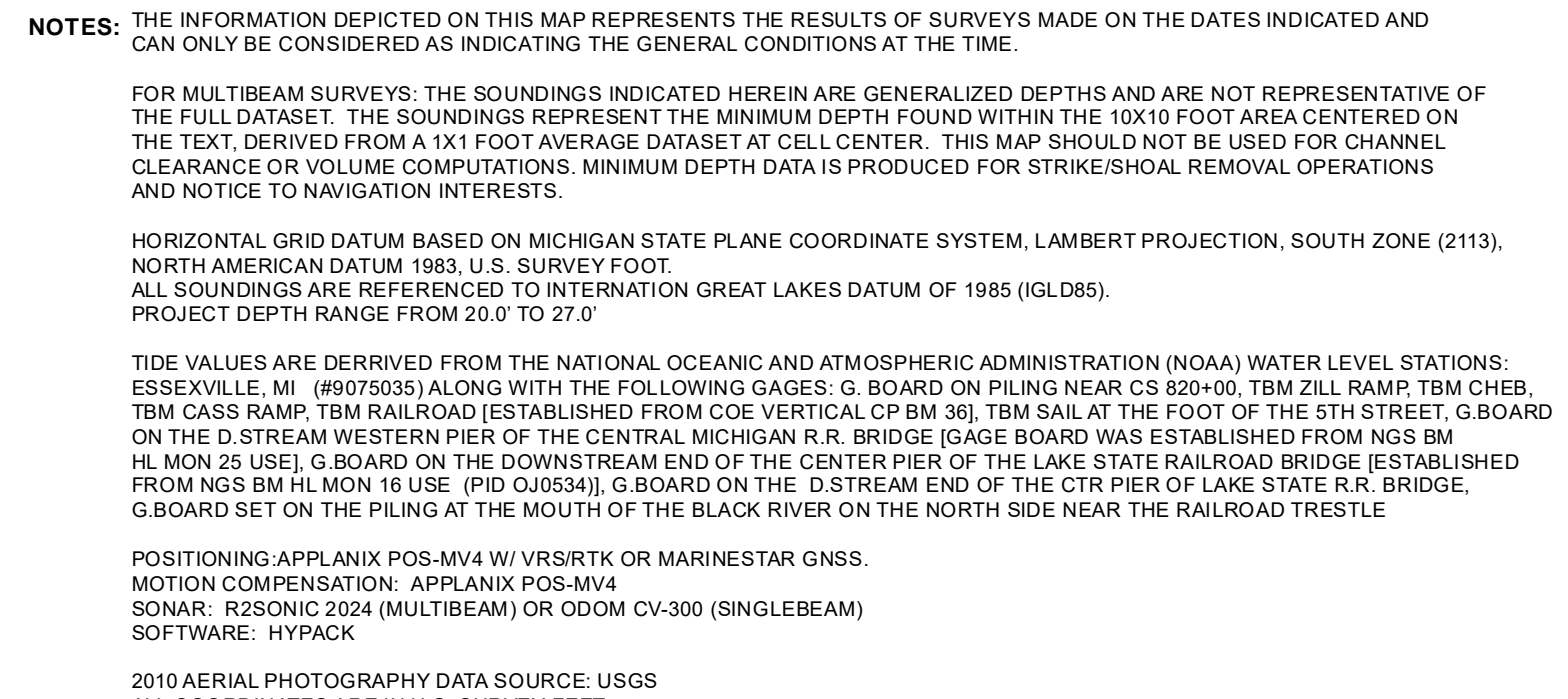
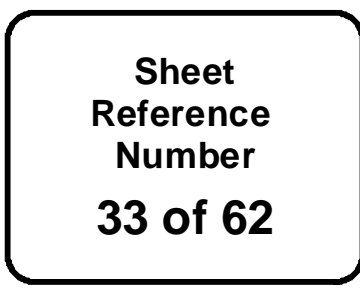
SH\_01\_SAG\_20220822\_BD

22 August 2022

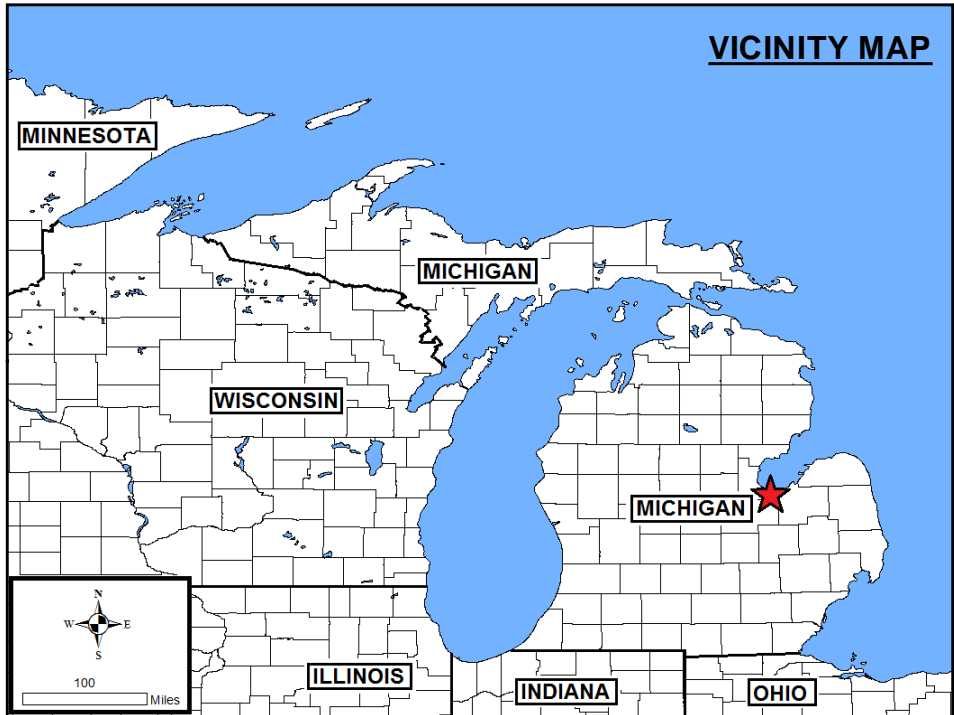
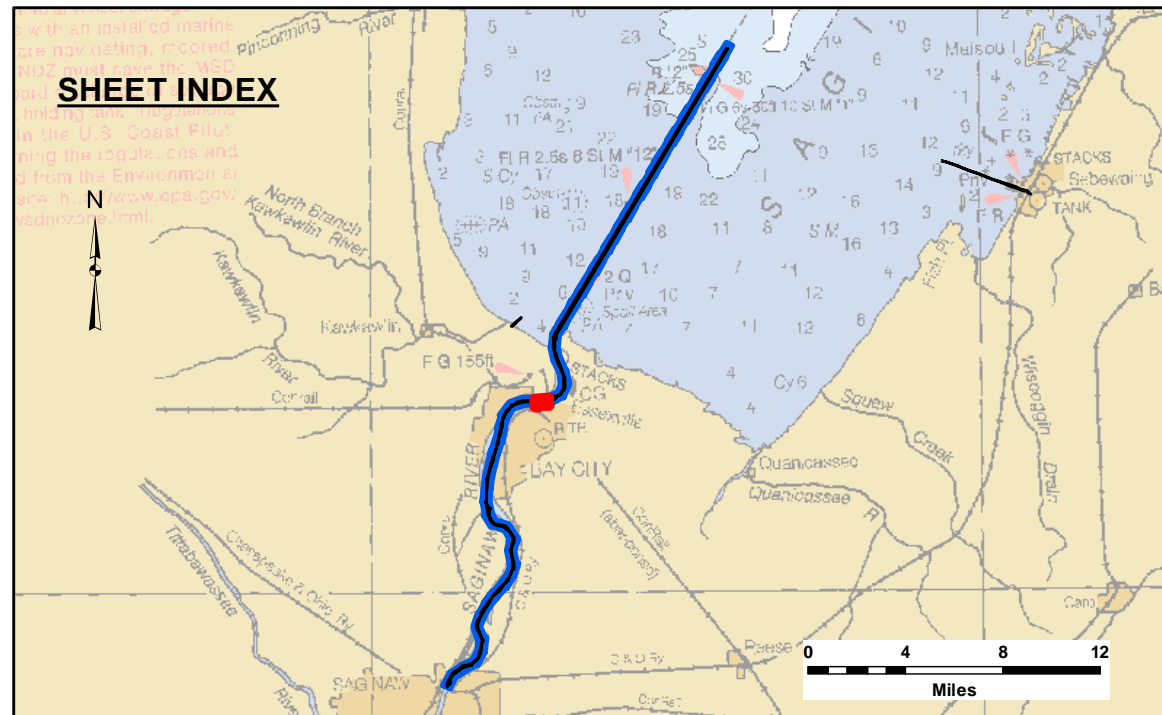
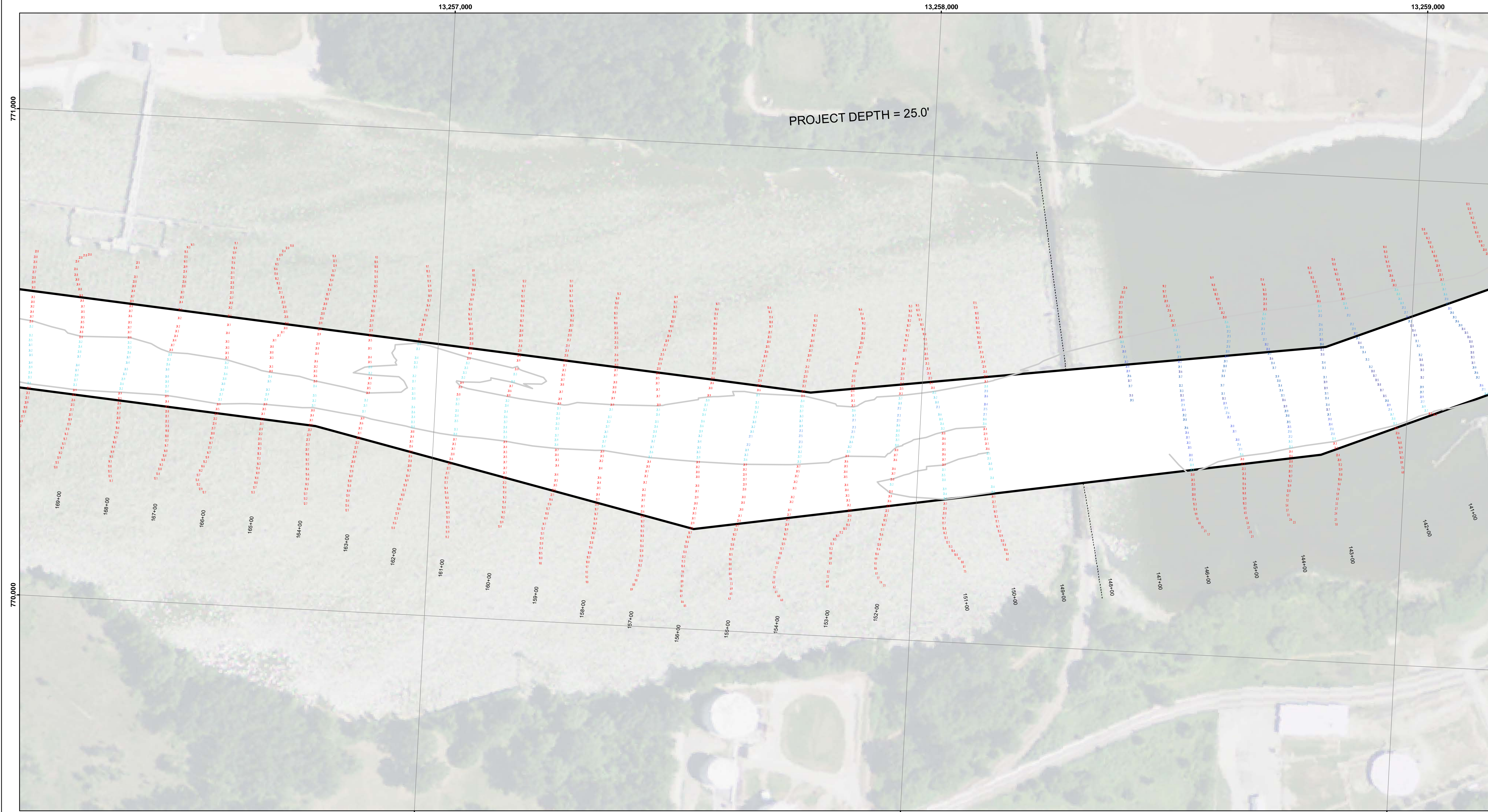
Sheet Reference Number 33 of 62

Revision Number: 4.2-202/004-20



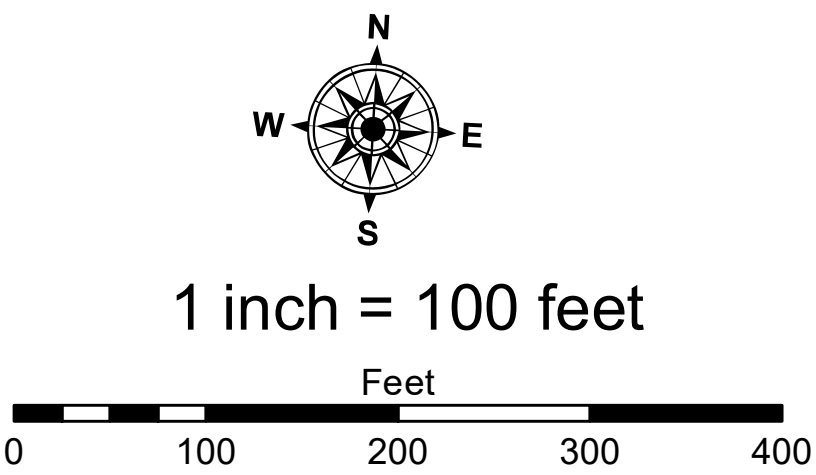






- LEGEND**
- ..... Cable Submarine
  - - - Cable Overhead
  - Placement Area
  - ⊥ Beacon, General
  - Contour Lines
  - Channel\_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
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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

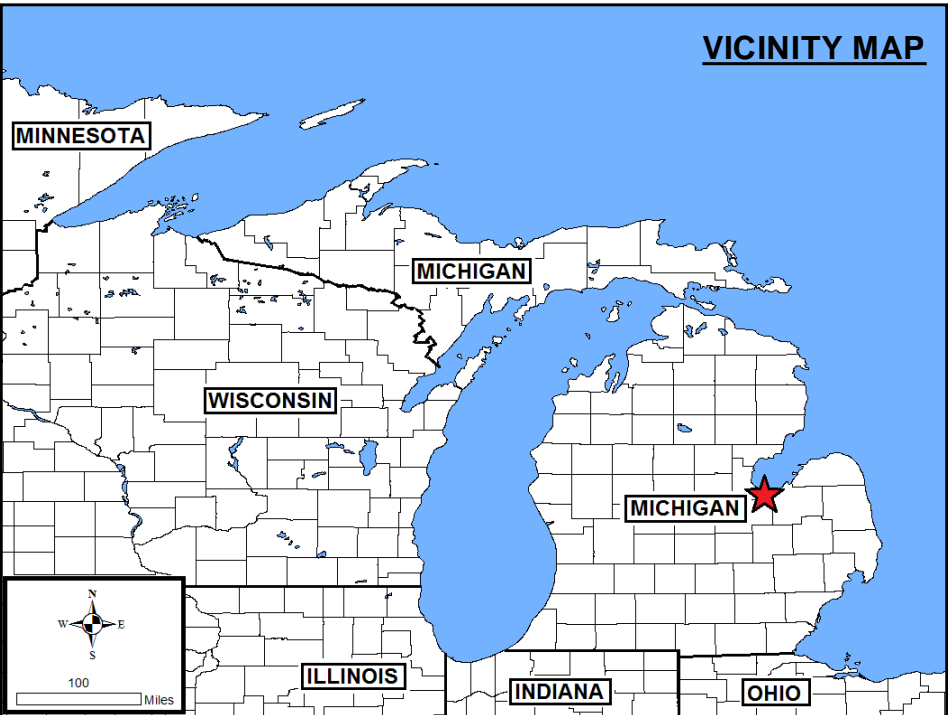
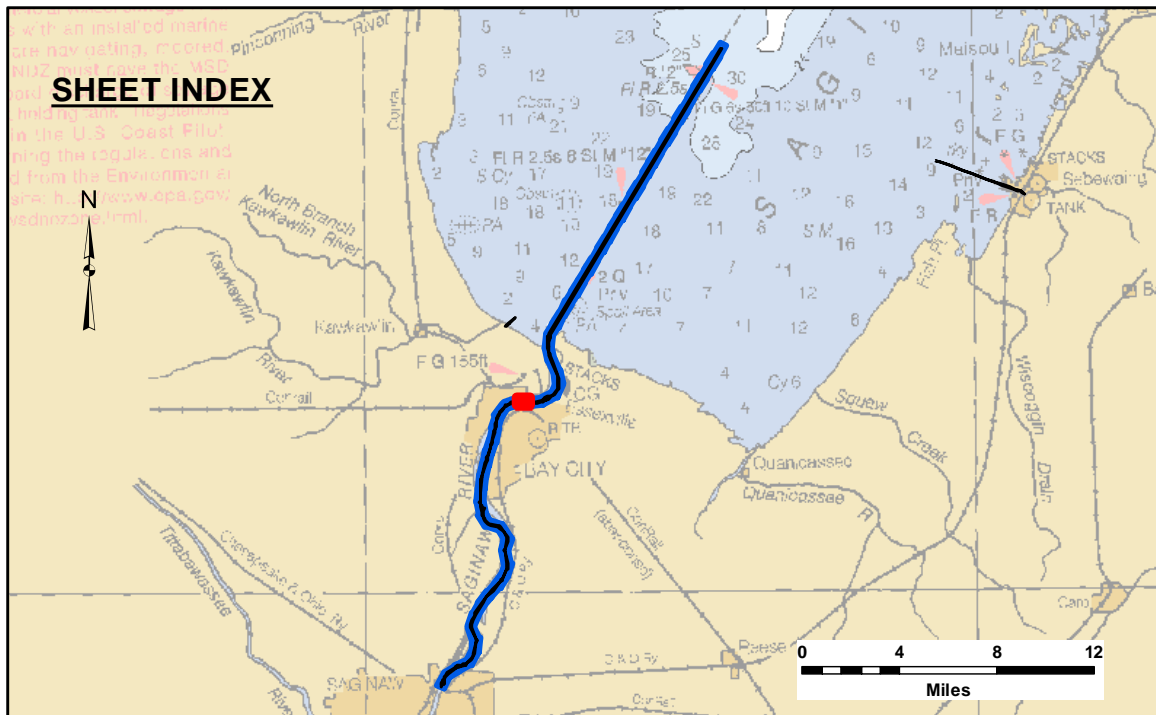
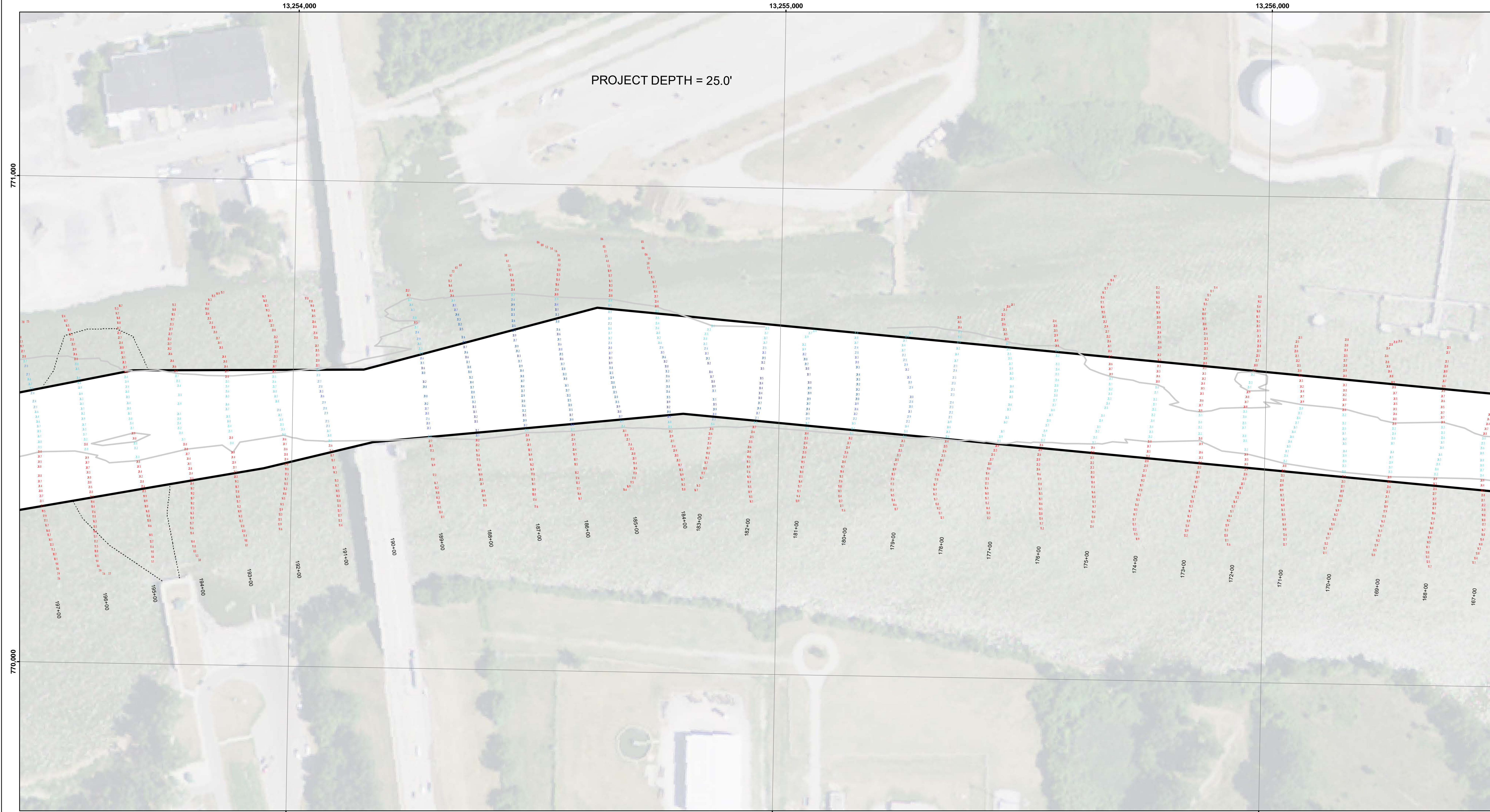
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02 August 2022

