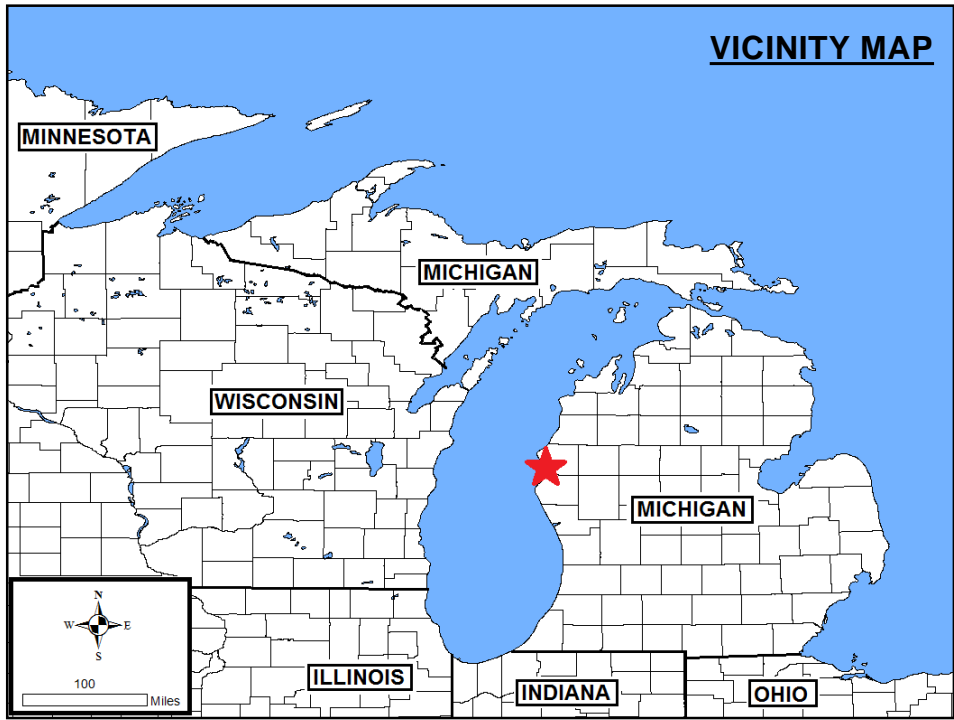
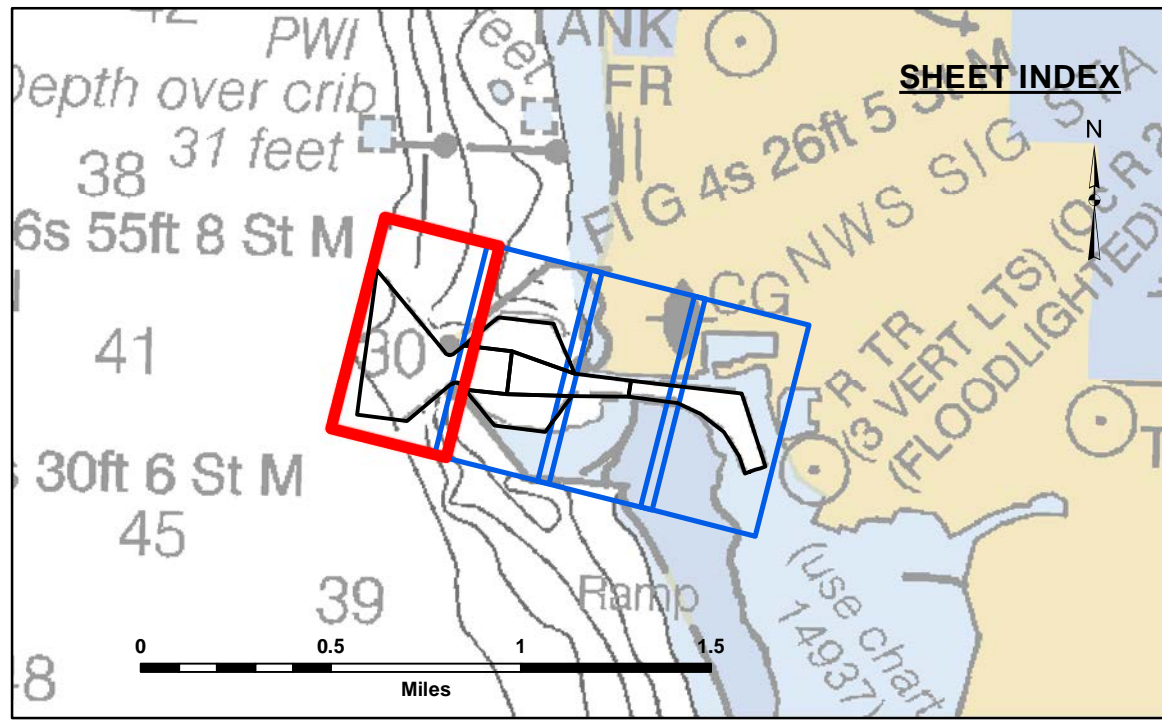


