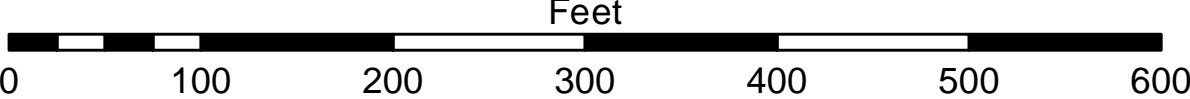


- LEGEND**
- Cable Submarine
 - - Cable Overhead
 - Placement Area
 - └ Beacon, General
 - Contour Lines
 - ▭ Channel_Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
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 - PROJECT DEPTH +2'
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 - PROJECT DEPTH +4'
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1 inch = 100 feet



NOTES:

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FOR MULTIBEAM SURVEYS:
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TIDE VALUES ARE DERRIVED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) WATER LEVEL STATIONS.

ST CLAIR SHORES, MI (#9034052)

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.

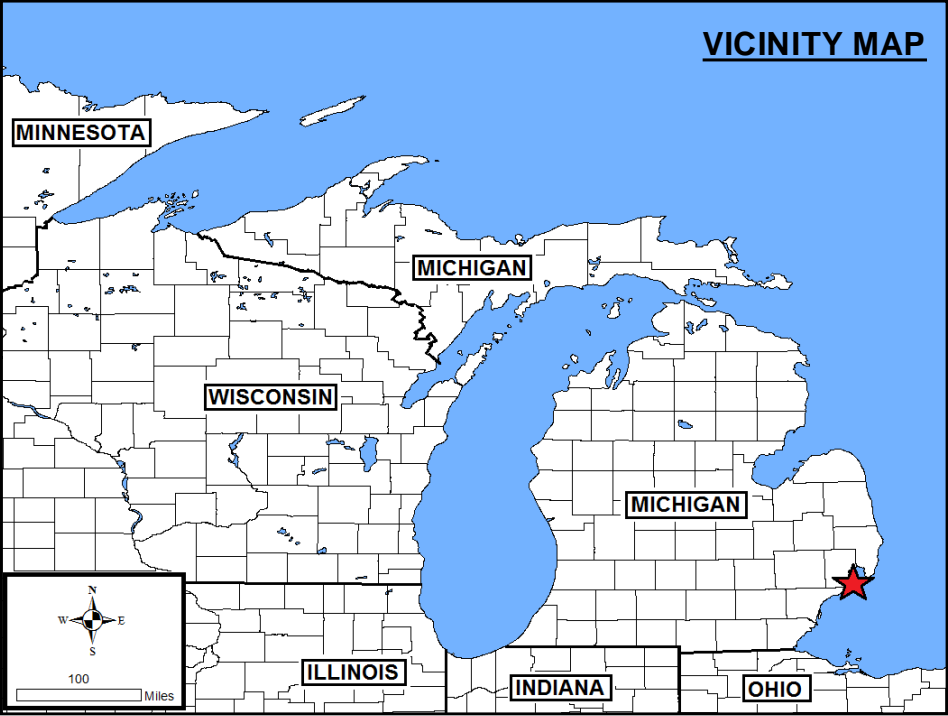
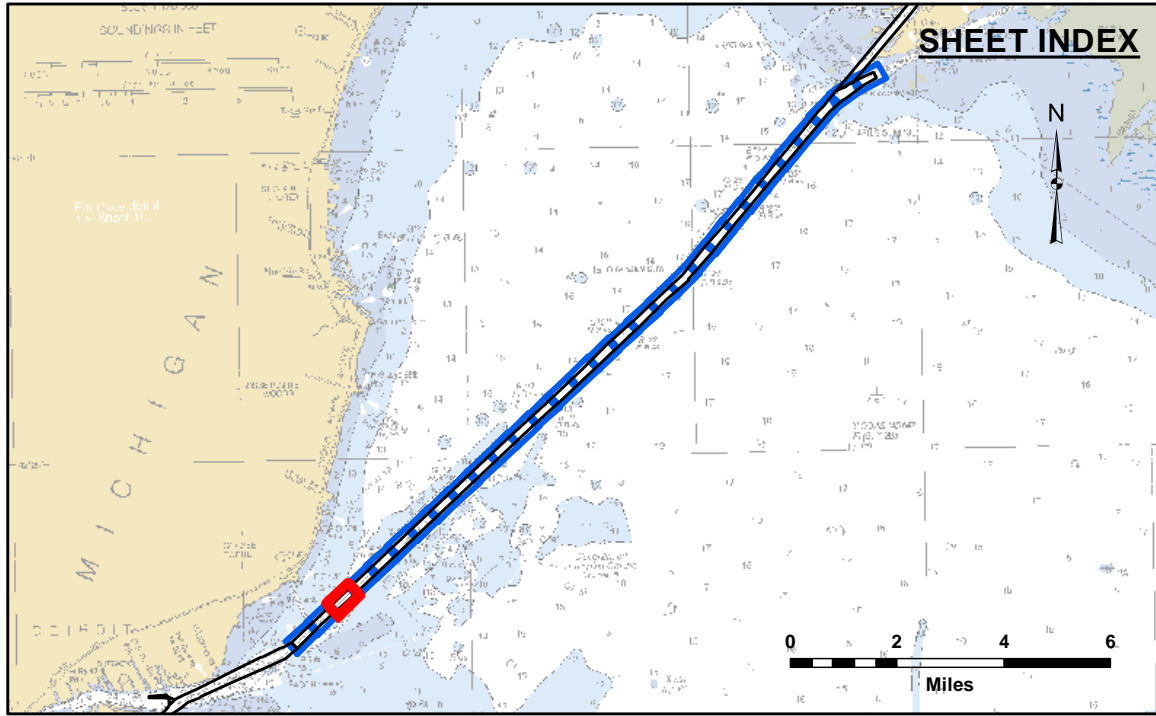
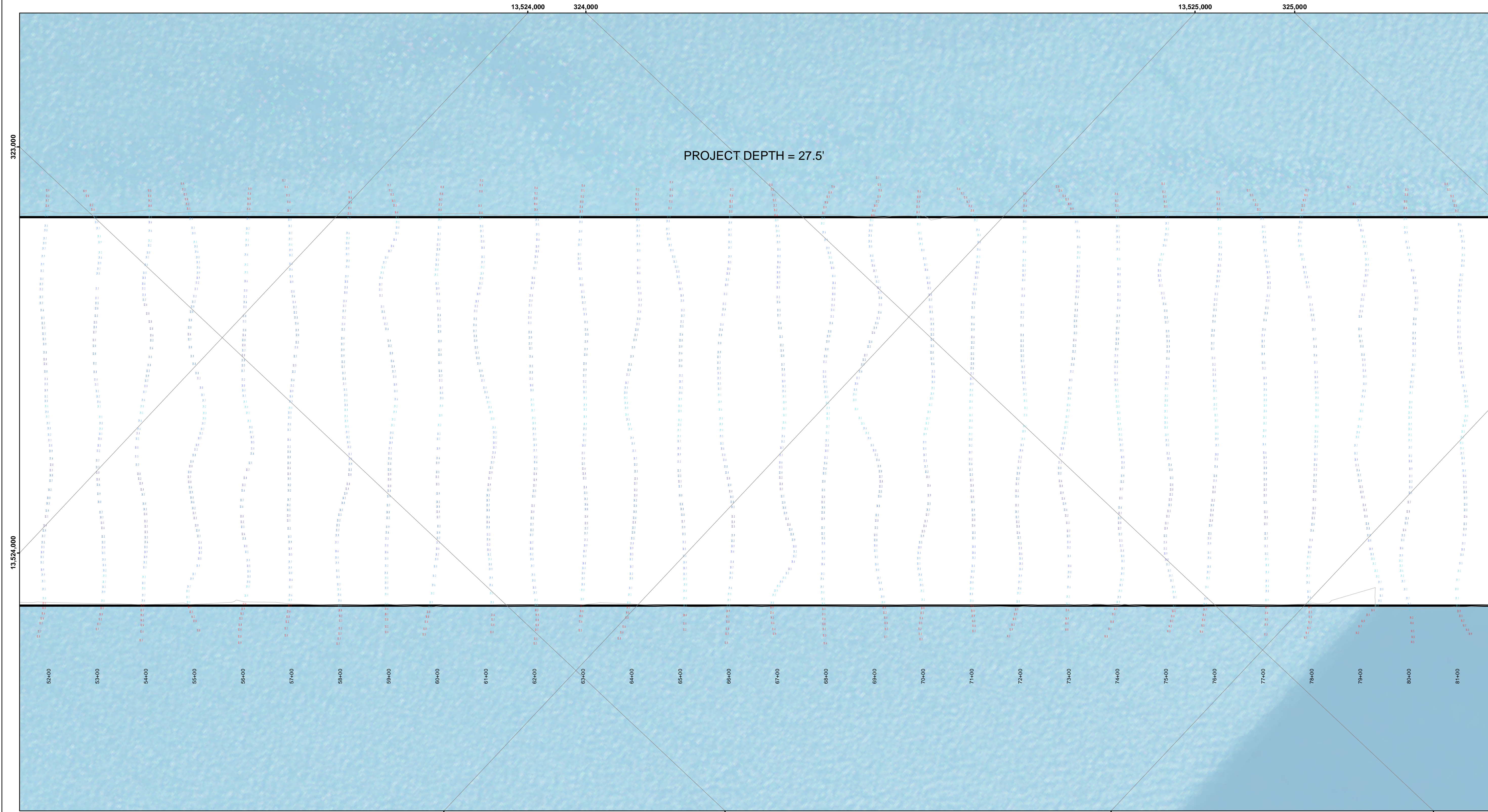


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	Recommended:	Plotted By:
	Chief, Survey Section	
	Approved:	Checked By:
	Chief, Technical Services	

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20200915_CS
15 September 2020



LEGEND

- Cable Submarine
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2019 AERIAL PHOTOGRAPHY DATA SOURCE: USGS
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**US Army Corps
of Engineers**
District: CELRE

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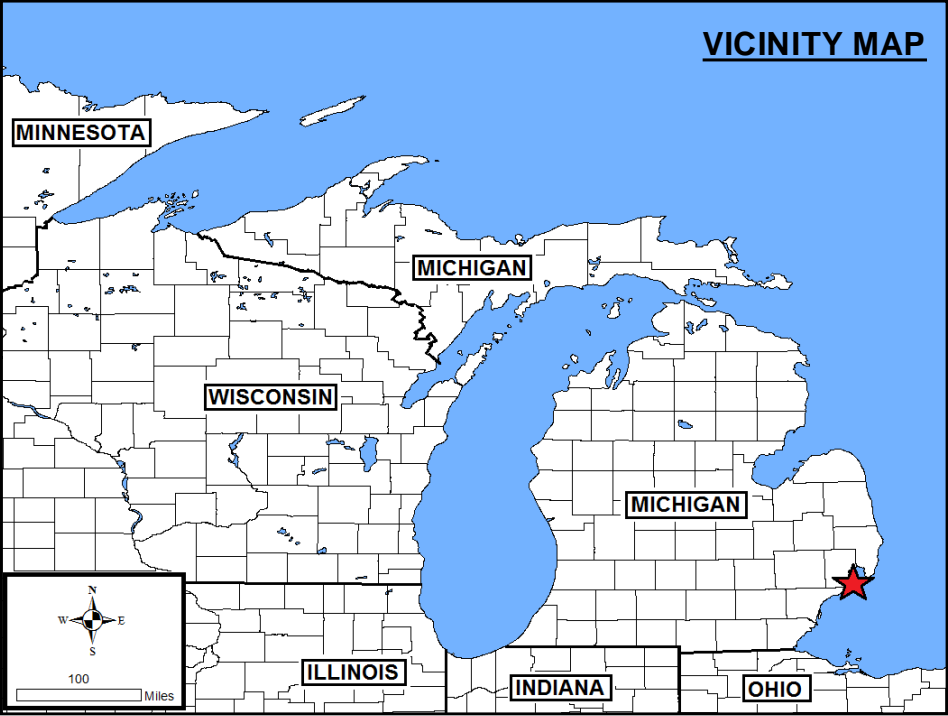
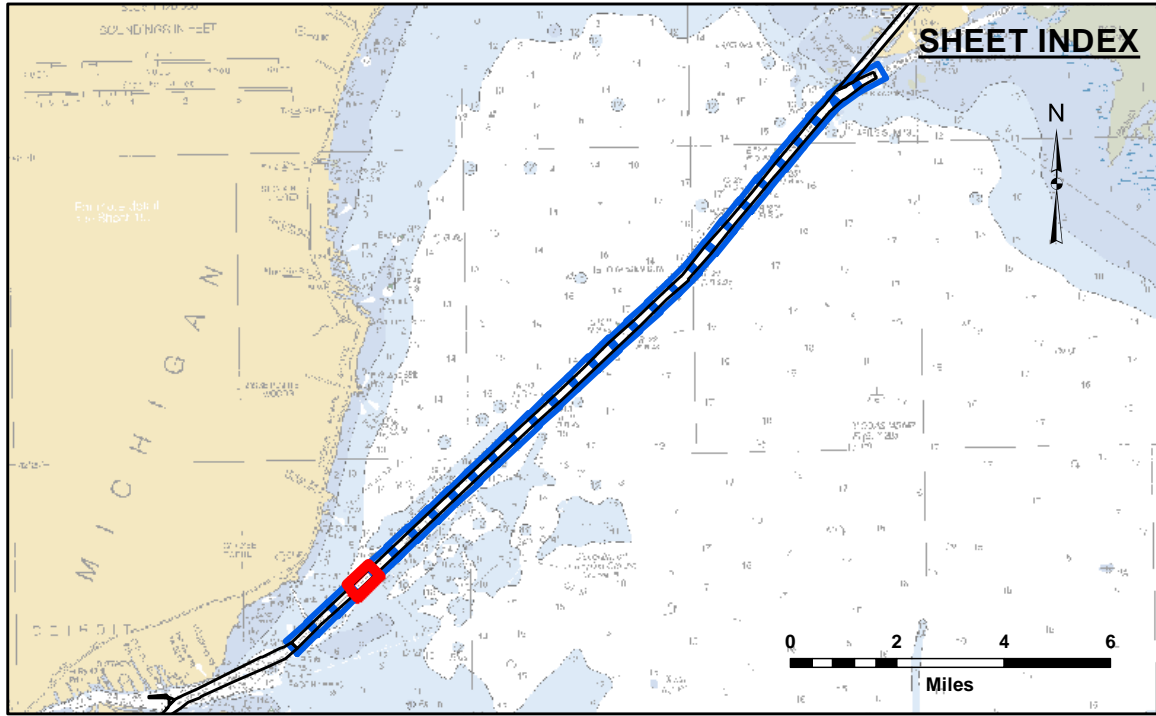
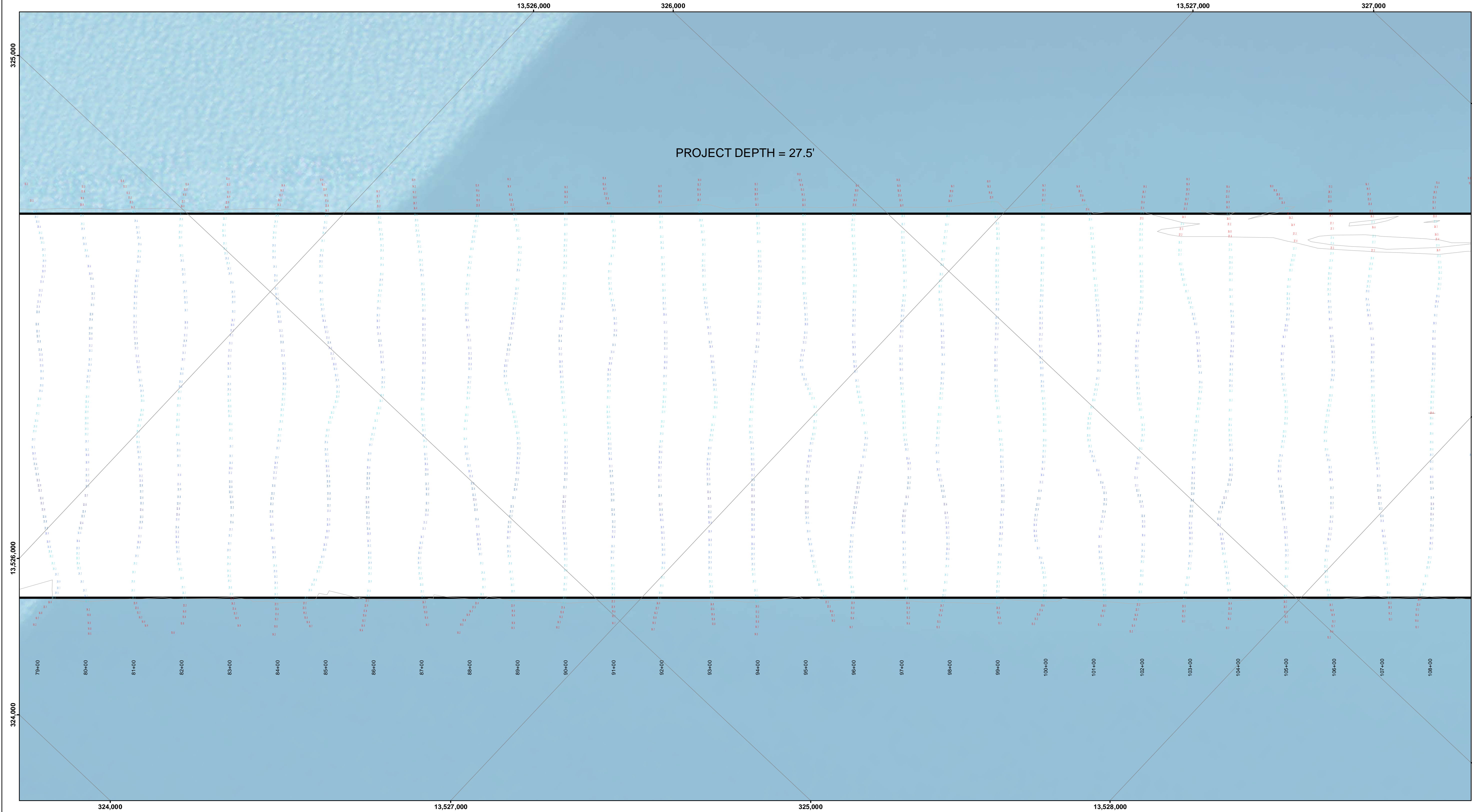
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted:	Surveyed By:
	Recommended: Chief, Survey Section	Plotted By:
	Approved:	Checked By:

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20200915_CS
15 September 2020

**Sheet
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Number**
3 of 30

Revision Number:
4.1-20191105

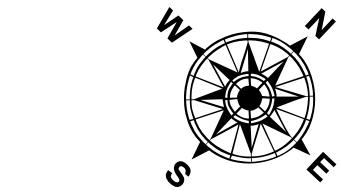


LEGEND

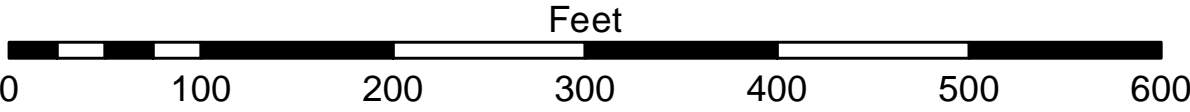
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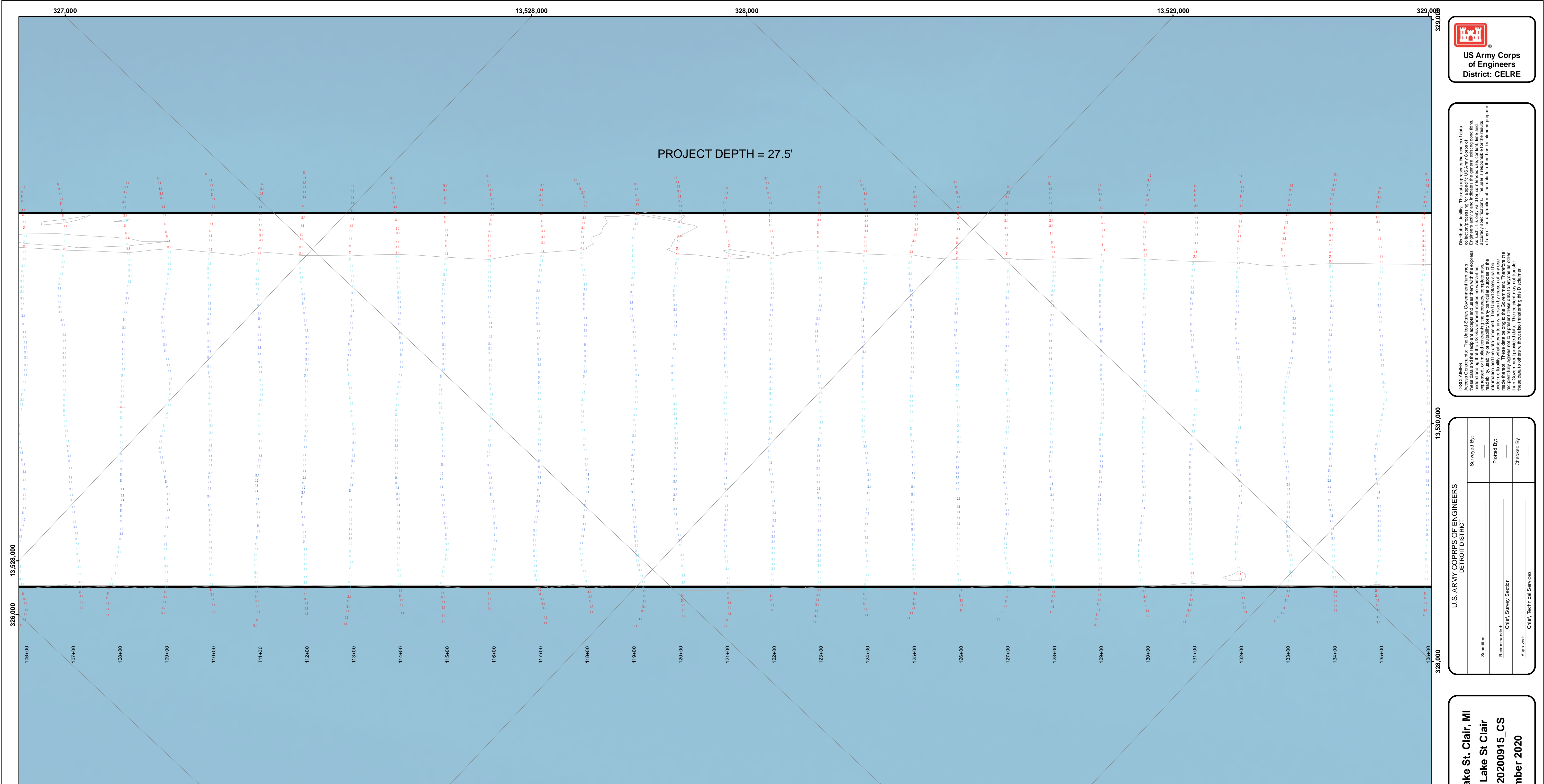
2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	Submitted:	Surveyed By:
	Recommended:	Plotted By:
	Chief, Survey Section	Checked By:
	Approved:	Chief, Technical Services

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20200915_CS
15 September 2020



SHEET INDEX

VICINITY MAP

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- Cable Submarine
- - Cable Overhead
- Placement Area
- Beacon, General
- Contour Lines
- Channel_Limits

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US Army Corps of Engineers
District: CELRE

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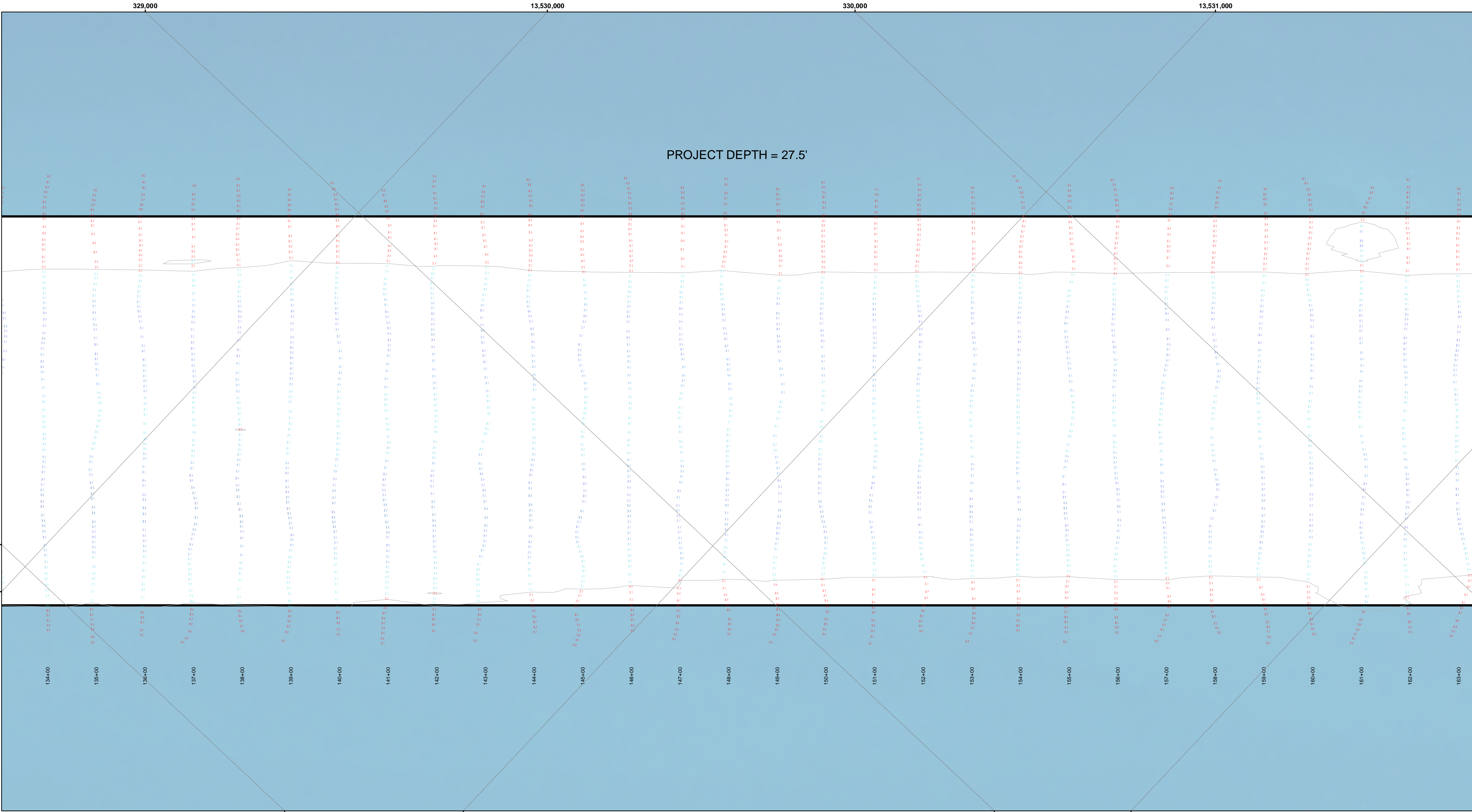
Submitted:	Surveyed By:
	Plotted By:
	Checked By:
	Approved:

U.S. ARMY CORPS OF ENGINEERS
DETROIT DISTRICT

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20200915_CS
15 September 2020

Sheet Reference Number
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Revision Number:
4.1-20191105



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Submitted:	Sounded By:	Checked By:		
			Plotted By:	
				Chief, Survey Section

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20200915_CS
15 September 2020