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Number

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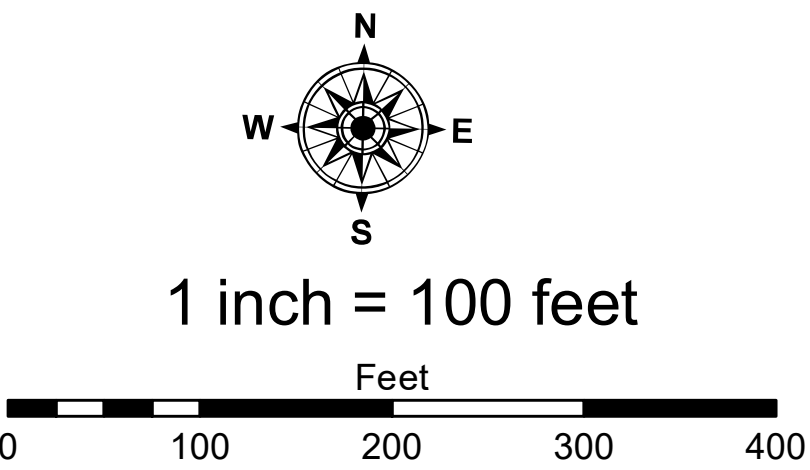
Revision Number:  
4.2-2020/04/20





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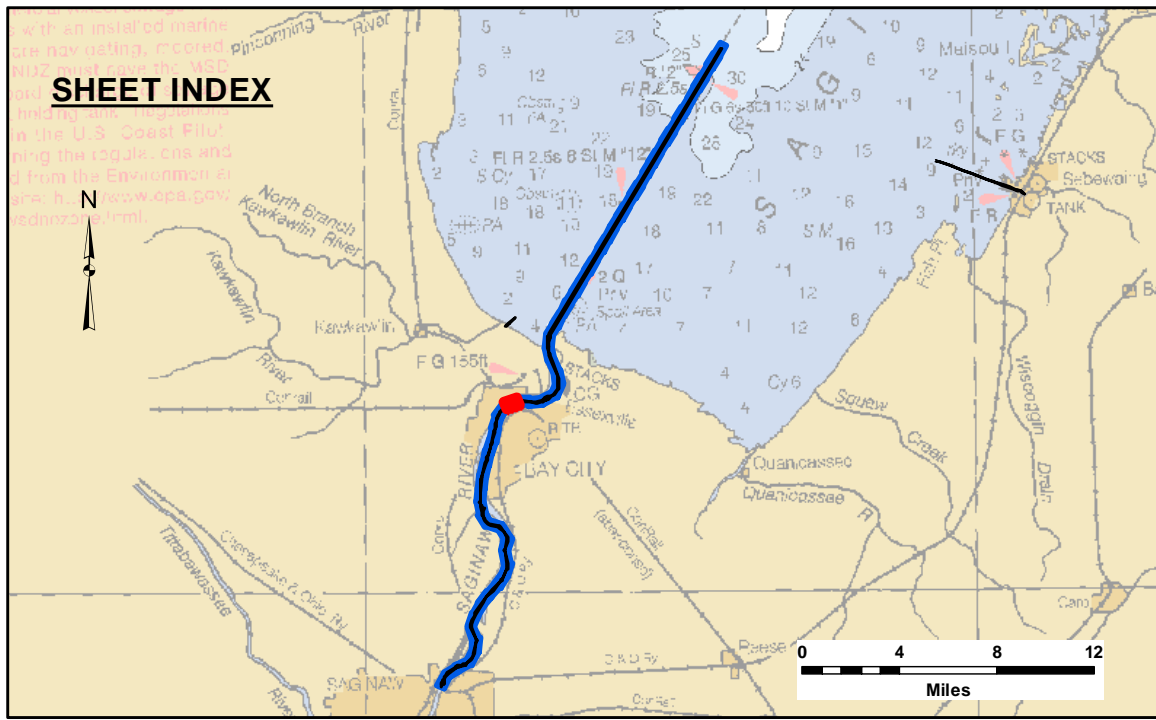
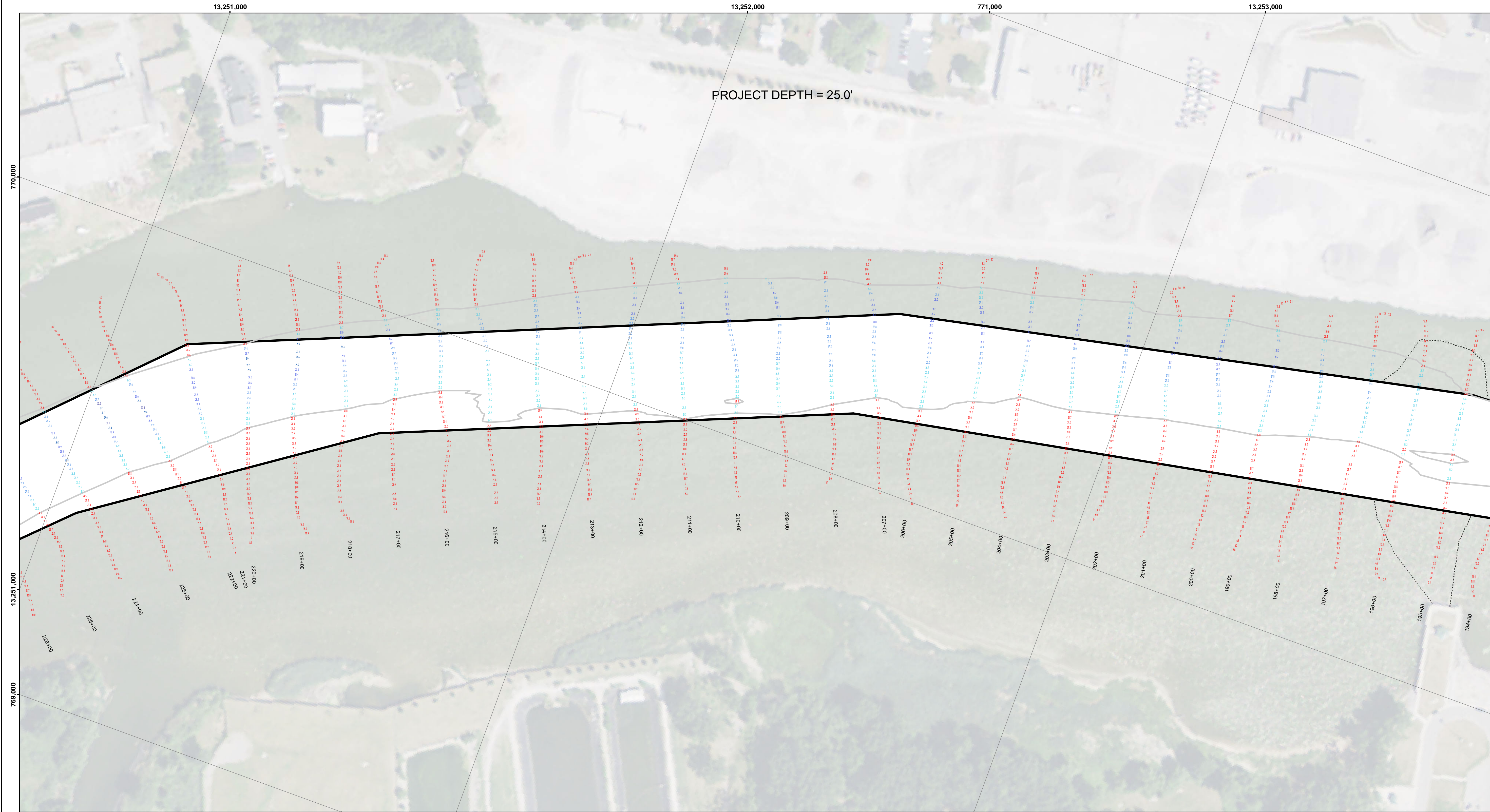
Submitted:	Surveyed By:
	Plotted By:
	Checked By:
Recommended:	Chief, Survey Section
Approved:	Chief, Technical Services

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

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Reference  
Number  
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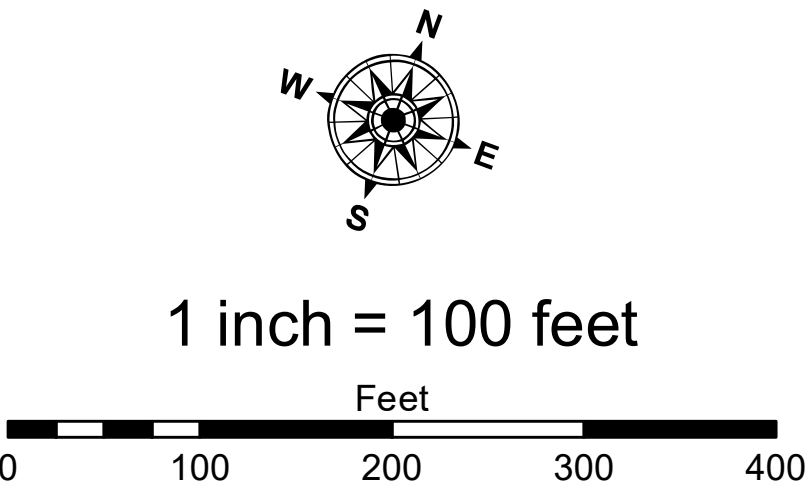
Revision Number:  
4.2-202/04/20





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

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



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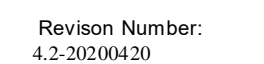
Submitted:	Surveyed By:
	Plotted By:
	Checked By:
Recommended:	Chief, Survey Section
Approved:	Chief, Technical Services

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

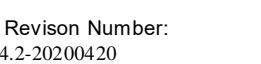
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4.2-2022/04/20

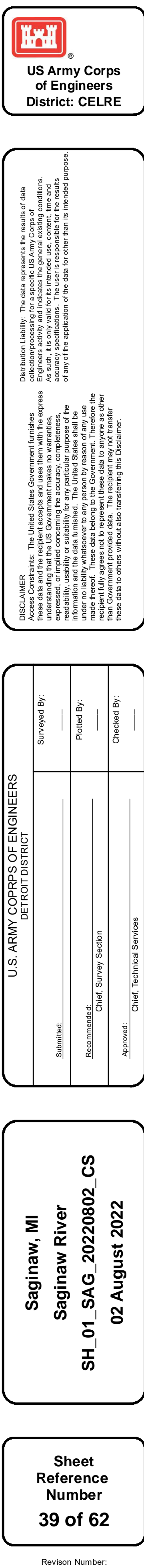




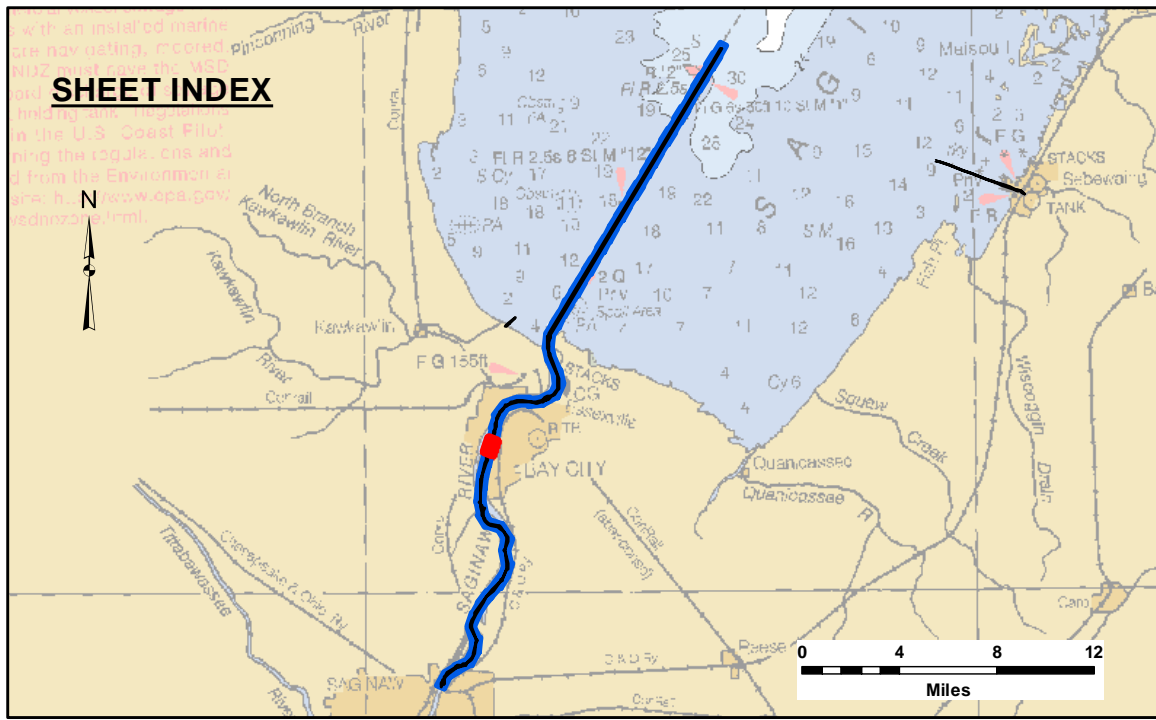
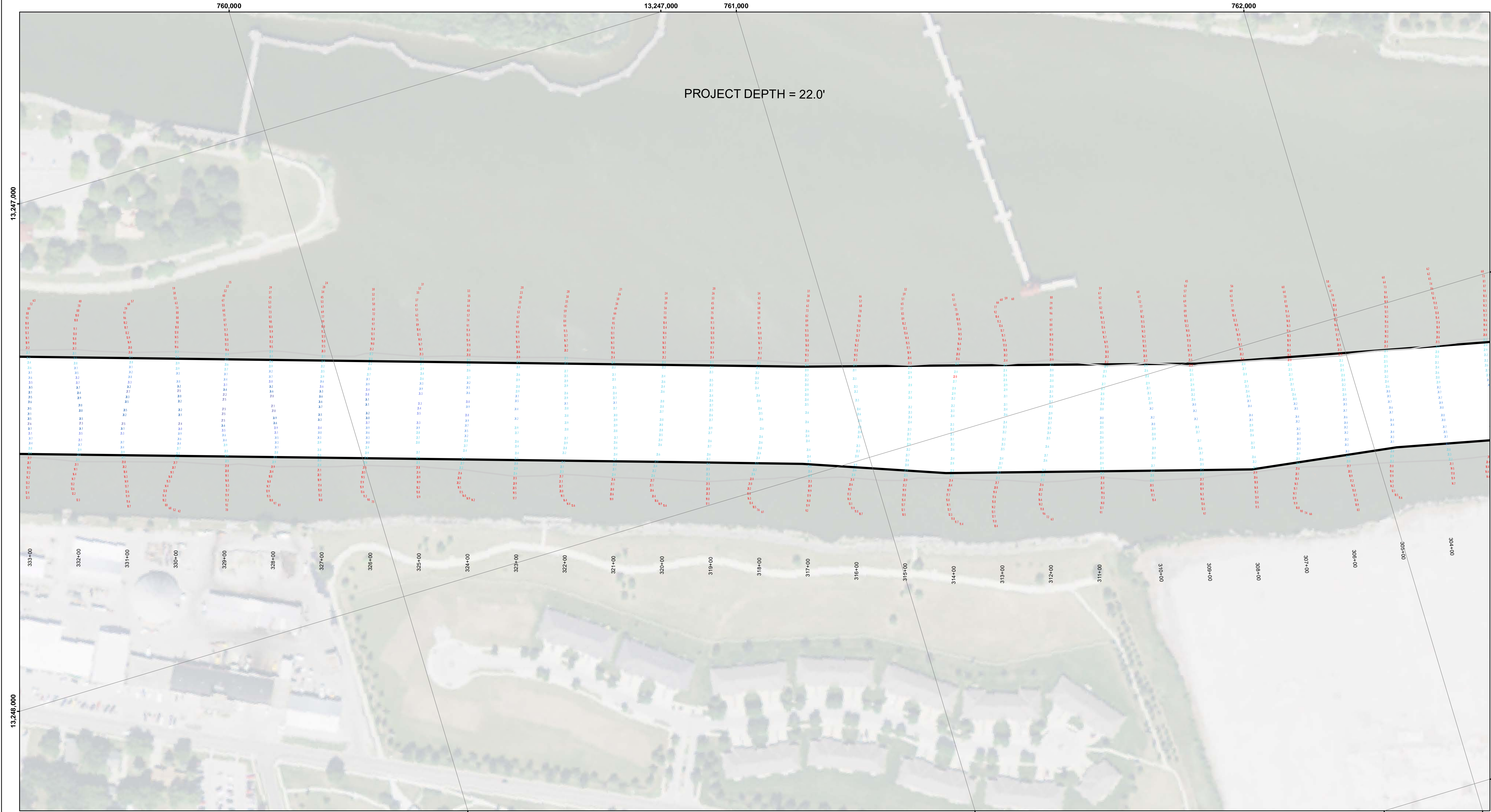






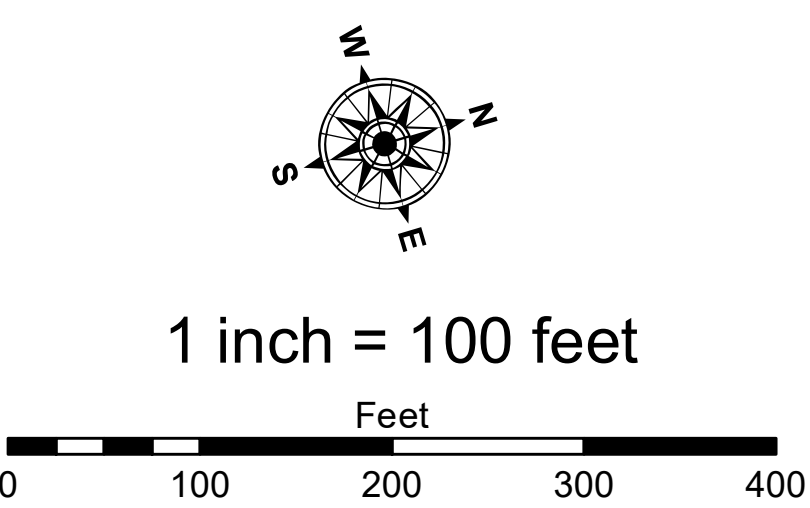






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - Beacon, General
  - Contour Lines
  - Channel\_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
  - PROJECT DEPTH +2'
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POSITIONING: APPLANIX POS-MV4 W/ VRS/RTK OR MARINESTAR GNSS.