PROJECT DEPTH = 30.0'

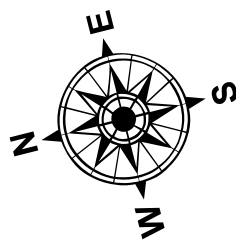


LEGEND

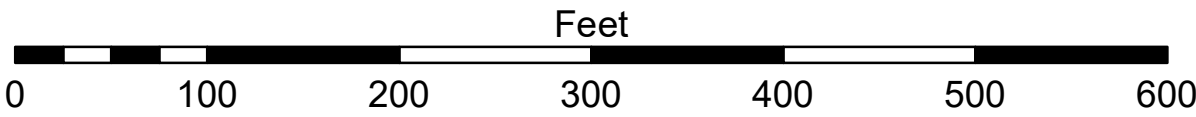
- Cable Submarine
- - Cable Overhead
- Channel_Limits
- Beacon, General
- Contour Lines
- Channel_Limits

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



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

ALL DEPTHS AND PROJECT DEPTHS ARE REFERRED TO LOW WATER DATUM ELEVATION 577.5 FT. ABOVE MEAN WATER LEVEL, I.G.L.D. 1985.

GRIDS SHOWN ARE BASED ON THE NATIONAL GEODETIC SURVEY PROJECTION TABLES, STATE OF MICHIGAN, CENTRAL ZONE (2112), LAMBERT PROJECTION, 1983 NORTH AMERICAN DATUM, US SURVEY FOOT.

PROJECT DEPTHS: 30.0' 29.5' and 29.0' FOR MAIN CHANNEL.

18.0' TURNING BASIN (AS NOTED)

POSITION SYSTEM: APPLANIX POS M/V

CORRECTIONS: MARINESTAR GNSS G2+

SOUNDER: ODOM CV300 SINGLEBEAM SOUNDER

SOFTWARE: HYPACK 2021

VESSEL: LAUNCH 3058

VERTICAL WATER LEVEL READINGS WERE TAKEN FROM A FIXED GAGE MARK ALONG THE SOUTH INNER SHEET STEEL WALL NEAR CROSS-SECTION 12+50.

