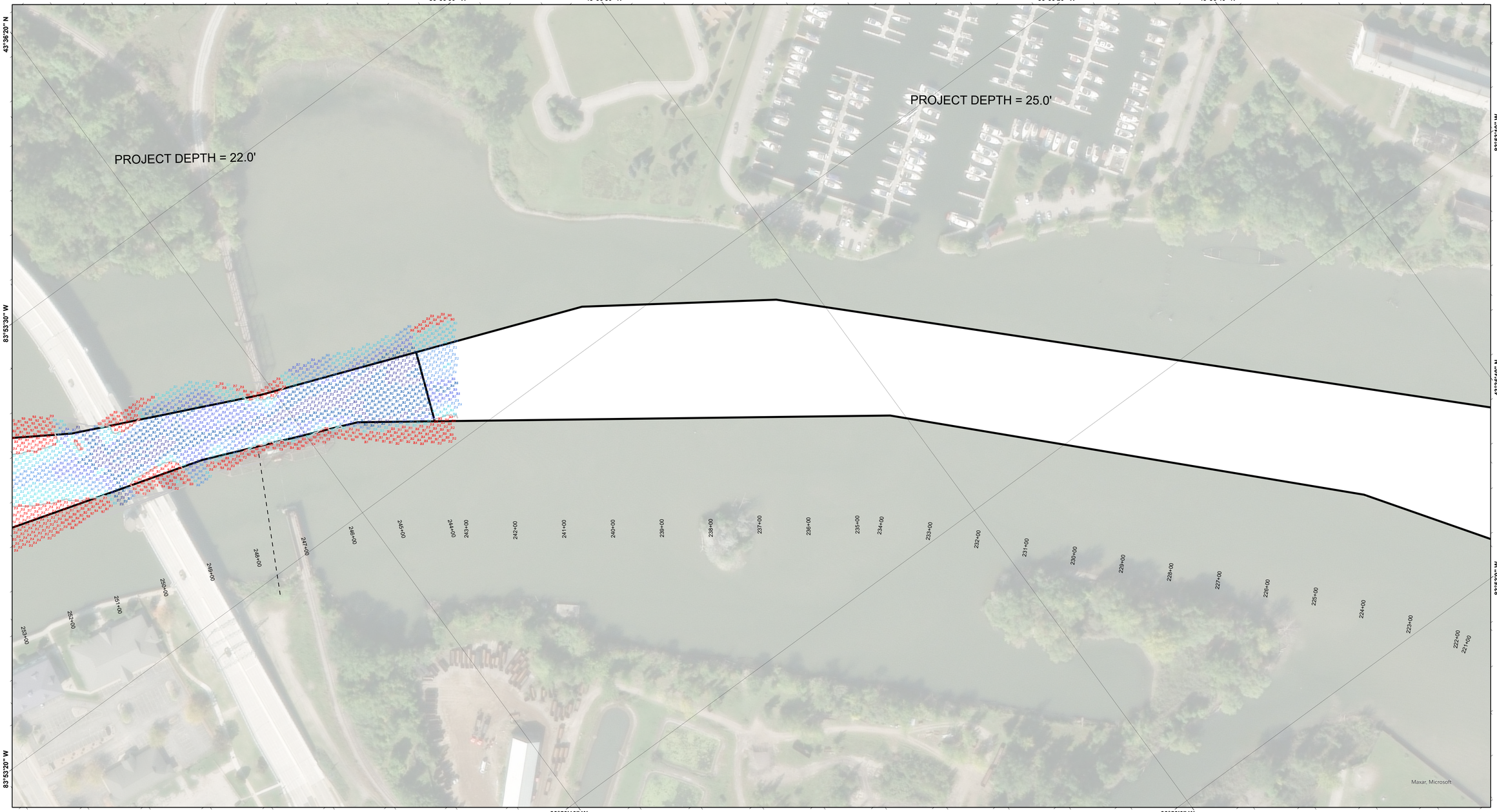
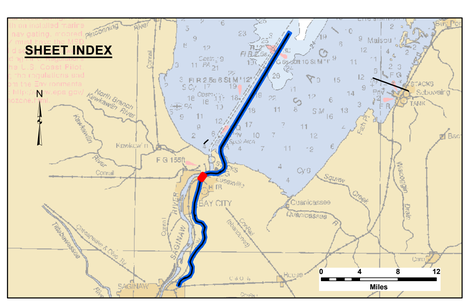
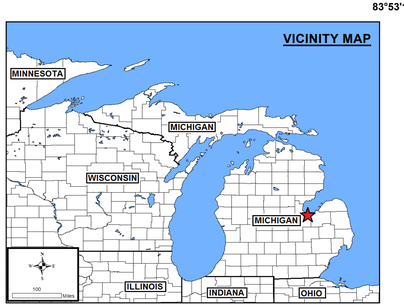






LEGEND

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

SOUNDING LEGEND

- LESS THAN PROJECT DEPTH
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- PROJECT DEPTH +1'
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- PROJECT DEPTH +4'
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Feet 0 100 200 300 400

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MOTION COMPENSATION: APPLANIX POS-MV4
SONAR: R2SONIC 2024 (MULTIBEAM) OR ODOM CV-300 (SINGLEBEAM)
SOFTWARE: HYPACK

AERIAL PHOTOGRAPHY DATA SOURCE: MAXAR, MICROSOFT
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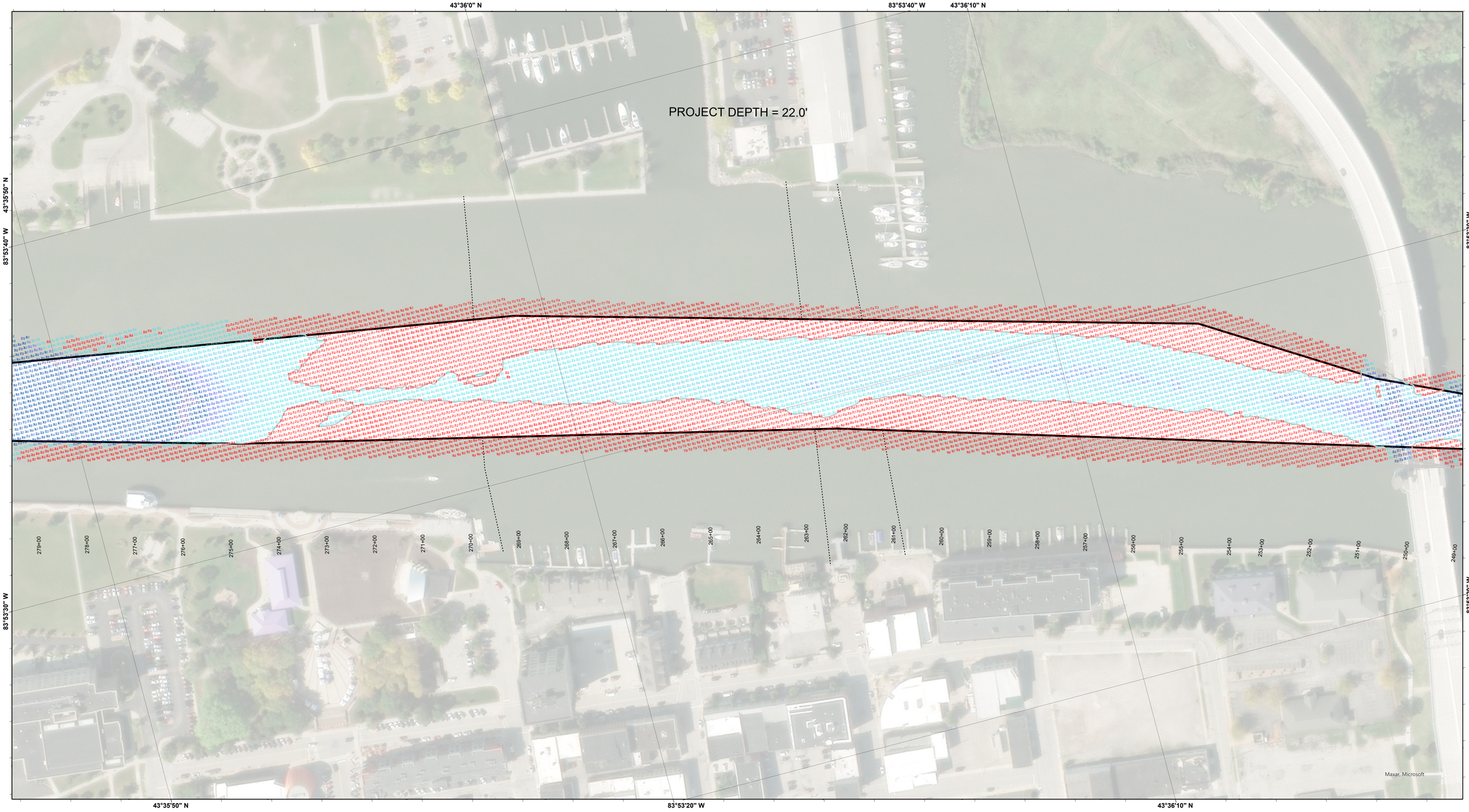
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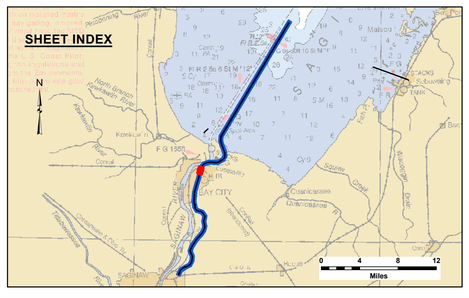
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Submitted:		Recommended: Chief, Survey Section	
		Approved: Chief, Technical Services	

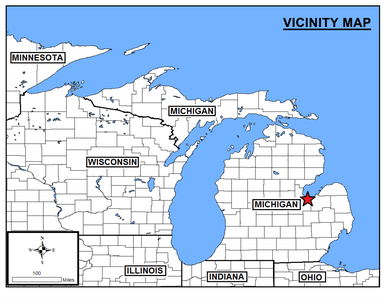
Saginaw, MI
Saginaw River
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5.23.8.1-5.23.8.1







LEGEND

- Cable Submarine
- Cable Overhead
- Placement Area
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- Channel_Limits

SOUNDING LEGEND

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SOFTWARE: HYPACK

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US Army Corps of Engineers
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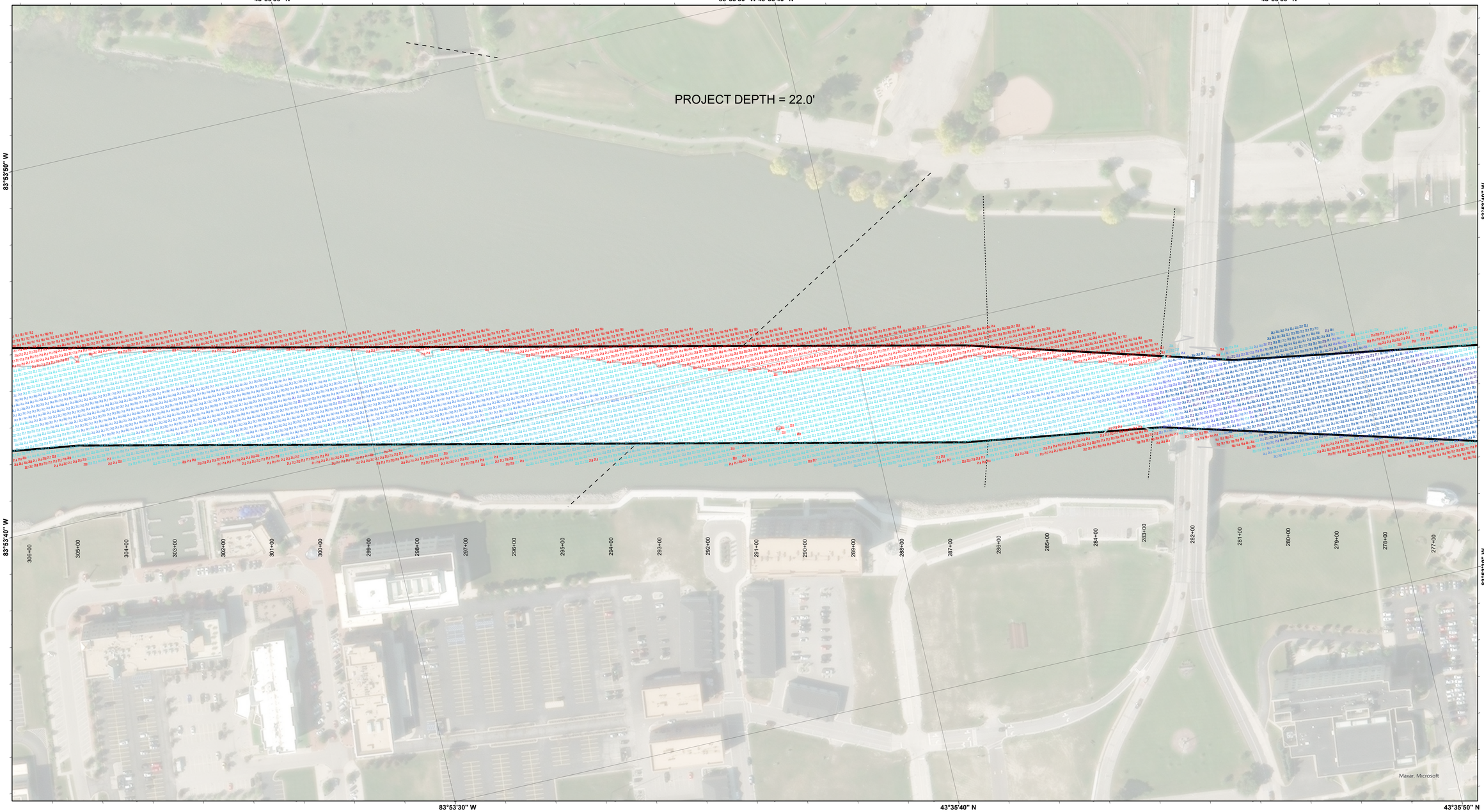
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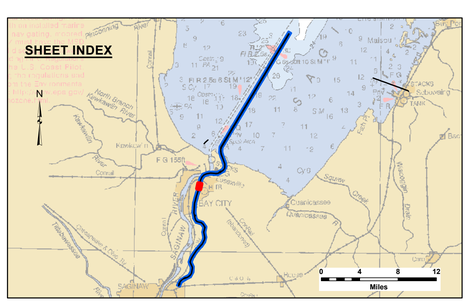
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Recommended:	Chief, Survey Section	Plotted By:	____
Approved:	Chief, Technical Services	Checked By:	____