MOTION COMPENSATION: APPLANIX POS-MV4

SONAR: RS20N2C (2024) (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)

SOFTWARE: HYPACK

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS

ALL COORDINATES ARE IN U.S. SURVEY FEET.



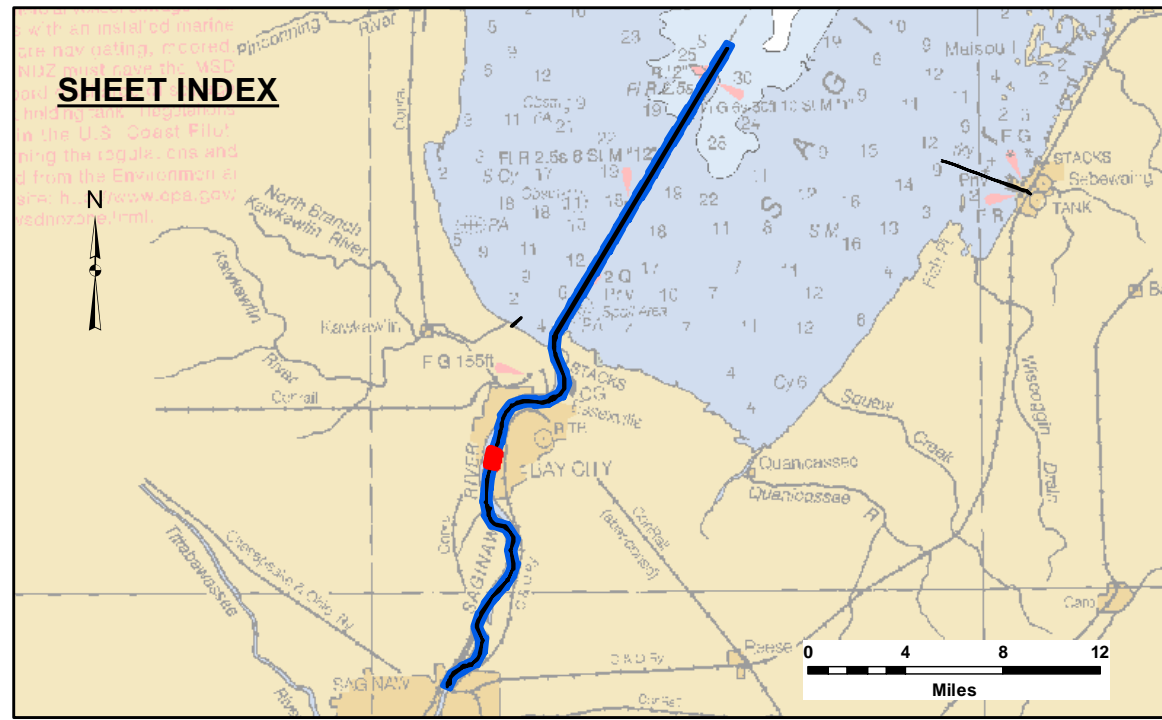
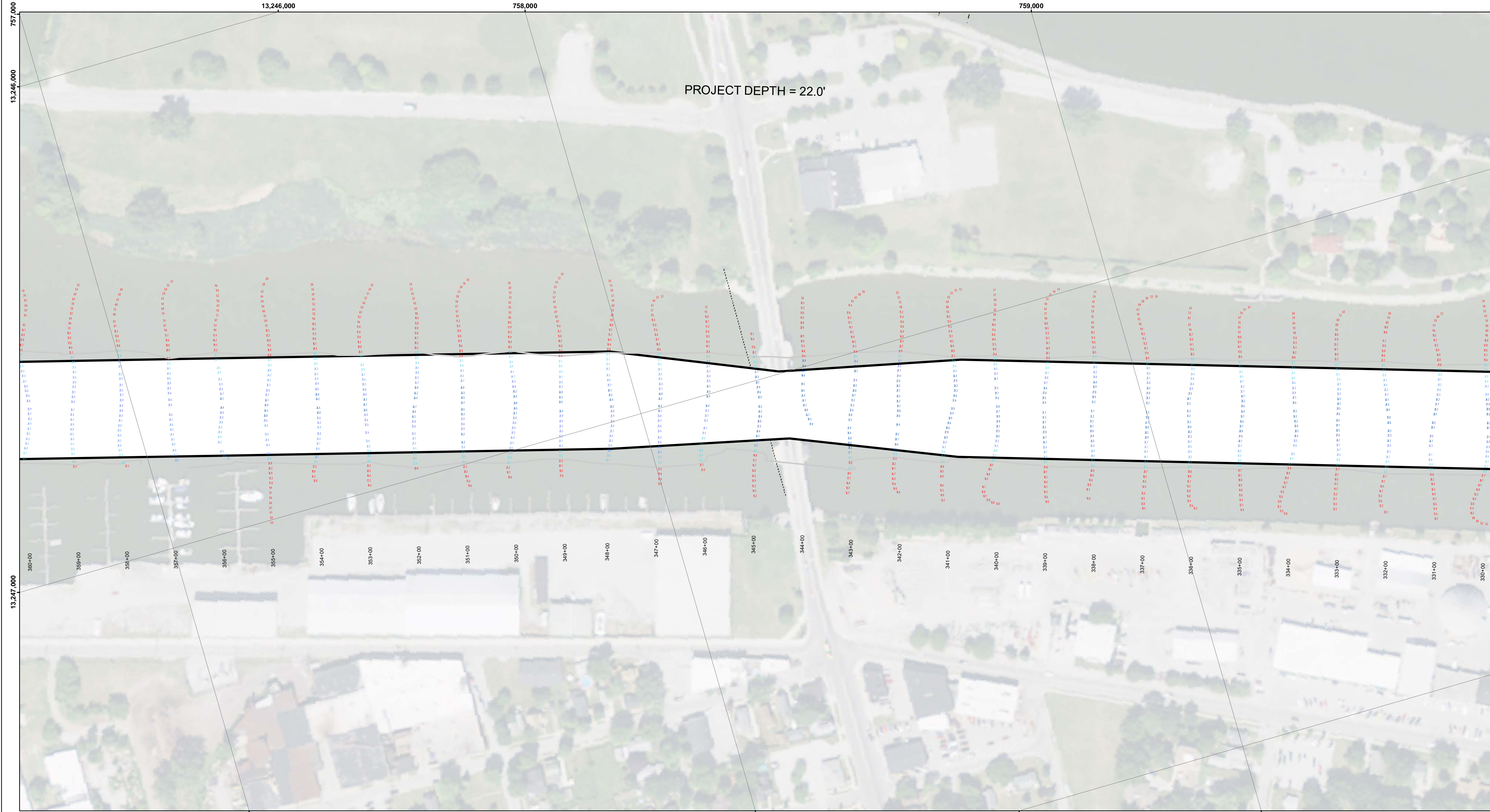
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Submitted:	Surveyed By:
Recommended:	Plotted By:
Approved:	Checked By:

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

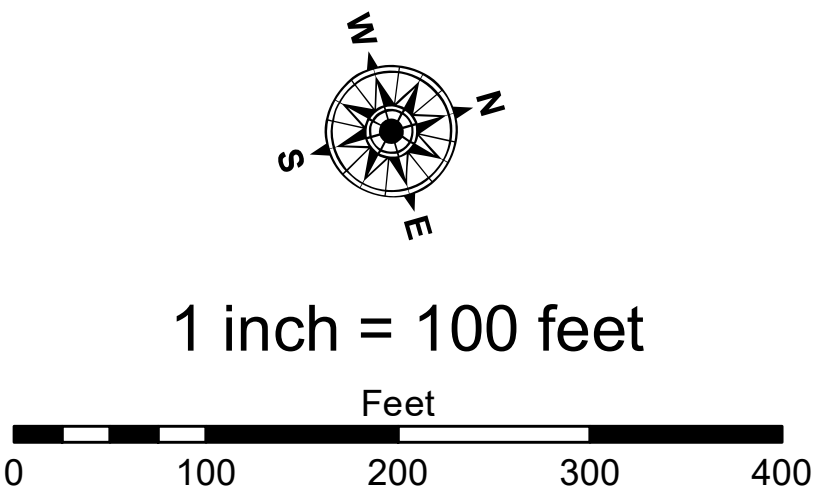
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- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ┆ Beacon, General
  - Contour Lines
  - Channel\_Limits

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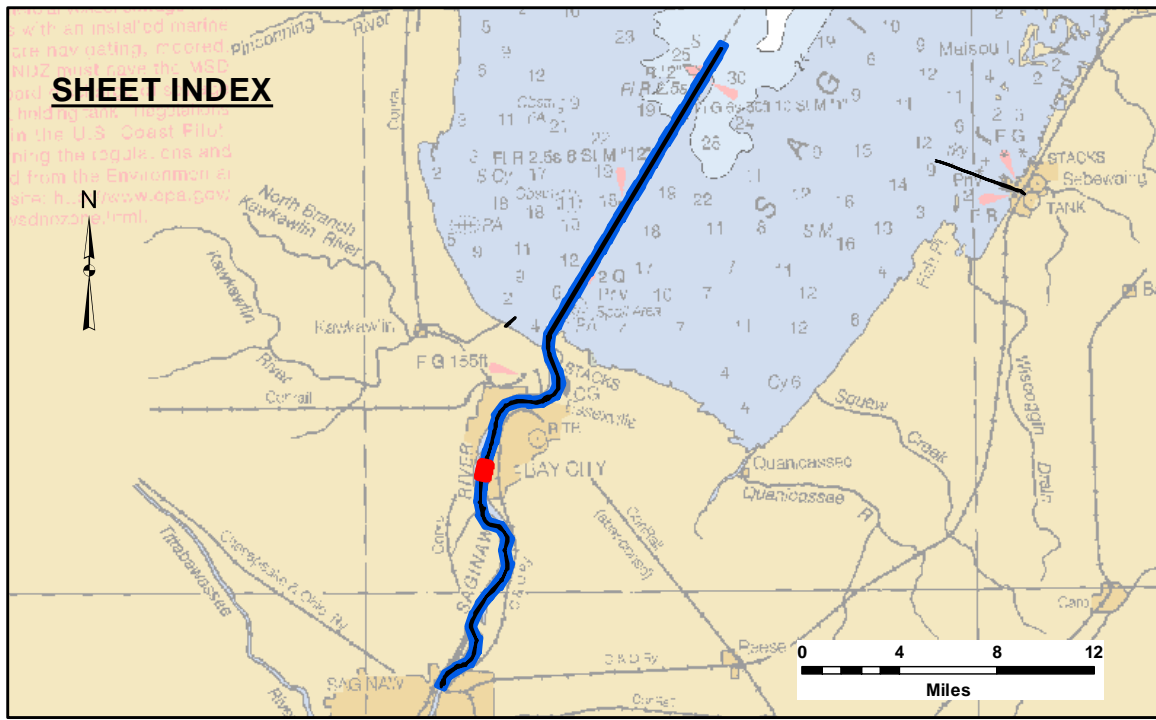
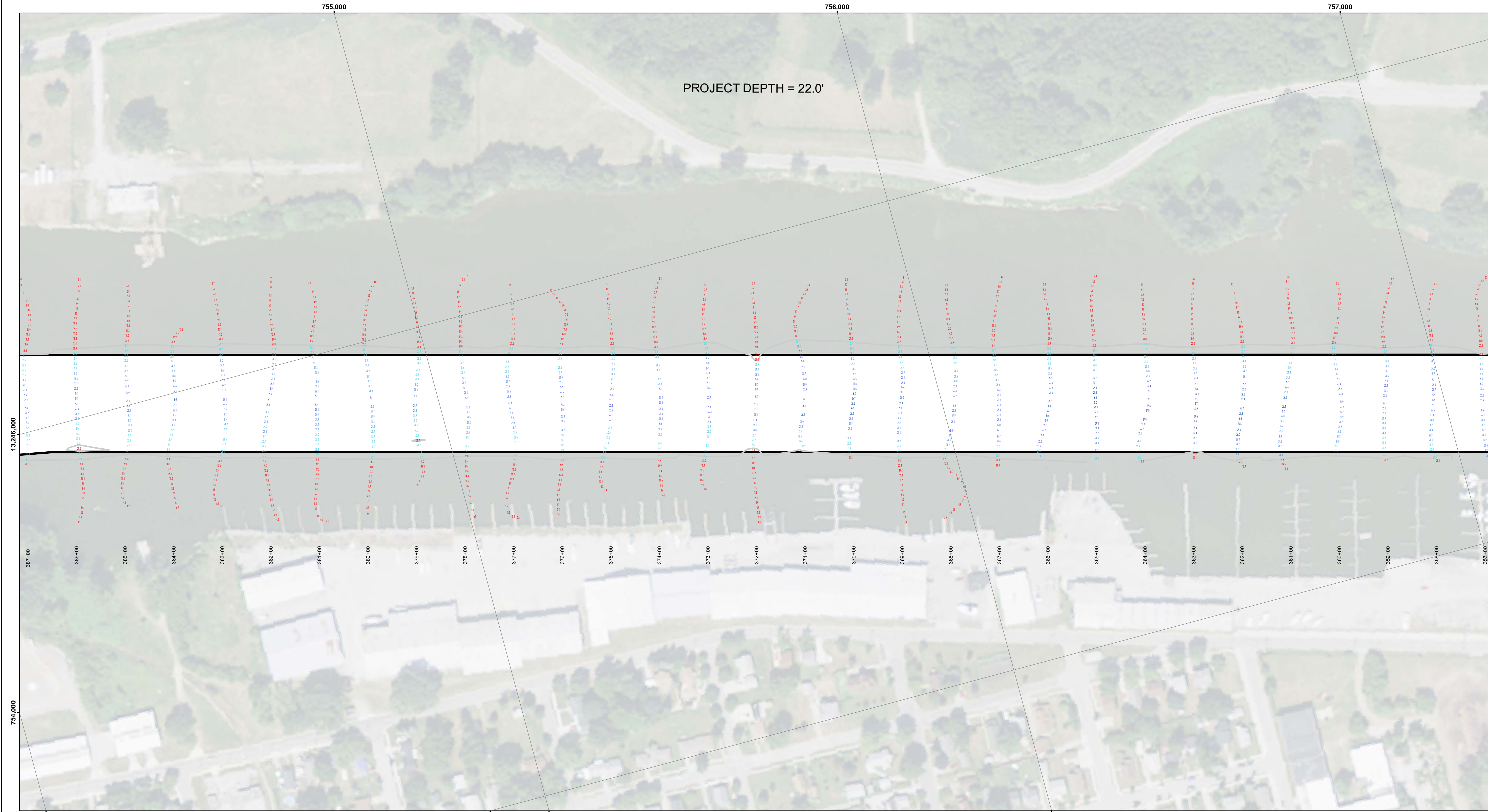
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Surveyed By: _____
	Submitted: _____
	Plotted By: _____
Recommended: _____	
Chief, Survey Section	Checked By: _____
Approved: _____	Chief, Technical Services

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

**Sheet Reference Number**  
**41 of 62**

Revision Number:  
4.2-2022/04/20



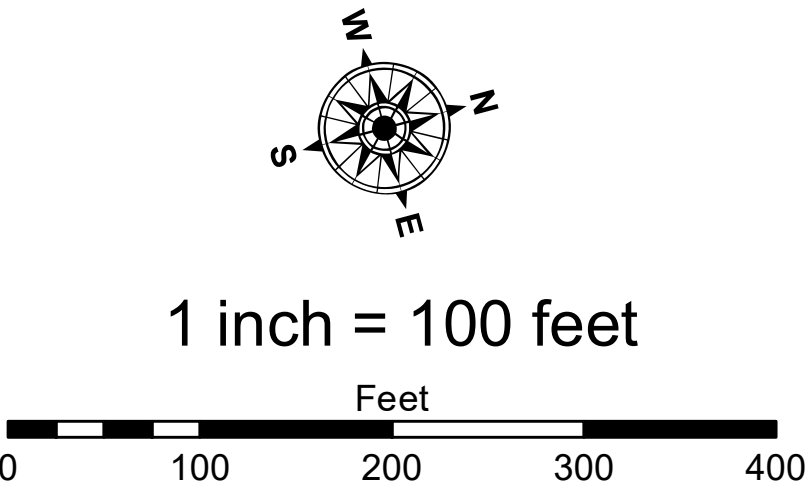


**LEGEND**

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

**SOUNDING LEGEND**

- LESS THAN PROJECT DEPTH
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SOFTWARE: HYPACK