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Number
6 of 30

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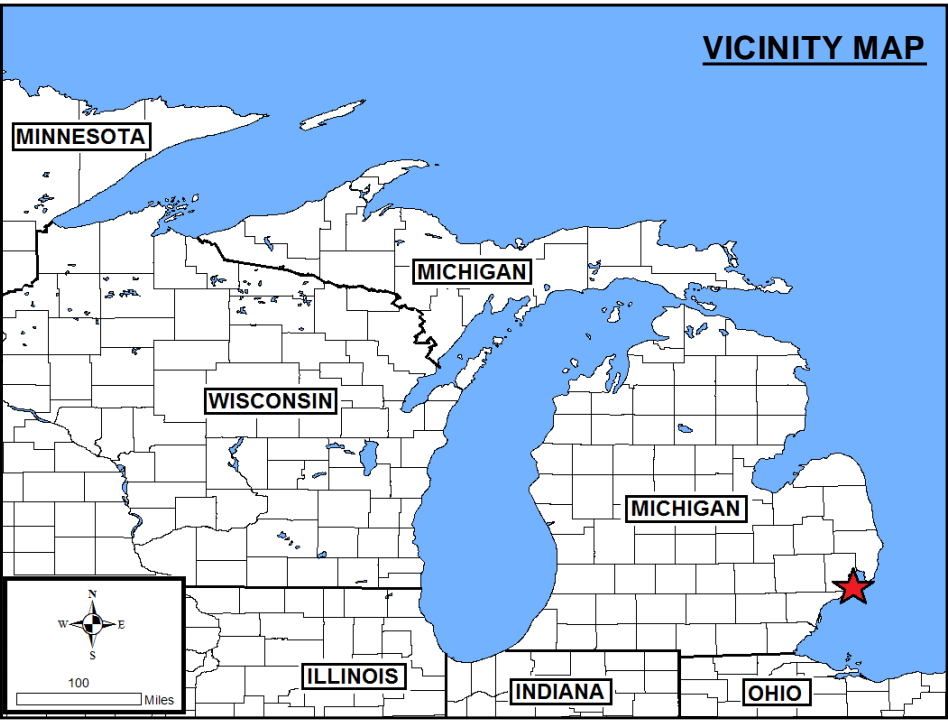
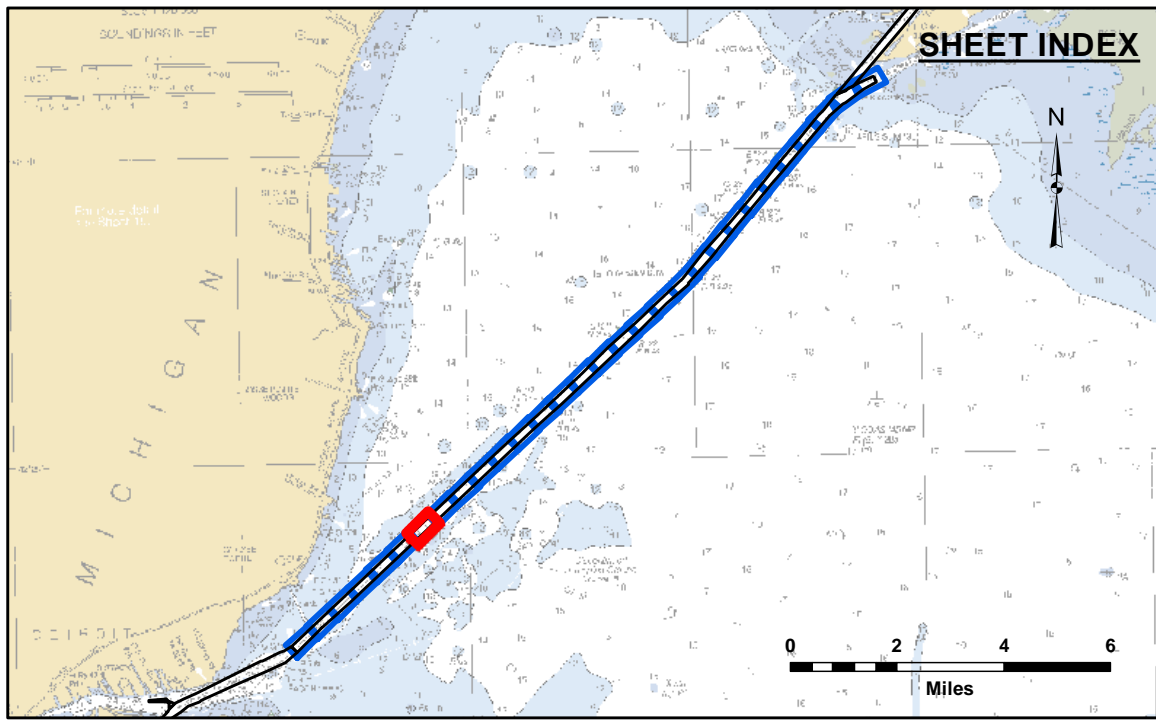
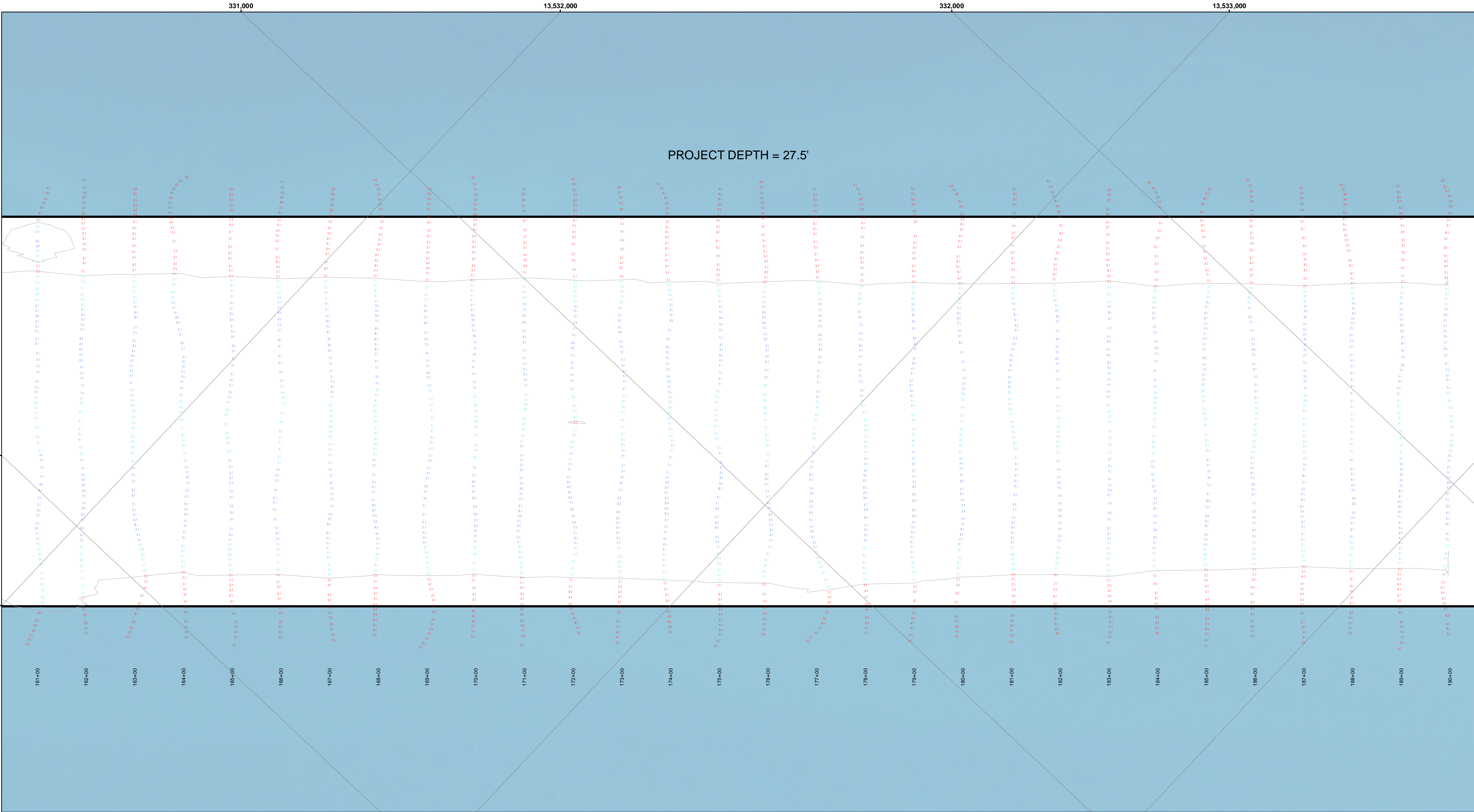
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LEGEND

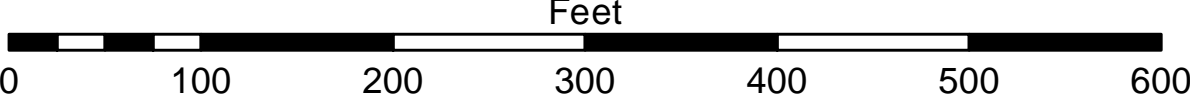
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**US Army Corps
of Engineers**
District: CELRE

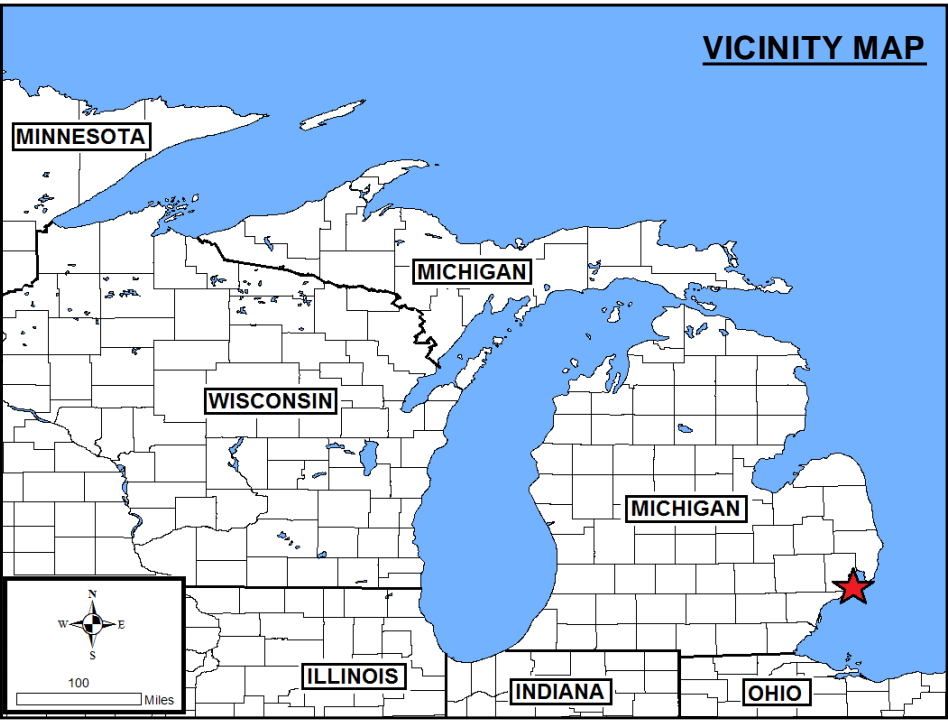
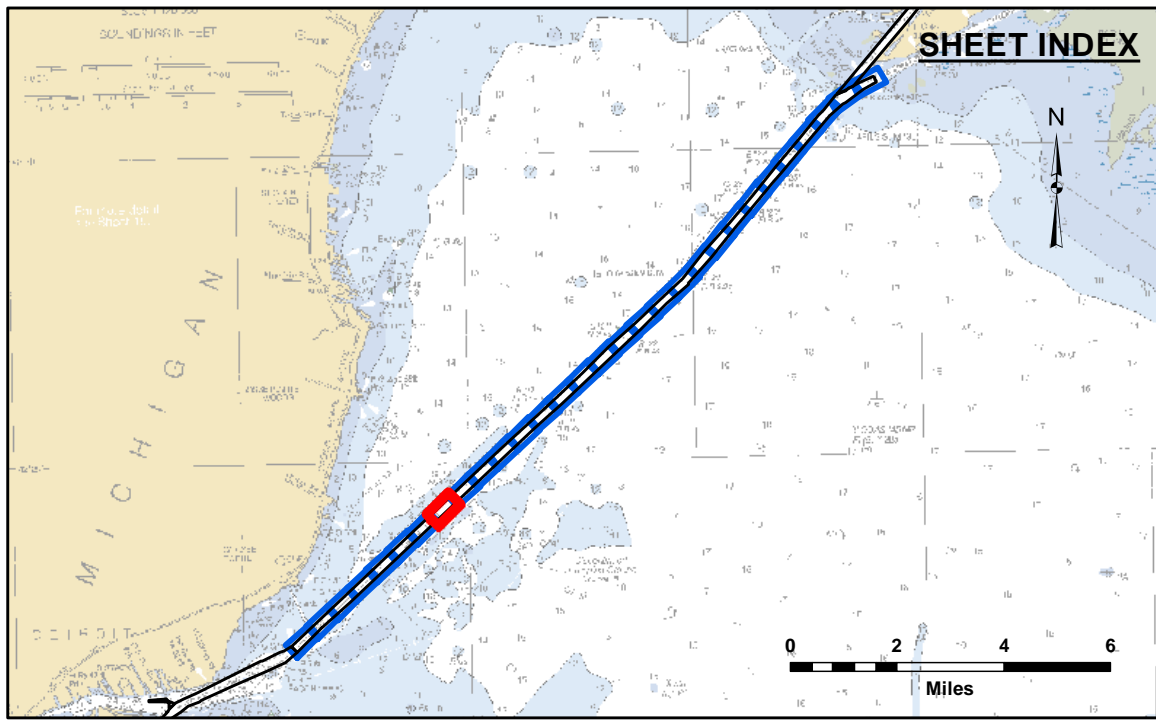
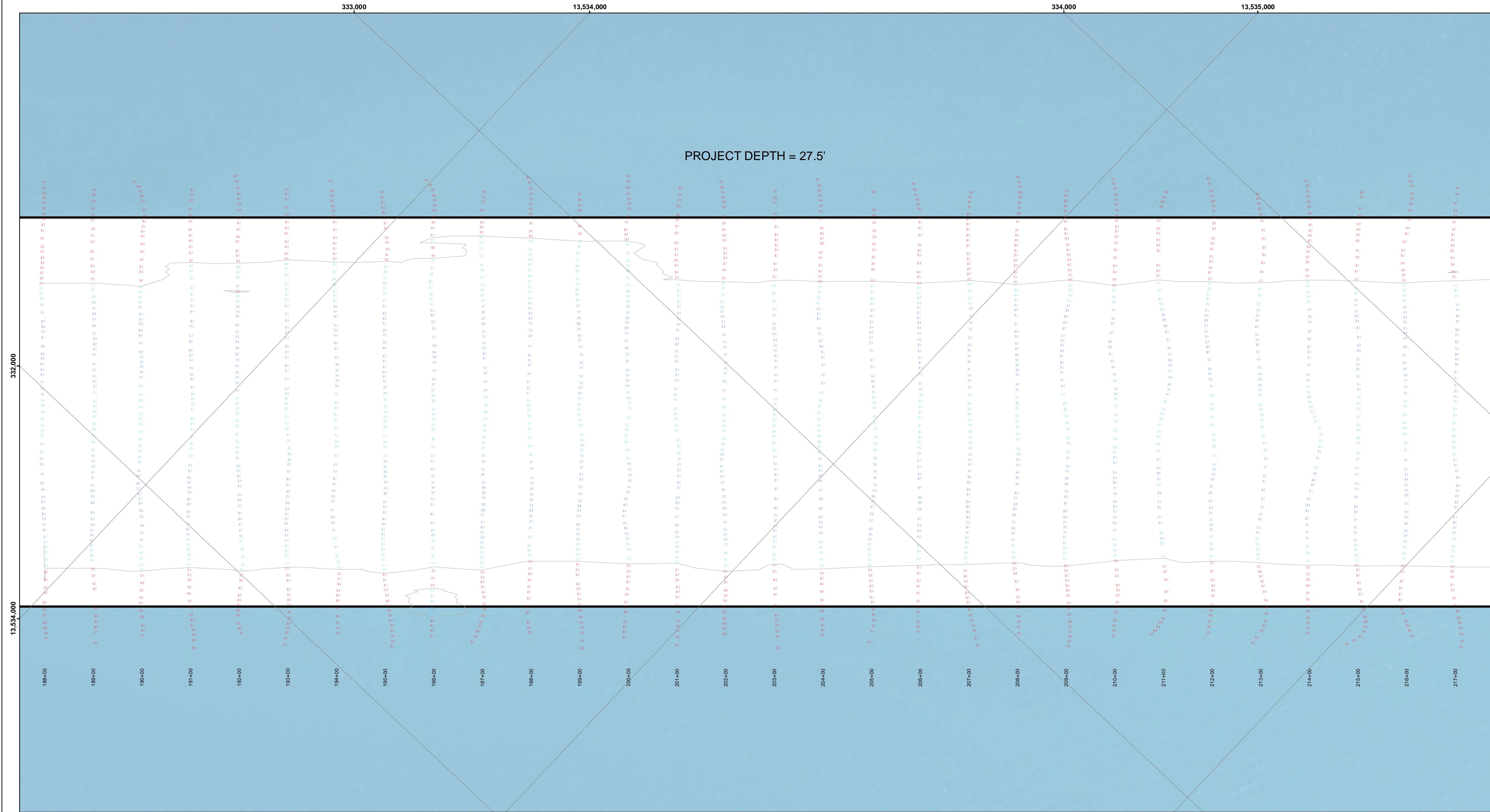
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT	
Submitted:	Surveyed By:
Recommended: Chief, Survey Section	Plotted By:
Approved:	Checked By:

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20200915_CS
15 September 2020

**Sheet
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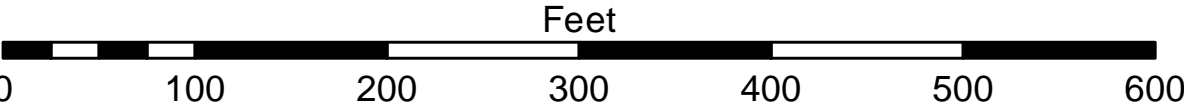
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US Army Corps of Engineers
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U.S. ARMY CORPS OF ENGINEERS
DETROIT DISTRICT

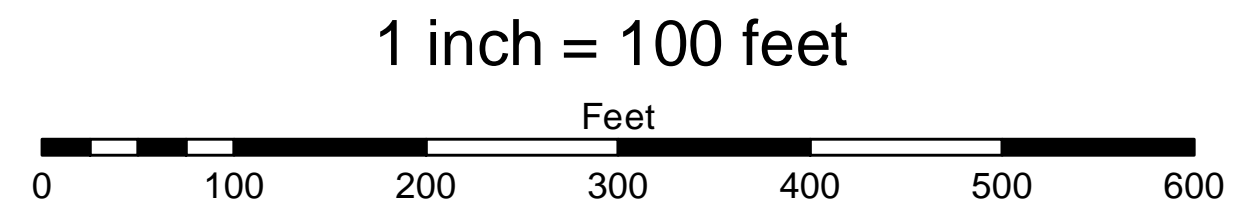
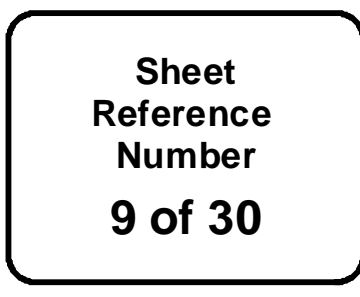
Submitted:	Surveyed By:
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Chief, Survey Section
Chief, Technical Services

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20201019_CS
19 October 2020

Sheet Reference Number
8 of 30

Revision Number:
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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/SWATH REMOVAL OPERATIONS AND NOTICE TO NAVIGATION INTERESTS.