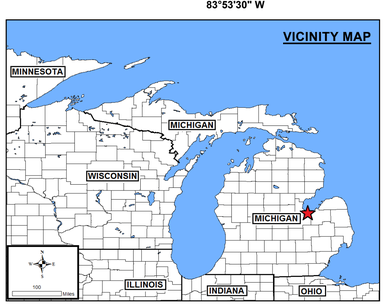
Saginaw, MI
Saginaw River
SH_01_SAG_20241030_CS
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LEGEND

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

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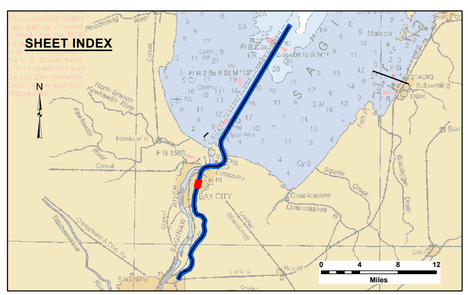
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Submitted:		Recommended: Chief, Survey Section	
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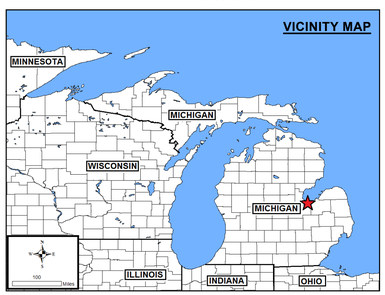
Saginaw, MI
Saginaw River
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5.23.8.1-5.23.8.1







LEGEND

- Cable Submarine
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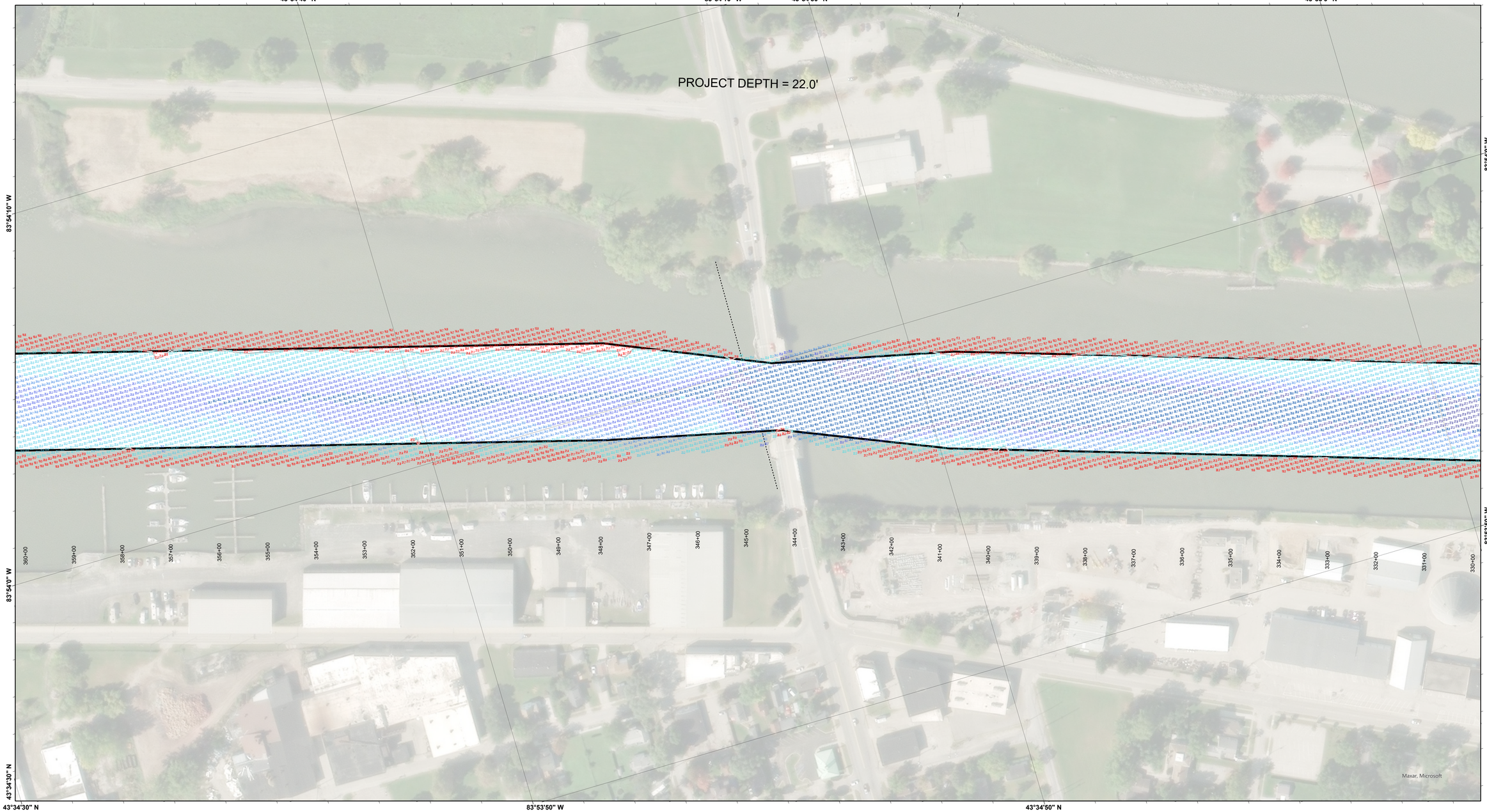
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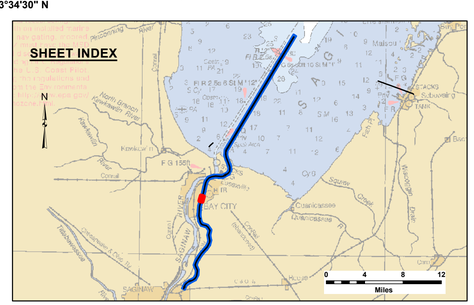
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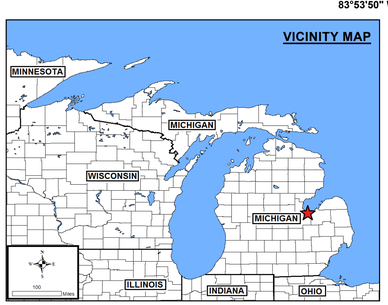
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U.S. ARMY CORPS OF ENGINEERS
DETROIT DISTRICT

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

Saginaw, MI
Saginaw River
SH_01_SAG_20241030_CS
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5.23.8.1-5.23.8.1

CORPS OF ENGINEERS U.S. ARMY

43°34'10" N 43°34'20" N 83°54'20" W 43°34'30" N

83°54'20" W

PROJECT DEPTH = 22.0'

83°54'10" W

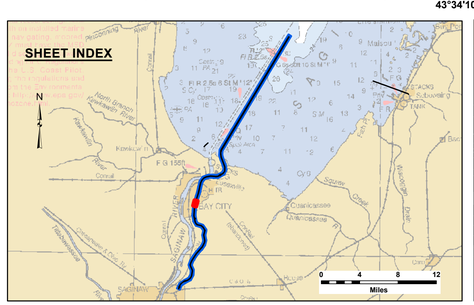
387+00 386+00 385+00 384+00 383+00 382+00 381+00 380+00 379+00 378+00 377+00 376+00 375+00 374+00 373+00 372+00 371+00 370+00 369+00 368+00 367+00 366+00 365+00 364+00 363+00 362+00 361+00 360+00 359+00 358+00 357+00

83°54'0" W

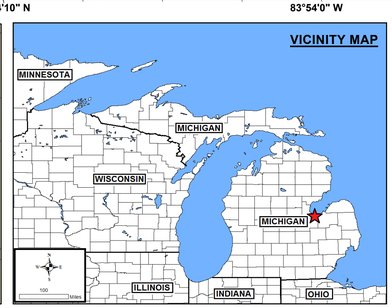
Maxar, Microsoft

43°34'10" N 83°54'0" W 43°34'20" N 43°34'30" N

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VICINITY MAP



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'

W N S E

1 inch = 100 feet

Feet

0 100 200 300 400

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SOFTWARE: HYPACK

AERIAL PHOTOGRAPHY DATA SOURCE: MAXAR, MICROSOFT
ALL COORDINATES ARE IN U.S. SURVEY FEET.

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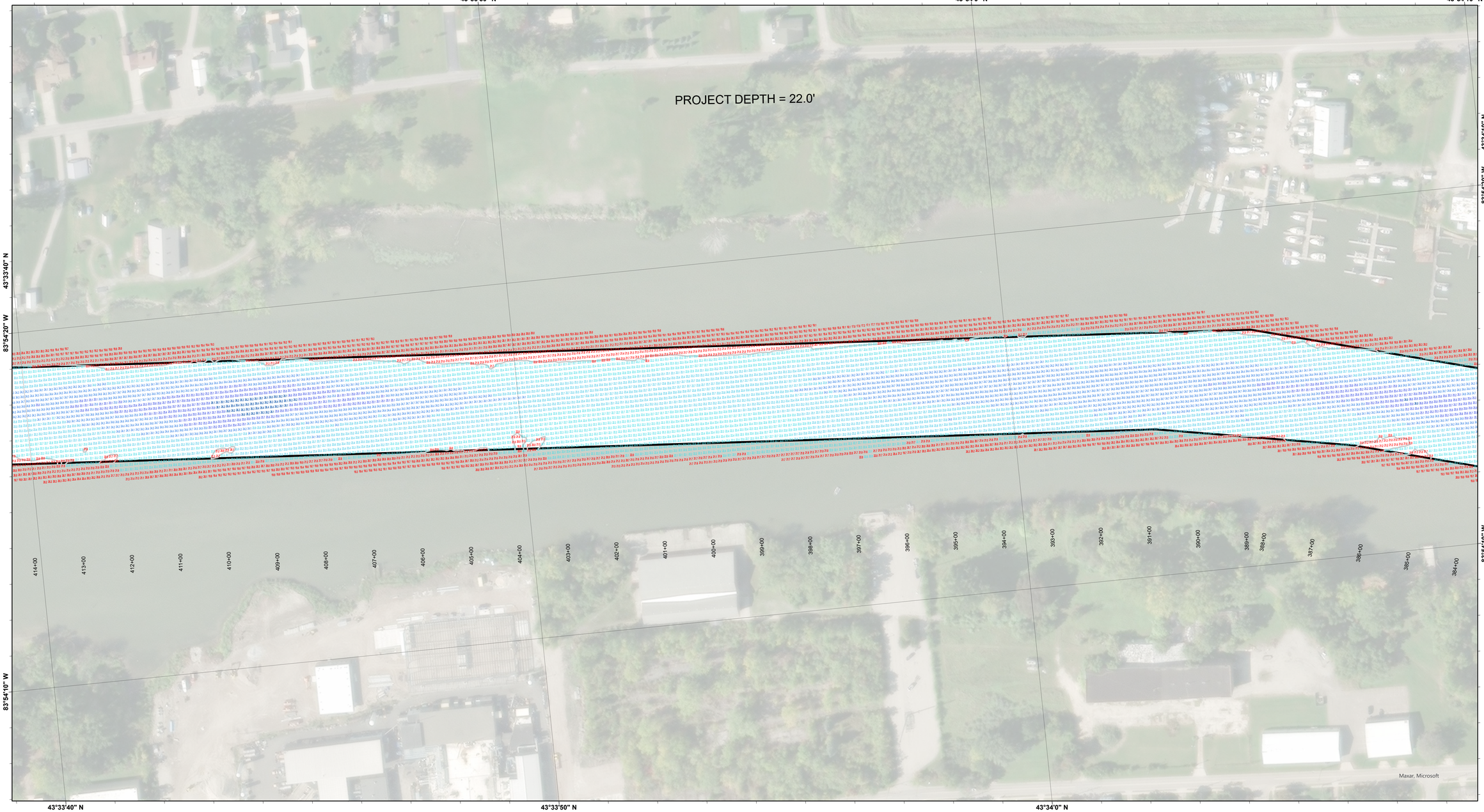
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DETROIT DISTRICT