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

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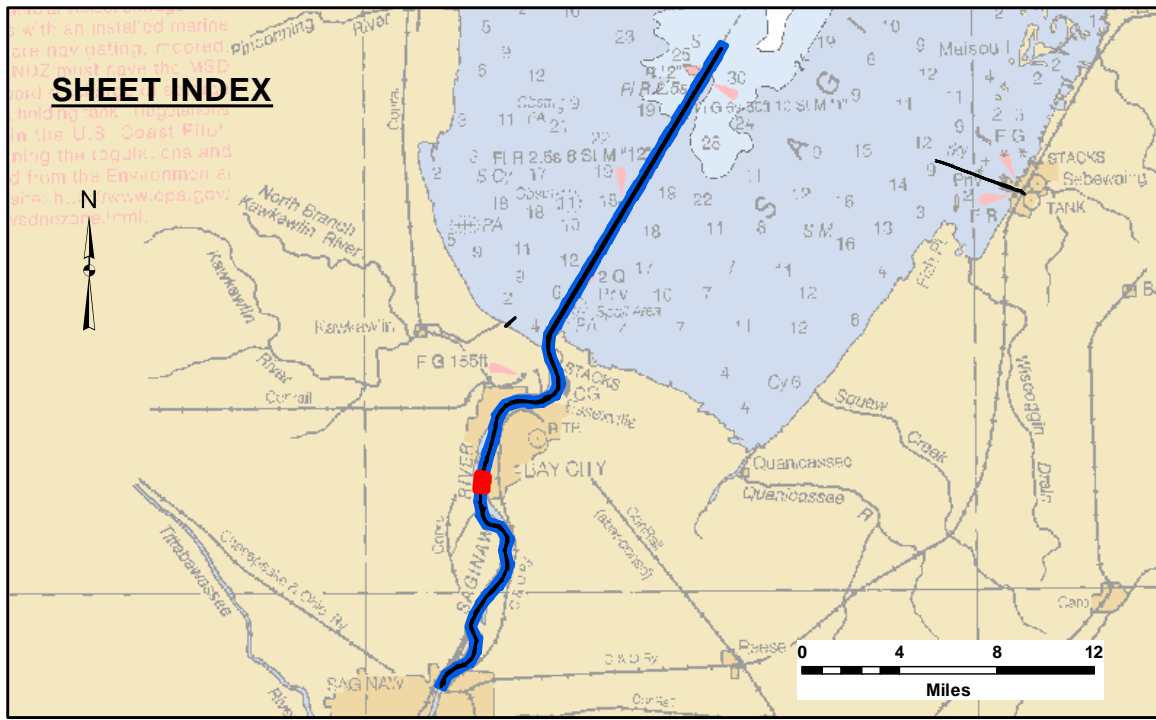
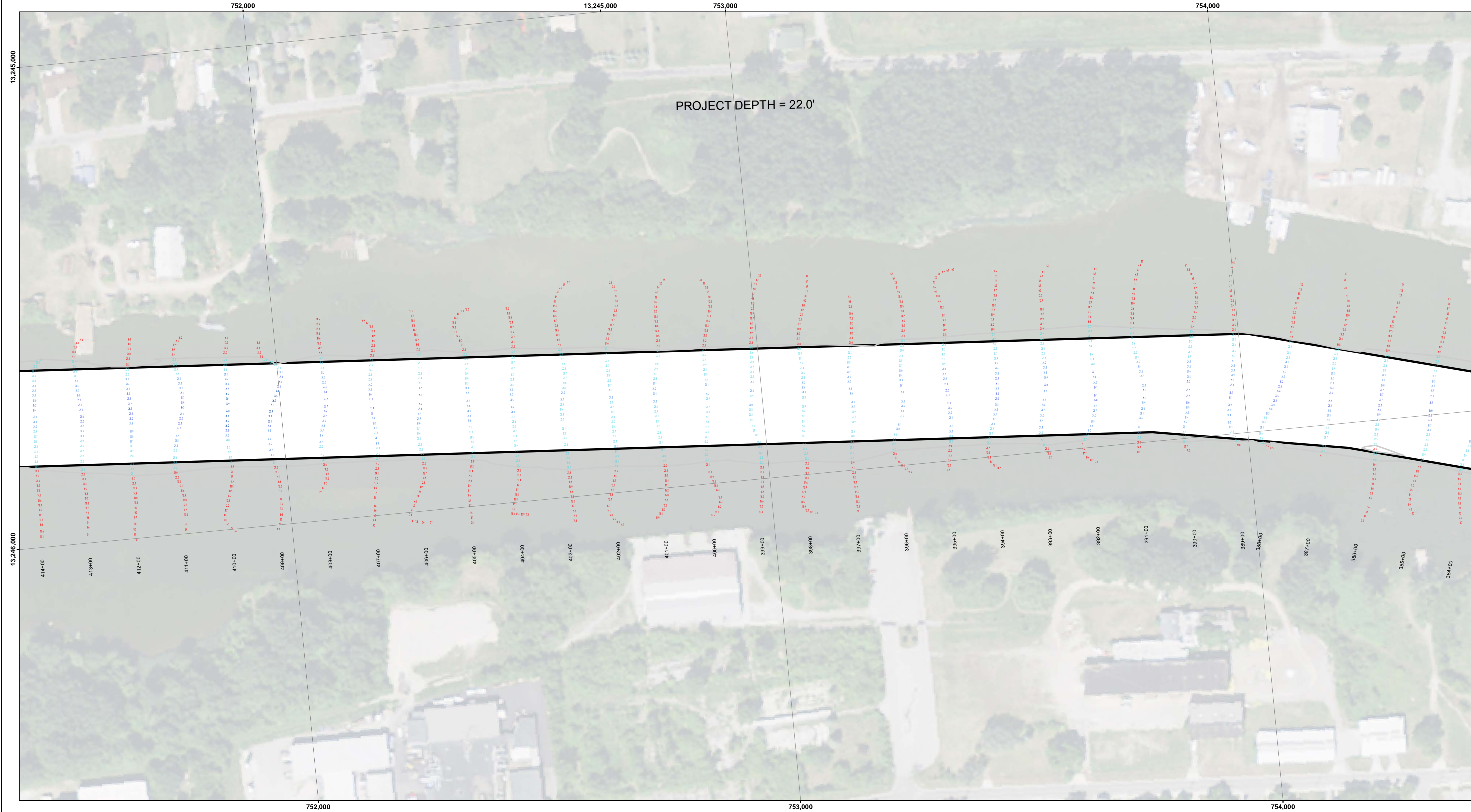
**U.S. ARMY CORPS OF ENGINEERS  
DETROIT DISTRICT**

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

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

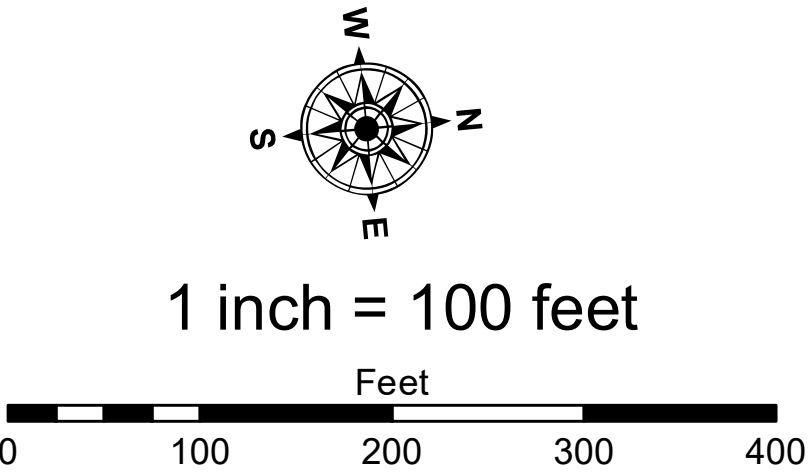
**Sheet  
Reference  
Number**  
**42 of 62**





- 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'



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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/IRTK 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.



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

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U.S. ARMY CORPS OF ENGINEERS  
DETROIT DISTRICT

Surveyed By:

Submitted:

Plotted By:

Recommended:  
Chief, Survey Section

Checked By:

Approved:  
Chief, Technical Services

Saginaw, MI

Saginaw River

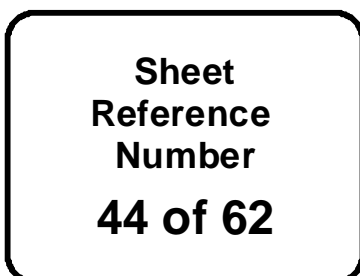
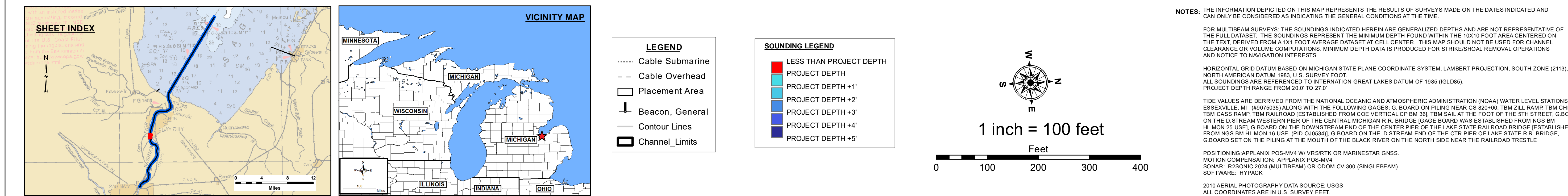
SH\_01\_SAG\_20220802\_CS

02 August 2022

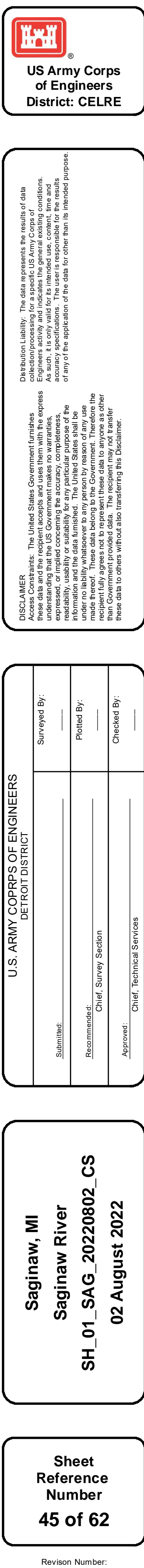
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Reference  
Number**  
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Revision Number:  
4.2-2020/04/20





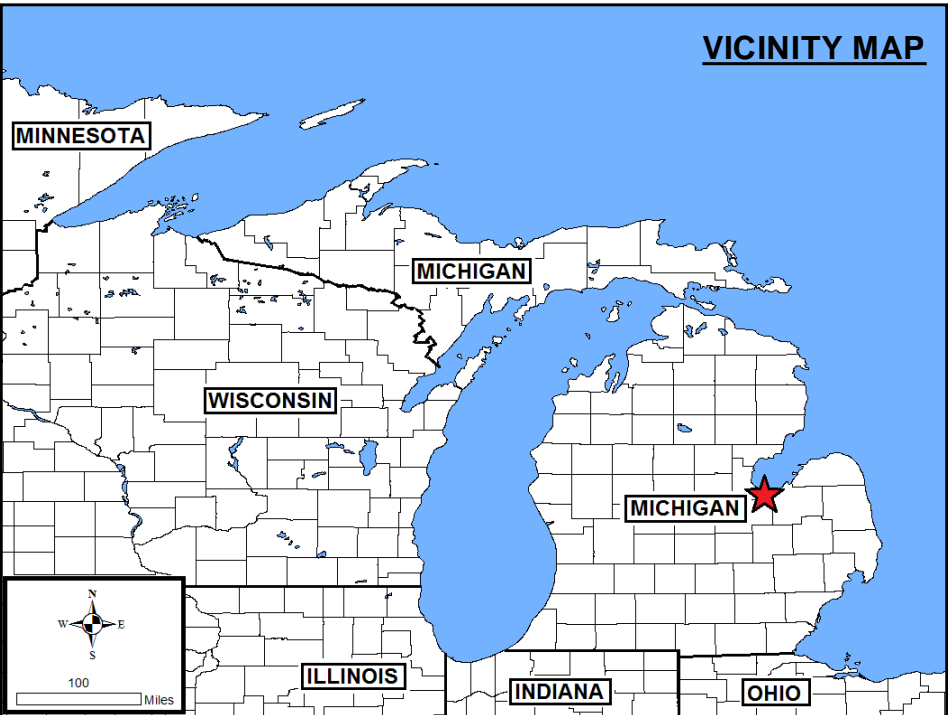
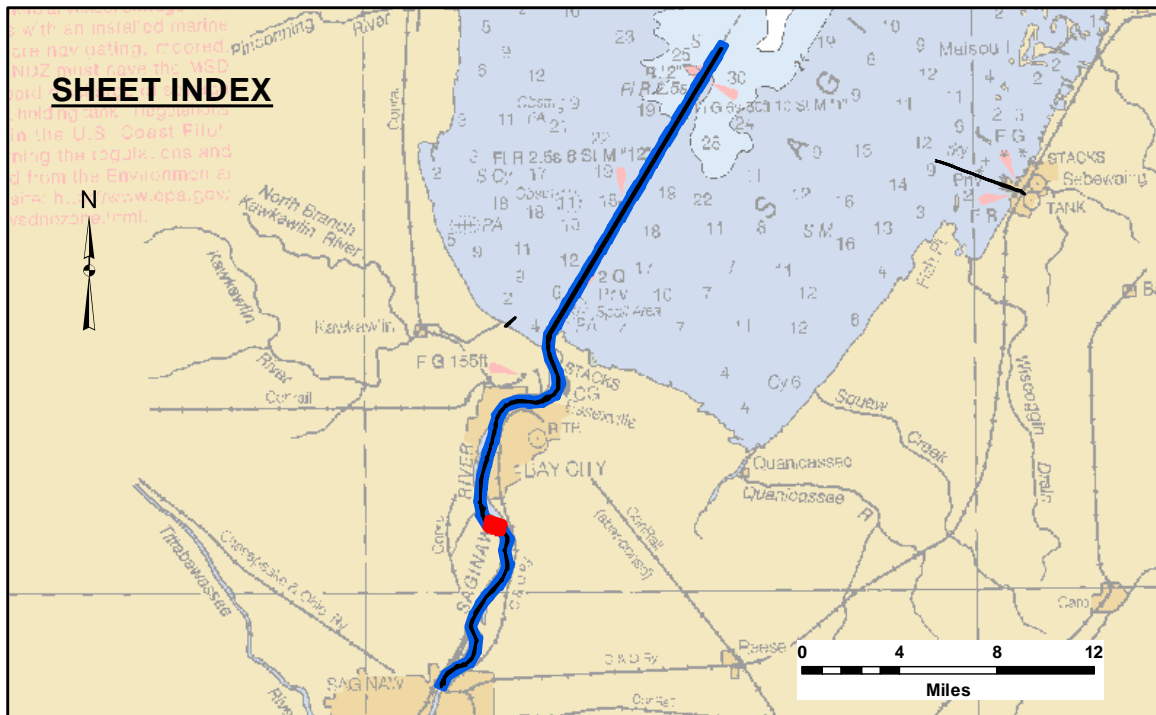
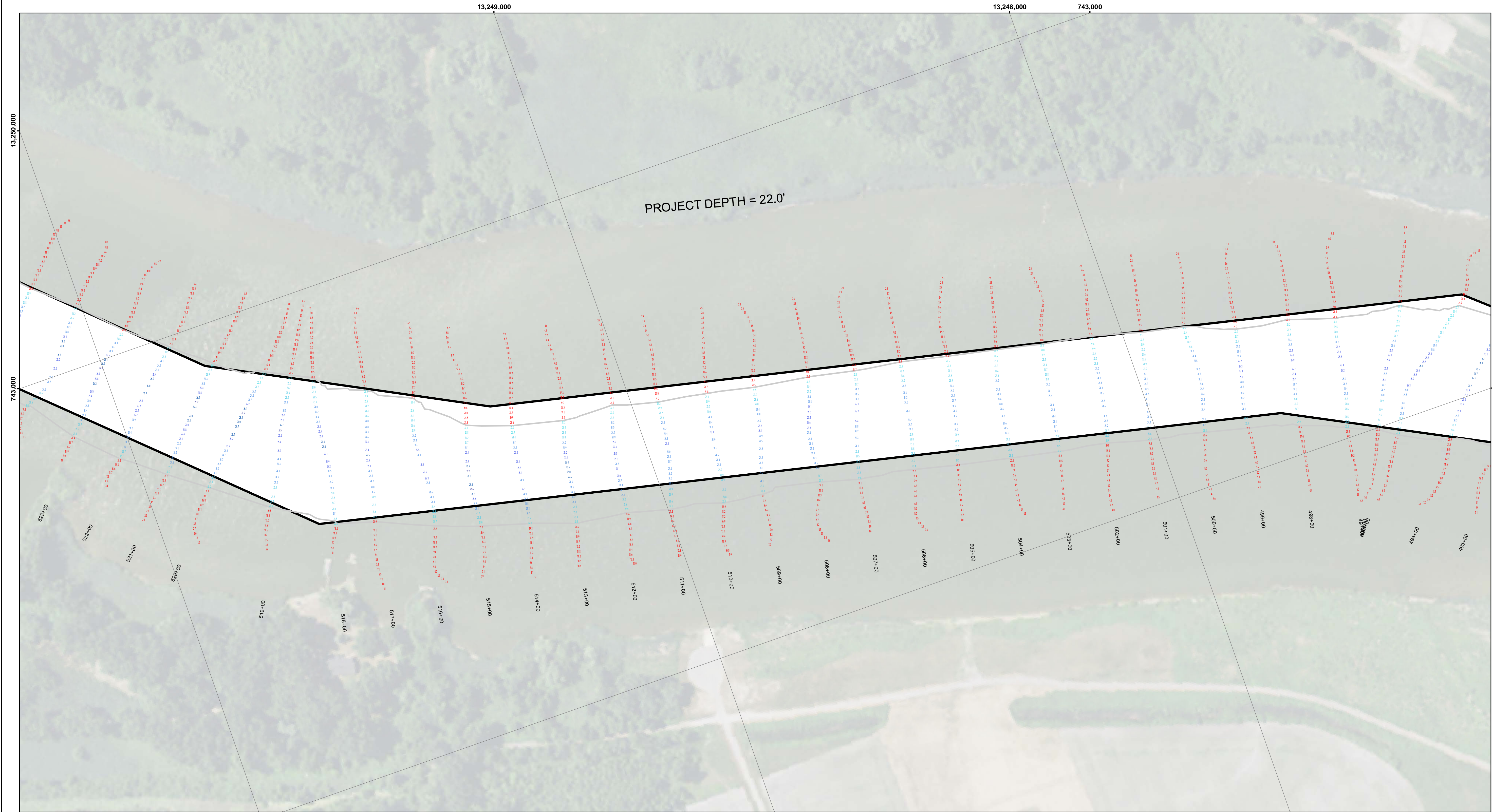












**LEGEND**

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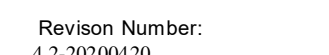
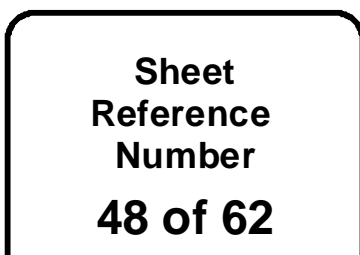
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted By: _____	Surveyed By: _____
	Recommended By: _____	Plotted By: _____
	Chief, Survey Section	Checked By: _____
Approved: _____		Chief, Technical Services

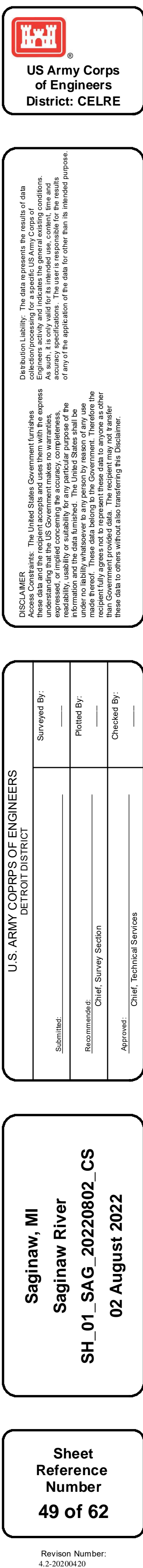
**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
**02 August 2022**