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS



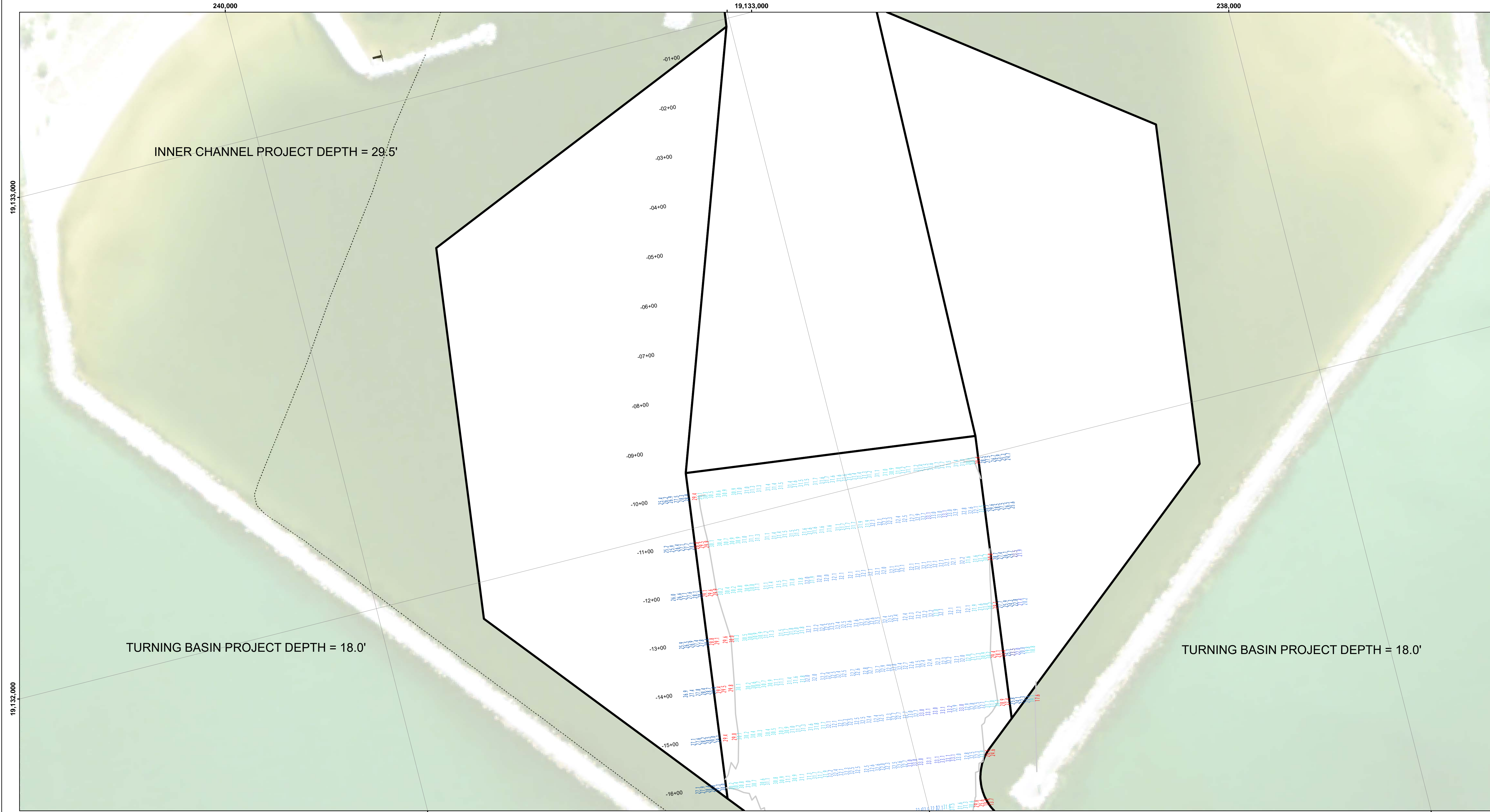
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U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT		
Submitted:	Surveyed By:	
Recommended:	Plotted By:	
Approved:	Chief, Survey Section	
	Chief, Technical Services	