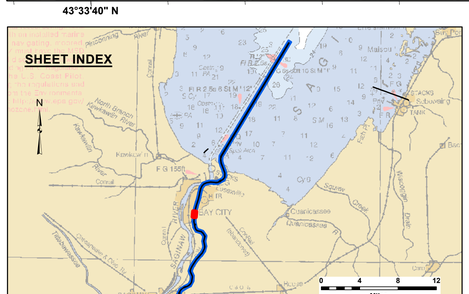
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Submitted:	Recommended: Chief, Survey Section	
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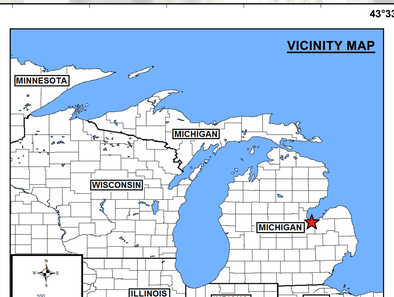
Saginaw, MI
Saginaw River
SH_01_SAG_20241030_CS
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LEGEND

- Cable Submarine
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- Channel_Limits

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U.S. ARMY CORPS OF ENGINEERS
DETROIT DISTRICT

Surveyed By:	Plotted By:	Checked By:

Submitted: _____

Recommended: _____ Chief, Survey Section

Approved: _____ Chief, Technical Services

Saginaw, MI
Saginaw River
SH_01_SAG_20241030_CS
30 October 2024

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CORPS OF ENGINEERS

U.S. ARMY

43°33'20" N

83°54'30" W

83°54'20" W

43°33'30" N

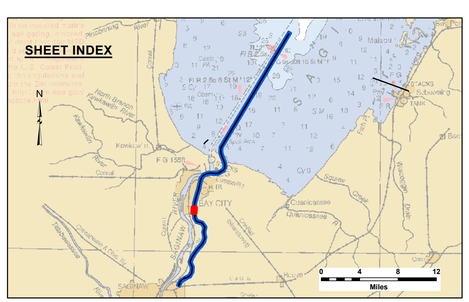
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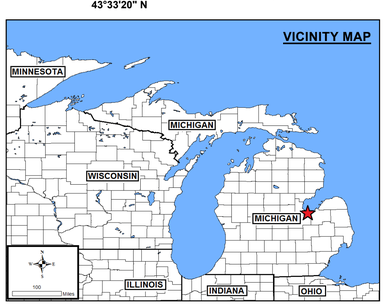
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Maxar, Microsoft

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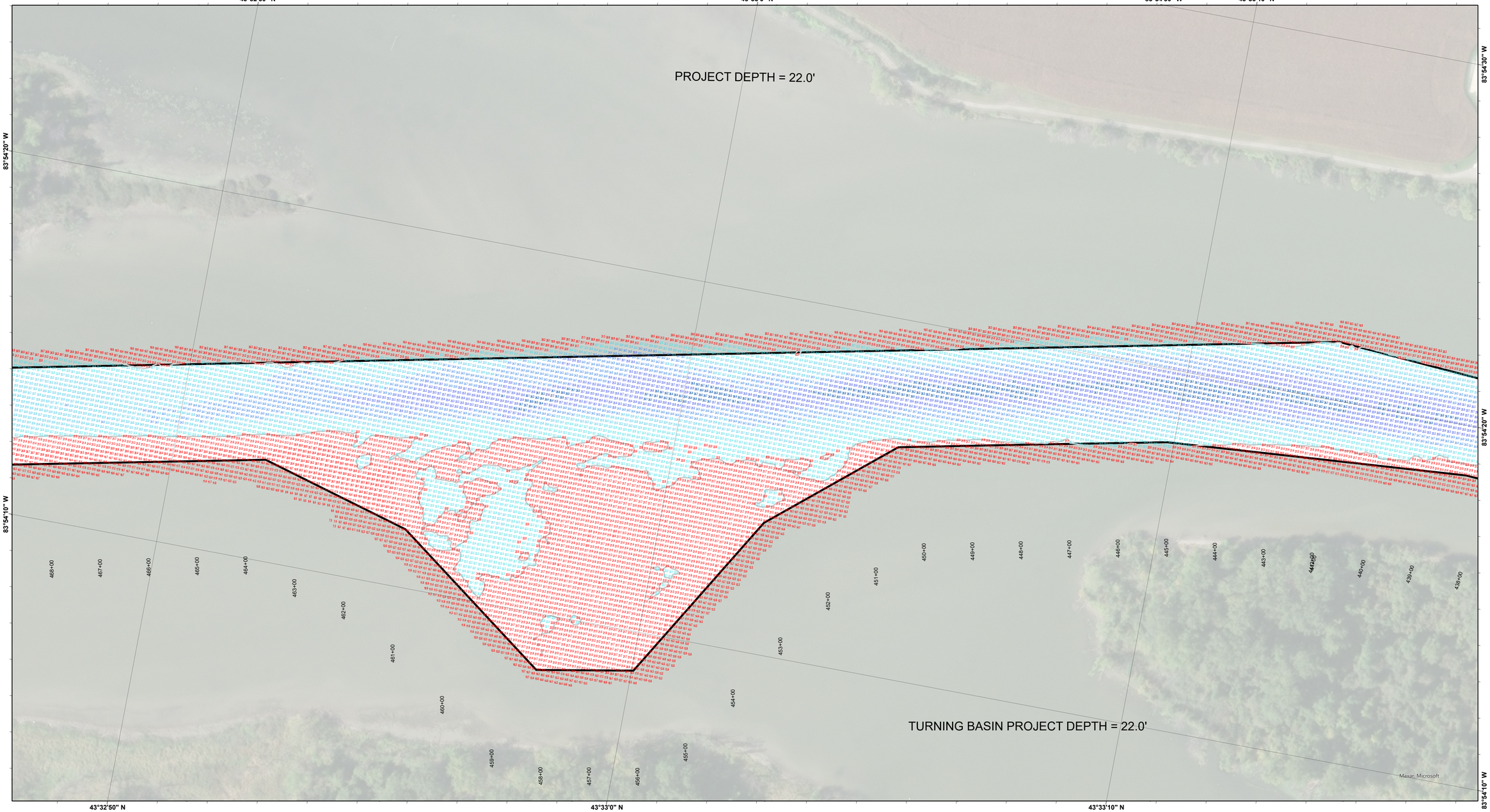
U.S. ARMY CORPS OF ENGINEERS
DETROIT DISTRICT

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

Saginaw, MI
Saginaw River
SH_01_SAG_20241030_CS
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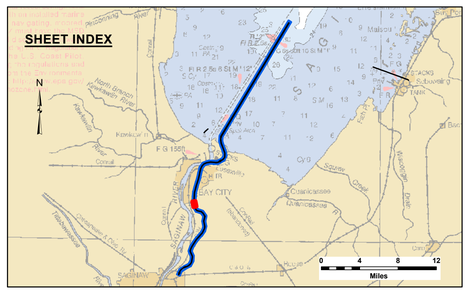
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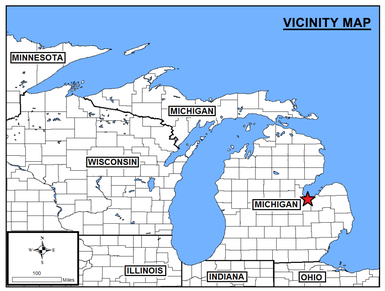
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VICINITY MAP



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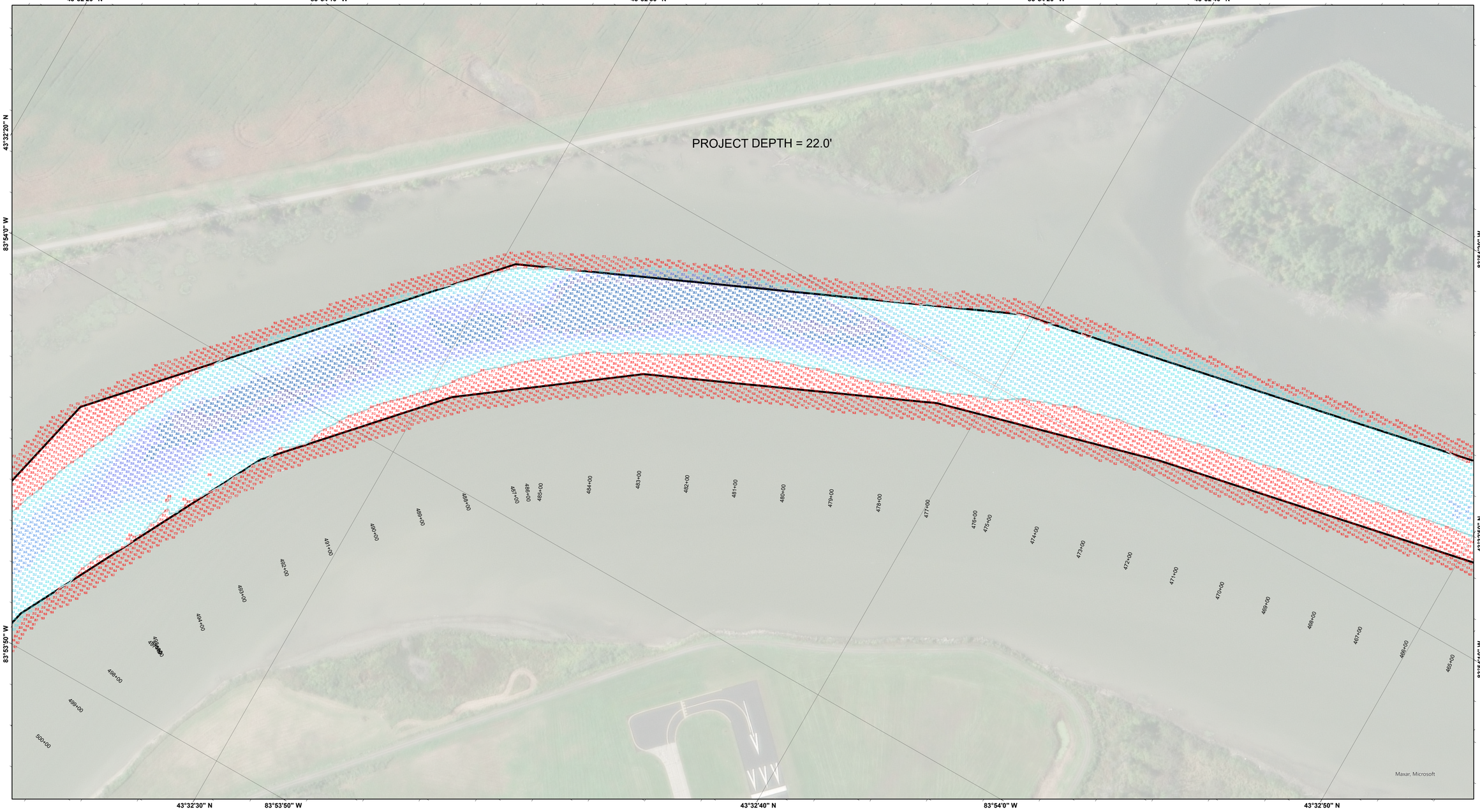
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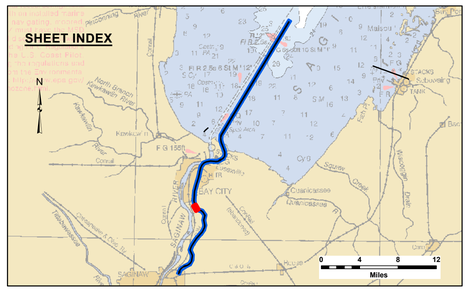
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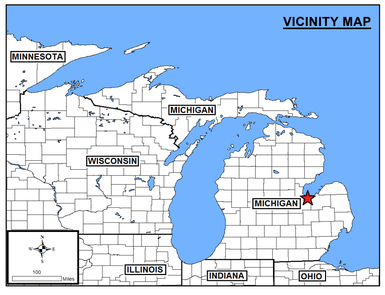
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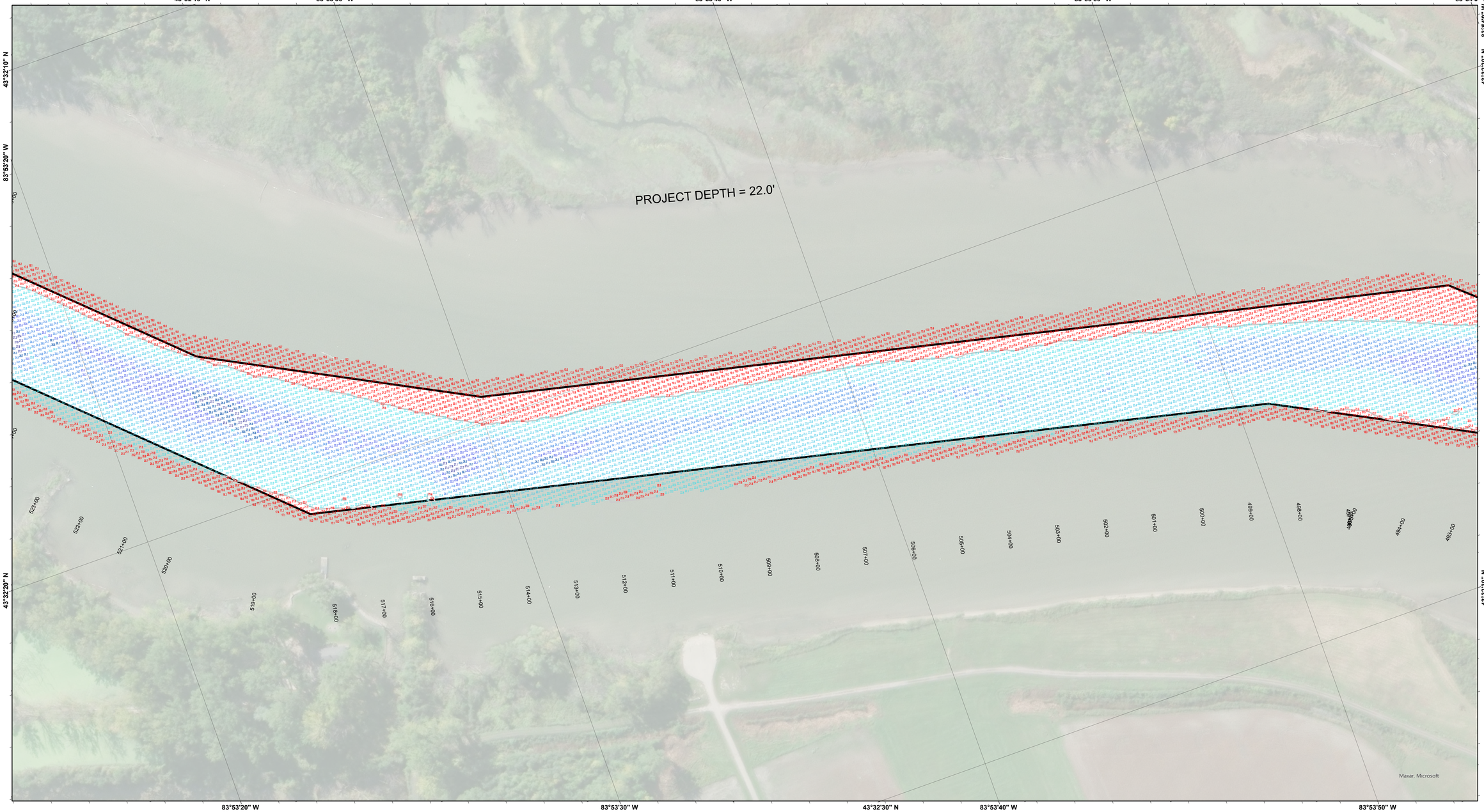
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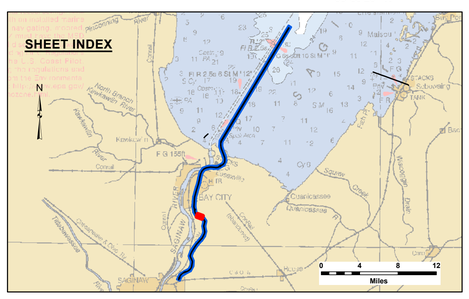
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Recommended: Chief, Survey Section			
Approved: Chief, Technical Services			