**Sheet Reference Number**  
**47 of 62**

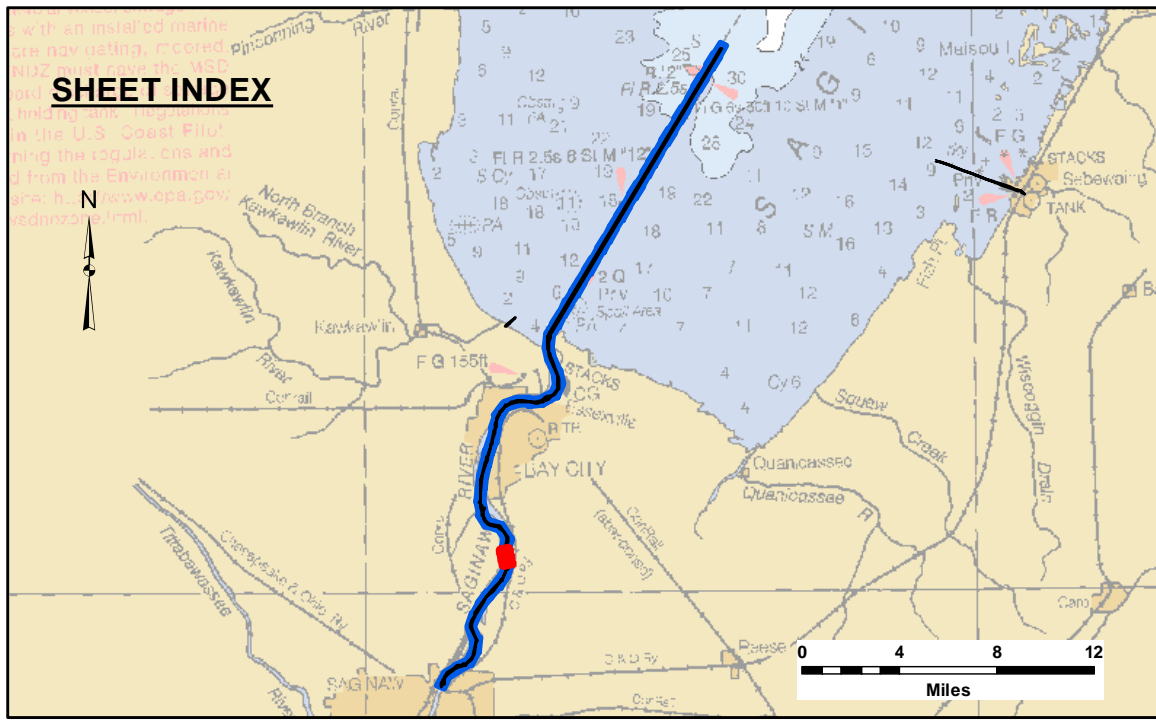
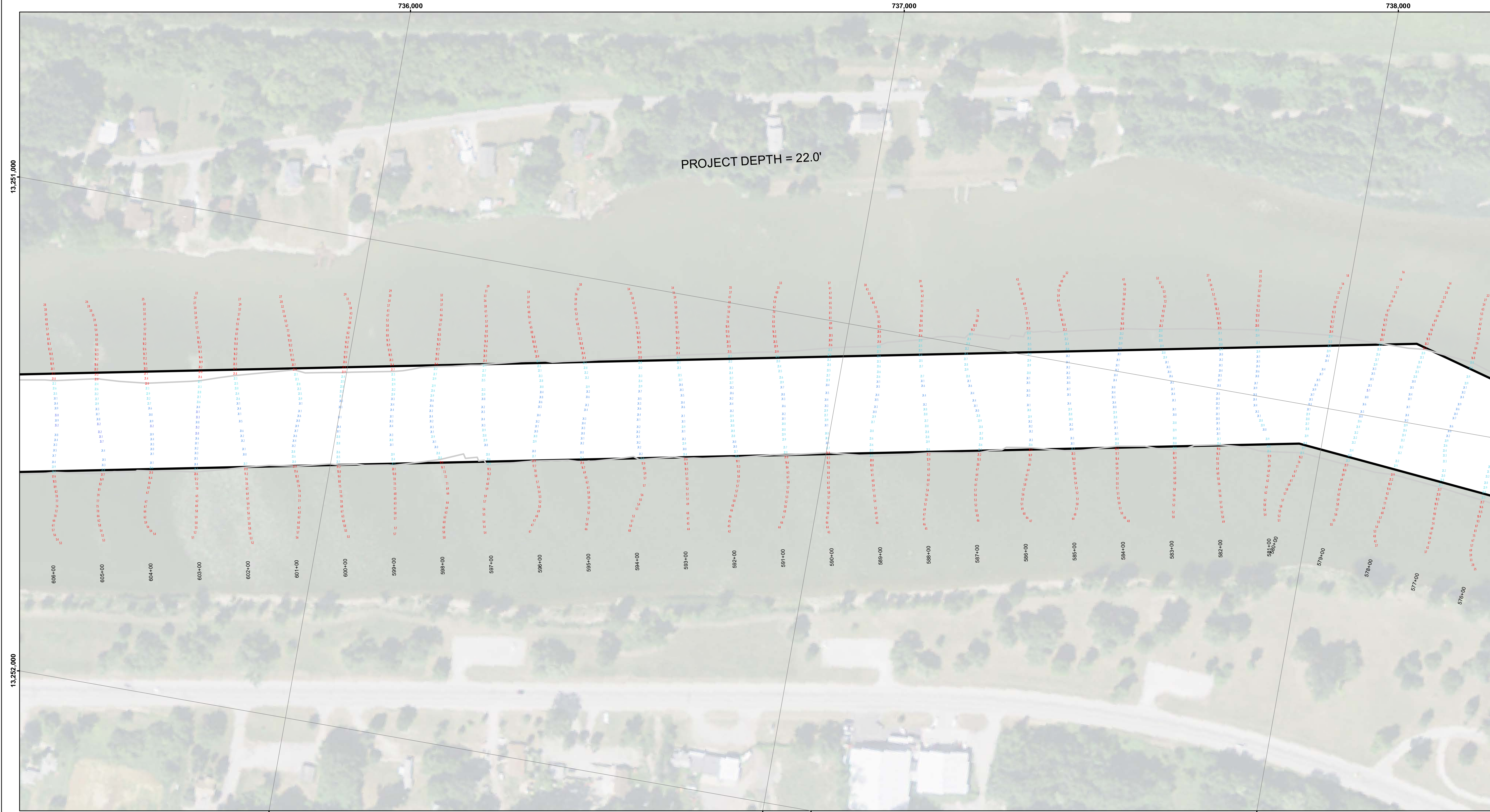






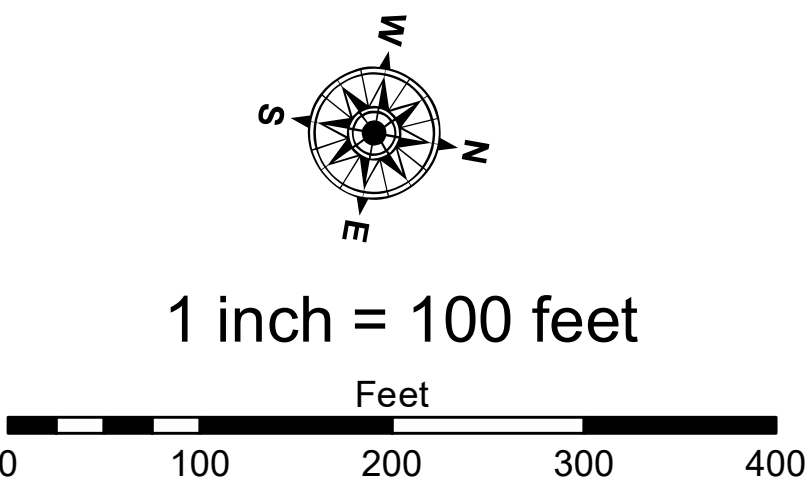






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ⊥ Beacon, General
  - Contour Lines
  - Channel Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
  - PROJECT DEPTH
  - PROJECT DEPTH +1'
  - PROJECT DEPTH +2'
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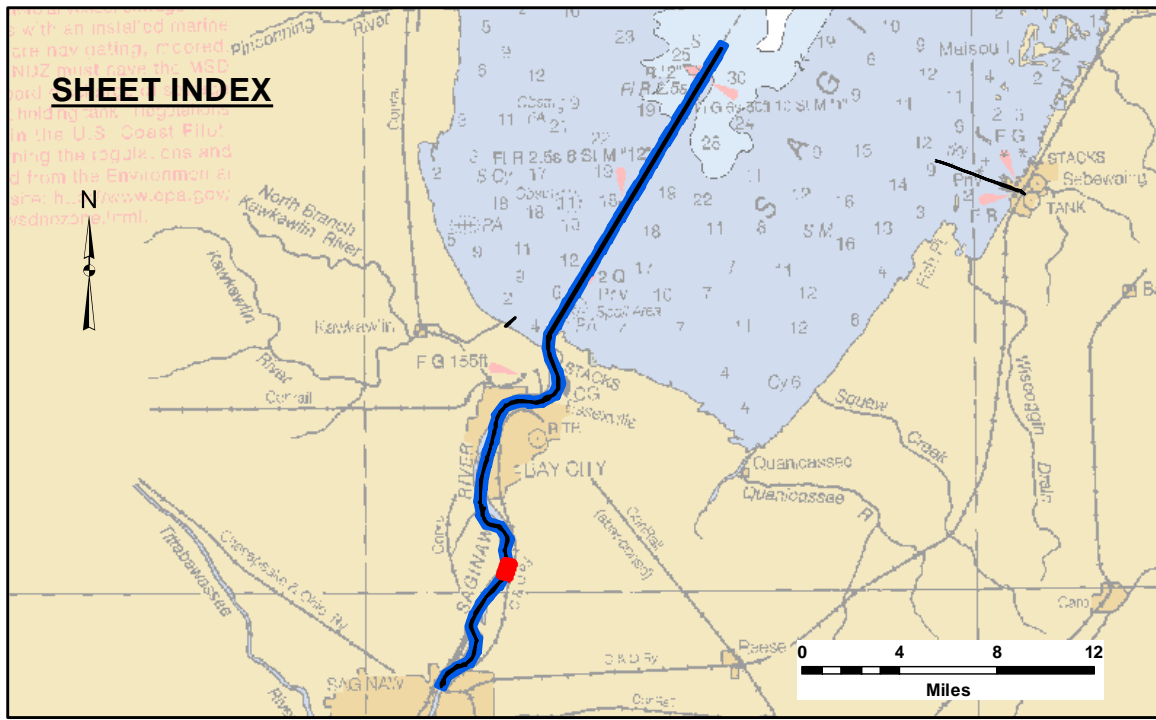
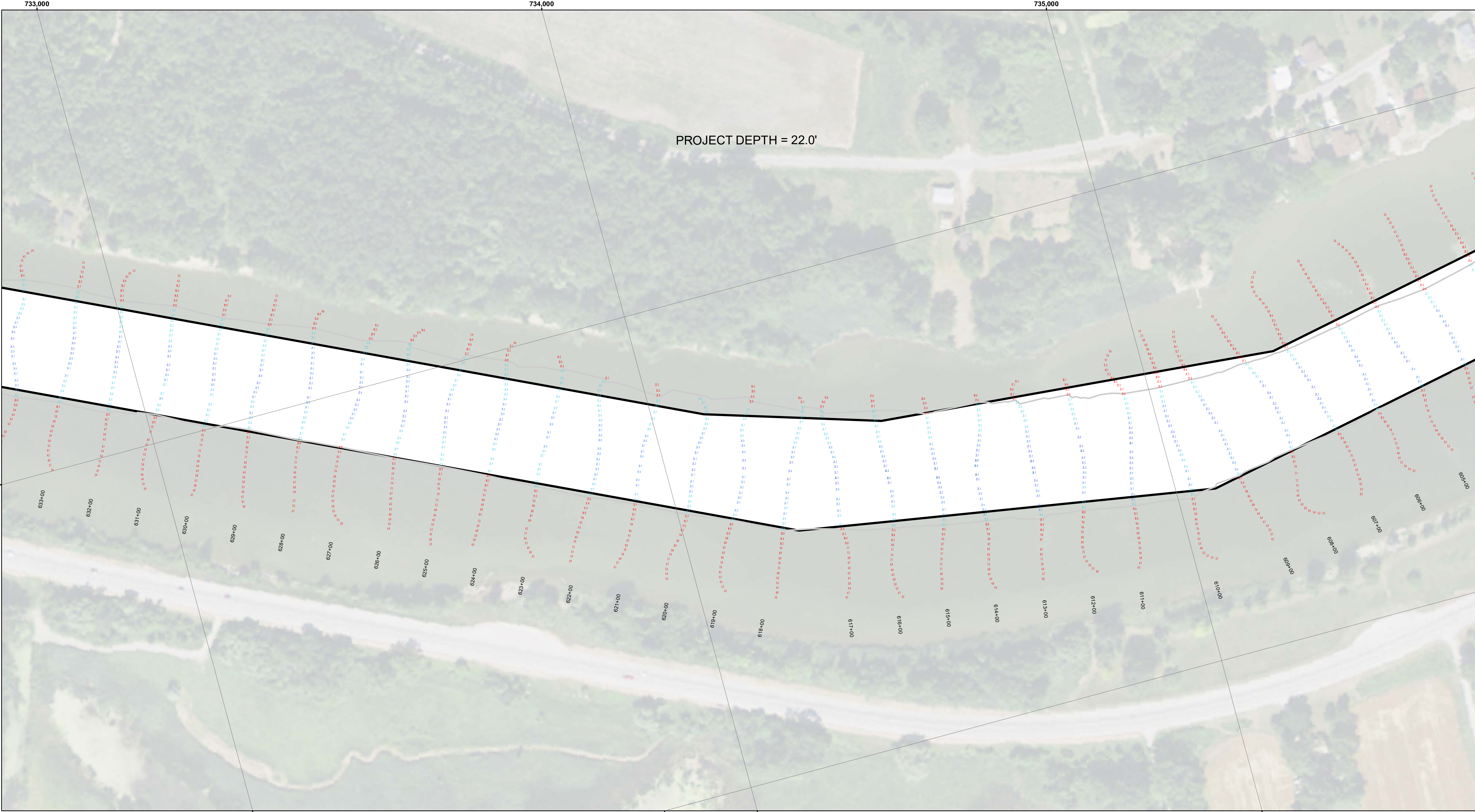
Submitted:	Surveyed By:
	Plotted By:
	Checked By:
Recommended:	Chief, Survey Section
Approved:	Chief, Technical Services

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

Sheet  
Reference  
Number  
50 of 62

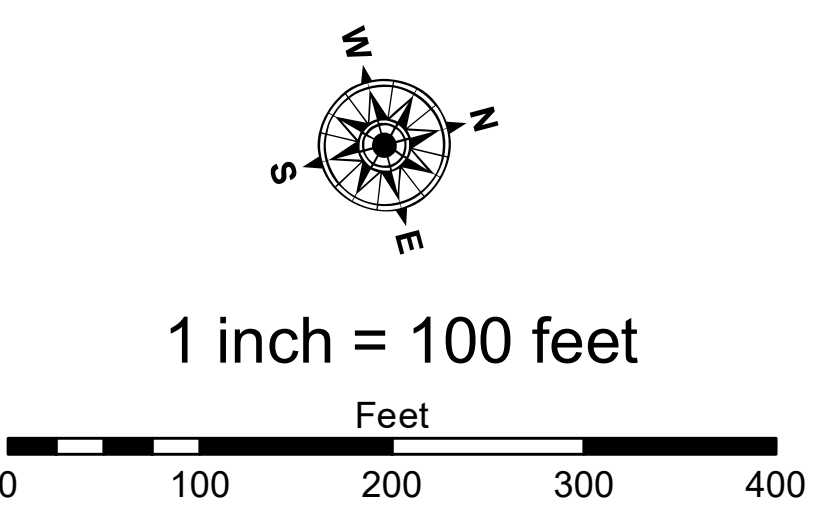
Revision Number:  
4.2-202/004.20





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

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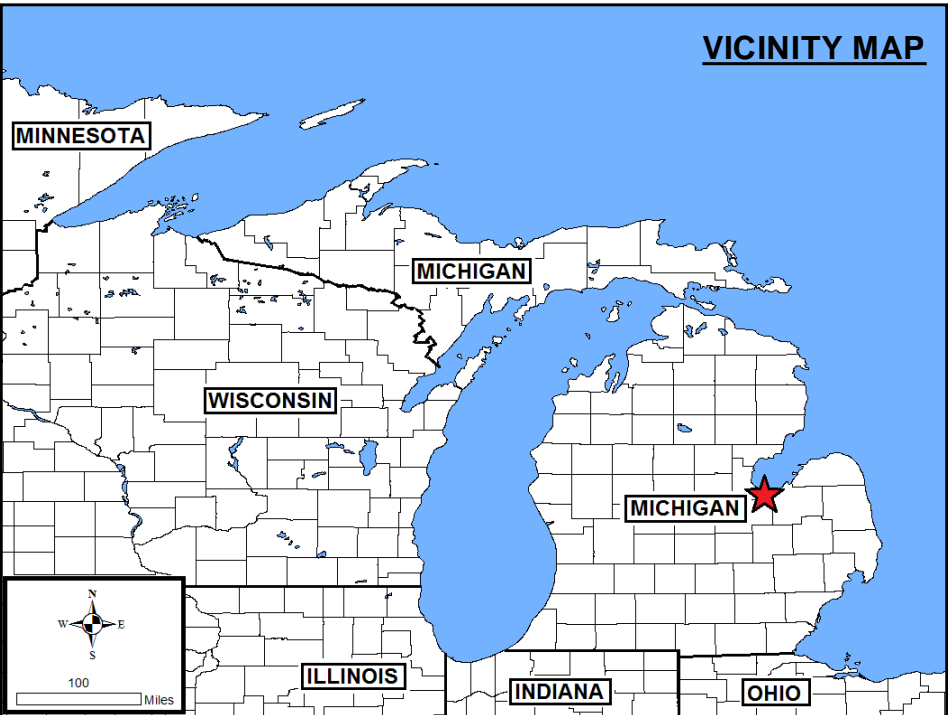
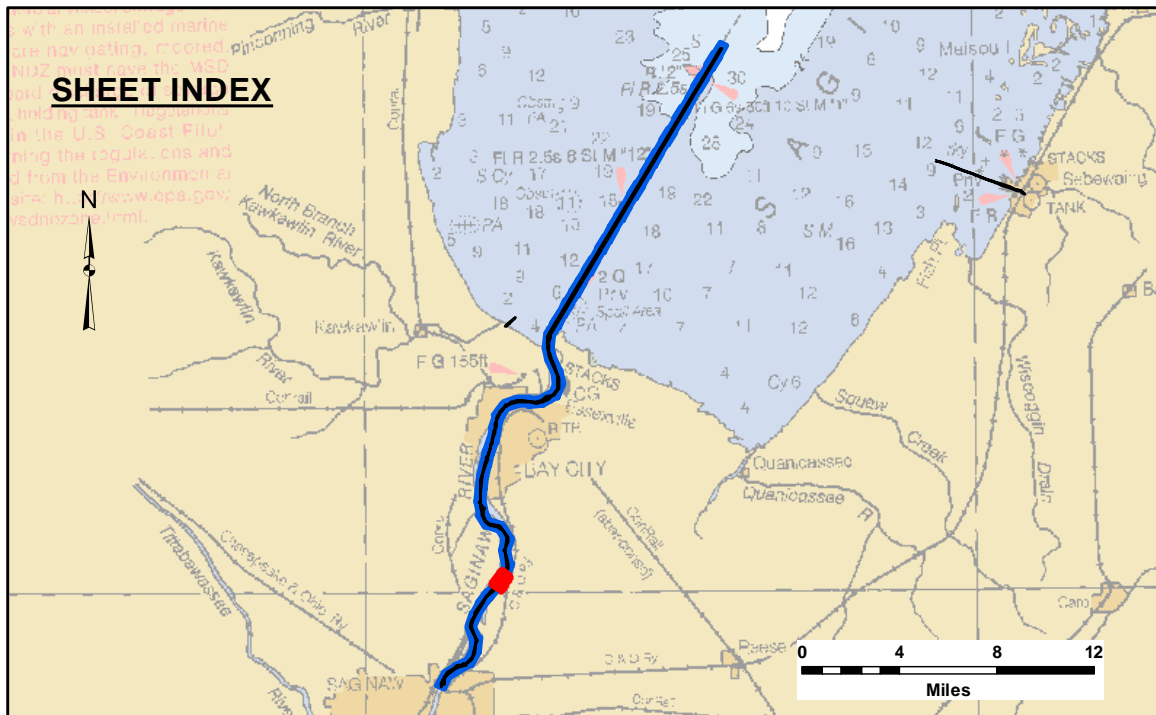
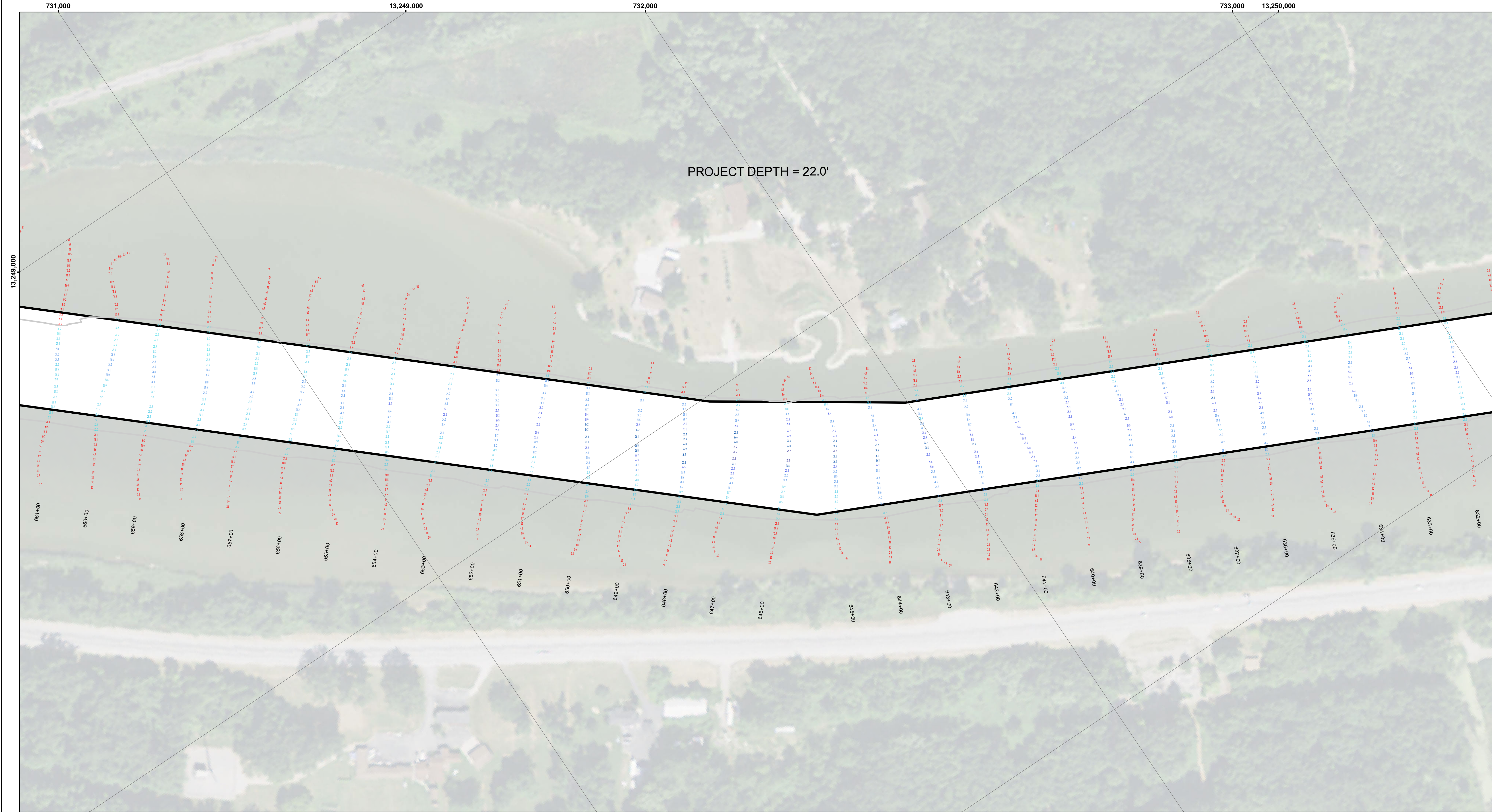
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By:	
Recommended:	Plotted By:	
Approved:	Chief, Survey Section	Checked By:
	Chief, Technical Services	