HORIZONTAL GRID DATUM BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, LAMBERT PROJECTION, NORTH ZONE (2113), NORTH AMERICAN DATUM 1983, U.S. SURVEY FOOT.

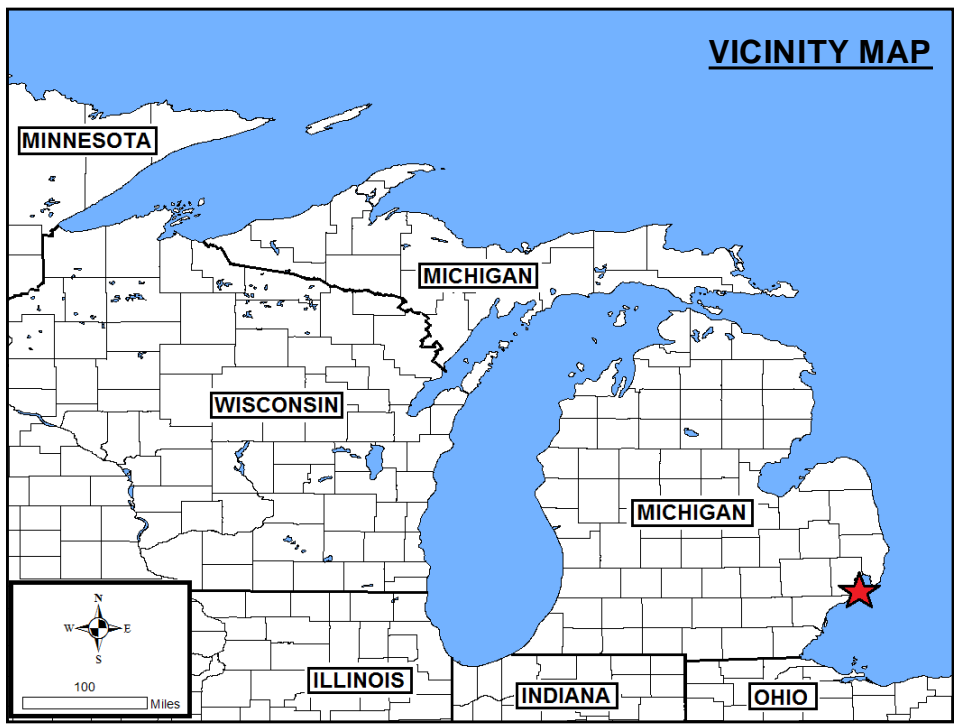
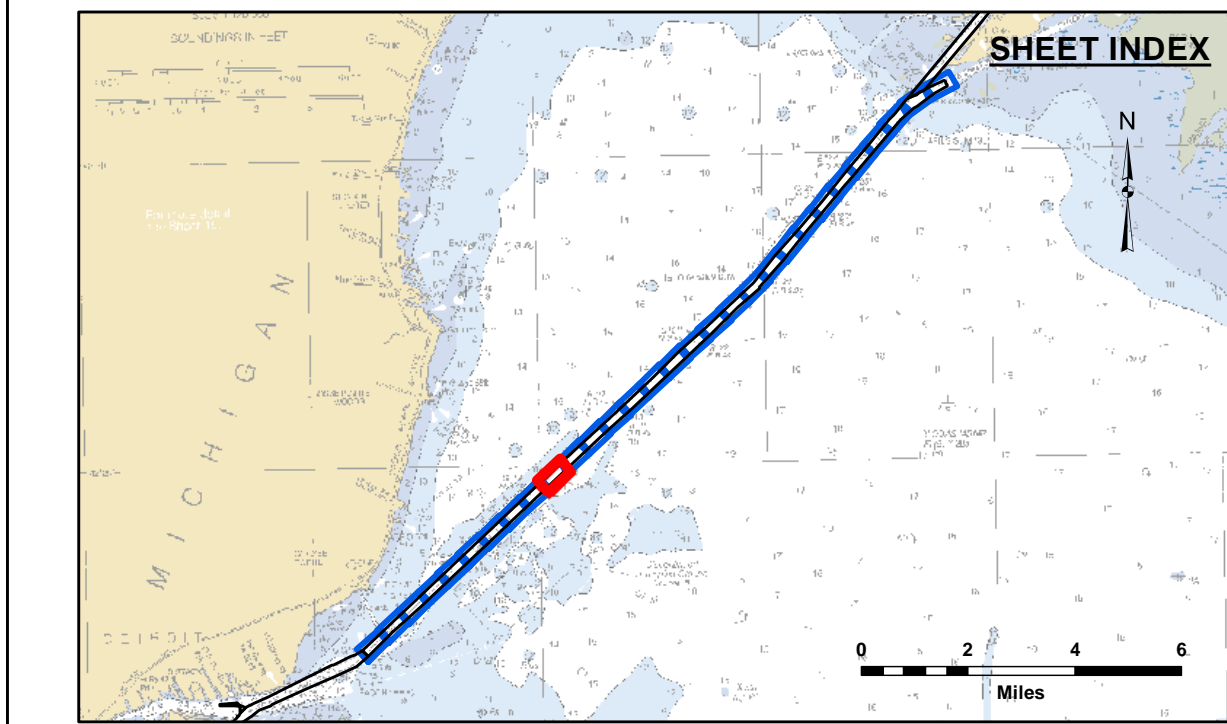
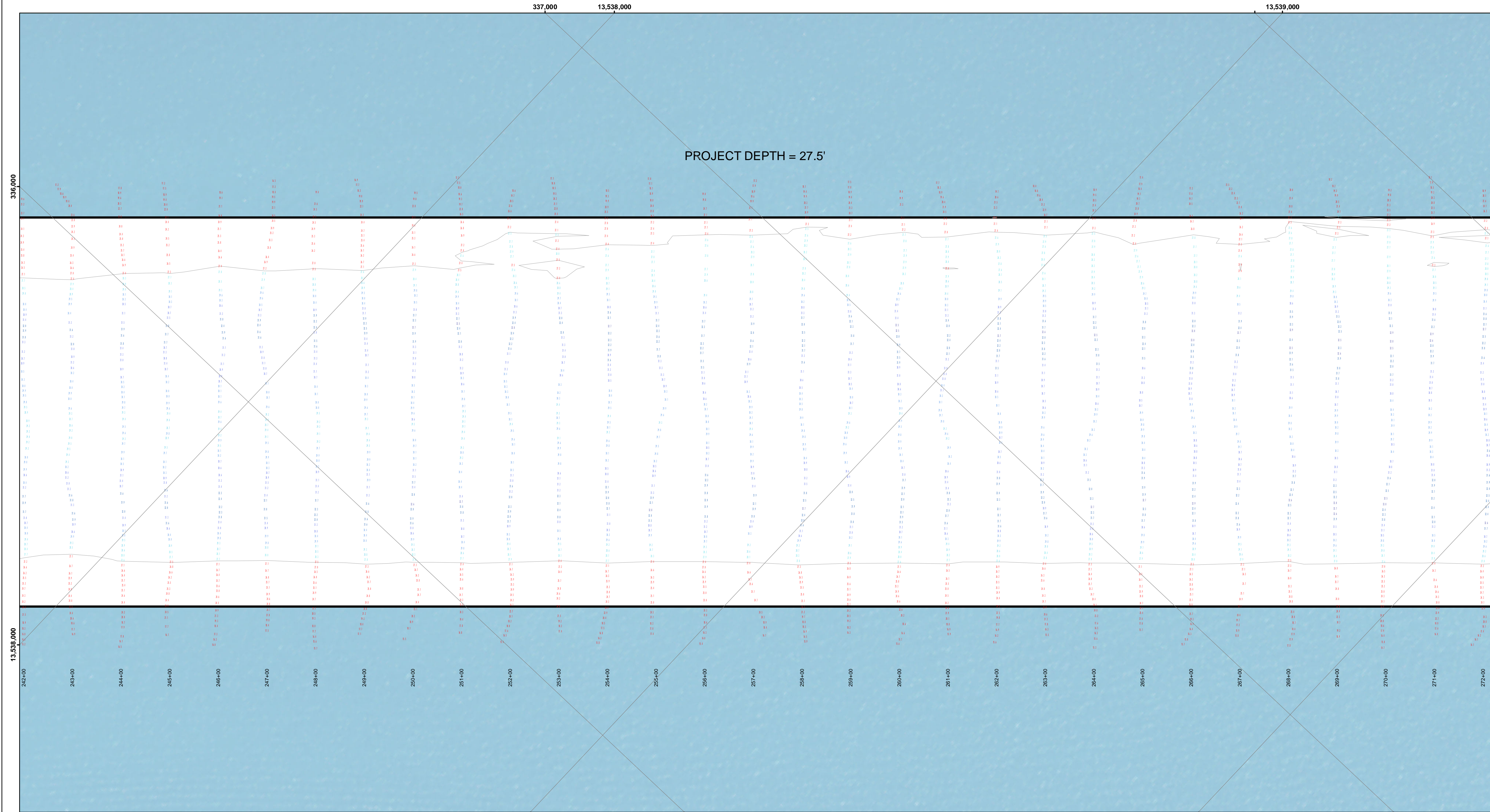
ALL SOUNDINGS ARE REFERENCED TO INTERNATIONAL GREAT LAKES DATUM OF 1985 (IGLD85).

TIDE VALUES ARE DERIVED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) WATER LEVEL STATIONS:

ST CLAIR SHORES, MI (990340502)

POSITIONING: APPLANIX POS-MV4 W/ VRS/RTK OR MARINESTAR GNSS.
TIDAL COMPENSATION: APPLANIX POS-MV4
SONAR: R230NIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)
SOFTWARE: HYPACK

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS



LEGEND

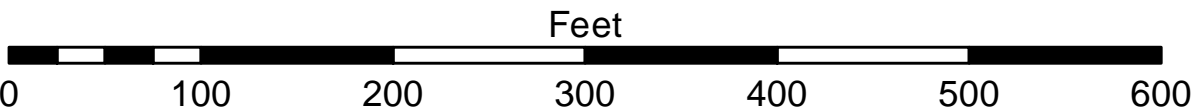
- Cable Submarine
- - Cable Overhead
- Placement Area
- └ Beacon, General
- Contour Lines
- ▭ Channel_Limits

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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TIDE VALUES ARE DERIVED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) WATER LEVEL STATIONS.

ST CLAIR SHORES, MI (#9034052)

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.

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20201019_CS
19 October 2020

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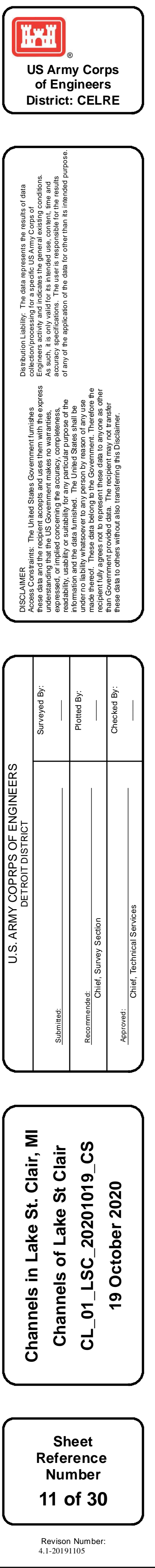
Revision Number:
4.1-20191105

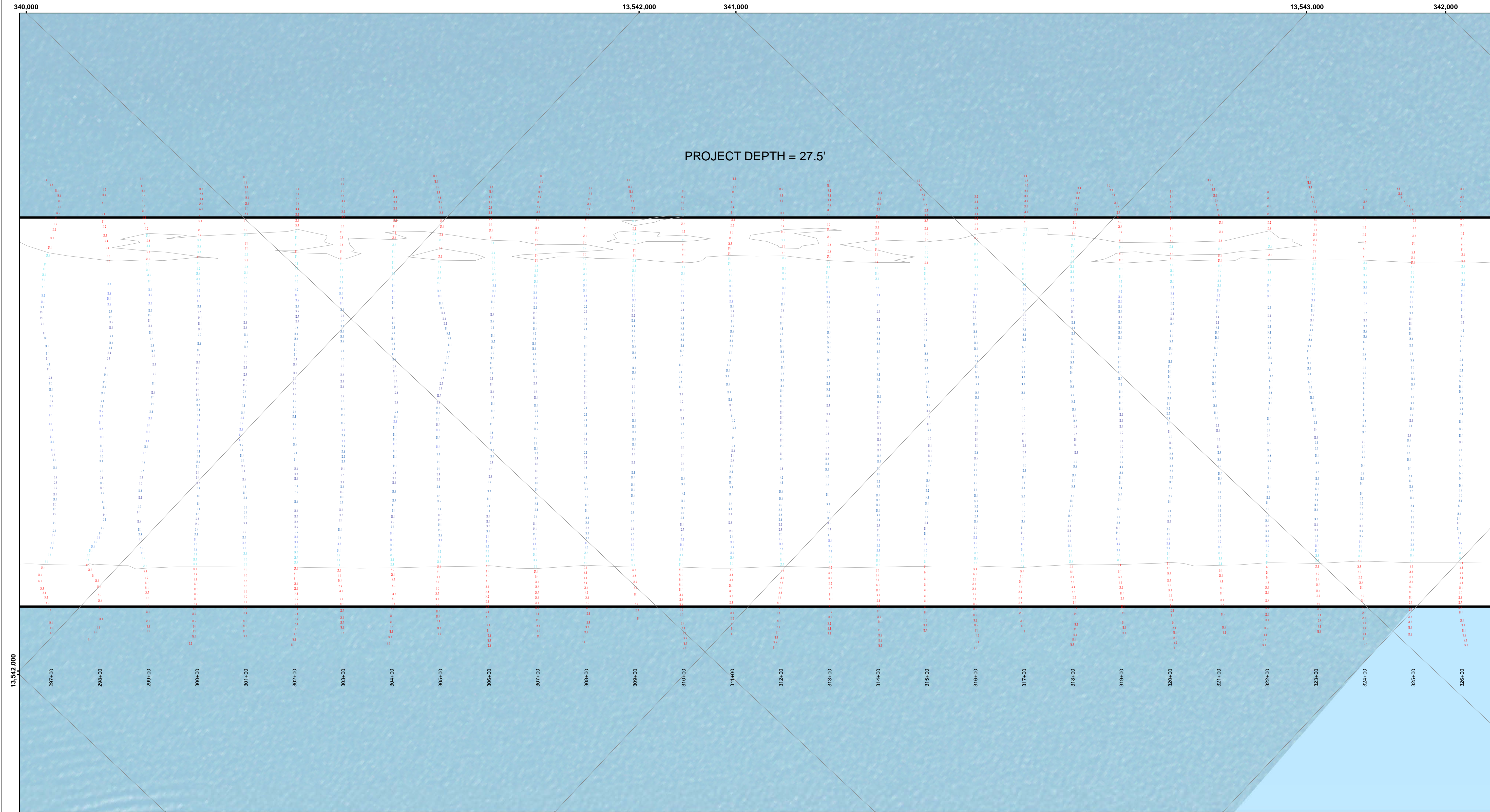


The data is publicly available. The data represents the results of data collection activities and is not intended for use in any other manner. Engineers actively and regularly update the general existing conditions. The data is not intended for use in any other manner. The user is responsible for the results of any of the application of the data for other than its intended purpose.

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





The data on this map represents the results of data collection conducted by the U.S. Army Corps of Engineers. The data is provided for informational purposes only and is not intended for use in any legal proceeding. The user is responsible for the results of any application of the data for other than its intended purpose.

