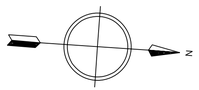
| CHANNEL LINE LIMITS | | |
|---|---|---|
| STATION NUMBER | COORDINATES | |
| | NORTH | EAST |
| A | 691,988.521 | 26,504,994.646 |
| B | 692,088.257 | 26,504,987.563 |
| C | 693,139.499 | 26,504,912.922 |
| D | 693,559.394 | 26,504,883.106 |
| E | 694,980.772 | 26,504,782.188 |
| F | 695,016.183 | 26,505,280.887 |
| G | 694,213.204 | 26,505,337.902 |
| H | 693,580.659 | 26,505,182.330 |
| I | 692,837.706 | 26,505,235.078 |
| J | 692,185.270 | 26,505,281.404 |
| K | 692,009.552 | 26,505,293.884 |
| CL.PT. 1 | 691,999.036 | 26,505,144.265 |
| CL.PT. 2 | 693,570.027 | 26,505,032.718 |
| CL.PT. 3 | 694,991.395 | 26,504,931.795 |

## NOTES

1. THE SOUNDINGS INDICATED HEREON REPRESENT THE MINIMUM DEPTH FOUND IN THE 10 FOOT BY 10 FOOT AREA CENTERED AROUND THE TEXT. MINIMUM DEPTH DATA IS PRODUCED FOR STRIKE/SHOAL REMOVAL OPERATIONS AND NOTICES TO NAVIGATION INTERESTS.
2. ELEVATIONS AND SOUNDING DEPTHS ARE REFERRED TO INTERNATIONAL GREAT LAKES DATUM 1985 (IGLD 85). LOW WATER DATUM ZERO IS 601.1 FEET ABOVE MEAN WATER LEVEL AT FATHER POINT QUEBEC. WATER LEVEL READINGS ARE FROM AN AUTOMATED GAUGE LOCATED AT THE INNER RANGE LIGHT. DEPTHS ARE MEASURED USING A RESON 8125 MULTIBEAM SONAR.
3. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON JUNE 16, 2008 AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS PRESENT AT THE TIME.
4. THE LOCATION OF NAVIGATION AIDS REPRESENT THEIR GENERAL LOCATION AND CANNOT BE CONSIDERED FOR NAVIGATION.
5. HORIZONTAL POSITIONING IS DETERMINED USING THE DIFFERENTIAL GLOBAL POSITIONING SYSTEM (DGPS). THE DIFFERENTIAL CORRECTIONS ARE PROVIDED BY U.S. COAST GUARD DIFFERENTIAL BROADCAST STATIONS. SIGNAL STRENGTH IS USED AS THE DETERMINING FACTOR IN DIFFERENTIAL SELECTION. THE DGPS RECEIVER IS MANUFACTURED BY APPLANIX INC. MODEL POS MV VER. 3.0. THIS IS A SINGLE FREQUENCY RECEIVER (C/A. L1 CODE) WITH ADVERTISED POSITIONAL ACCURACY OF 1-3 METERS RMS.
6. GRID COORDINATES ARE BASED ON THE MICHIGAN STATE PLANE COORDINATE SYSTEM, LAMBERT PROJECTION, MICHIGAN NORTH ZONE (2111), NORTH AMERICAN DATUM 1983 (NAD83). ALL COORDINATES SHOWN ARE IN U.S. SURVEY FEET.




LAKE SUPERIOR

PROJECT DEPTH 18' (MAINTAINED TO 15')

INNER RANGE LIGHT

WEST CHANNEL LINE

WEST PIER

OUTER RANGE LIGHT

PT. A PT. B PT. C PT. D PT. E

CL.PT 1 CL.PT. 2 CL.PT 3

PT. K PT. J PT. I PT. H PT. G PT. F

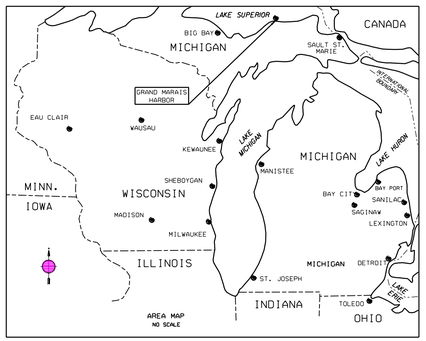
EAST PIER

EAST CHANNEL LINE

PROJECT DEPTH 20' (MAINTAINED TO 17')

U.S. PILE DIKE RUINS

GRAND MARAIS HARBOR




15.0' LEGEND

- 0.0'
- 15.0'
- 17.0'
- 19.0'
- 21.0'
- 23.0'
- 25.0'
- 27.0'
- 29.0'
- 100'

17.0' LEGEND

- 0.0'
- 17.0'
- 19.0'
- 21.0'
- 23.0'
- 25.0'
- 27.0'
- 29.0'
- 31.0'
- 100'

100' 50' 0 100' 200'

SCALE: 1"=100'

US Army Corps of Engineers
Detroit District

| Symbol | Description | Date Appr. |
|---|---|---|
| | | |
| | | |
| | Description | Date Appr. Symbol |
| | | |
| | | |
| | Description | Date Appr. |

Survey Date: June 16, 2008
Rev.
Design file name: Grand Marais.dgn
Drawing code:
File name: Plot date: 8-04-08
Plot scale: 1"=100'

| | | | |
|---|---|---|---|
| Surveyed by: J. Mrozek | Checked by: M. Gilbert | Chief, Eng. Div. | Mgmt. |
| Drawn by: J. Mrozek | Checked by: M. Gilbert | Chief, Navigation Section | |
| Reviewed by: | | Chief, Ops. Div. | |
| Approved: Recommended | | Chief, Hydraulics Section | |
| Approved by: | | | |
| District Engineer | | | |

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
DETROIT, MICHIGAN

500 AREA OF FREE
GRAND MARAIS HARBOR
FEDERAL NAVIGATION CHANNEL

GRAND MARAIS HARBOR
FY 2008
CONDITION SURVEY

Sheet reference number:
GMH-01
Sheet 1 of 10