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

Sheet  
Reference  
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51 of 62

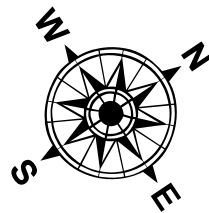
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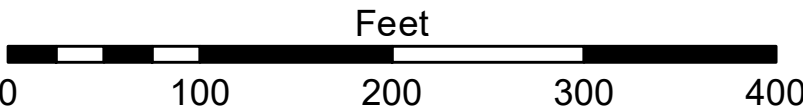


- LEGEND**
- ..... Cable Submarine
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US Army Corps of Engineers District: CELRE

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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT

Submitted:

Surveyed By:

Plotted By:

Recommended:

Checked By:

Approved:

Saginaw, MI

Saginaw River

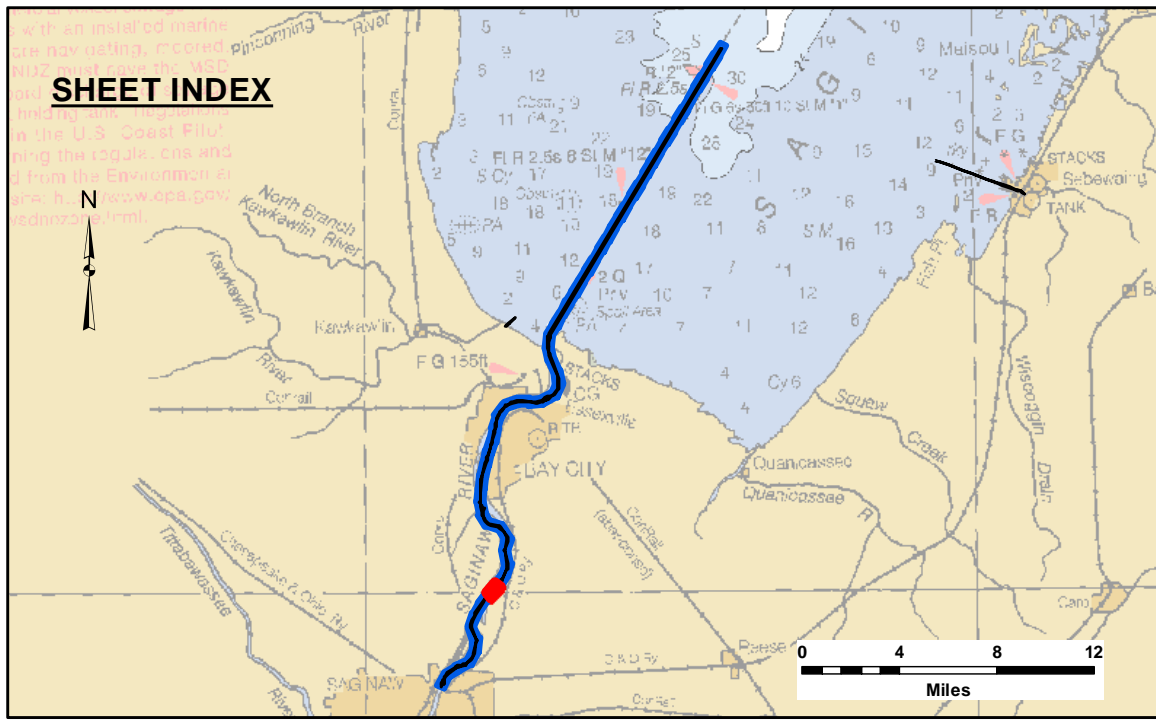
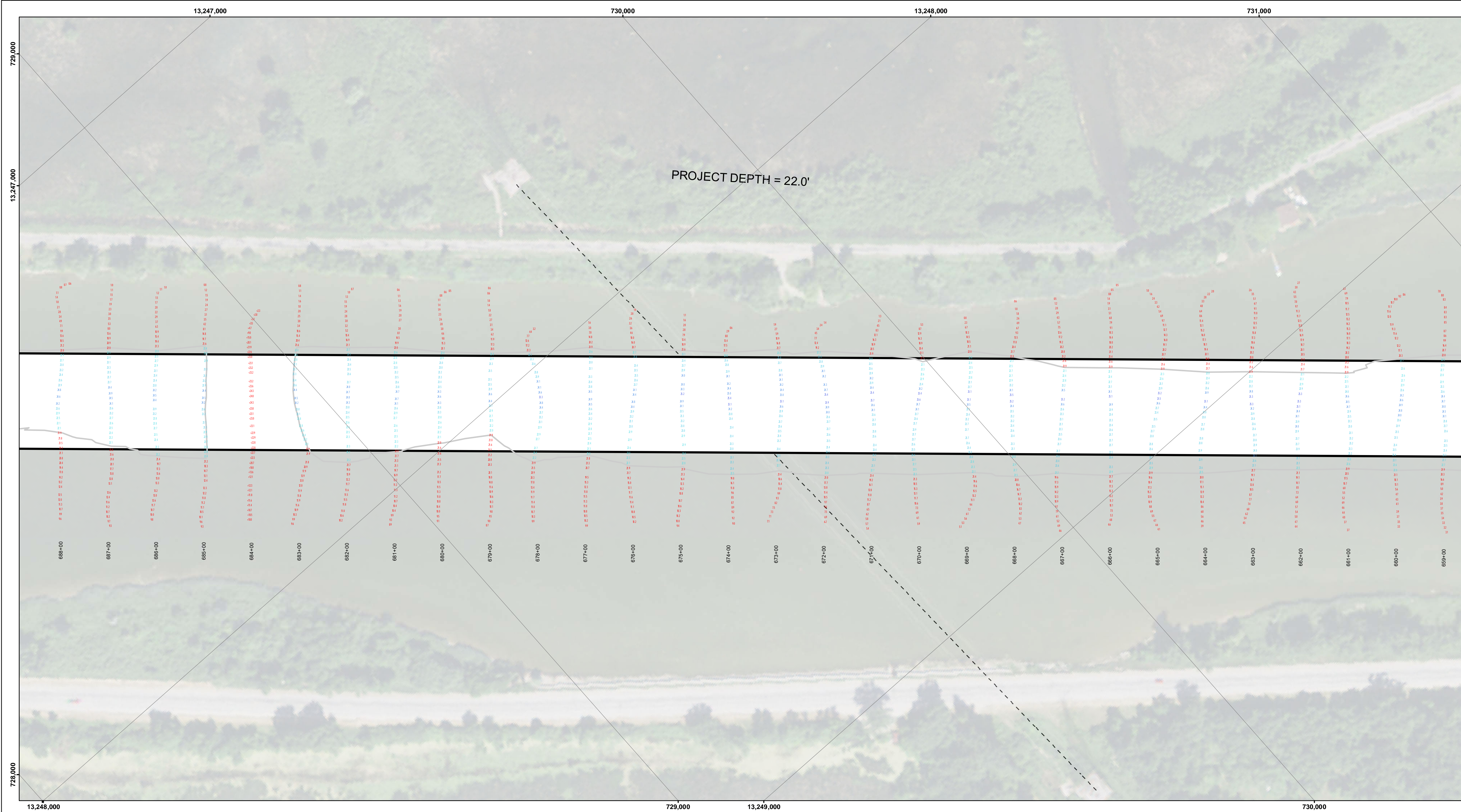
SH\_01\_SAG\_20220802\_CS

02 August 2022

Sheet Reference Number 52 of 62

Revision Number: 4.2-202/004.20





**LEGEND**

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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: \_\_\_\_\_

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

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

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

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

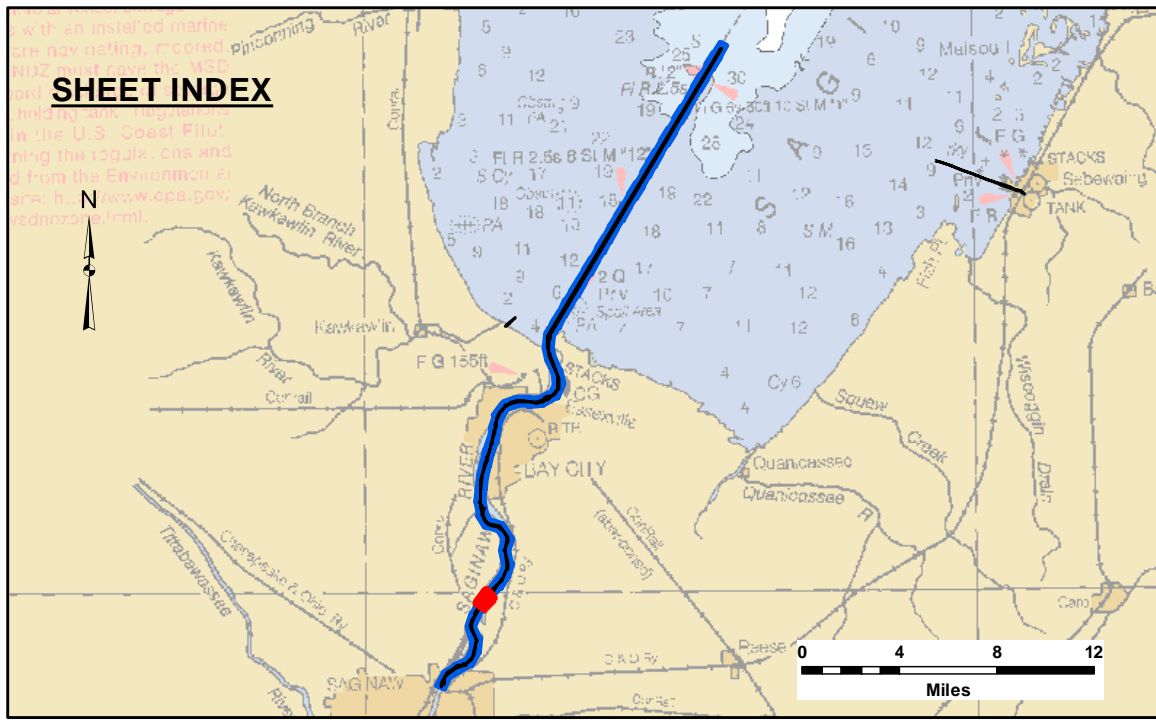
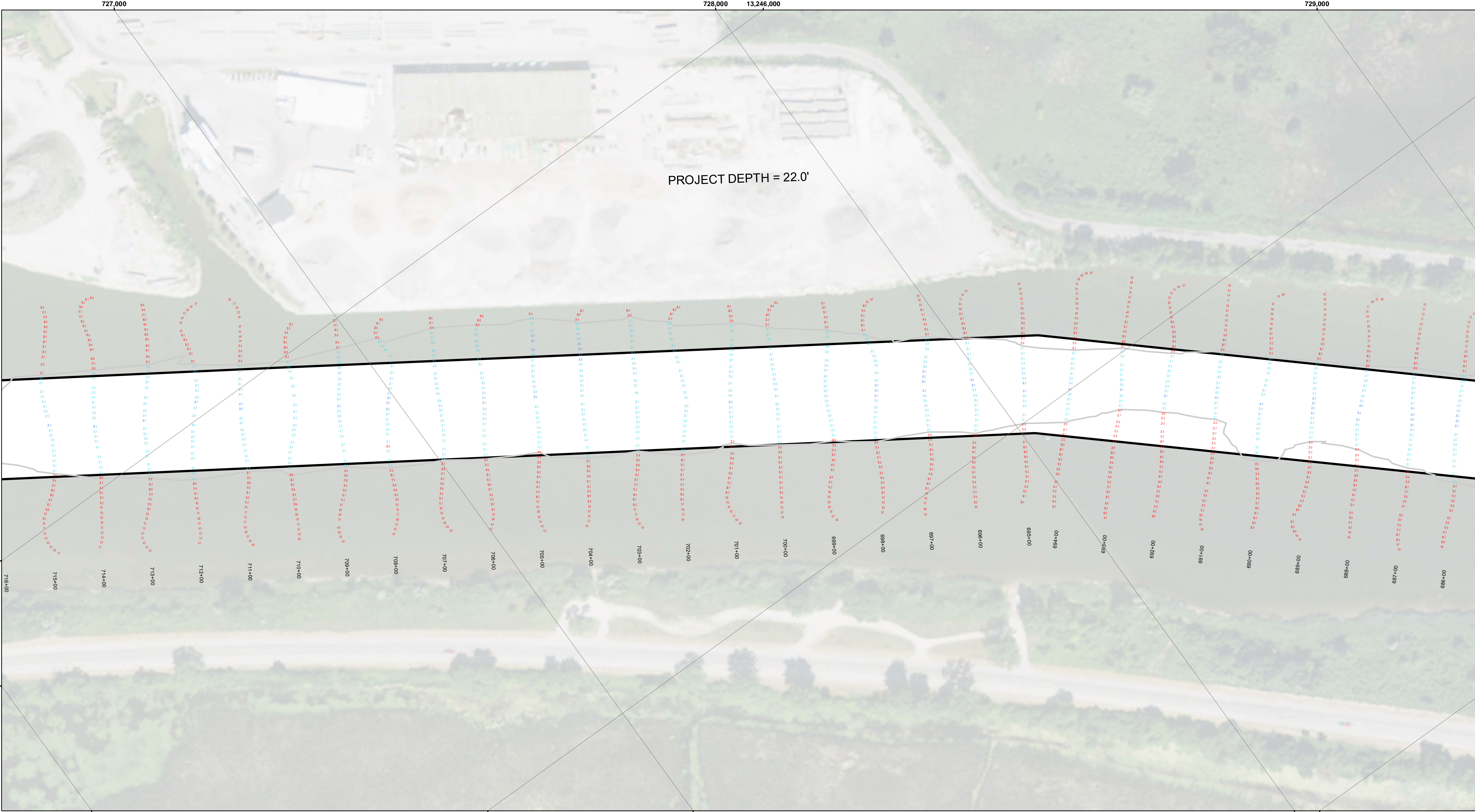
Checked By: \_\_\_\_\_

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

**Sheet Reference Number**  
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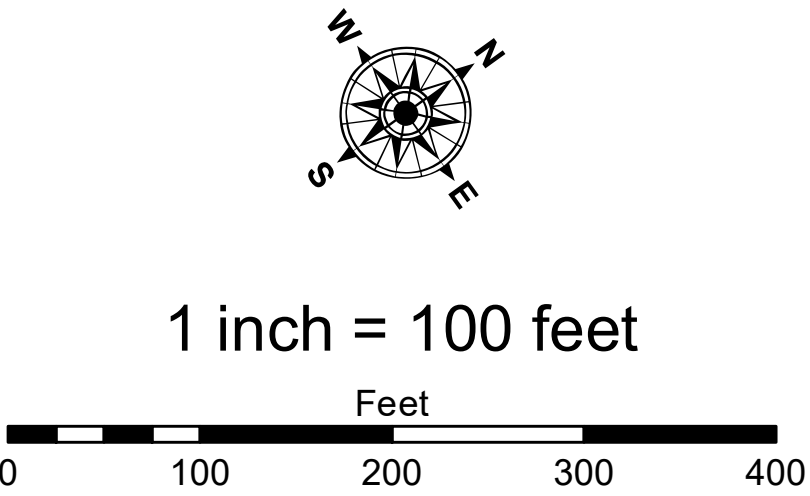
Revision Number: 4.2-202/004.20





- 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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SONAR: RS2SONIC 12024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)  
SOFTWARE: HYPACK

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS  
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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

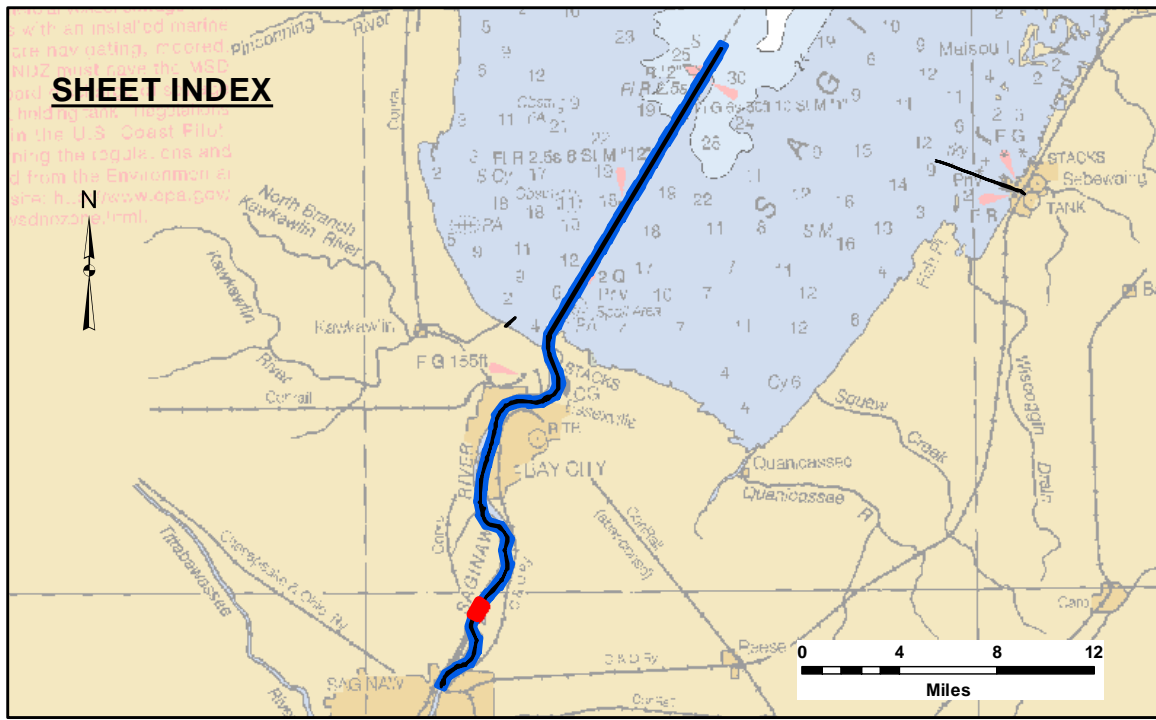
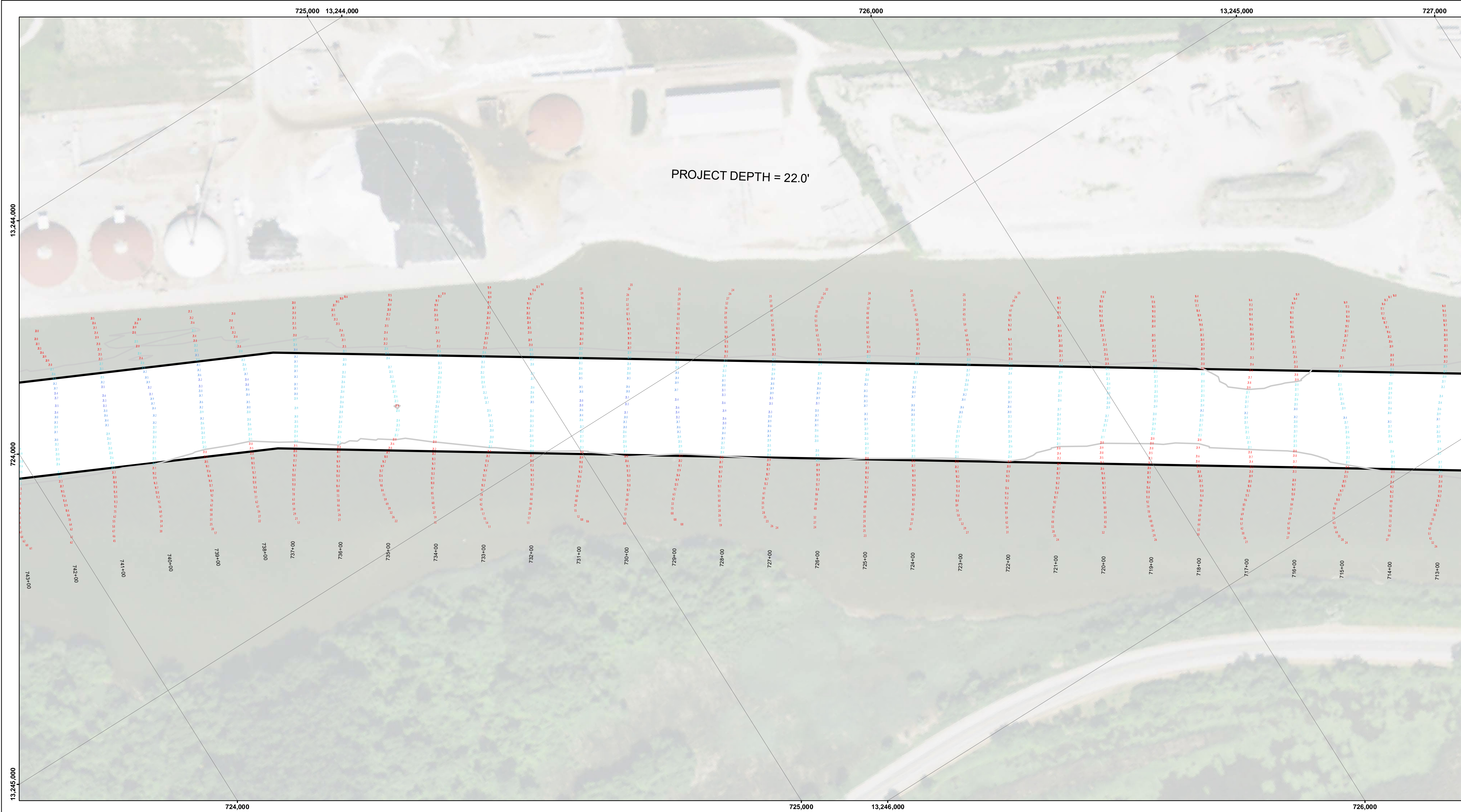
SH\_01\_SAG\_20220802\_CS