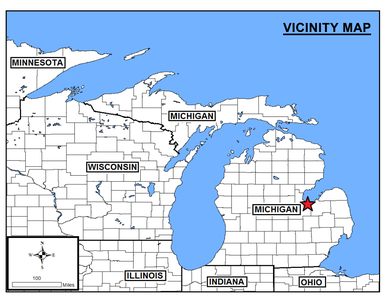
Saginaw, MI
Saginaw River
SH_01_SAG_20241030_CS
30 October 2024

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Revision Number:
5.23.8.1-5.23.8.1







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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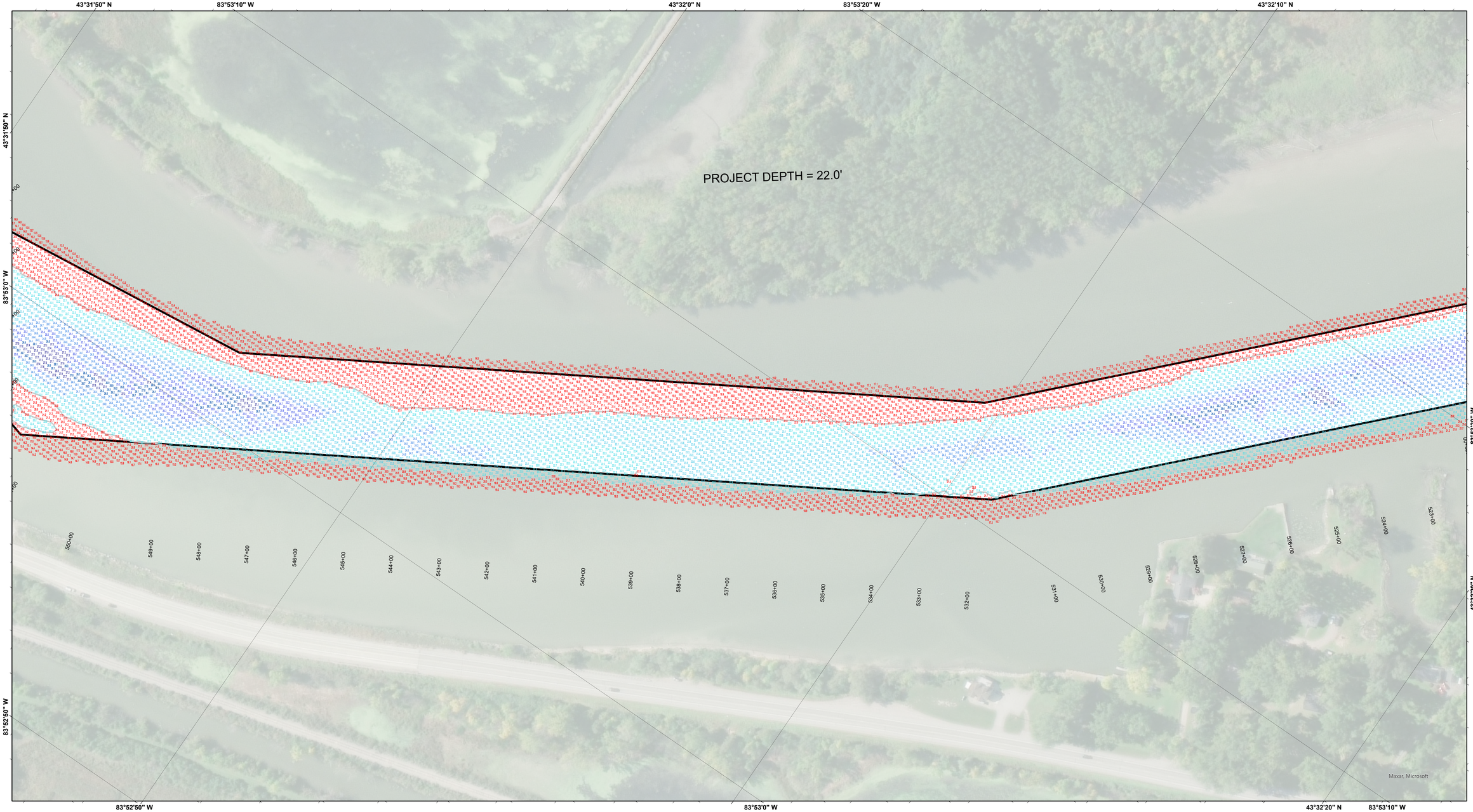
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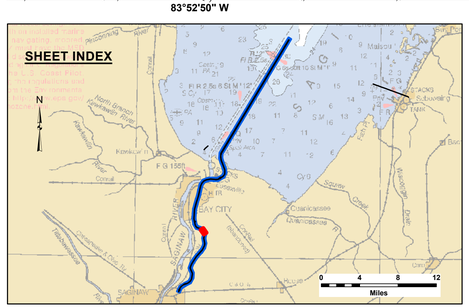
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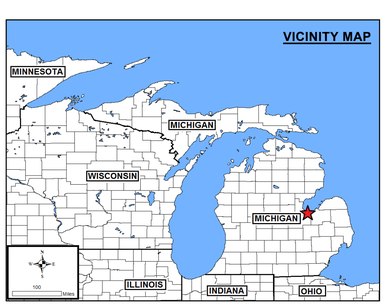
Saginaw, MI
Saginaw River
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LEGEND

- Cable Submarine
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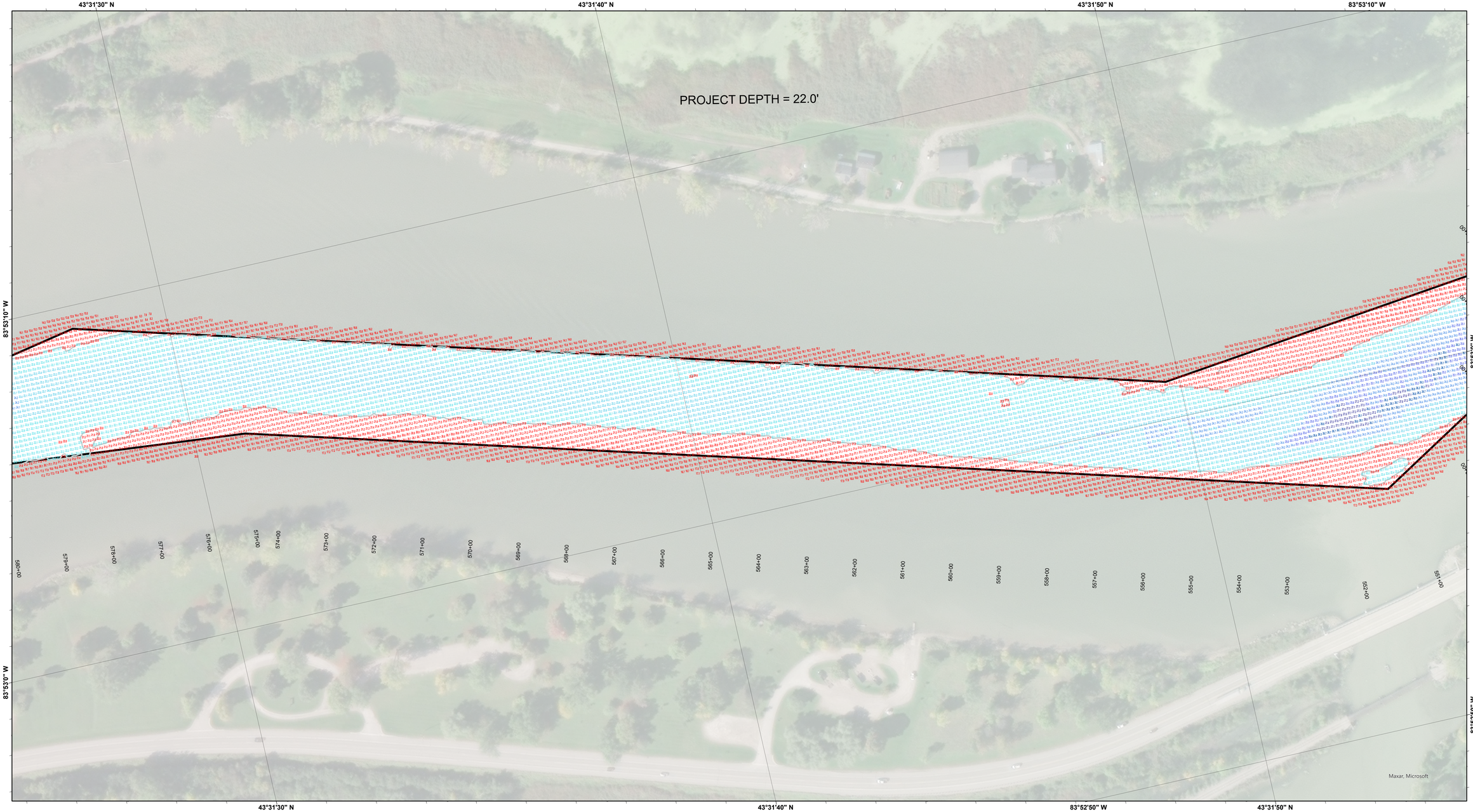
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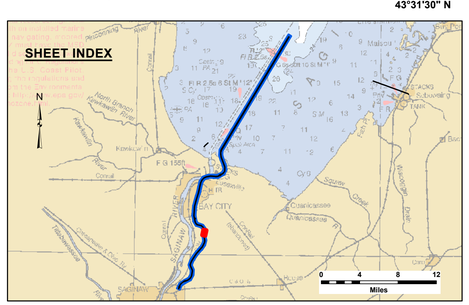
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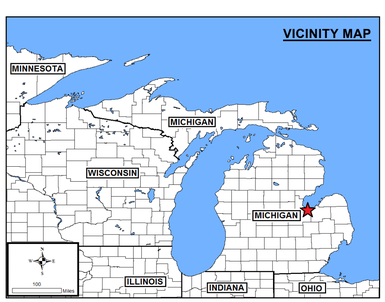
Saginaw, MI
Saginaw River
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LEGEND

- Cable Submarine
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SOUNDING LEGEND