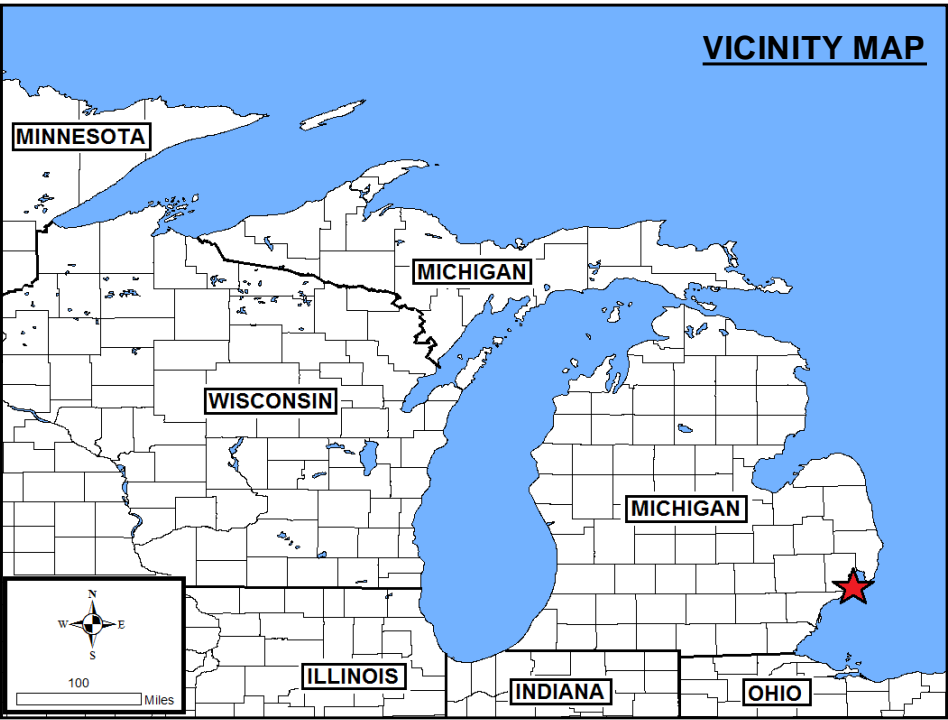
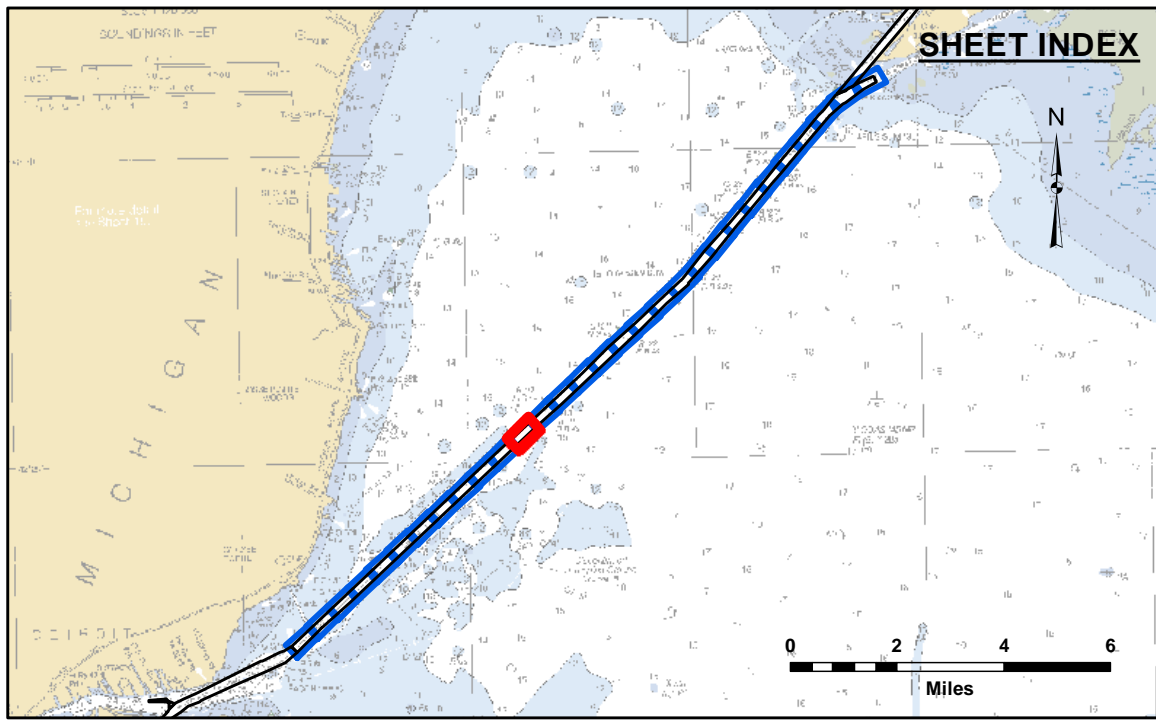
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By:	
Recommended:	Plotted By:	
Approved:	Checked By:	

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20201019_CS
19 October 2020

Sheet
Reference
Number
12 of 30

Revision Number:
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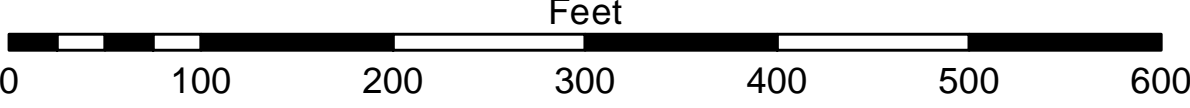


- LEGEND**
- Cable Submarine
 - - Cable Overhead
 - Placement Area
 - Beacon, General
 - Contour Lines
 - Channel Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
 - PROJECT DEPTH
 - PROJECT DEPTH +1'
 - PROJECT DEPTH +2'
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NOTES:

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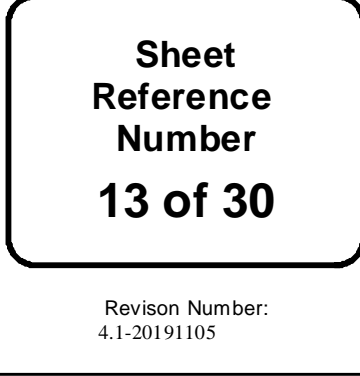
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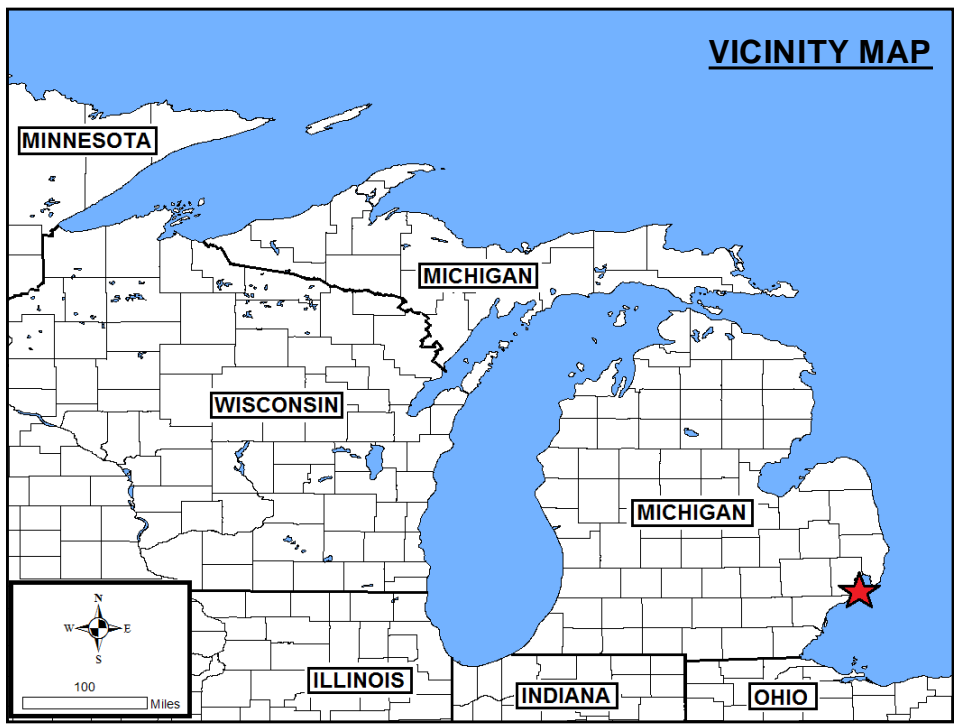
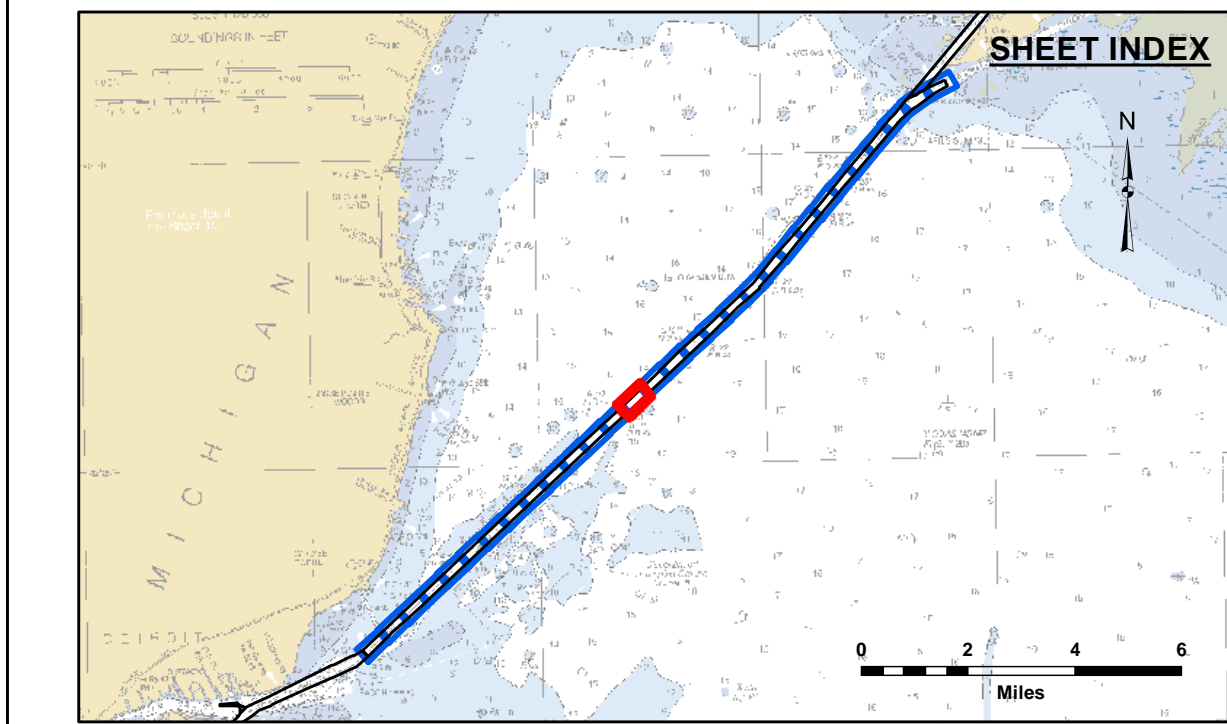
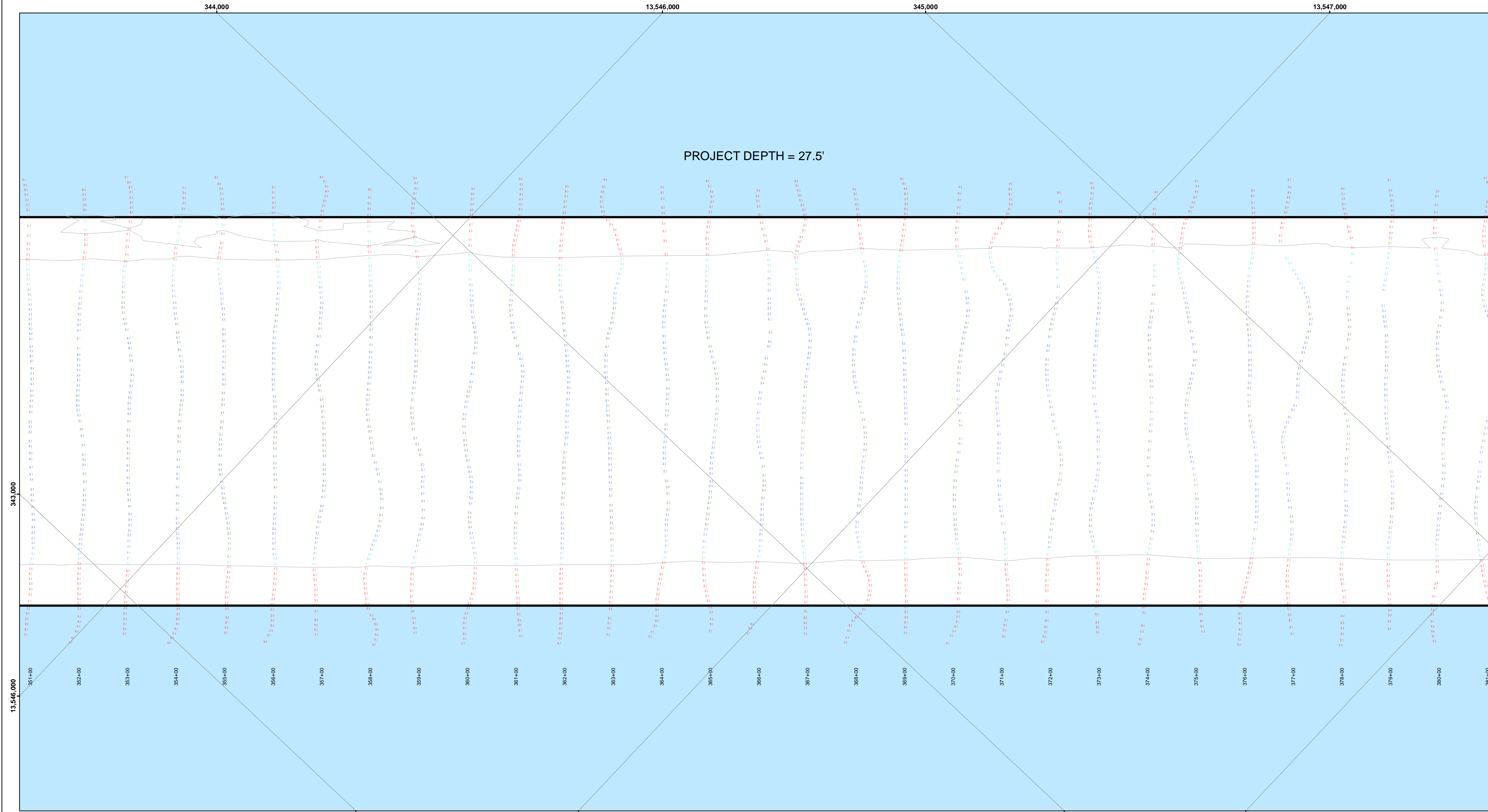
TIDE VALUES ARE DERRIVED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) WATER LEVEL STATIONS.