02 August 2022

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Reference  
Number  
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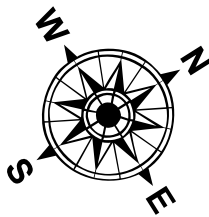
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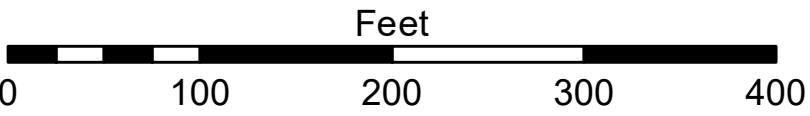


- LEGEND**
- ..... Cable Submarine
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  - Contour Lines
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1 inch = 100 feet



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

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

Reviewed By: \_\_\_\_\_

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

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

Chief, Survey Section

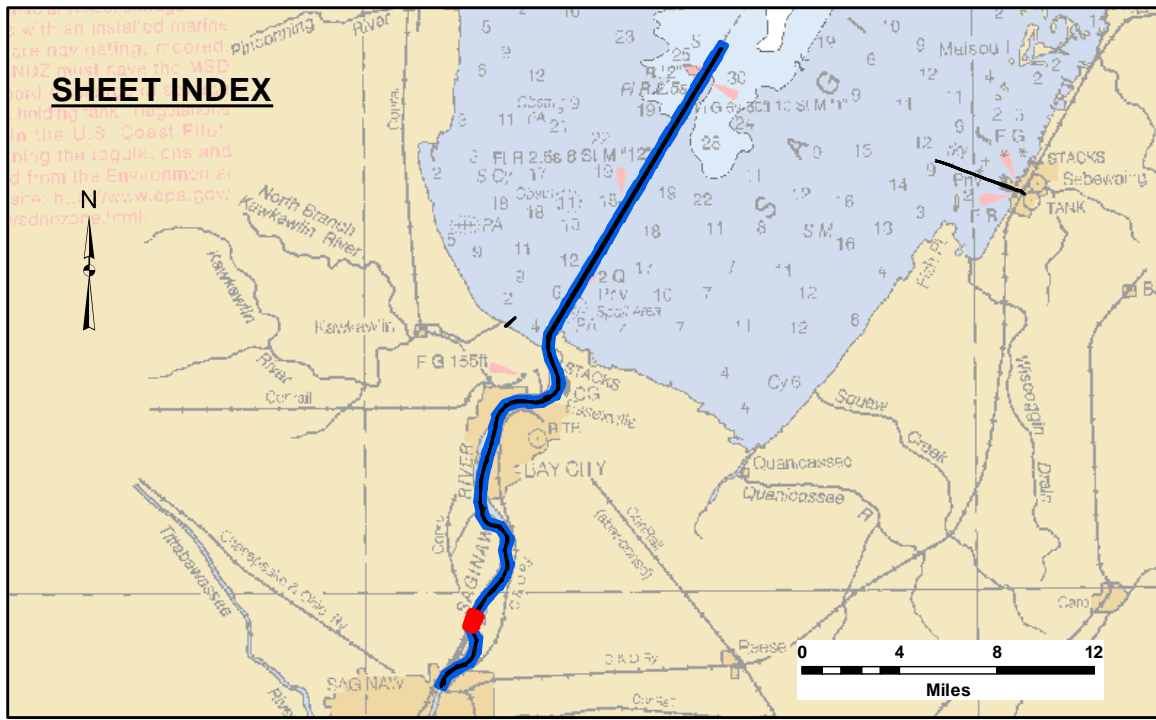
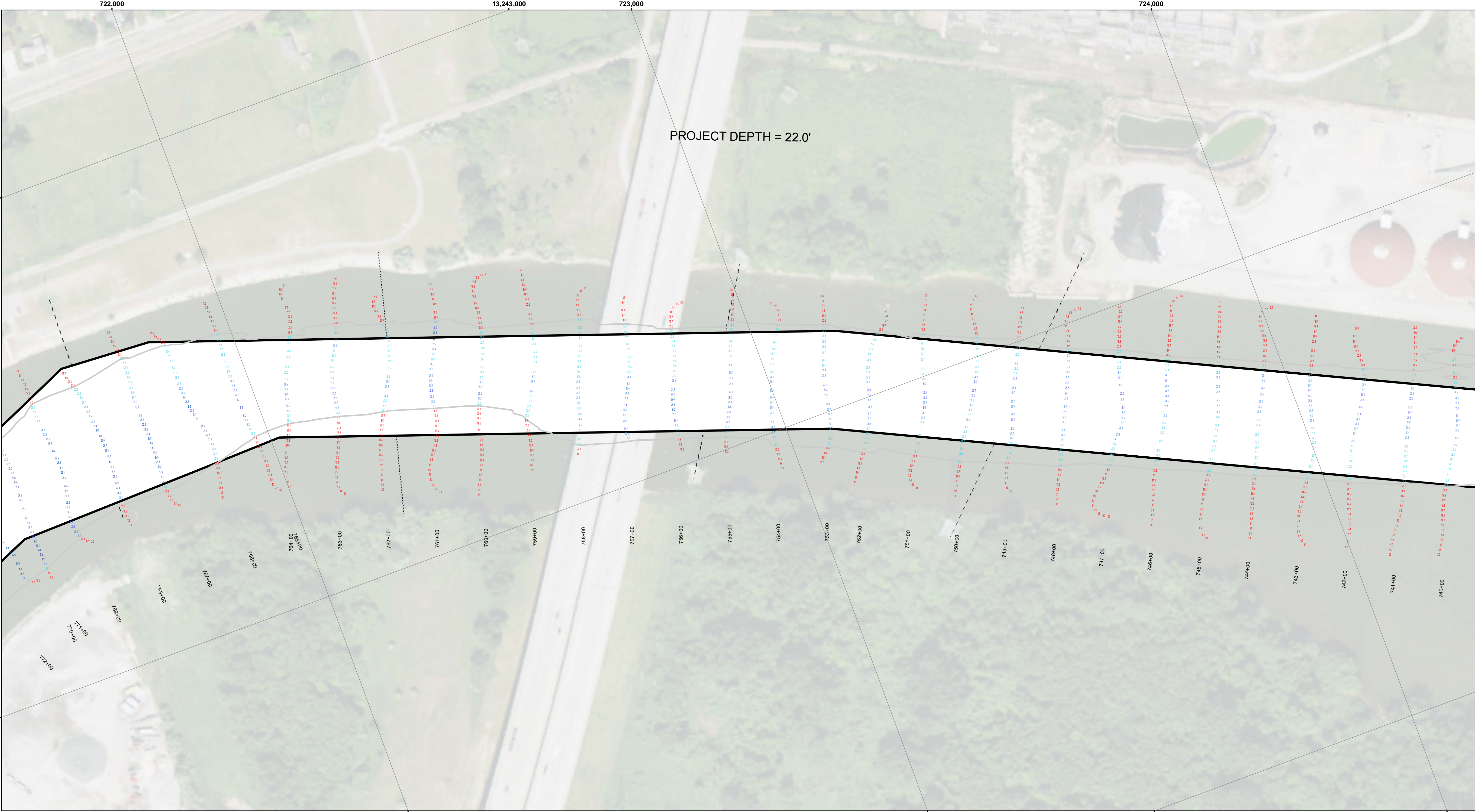
Chief, Technical Services

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

**Sheet**  
**Reference**  
**Number**  
**55 of 62**

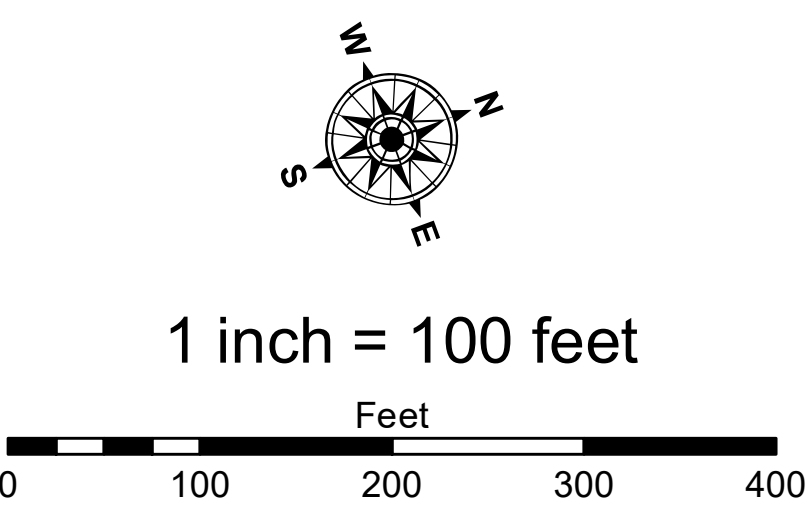
Revision Number:  
4.2-202/004.20





- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ┆ Beacon, General
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SOFTWARE: HYPACK

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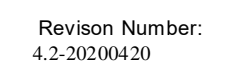
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Submitted:	Surveyed By:
	Plotted By:
	Checked By:
Recommended:	Chief, Survey Section
Approved:	Chief, Technical Services

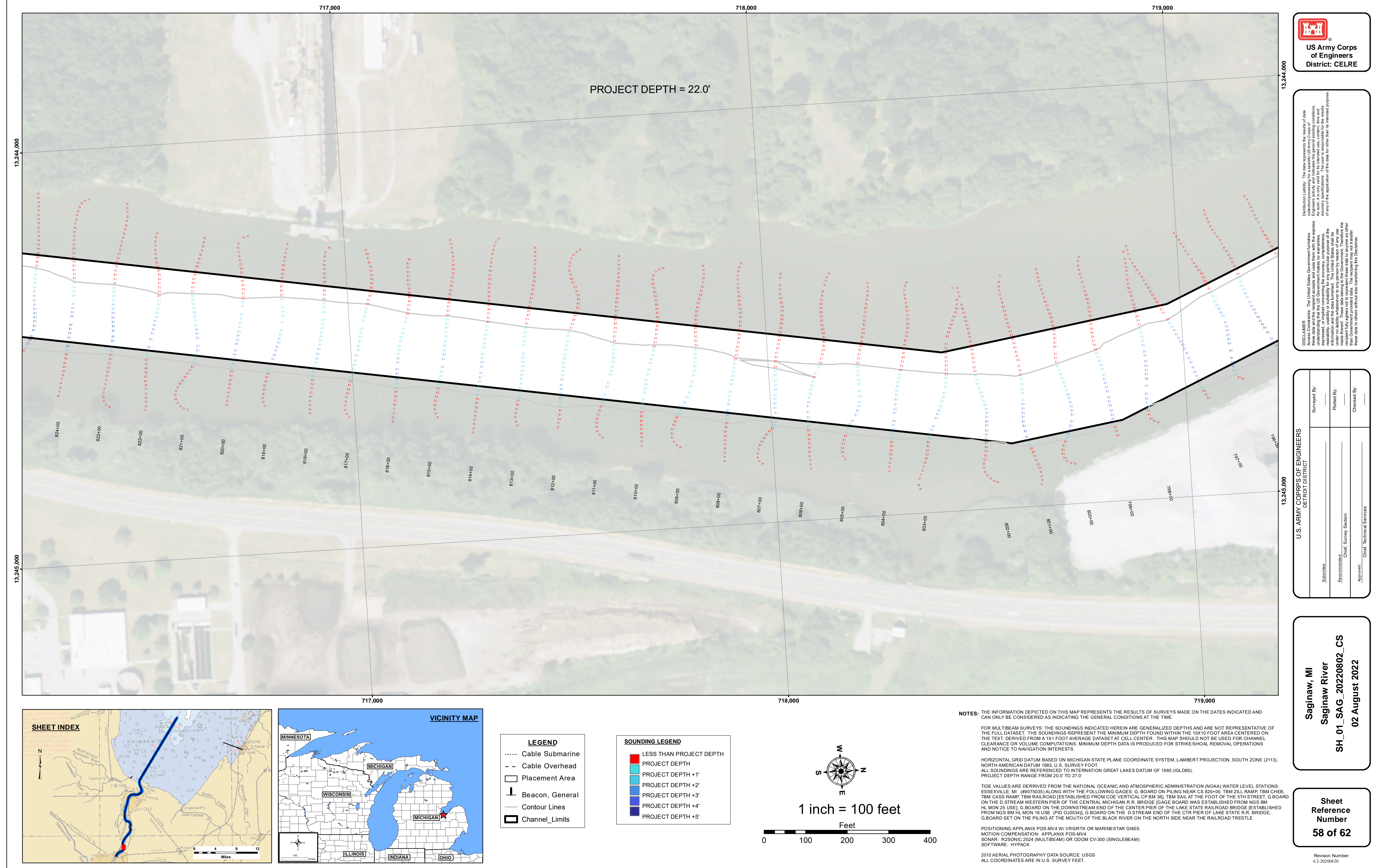
**Saginaw, MI**  
**Saginaw River**  
**SH\_01\_SAG\_20220802\_CS**  
**02 August 2022**

**Sheet Reference Number**  
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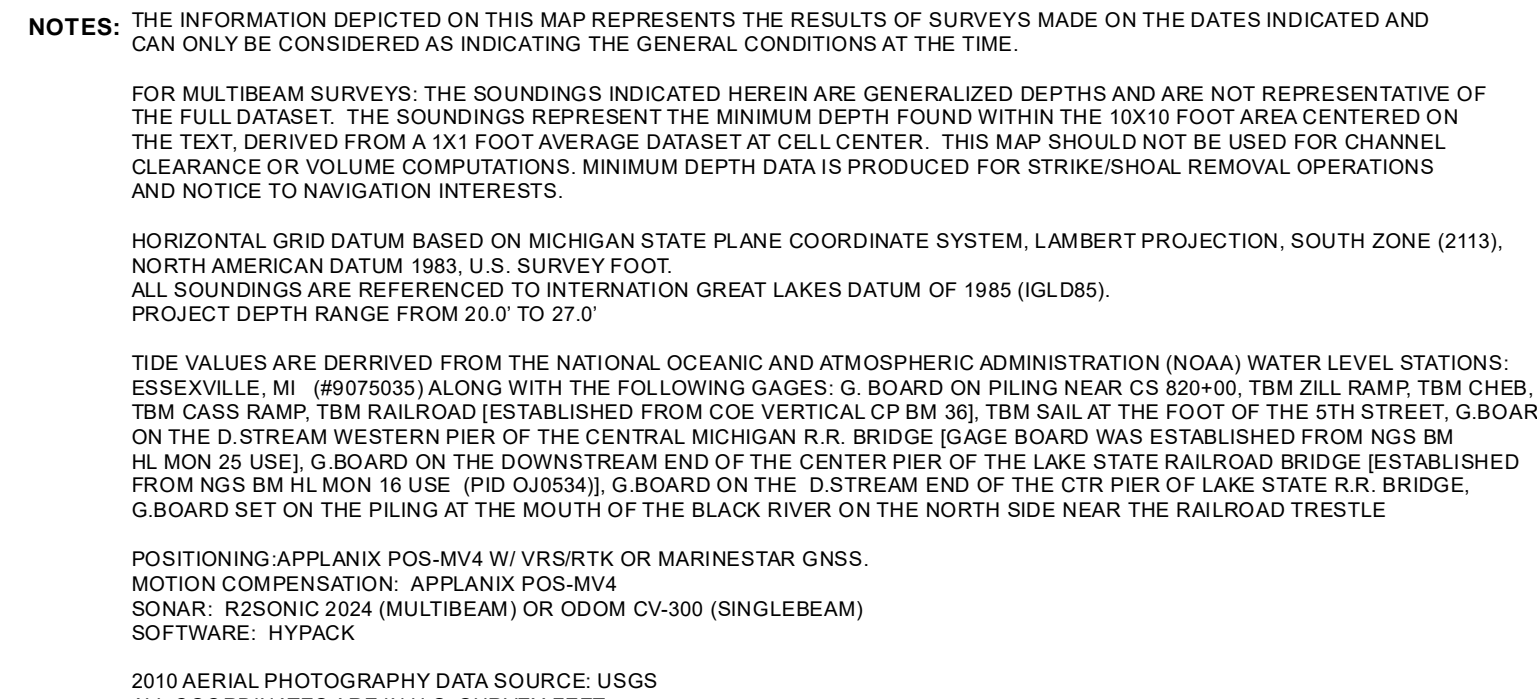
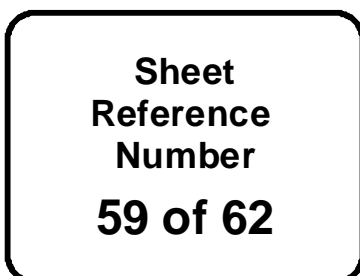