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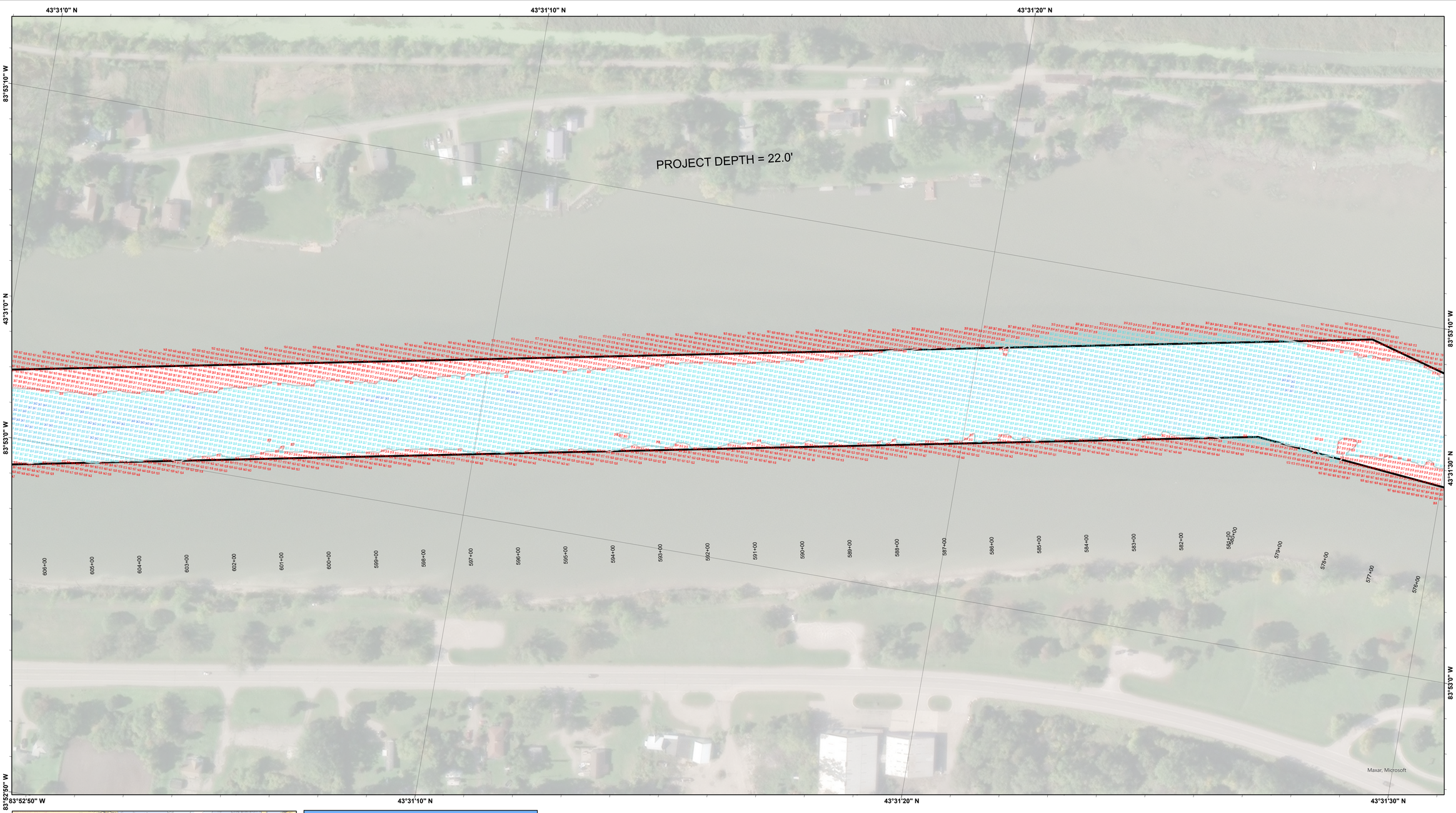
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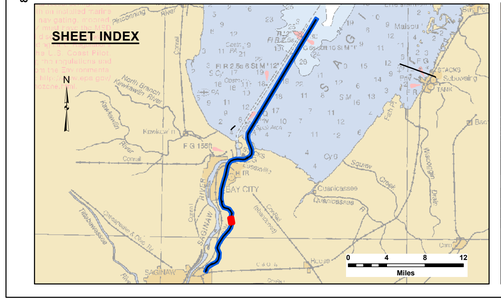
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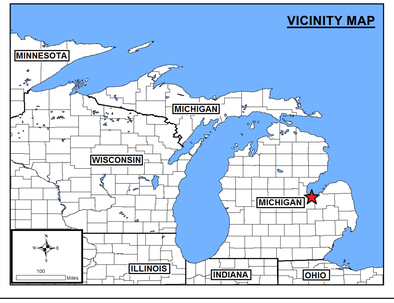
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LEGEND

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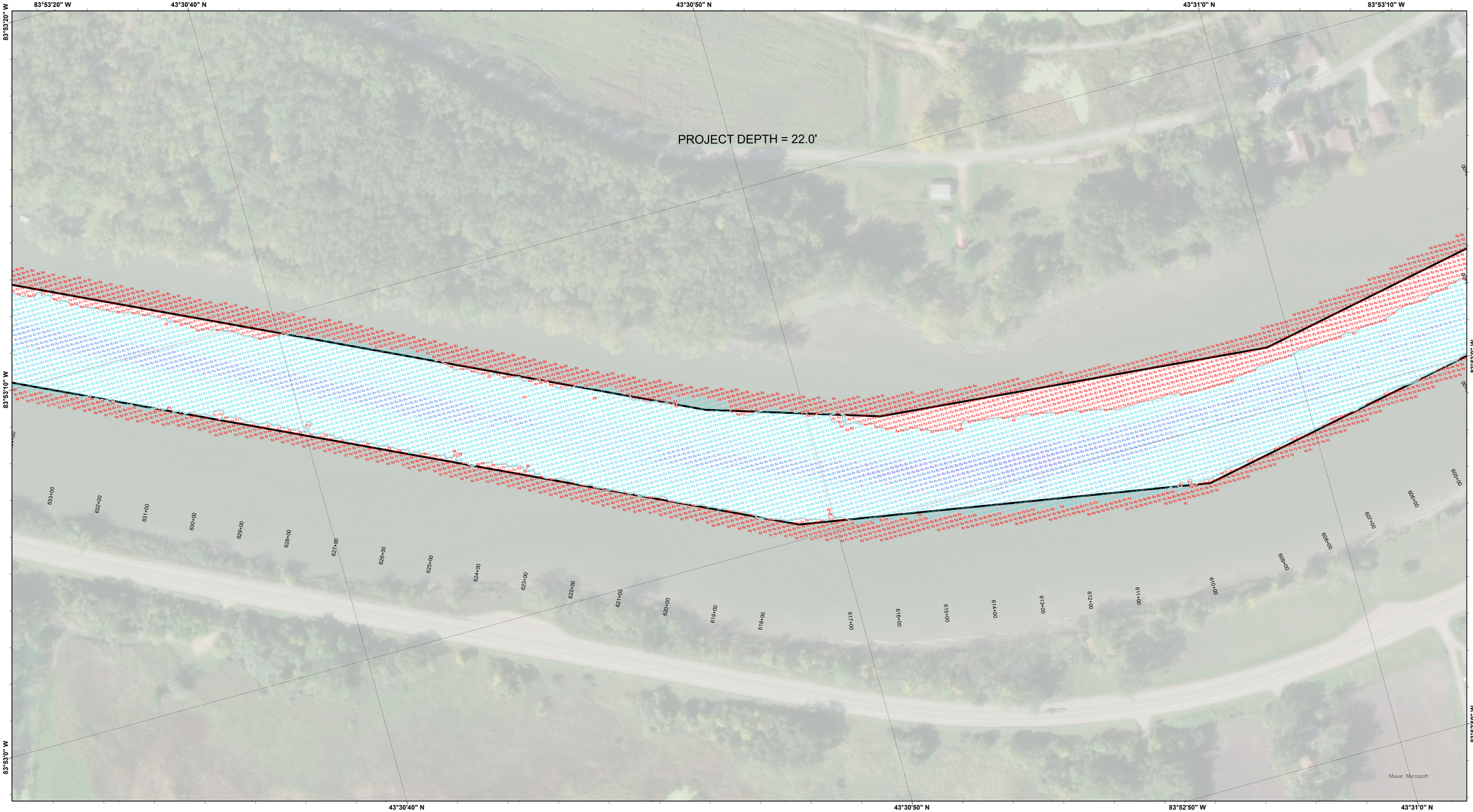
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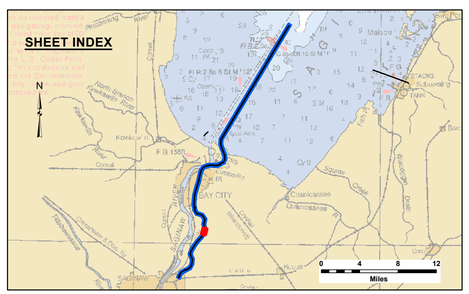
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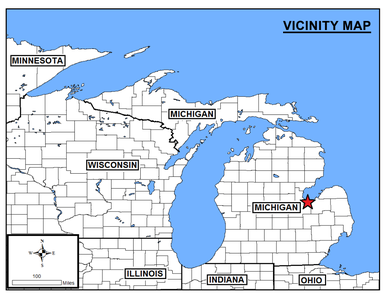
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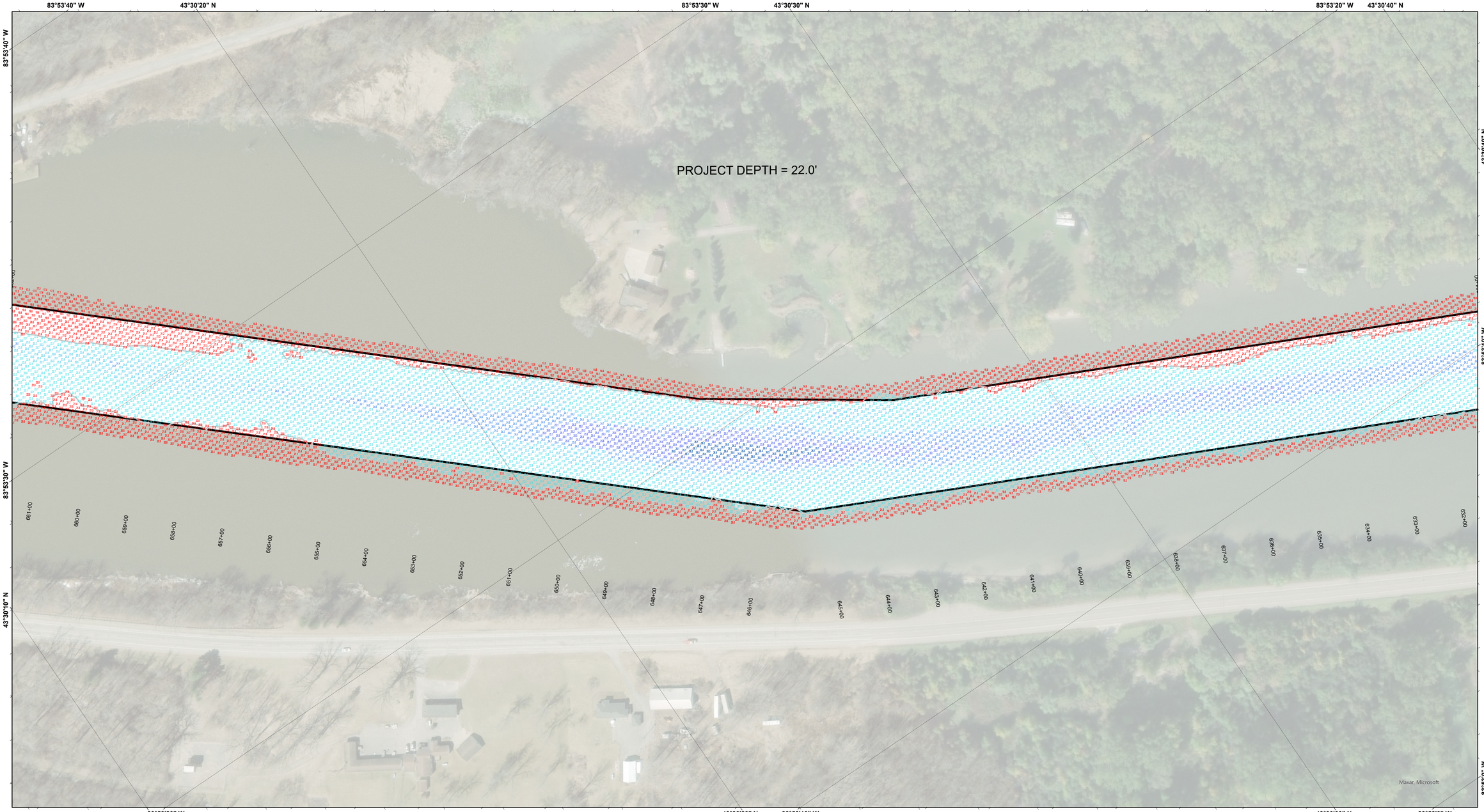
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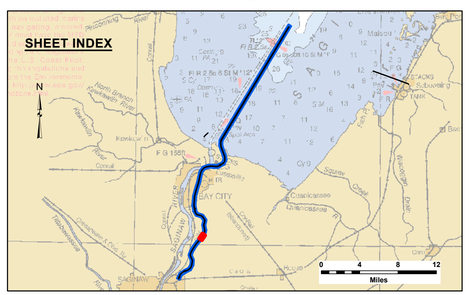
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Recommended:	Plotted By:	
Chief, Survey Section		
Approved:	Checked By:	
Chief, Technical Services		

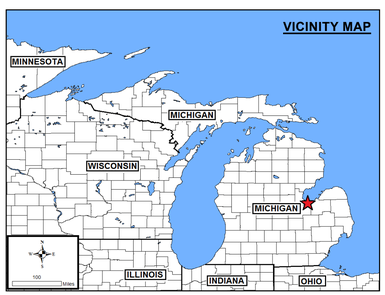
Saginaw, MI
Saginaw River
SH_01_SAG_20241030_CS
30 October 2024