LUDINGTON HARBOR, MI
Ludington Harbor
LU_01_LUD_20231222_AD
22 December 2023

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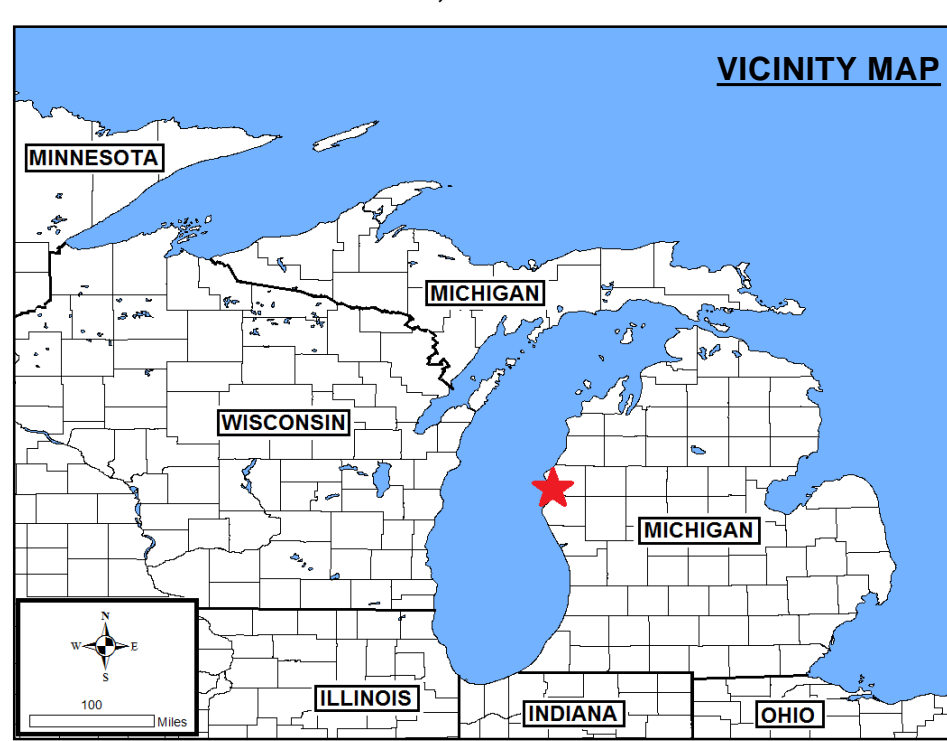
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U.S. ARMY CORPERS OF ENGINEERS DETROIT DISTRICT	
Submitted: _____	Surveyed By: _____
Recommended: _____ Chief, Survey Section	Plotted By: _____
Approved: _____ Chief, Technical Services	Checked By: _____








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Ludington Harbor
LU_01_LUD_20231108_AD
08 November 2023

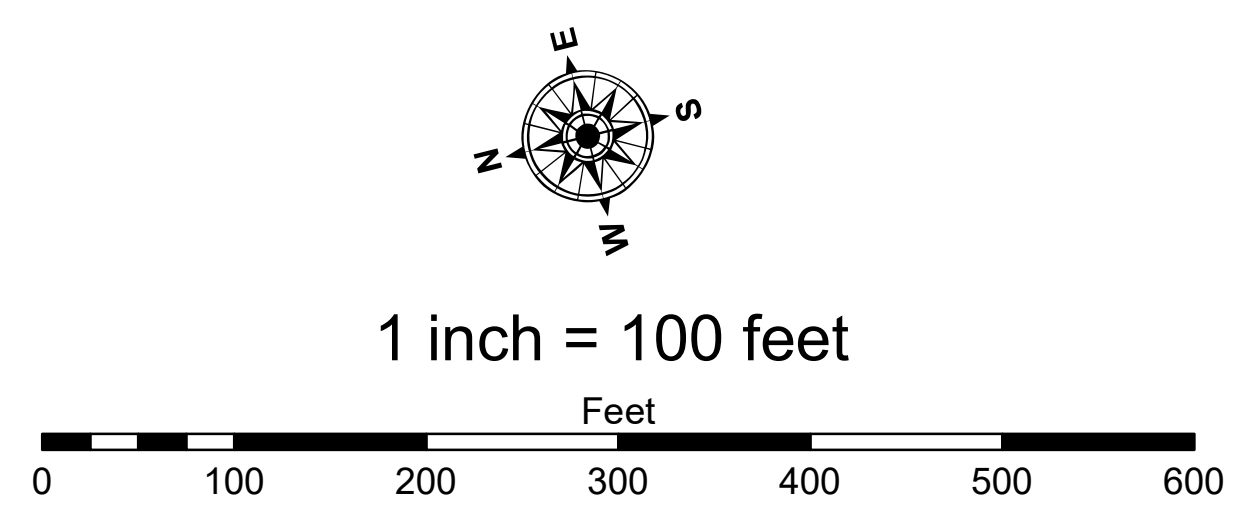
Sheet
Reference
Number
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Revision Number:
4.2-20200420



- LEGEND**
- Cable Submarine
 - Cable Overhead
 -  Channel_Limits
 -  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 THE SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

ALL DEPTHS AND PROJECT DEPTHS ARE REFERRED TO LOW WATER DATUM ELEVATION 577.5 FT. ABOVE MEAN WATER LEVEL, 1 G.L.D. 1985.