ST CLAIR SHORES, MI (#9034052)

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

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





LEGEND

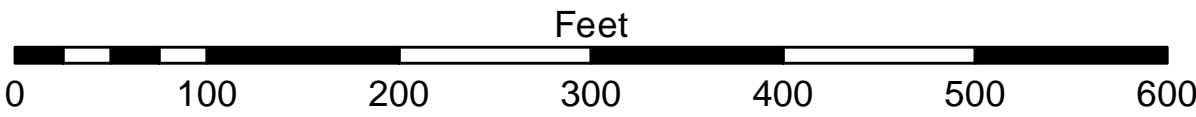
- Cable Submarine
- - Cable Overhead
- Placement Area
- └ Beacon, General
- Contour Lines
- ▭ Channel Limits

SOUNDING LEGEND

- LESS THAN PROJECT DEPTH
- PROJECT DEPTH
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ST CLAIR SHORES, MI (#9034052)

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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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US Army Corps of Engineers
District: CELRE

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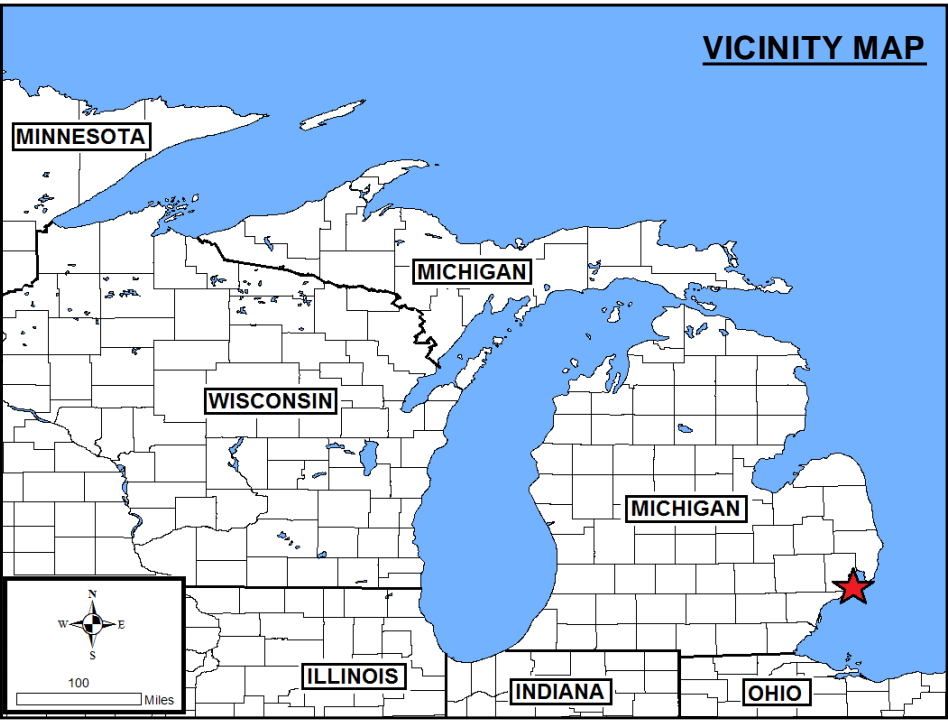
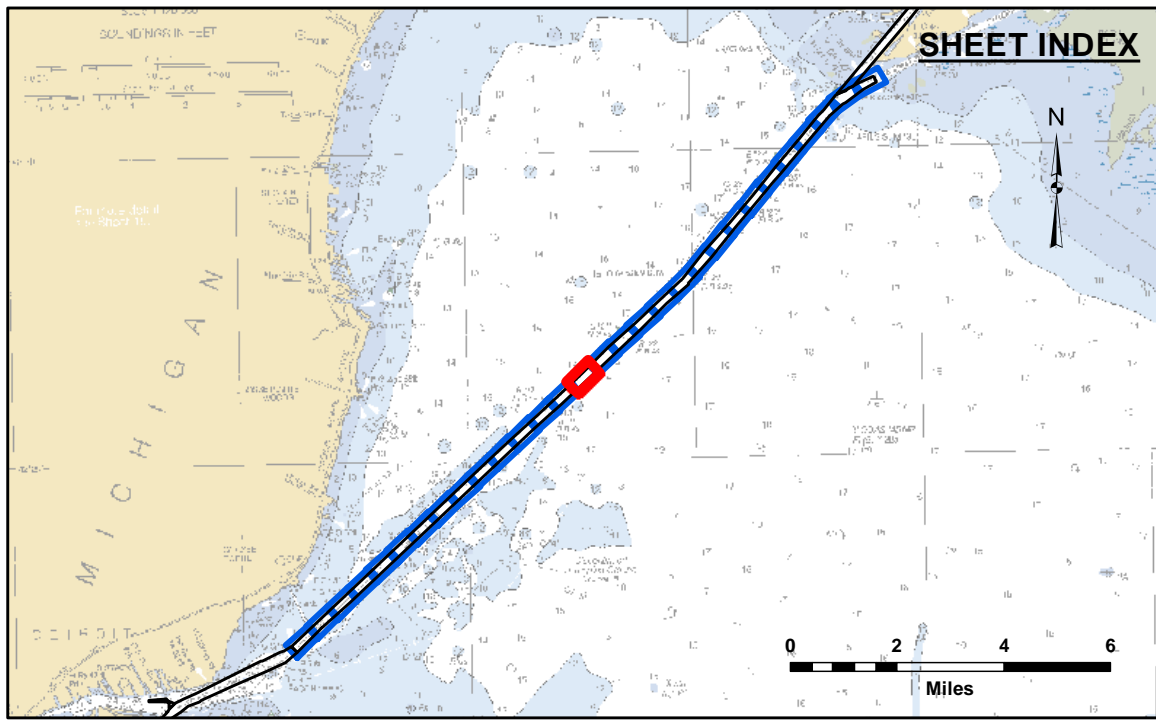
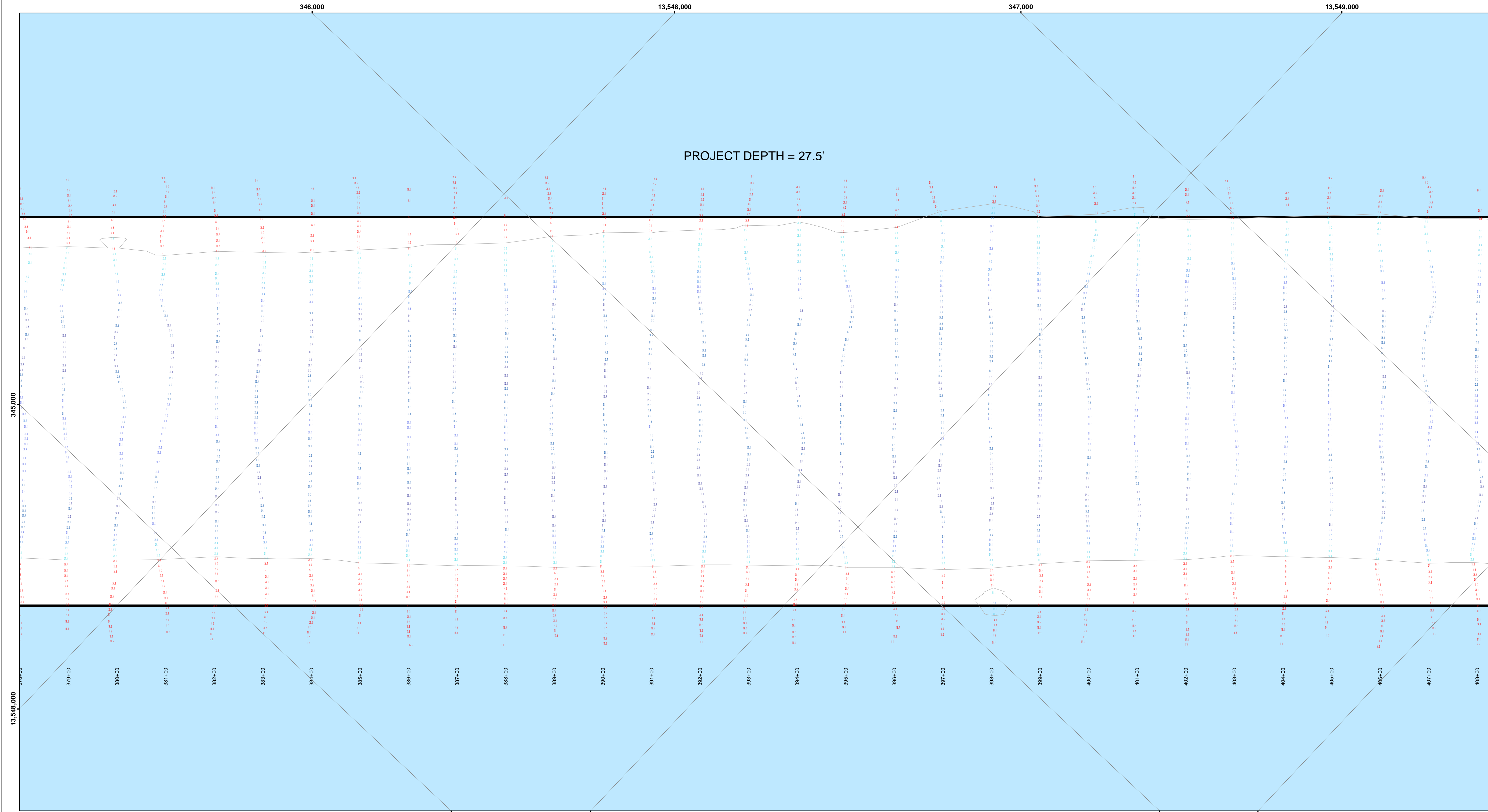
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Submitted:	Surveyed By:
	Plotted By:
	Checked By:

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20201019_CS
19 October 2020

Sheet Reference Number
14 of 30

Revision Number:
4.1-20191105

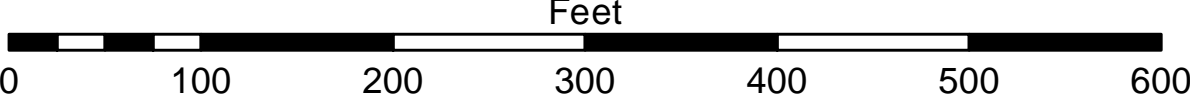


- LEGEND**
- Cable Submarine
 - - Cable Overhead
 - Placement Area
 - ⊥ Beacon, General
 - Contour Lines
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- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
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SOFTWARE: HYPACK

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

Submitted: _____

Recommended: Chief, Survey Section

Approved: Chief, Technical Services

Surveyed By: _____

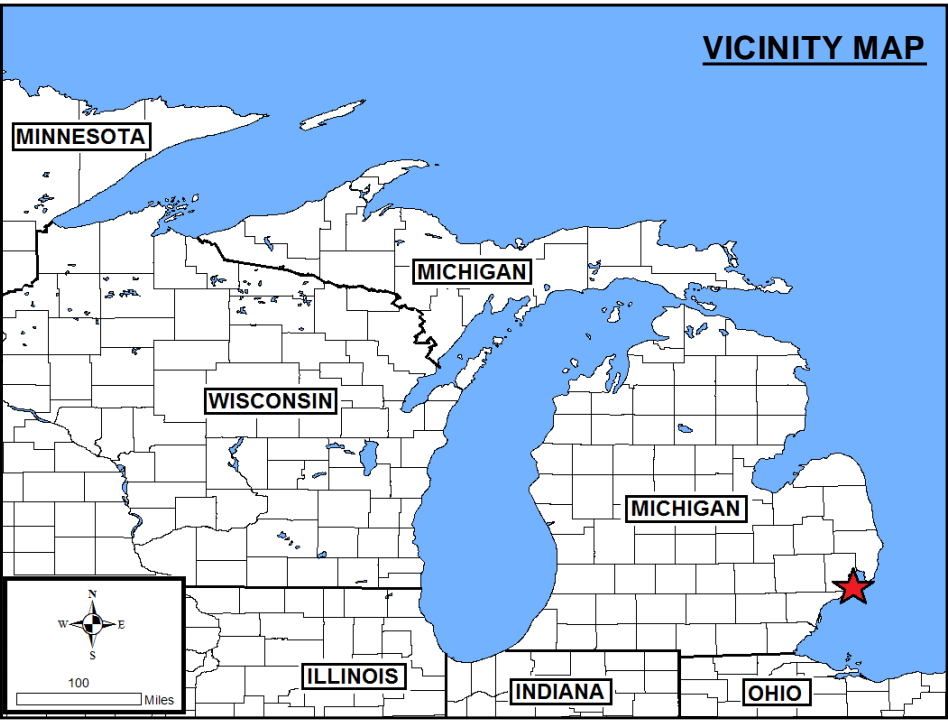
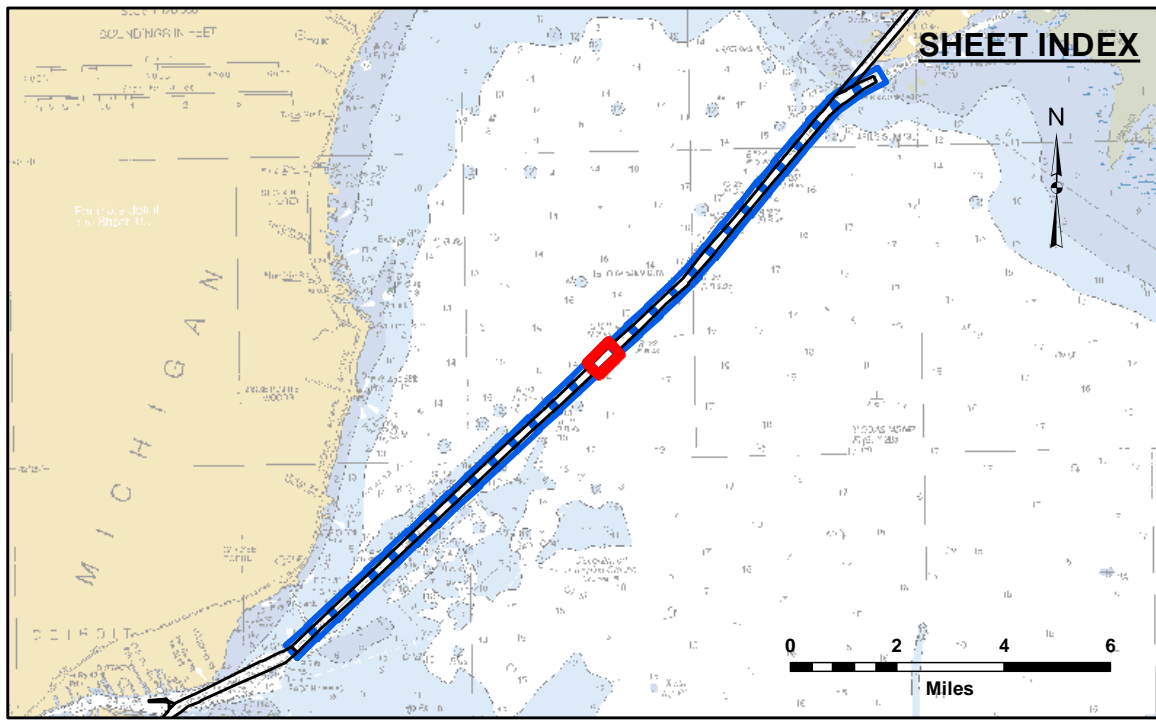
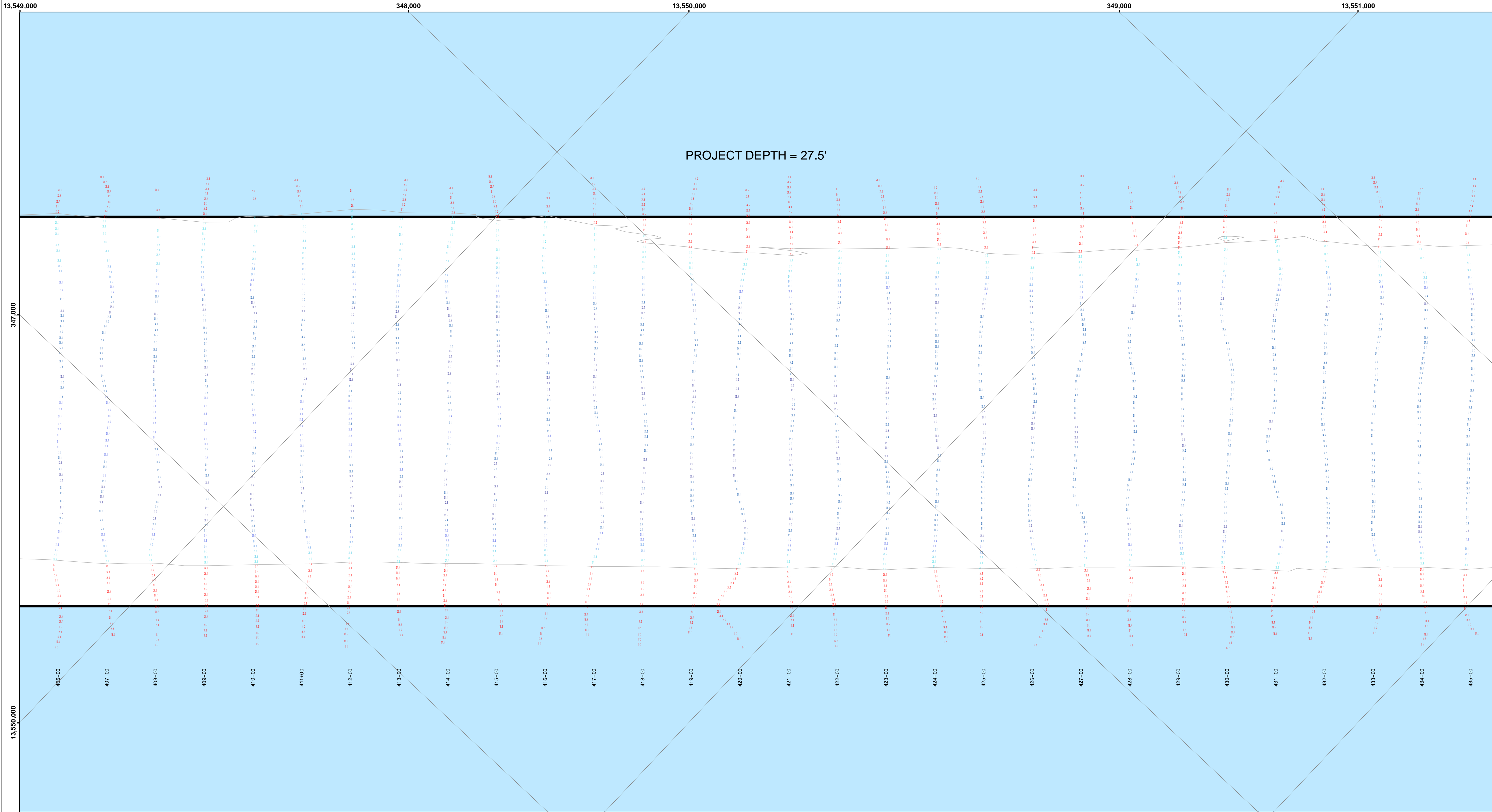
Plotted By: _____