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5.23.8.1-5.23.8.1







LEGEND

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

SOUNDING LEGEND

- LESS THAN PROJECT DEPTH
- PROJECT DEPTH
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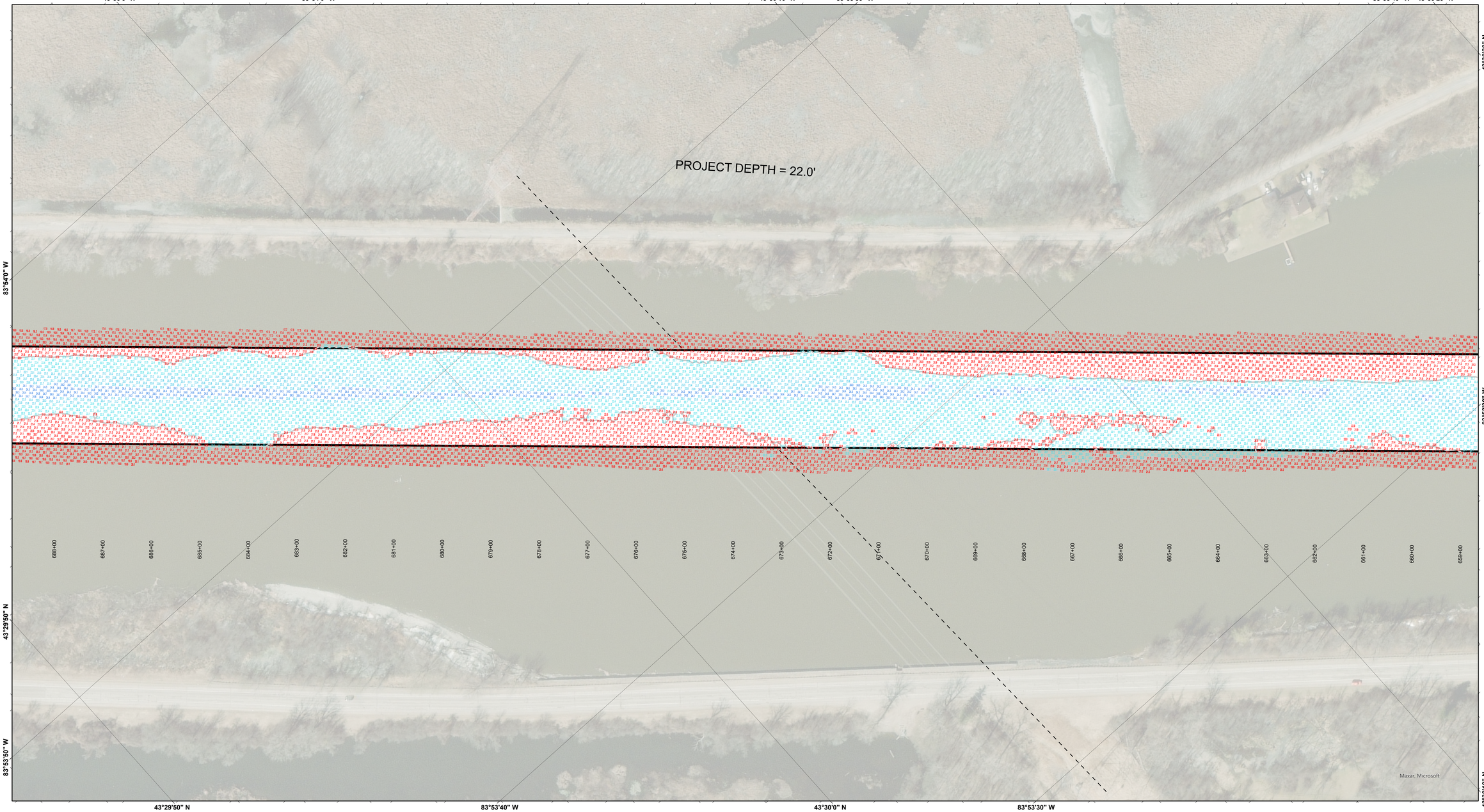
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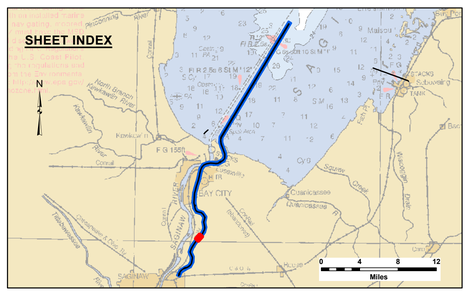
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	Approved: Chief, Technical Services	

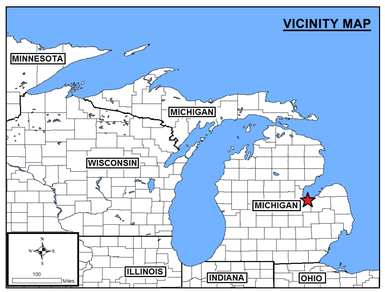
Saginaw, MI
Saginaw River
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LEGEND

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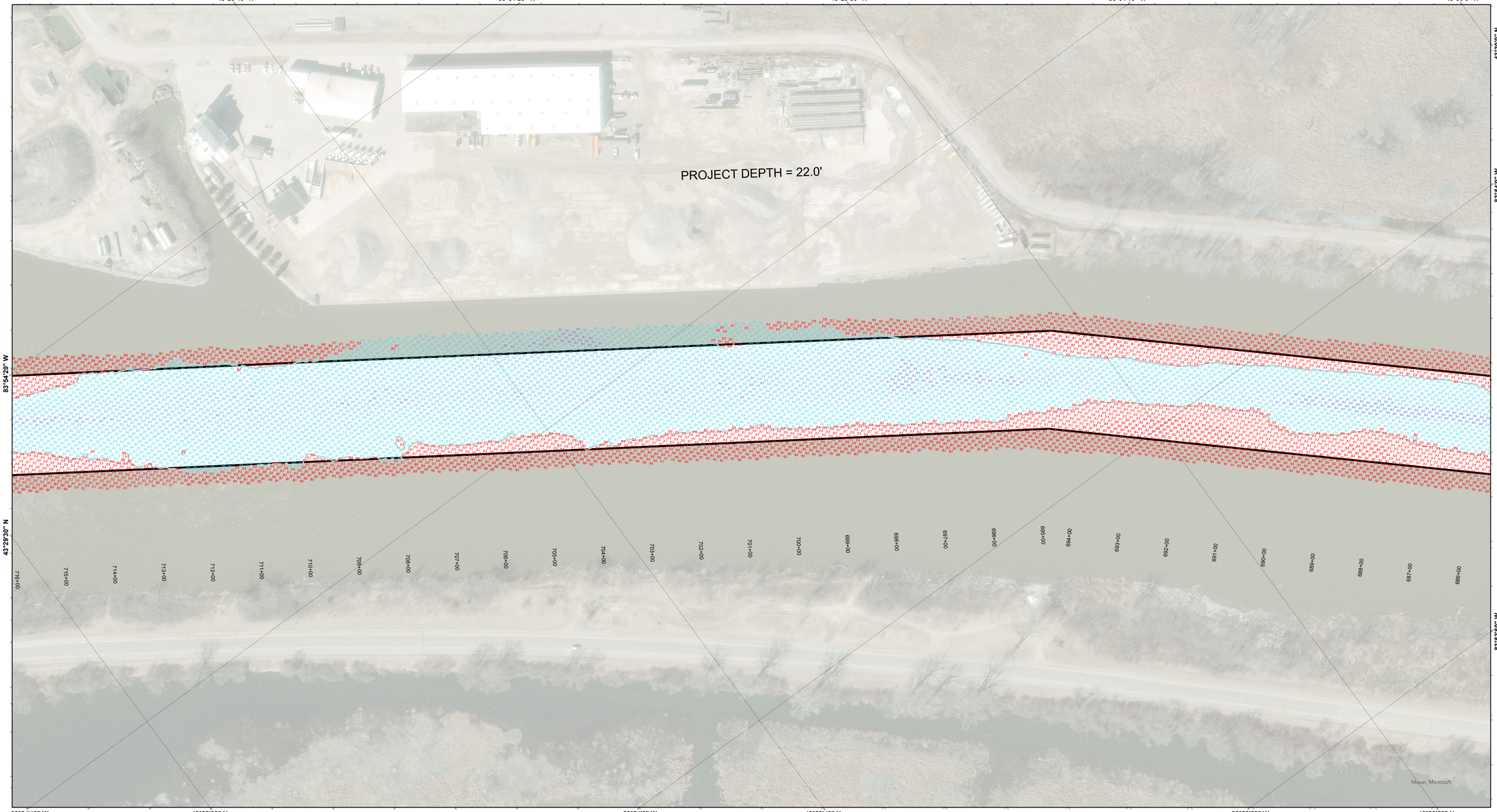
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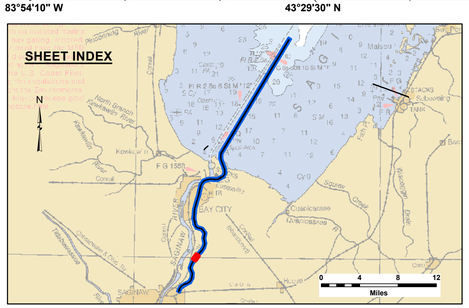
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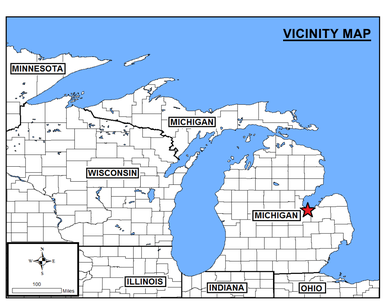
Saginaw, MI
Saginaw River
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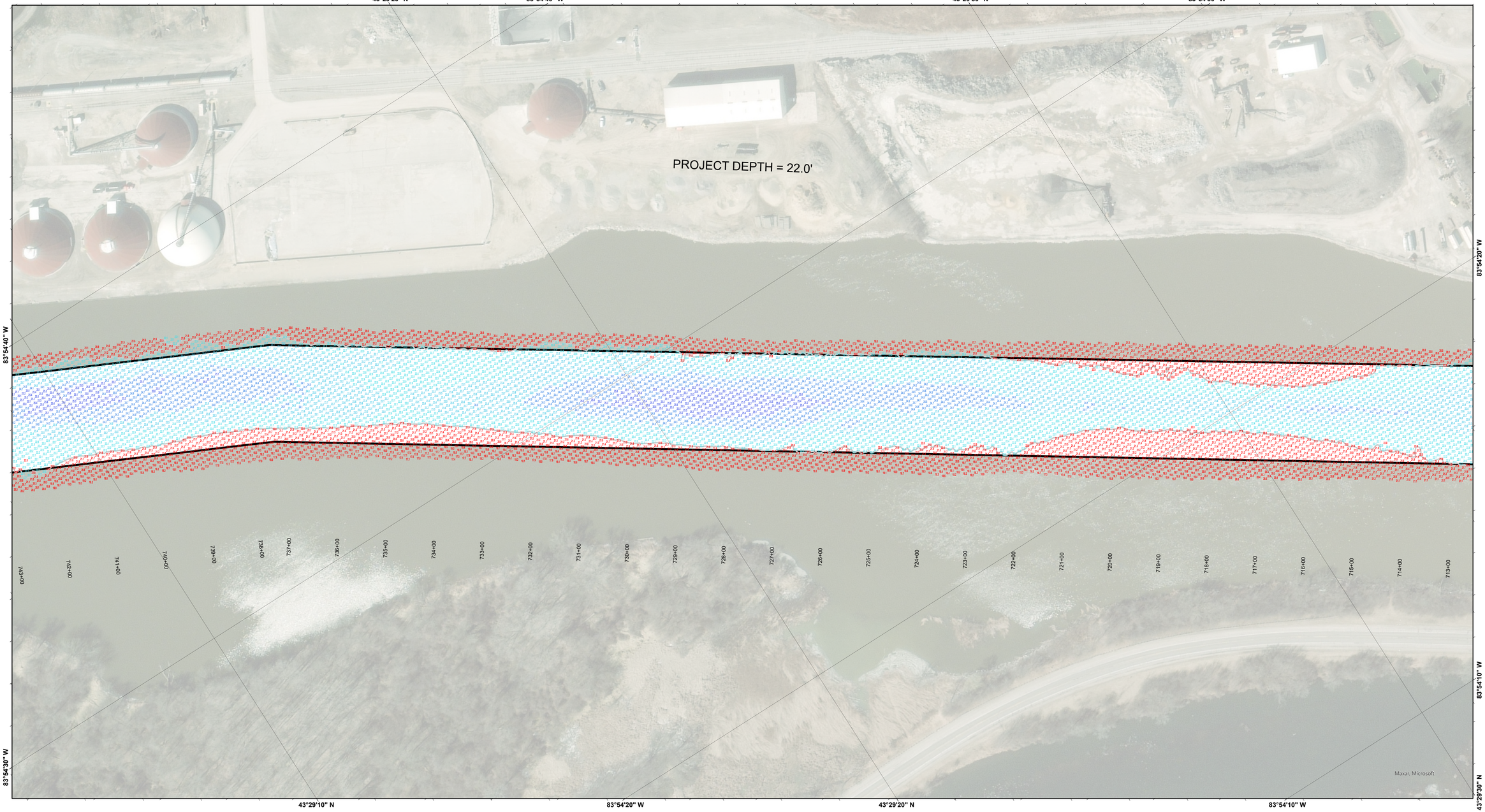
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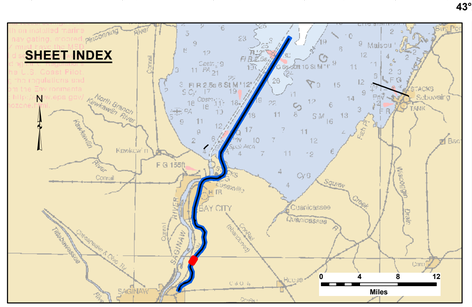
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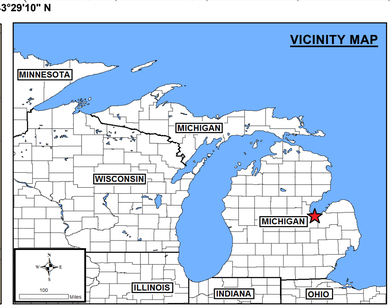
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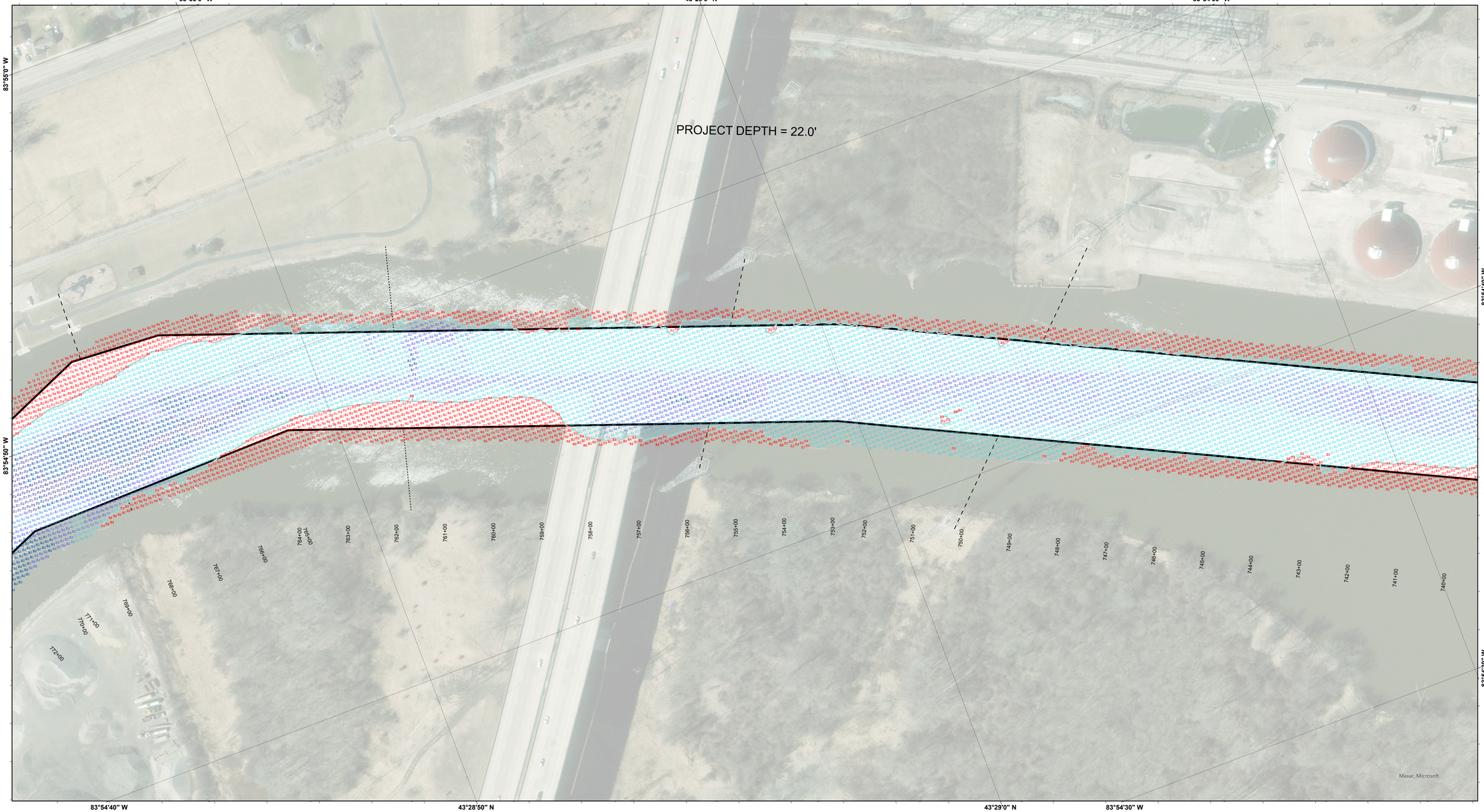
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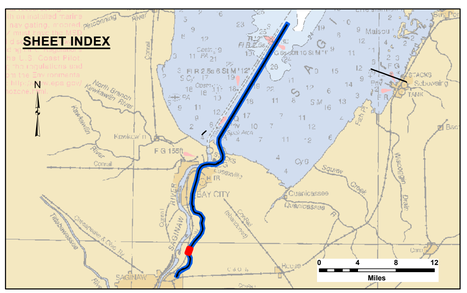
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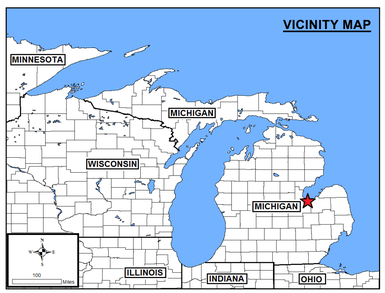
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DETROIT DISTRICT