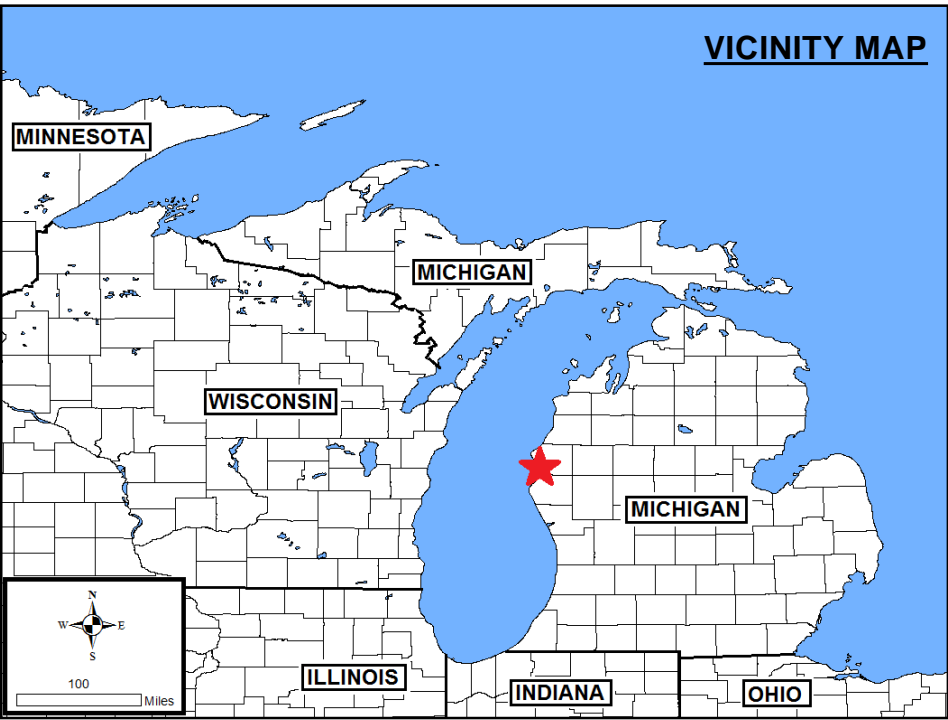
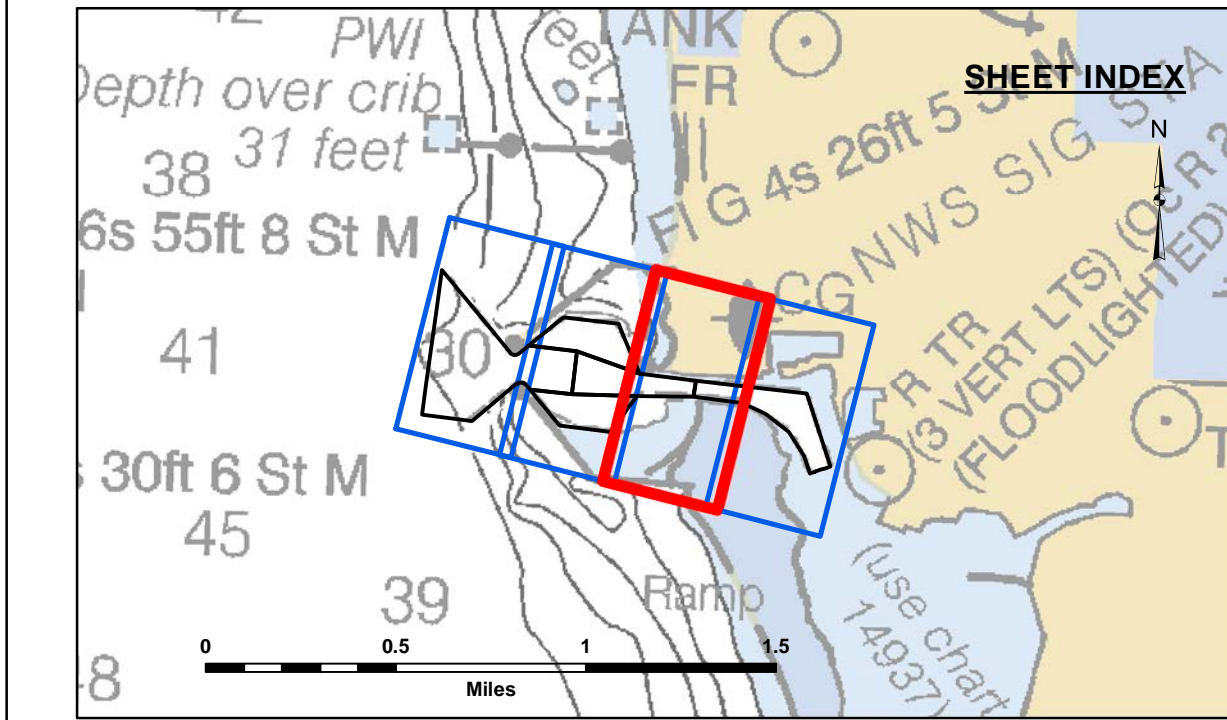
GRIDS SHOWN ARE BASED ON THE NATIONAL GEODETIC SURVEY PROJECTION TABLES, STATE OF MICHIGAN, CENTRAL ZONE (2112), LAMBERT PROJECTION, 1983 NORTH AMERICAN DATUM, US SURVEY FOOT.