Checked By: _____

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20201019_CS
19 October 2020

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15 of 30

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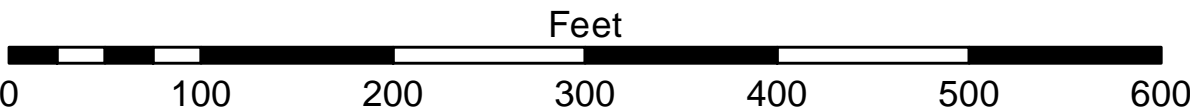


- LEGEND**
- Cable Submarine
 - - Cable Overhead
 - Placement Area
 - └ Beacon, General
 - Contour Lines
 - ▭ Channel Limits

- SOUNDING LEGEND**
- LESS THAN PROJECT DEPTH
 - PROJECT DEPTH
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ST CLAIR SHORES, MI (#9034052)

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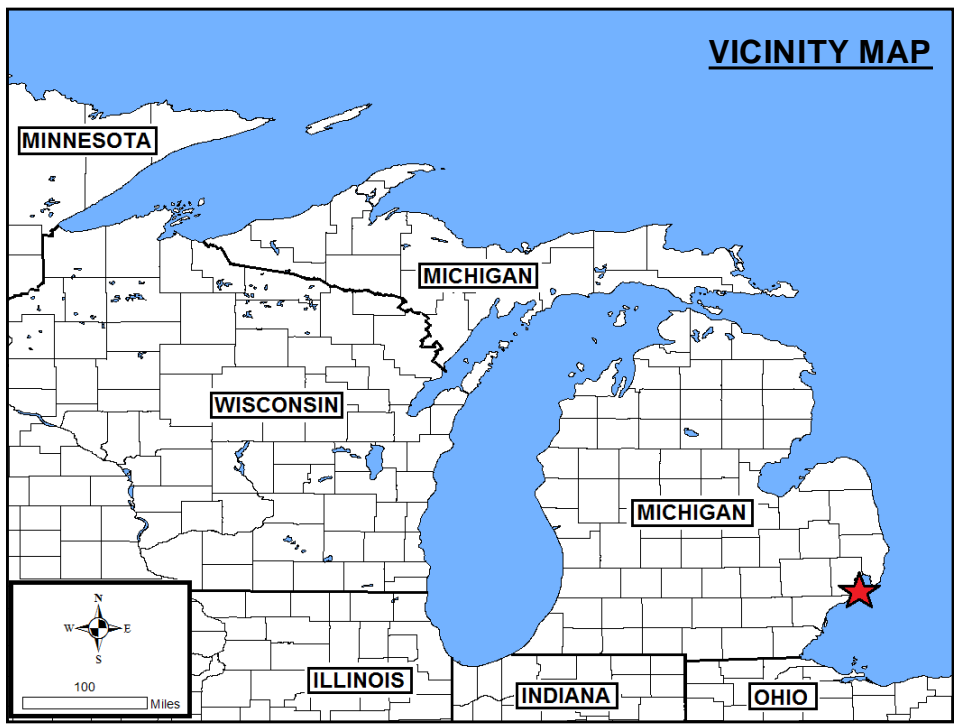
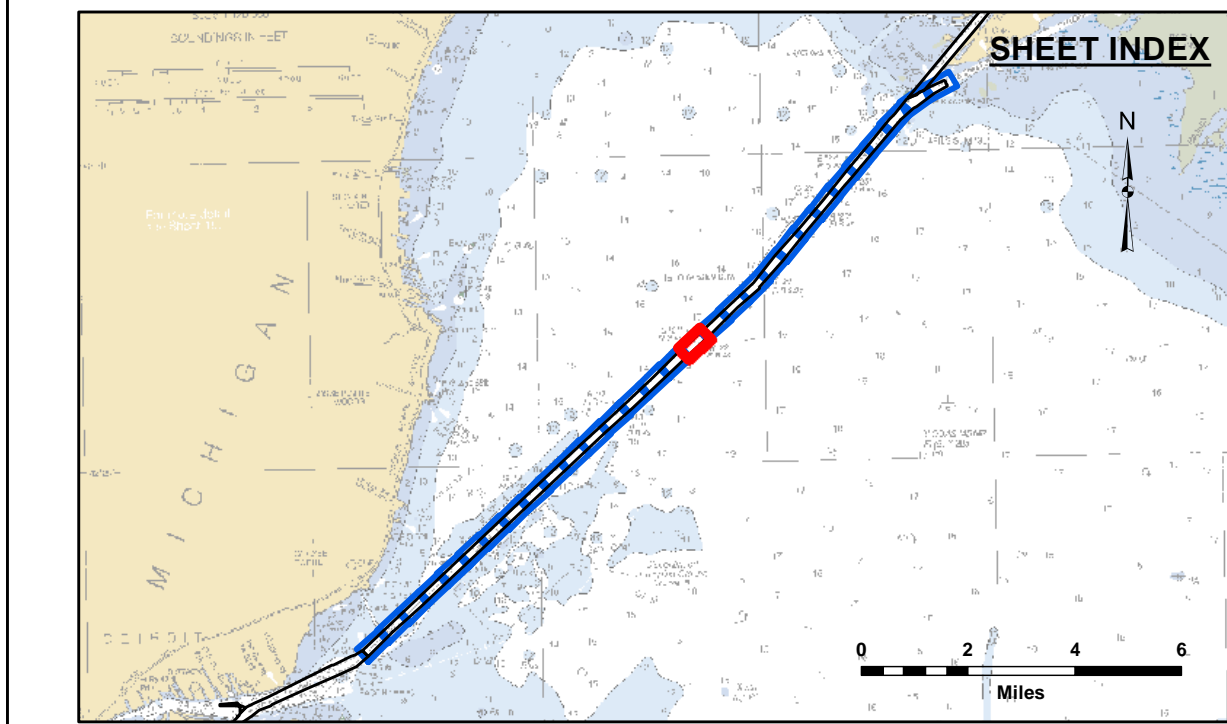
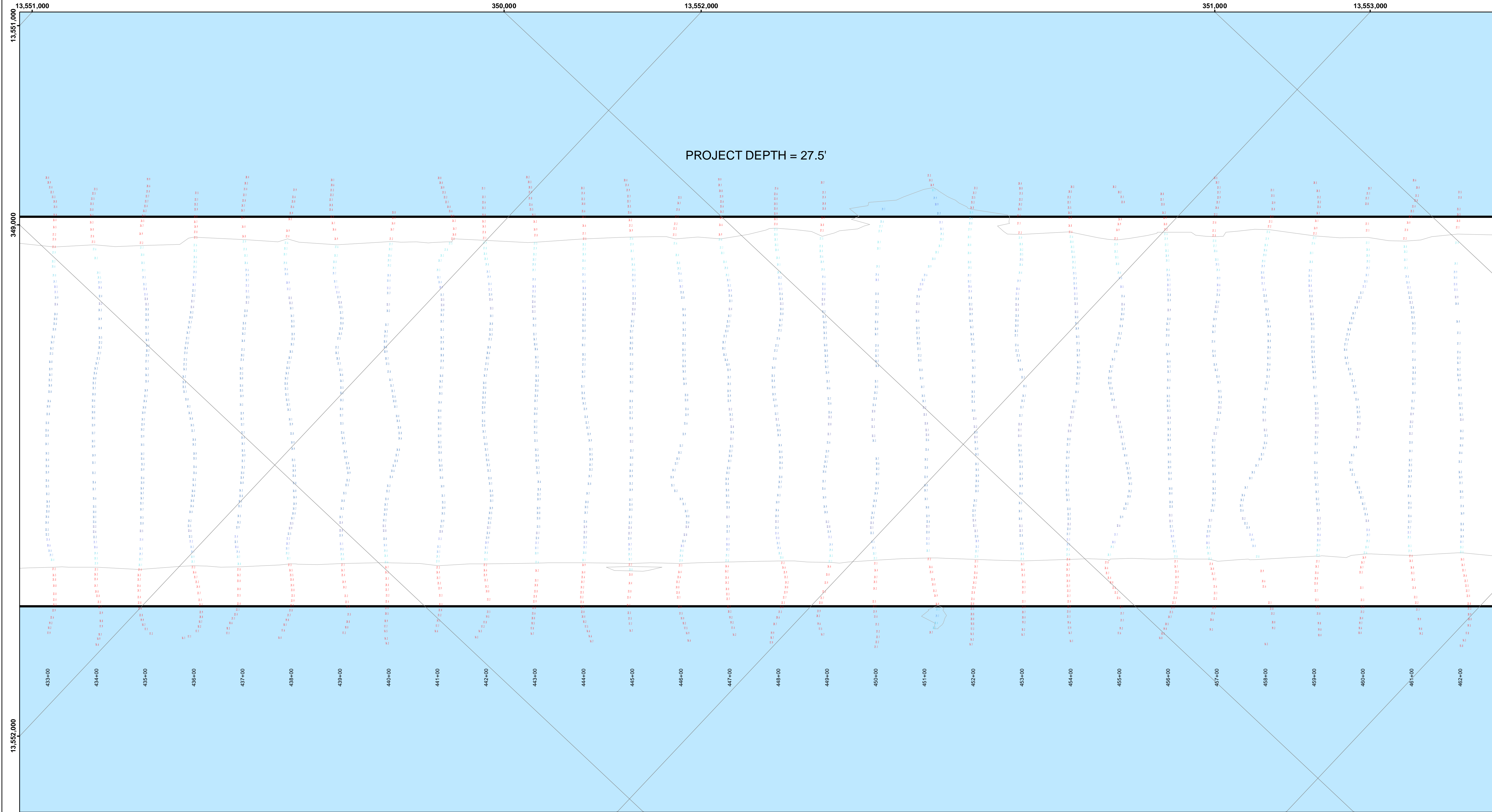
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By:	
Recommended: Chief, Survey Section	Plotted By:	
Approved:	Chief, Technical Services	
Checked By:		

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20201019_CS
19 October 2020

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

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LEGEND

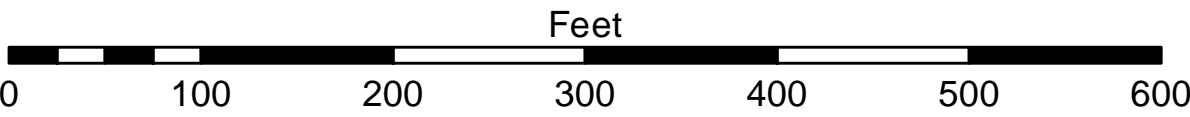
- Cable Submarine
- - Cable Overhead
- Placement Area
- └ Beacon, General
- Contour Lines
- ▭ Channel Limits

SOUNDING LEGEND

- LESS THAN PROJECT DEPTH
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SOFTWARE: HYPACK