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

Saginaw, MI
Saginaw River
SH_01_SAG_20241030_CS
30 October 2024

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Revision Number:
5.23.8.1-5.23.8.1

43°28'20" N 83°54'50" W 43°28'30" N 43°28'40" N 83°55'0" W

83°54'40" W

42°28'20" N

83°54'30" W

PROJECT DEPTH = 22.0'

796+00 795+00 794+00 793+00 792+00 791+00 790+00 789+00 788+00 787+00 786+00 785+00 784+00 783+00 782+00 781+00 780+00 779+00 778+00 777+00 776+00 775+00 774+00 773+00 772+00 770+00 771+00 769+00 768+00 767+00 766+00

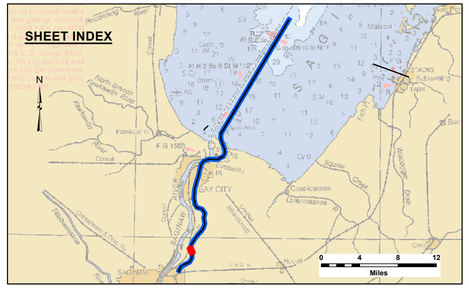
83°55'0" W

83°54'50" W

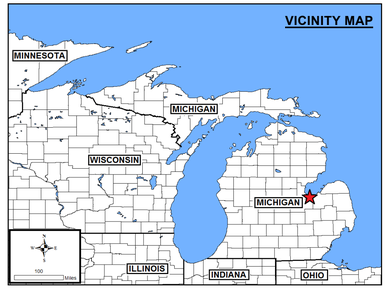
Maxar, Microsoft

43°28'30" N 83°54'30" W 43°28'40" N 83°54'40" W

SHEET INDEX



VICINITY MAP



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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- PROJECT DEPTH +4'
- PROJECT DEPTH +5'

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Feet
0 100 200 300 400

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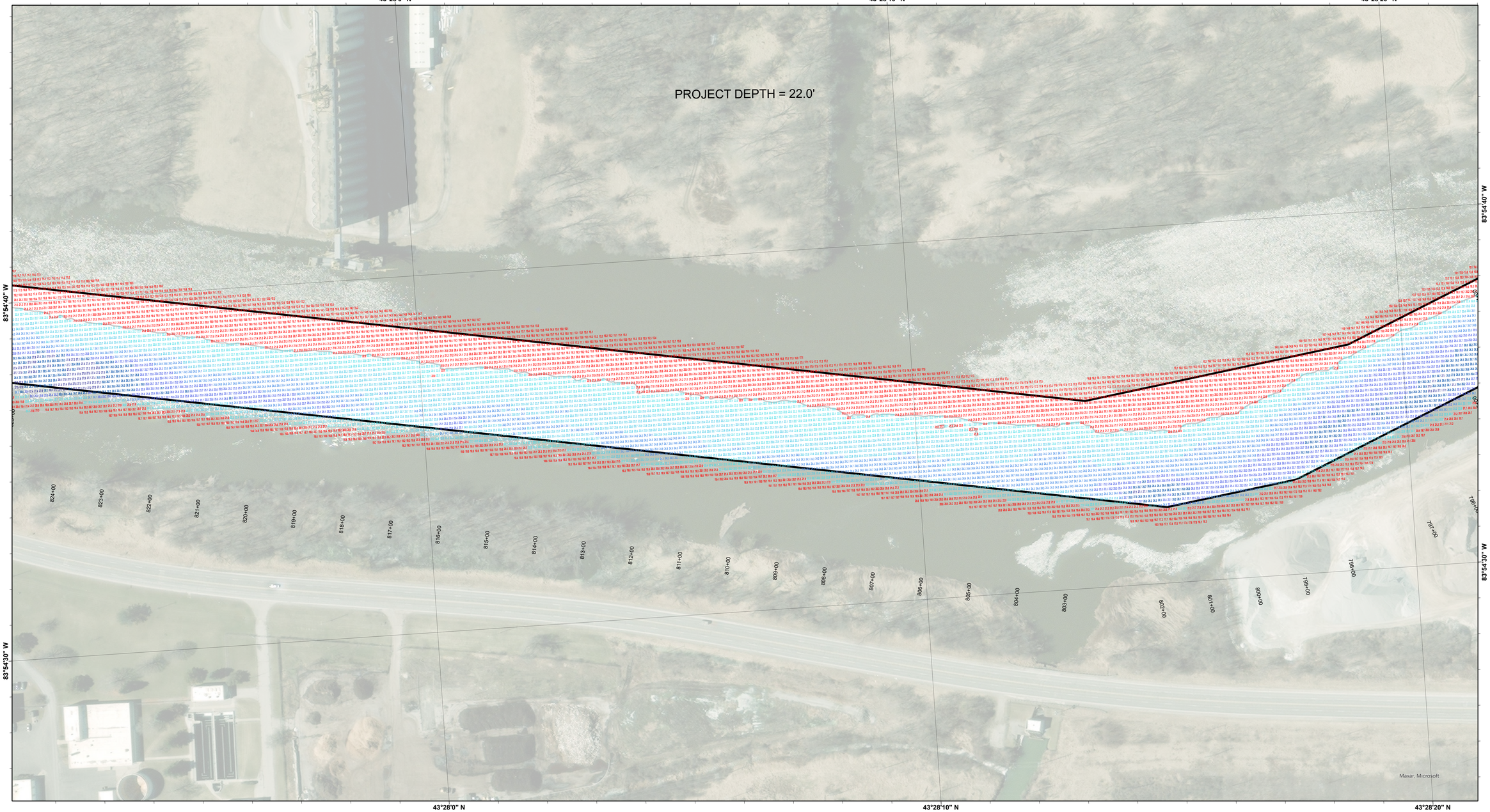
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DETROIT DISTRICT