PROJECT DEPTHS: 30.0' 28.5' AND 25.0' FOR MAIN CHANNEL.
18.0' TURNING BASIN (AS NOTED)

POSITION SYSTEM: Applanix POSMV
CORRECTIONS: MARINESTAR GNSS G2+
SOUNDER: ODOM CV300 SINGLEBEAM SOUNDER
SOFTWARE: HYPACK 2021
VESSEL: LAUNCH 3058

WATER LEVEL ELEVATIONS OBTAINED DURING THE SURVEY WERE FROM THE SOUTH INNER WALL NEAR CROSS-SECTION #400.

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS



LEGEND

- Cable Submarine
- - Cable Overhead
- Channel_Limits
- 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

0 100 200 300 400 500 600

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

ALL DEPTHS AND PROJECT DEPTHS ARE REFERRED TO LOW WATER DATUM ELEVATION 577.5 FT. ABOVE MEAN WATER LEVEL, I.G.L.D. 1985.

GRIDS SHOWN ARE BASED ON THE NATIONAL GEODETIC SURVEY PROJECTION TABLES, STATE OF MICHIGAN, CENTRAL ZONE (2112), LAMBERT PROJECTION, 1983 NORTH AMERICAN DATUM, US SURVEY FOOT.

PROJECT DEPTHS: 30.0' 29.5' and 29.0' FOR MAIN CHANNEL.
18.0' TURNING BASIN (AS NOTED)

POSITION SYSTEM: Applanix POSMV
CORRECTIONS: MARINESTAR GNSS G2+
SOUNDER: ODOM CV300 SINGLEBEAM SOUNDER
SOFTWARE: HYDRACK 2021
VESSEL: LAUNCH 3058

WATER LEVEL ELEVATIONS OBTAINED DURING THE SURVEY WERE FROM THE SOUTH INNER WALL NEAR CROSS-SECTION 8+00.

2010 AERIAL PHOTOGRAPHY DATA SOURCE: USGS


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:	Chief, Technical Services	Checked By:

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Ludington Harbor
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