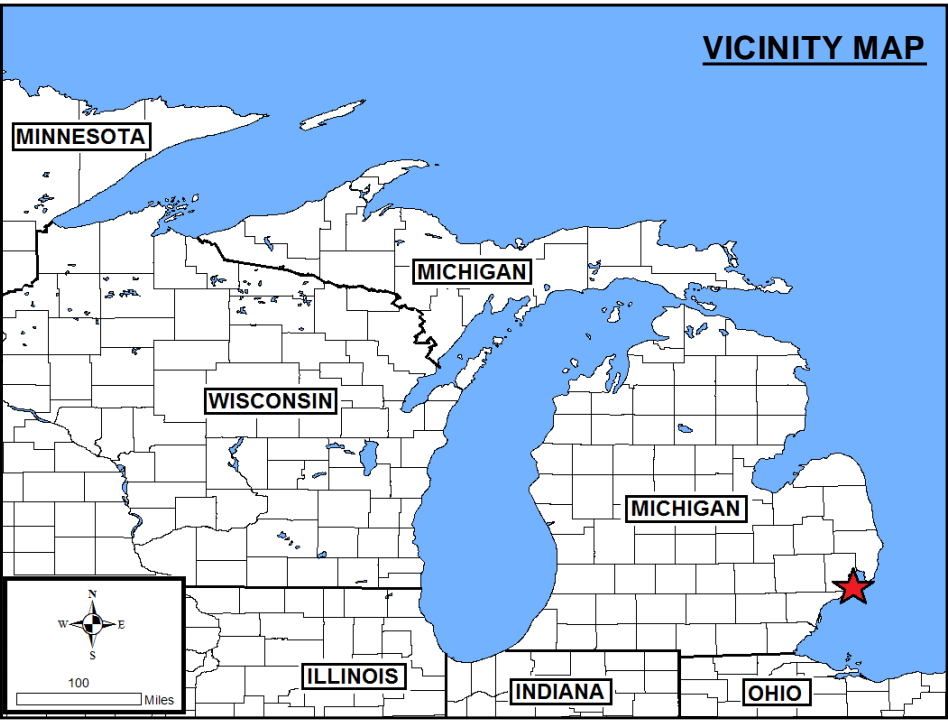
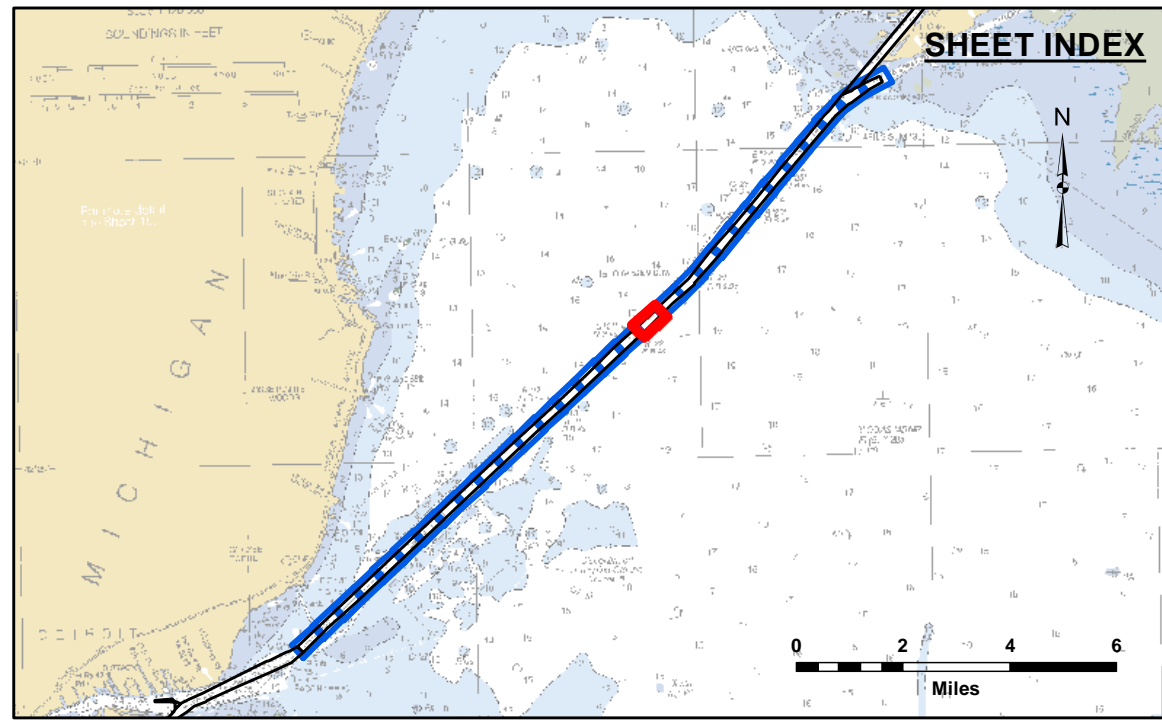
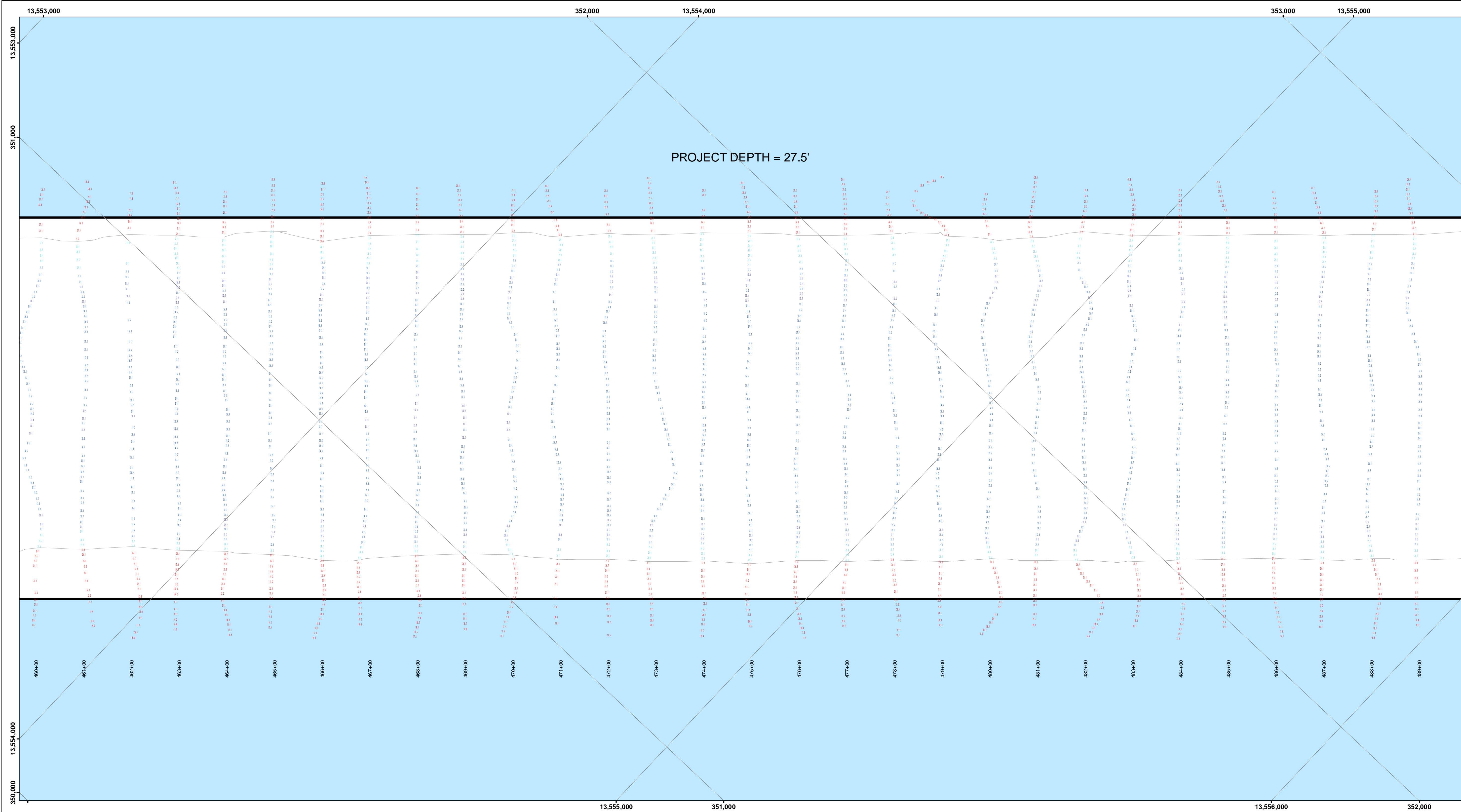
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Submitted:	Surveyed By:
	Plotted By:
	Checked By:

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CL_01_LSC_20201019_CS
19 October 2020



LEGEND

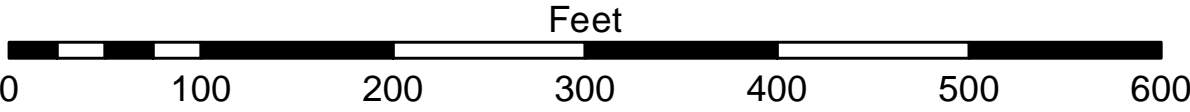
- Cable Submarine
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- LESS THAN PROJECT DEPTH
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- PROJECT DEPTH +1'
- PROJECT DEPTH +2'
- PROJECT DEPTH +3'
- PROJECT DEPTH +4'
- PROJECT DEPTH +5'



1 inch = 100 feet



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).

TIDE VALUES ARE DERRIVED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) WATER LEVEL STATIONS.

ST CLAIR SHORES, MI (#9034052)

POSITIONING: APPLANIX POS-MV4 W/ VRS/RTK 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.

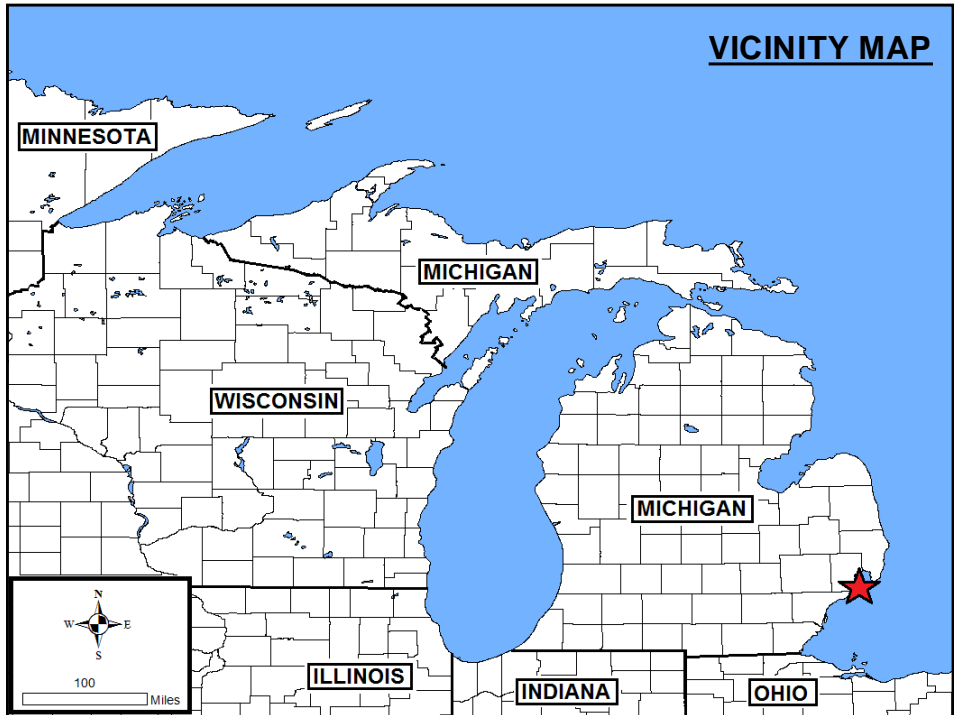
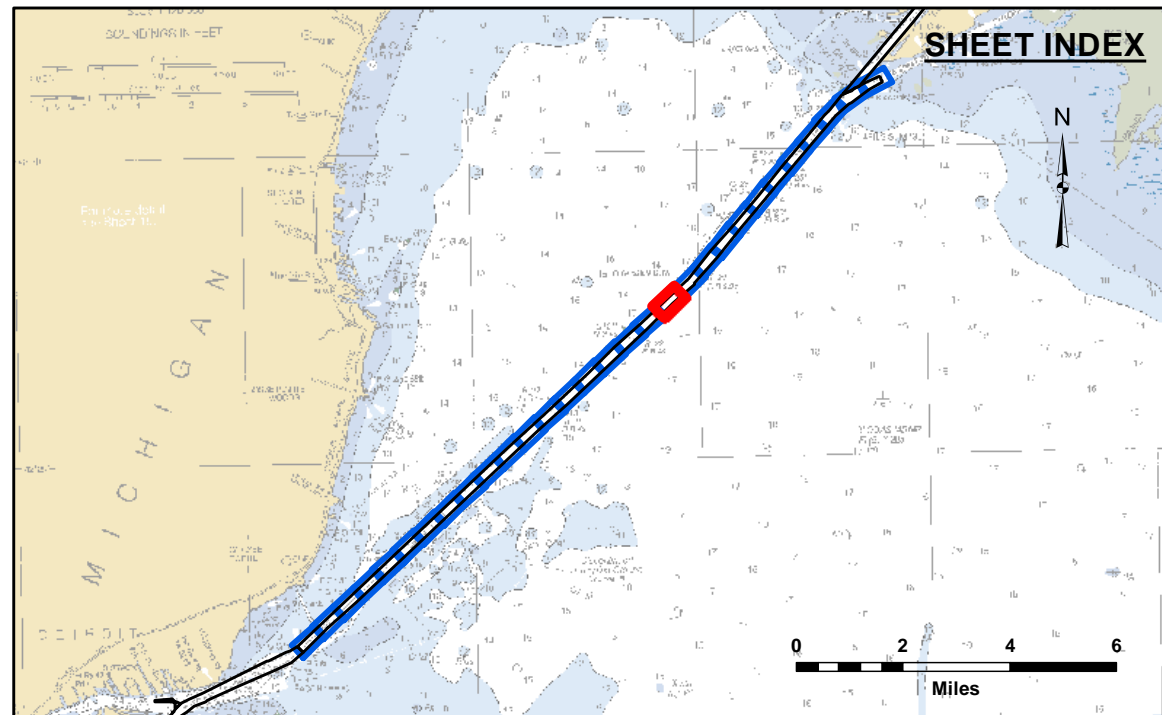
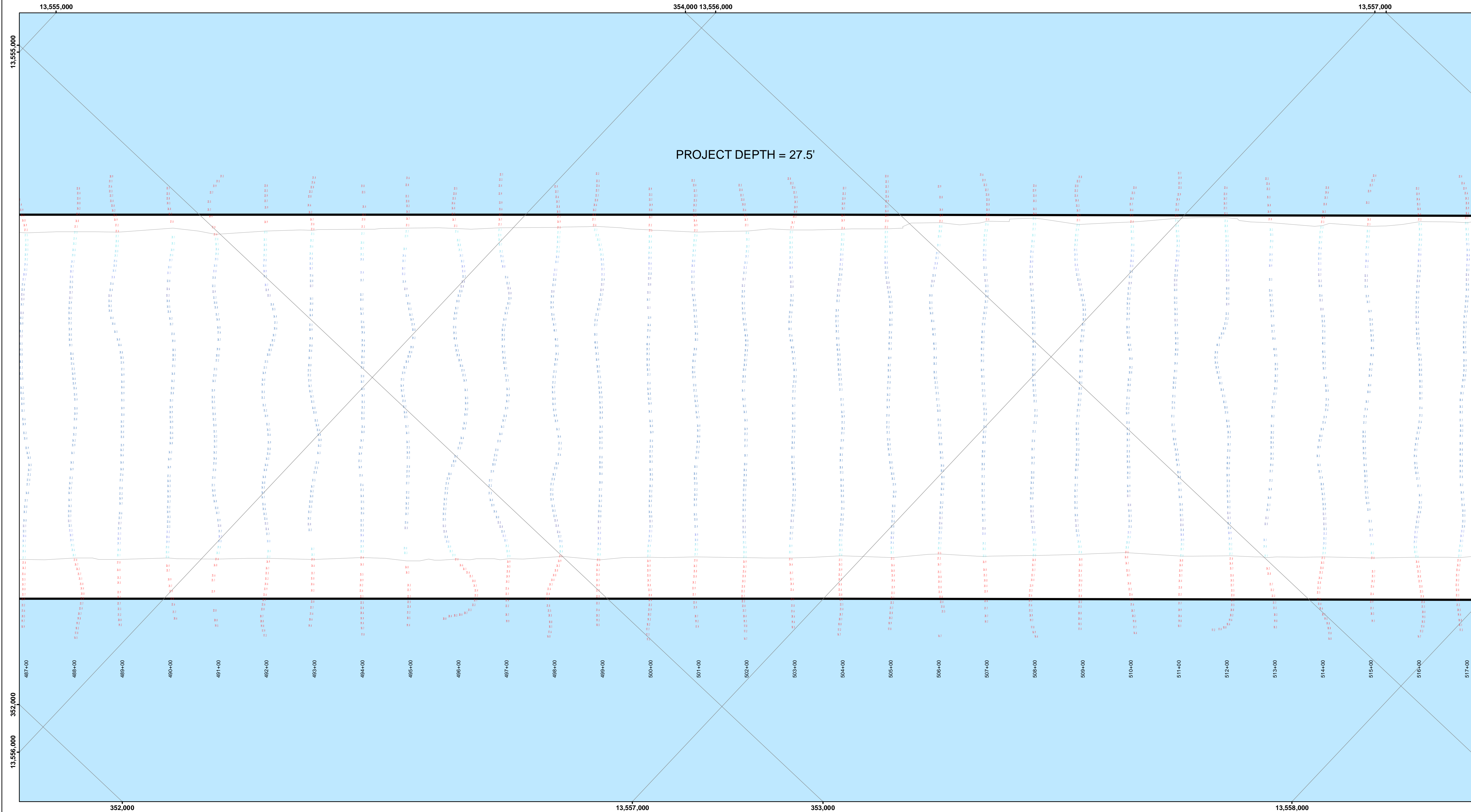


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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By:	
Recommended:	Plotted By:	
Approved:	Checked By:	

Channels in Lake St. Clair, MI
Channels of Lake St Clair
CL_01_LSC_20201019_CS
19 October 2020

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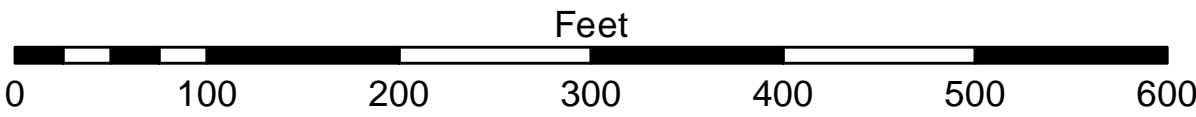


- LEGEND**
- Cable Submarine
 - - Cable Overhead
 - Placement Area
 - Beacon, General
 - Contour Lines
 - Channel_Limits

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



1 inch = 100 feet



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

U.S. ARMY CORPS OF ENGINEERS
DETROIT DISTRICT

Channels in Lake St. Clair, MI
Channels of Lake St Clair
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