Submitted:	Surveyed By: ____
	Plotted By: ____
Recommended: Chief, Survey Section	Checked By: ____
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Saginaw, MI
Saginaw River
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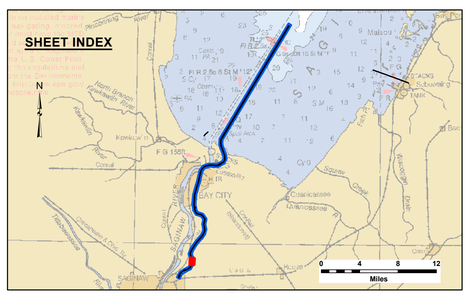
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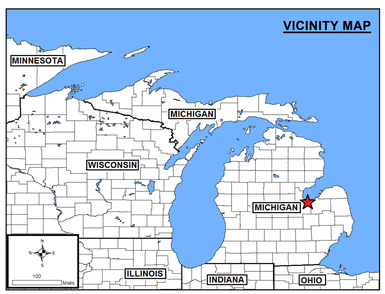
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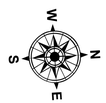
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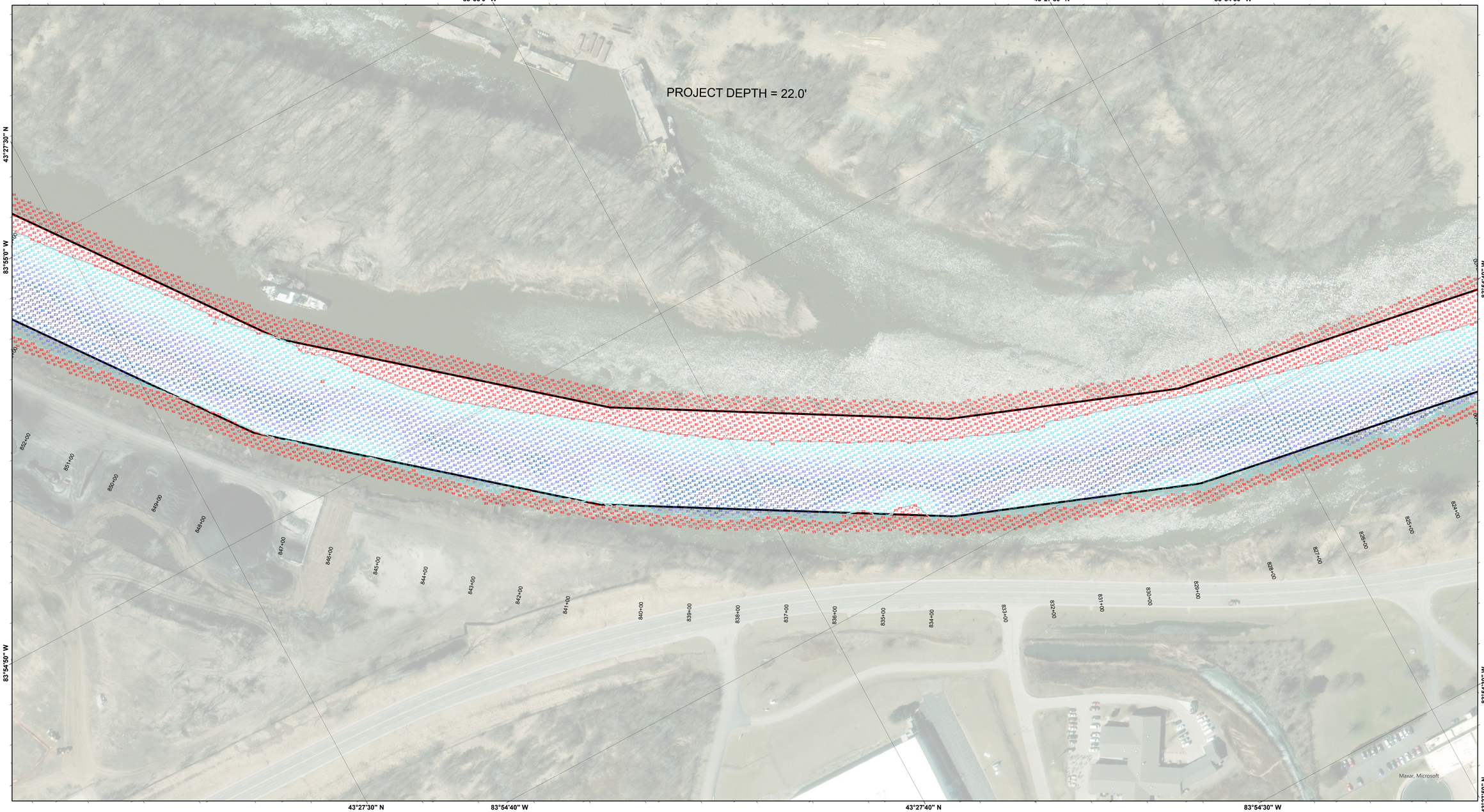
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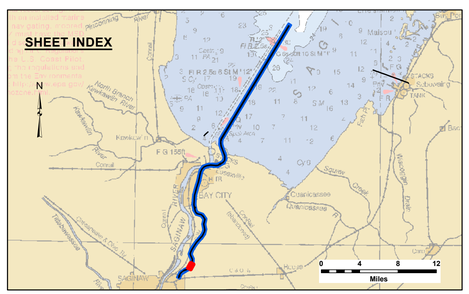
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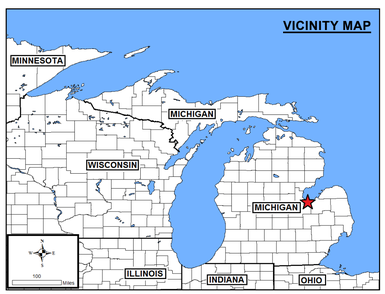
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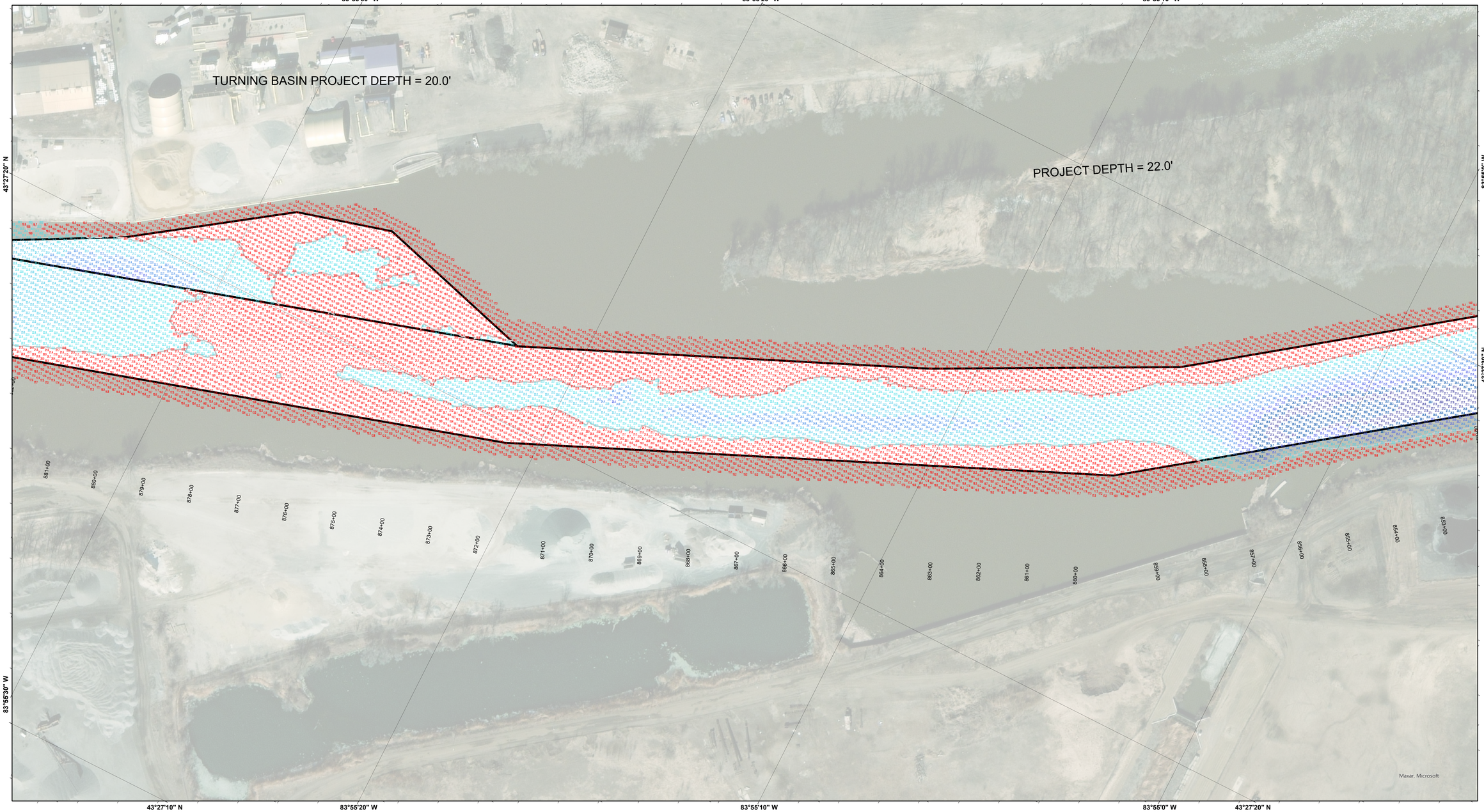
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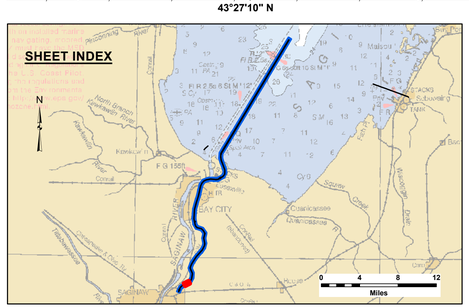
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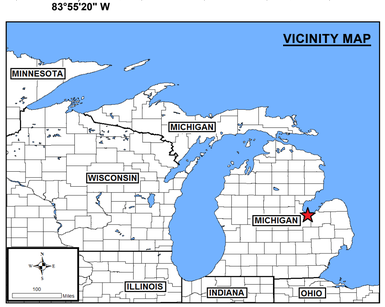
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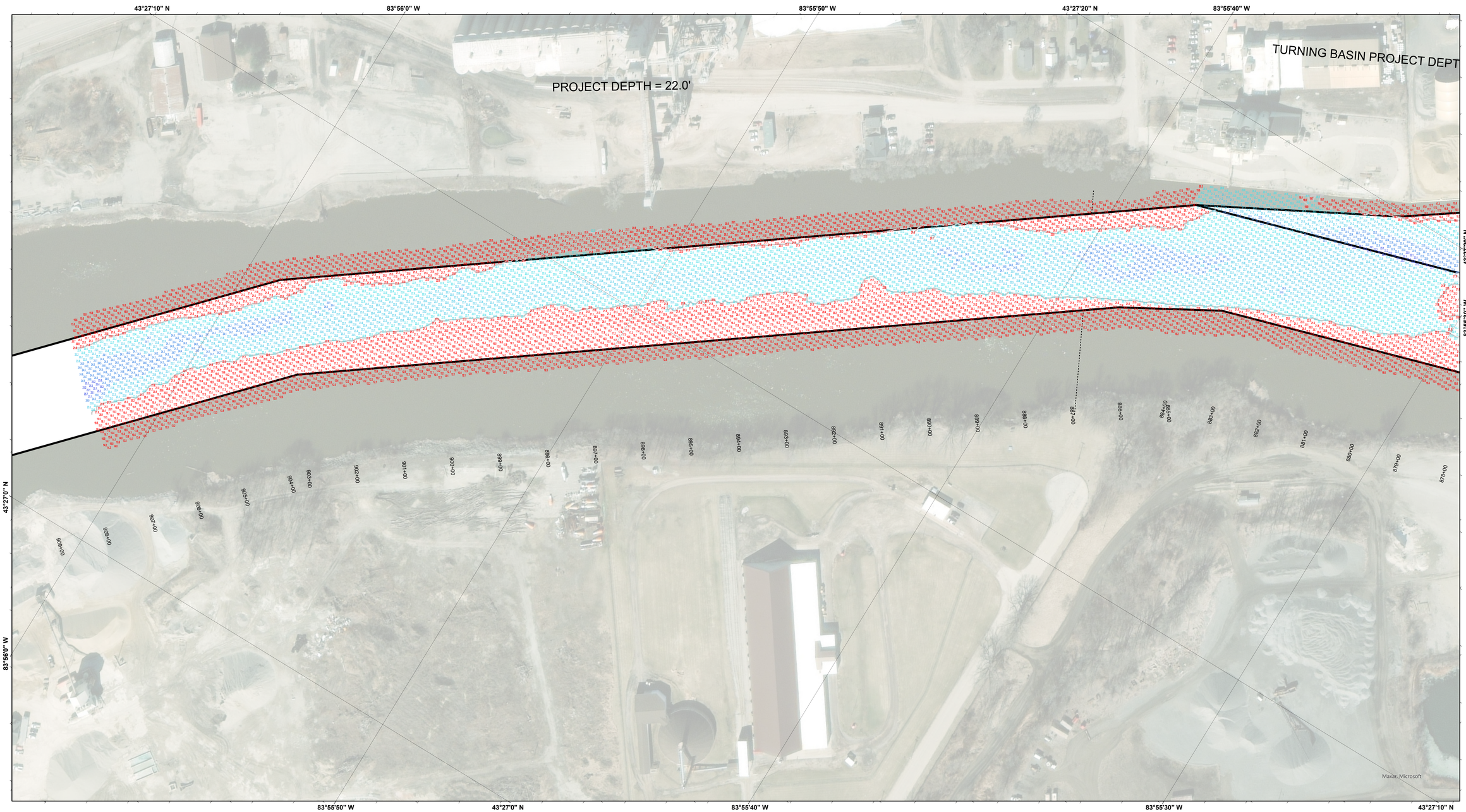
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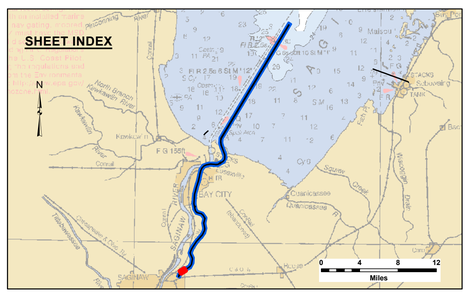
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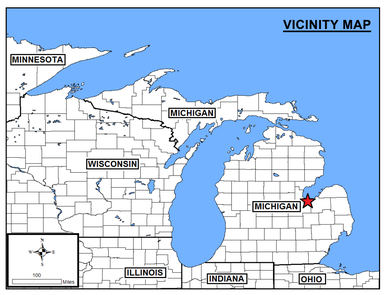
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NOTES: THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS AT THE TIME.

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/SHOAL REMOVAL OPERATIONS AND NOTICE TO NAVIGATION INTERESTS.

THE GRID SHOWN REFERENCES LATITUDE/LONGITUDE DISPLAYED AS DEGREES, MINUTE, SECONDS IN 10 SECOND INCREMENTS. THE SURVEY DATA REPRESENTED HEREIN IS PROJECTED TO THE MICHIGAN STATE PLANE, SOUTH ZONE (2113), NORTH AMERICAN DATUM 1983 (NAD83), US SURVEY FOOT. 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 OJ0534)], 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

AERIAL PHOTOGRAPHY DATA SOURCE: MAXAR, MICROSOFT
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:	
Recommended: Chief, Survey Section		Checked By:
Approved: Chief, Technical Services		

Saginaw, MI
Saginaw River
SH_01_SAG_20241030_CS
30 October 2024

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