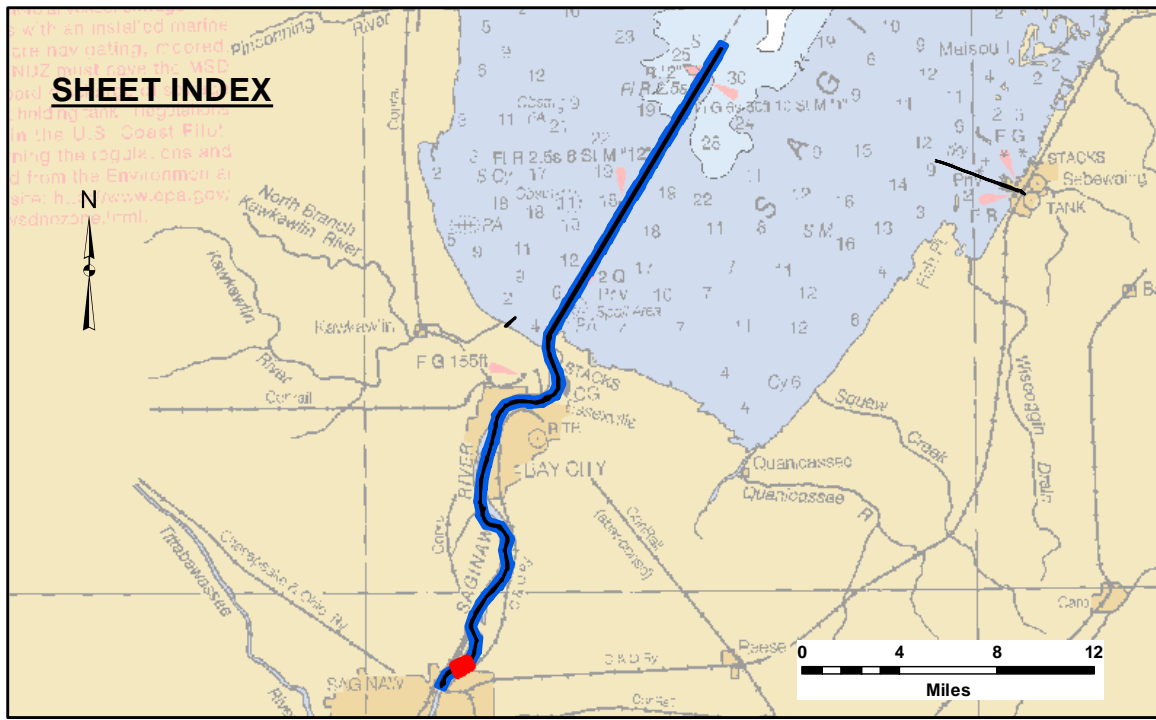
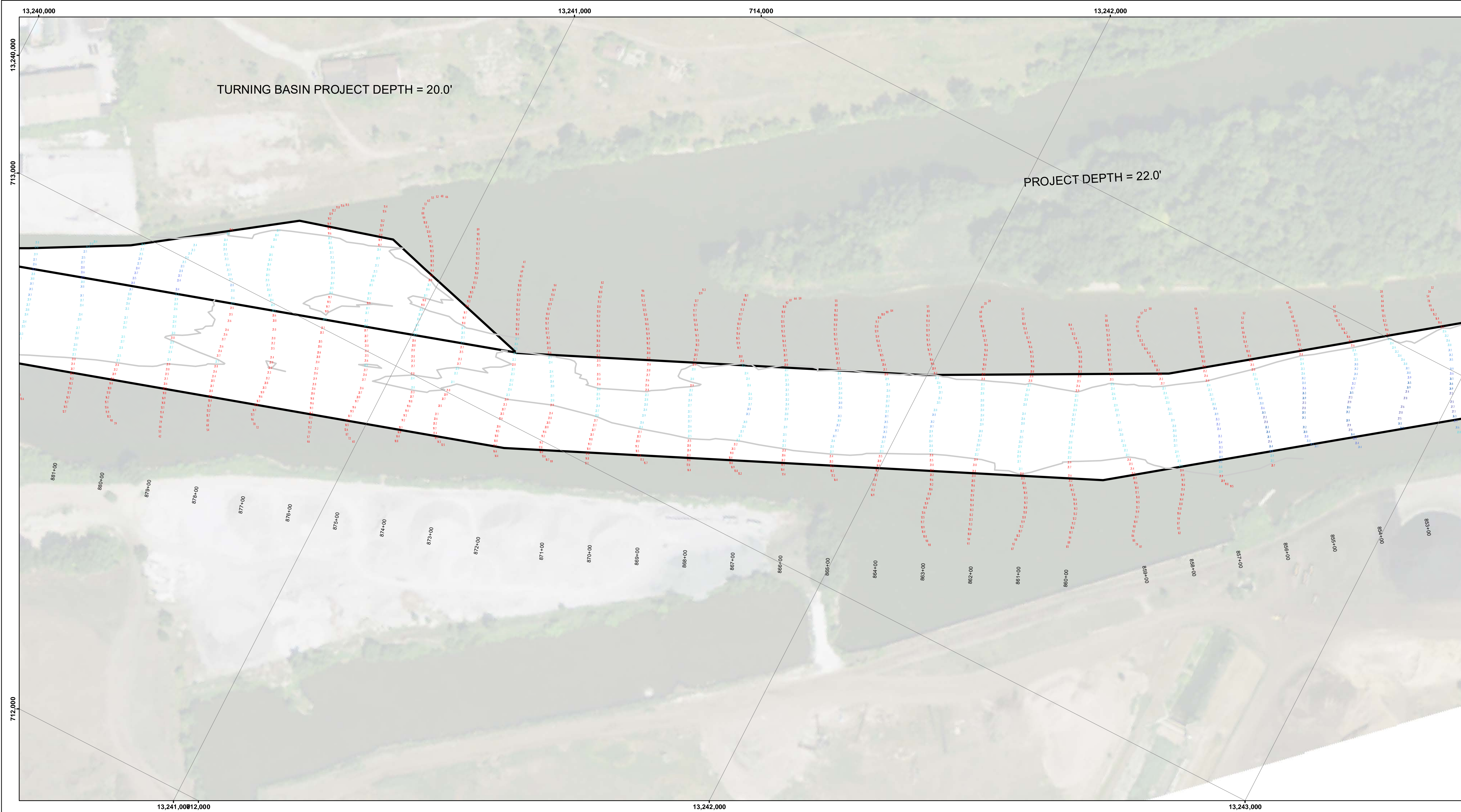






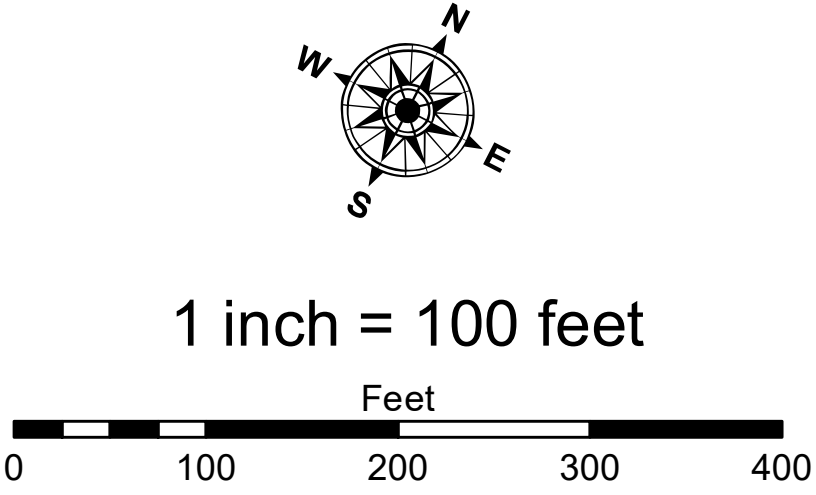






- LEGEND**
- ..... Cable Submarine
  - - Cable Overhead
  - Placement Area
  - ⊥ Beacon, General
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- SOUNDING LEGEND**
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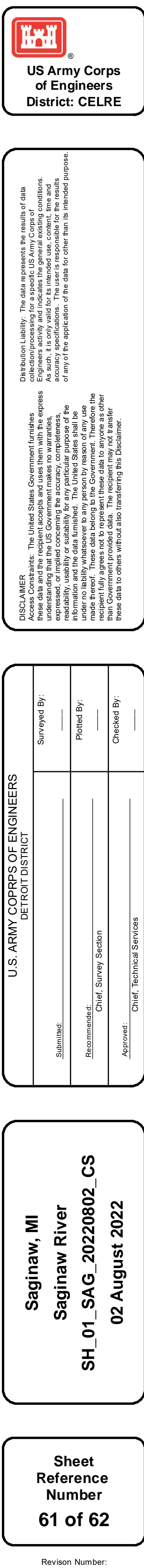
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Surveyed By:
	Plotted By:
	Checked By:
Submitted:	Recommended:
Chief, Survey Section	Chief, Technical Services

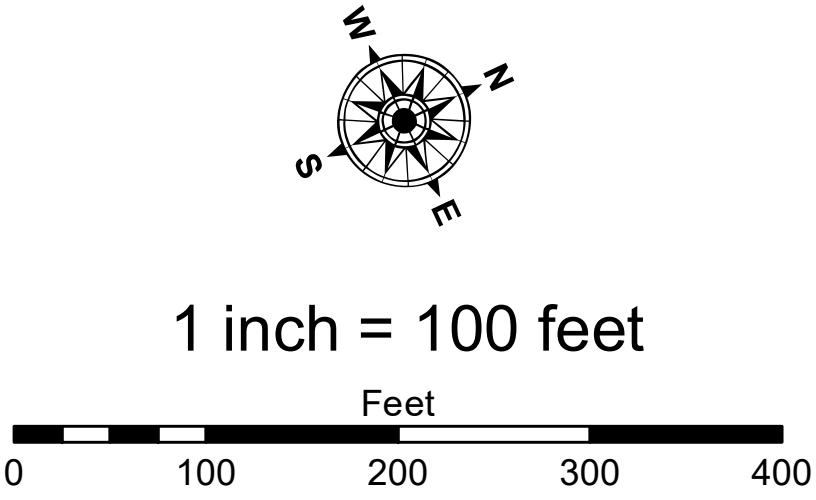
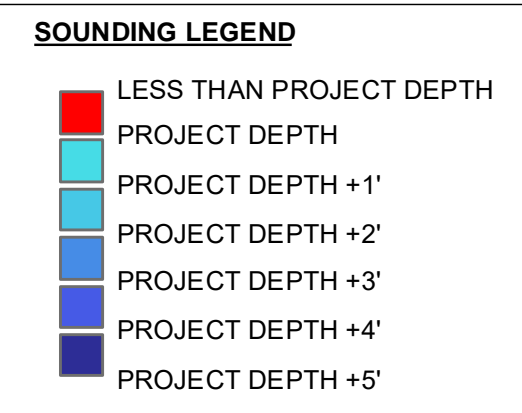
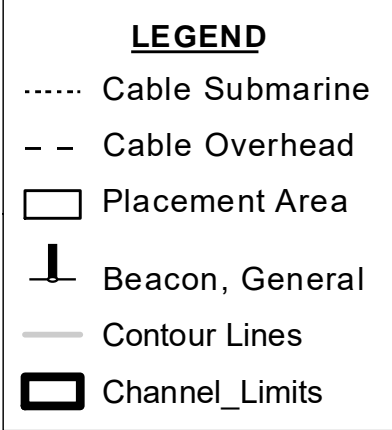
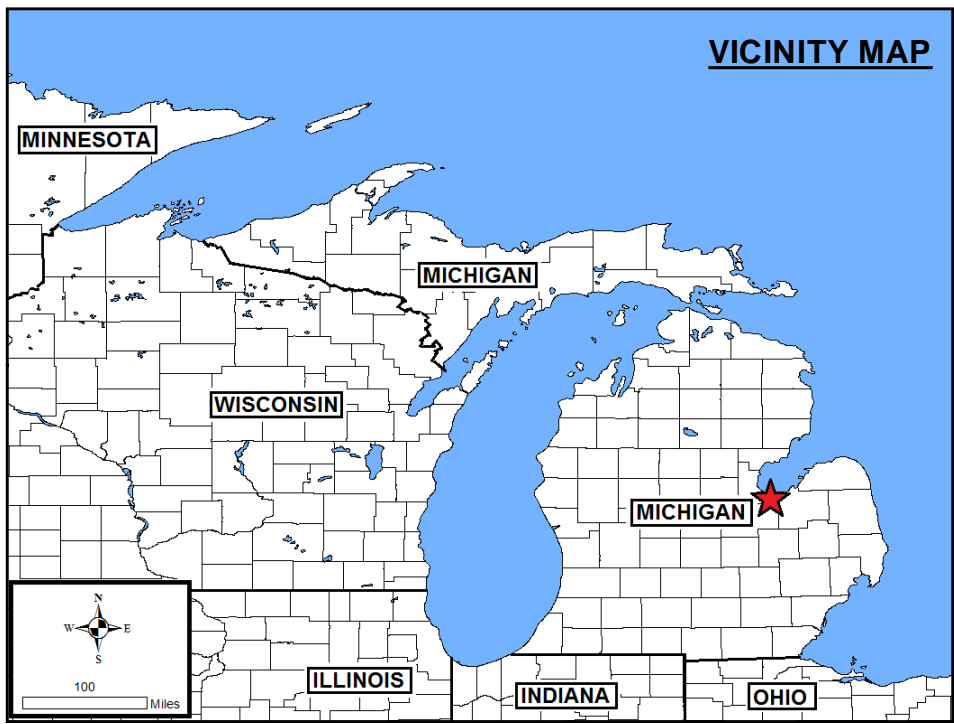
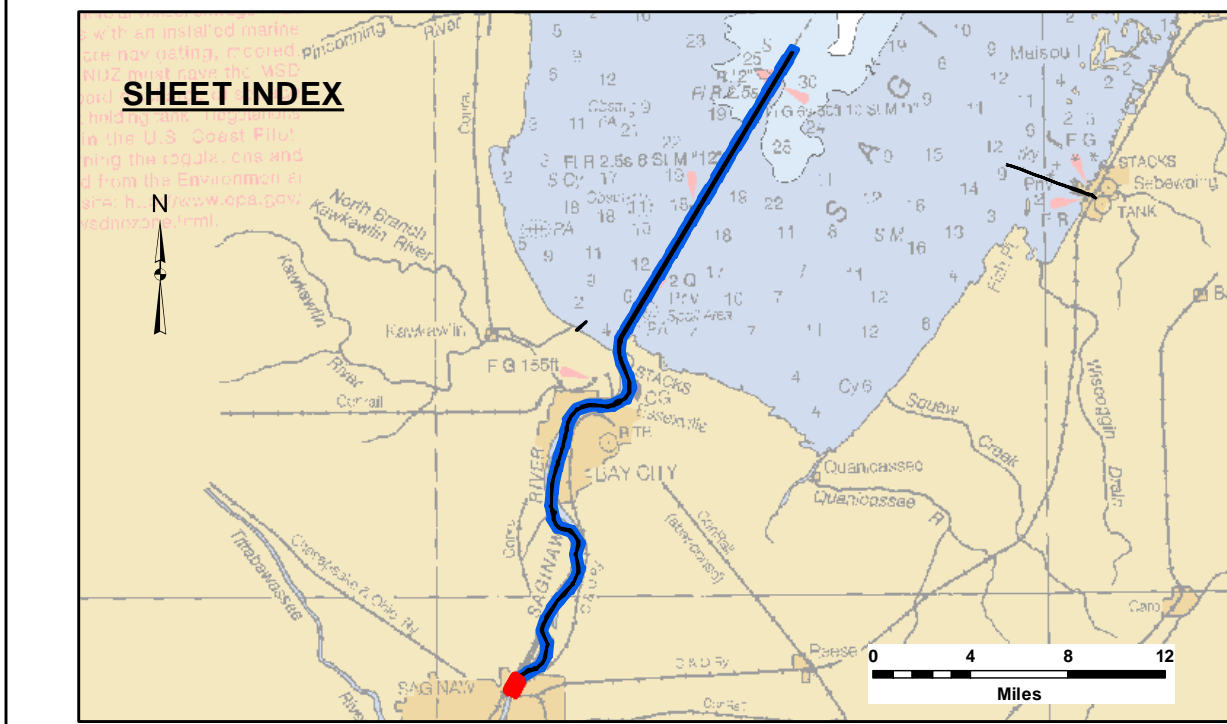
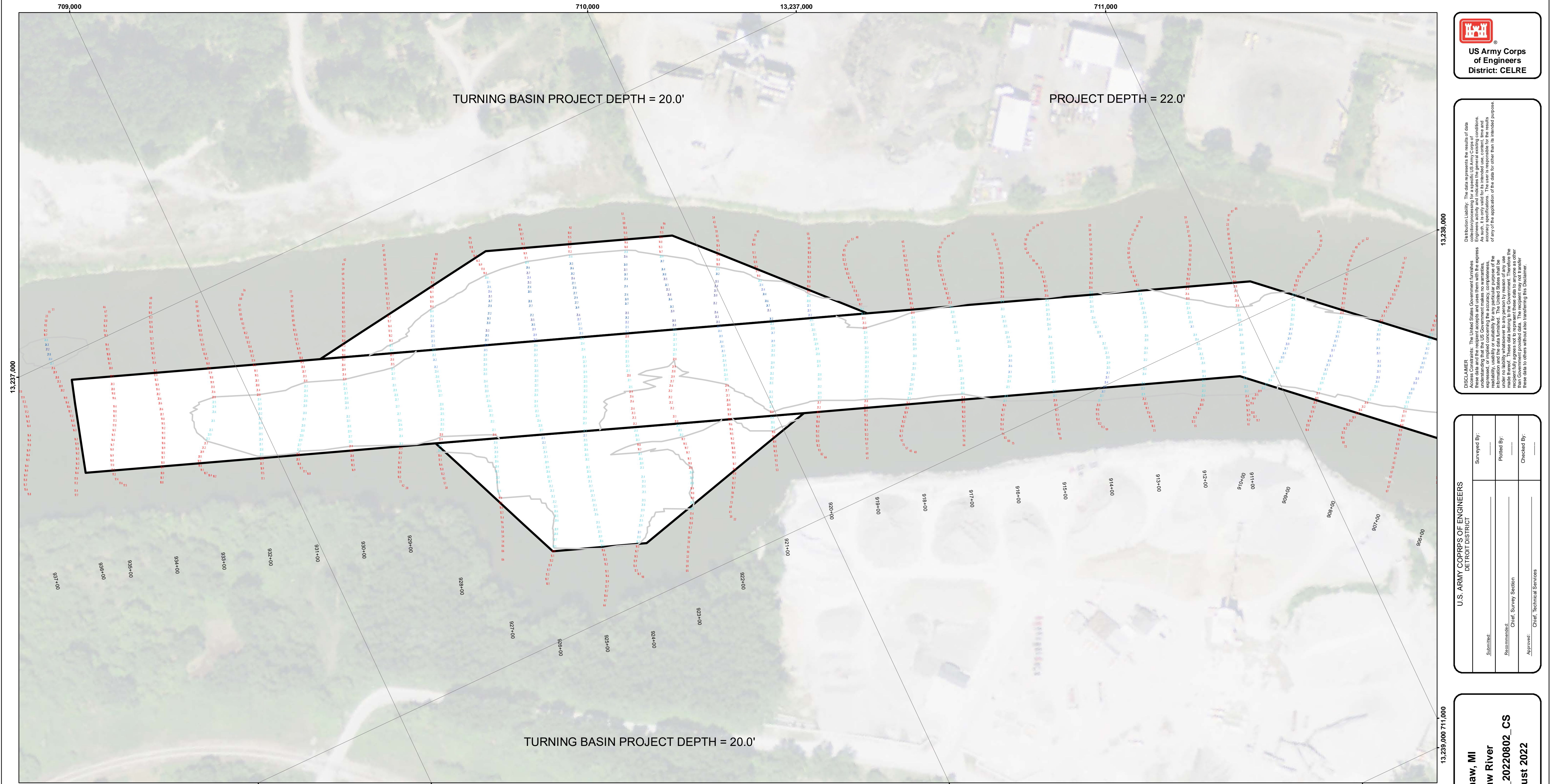
Saginaw, MI  
Saginaw River  
SH\_01\_SAG\_20220802\_CS  
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Sheet  
Reference  
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FOR MULTIBEAM SURVEYS: THE SOUNDINGS INDICATED HEREIN ARE GENERALIZED DEPTHS AND ARE NOT REPRESENTATIVE OF THE FULL DATASET. 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/SWAL 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 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 00534)], 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 presented in 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 any purpose other than the intended purpose of the activity. The user is responsible for the results of any of the application of the data for other than its intended purpose.

Access Constraints: 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 the intended purpose of the activity. The data are not to be used for any purpose other than the intended purpose of the activity. The user is responsible for the results of any of the 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:	Checked By:

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

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Reference  
Number  
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Revision Number:  
4.2-202/004.20