

BookletChart™



Stony Lake to Point Betsie

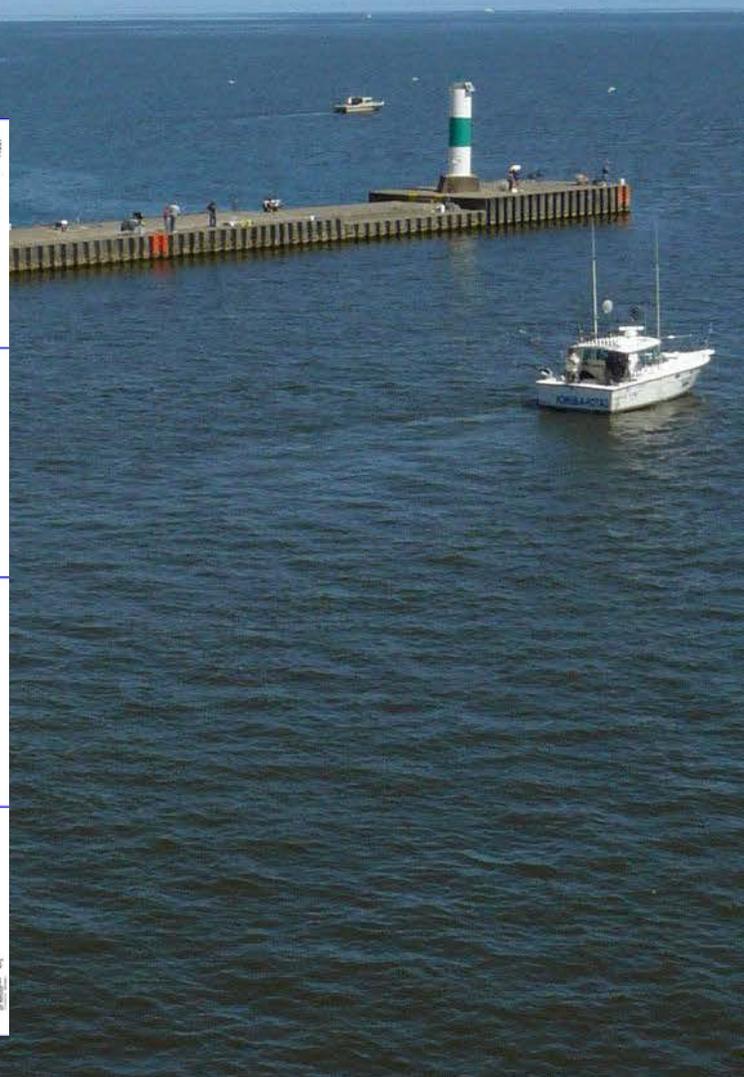
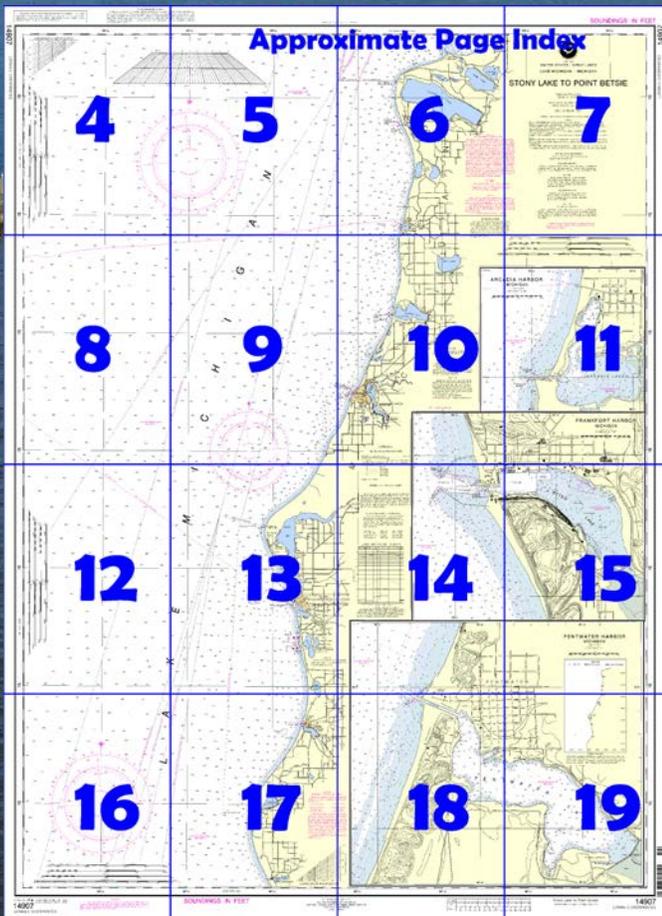
NOAA Chart 14907

A reduced-scale NOAA nautical chart for small boaters

When possible, use the full-size NOAA chart for navigation.



- Complete, reduced-scale nautical chart
- Print at home for free
- Convenient size
- Up-to-date with Notices to Mariners
- Compiled by NOAA's Office of Coast Survey, the nation's chartmaker



**Published by the
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Coast Survey
www.NauticalCharts.NOAA.gov
888-990-NOAA**

What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

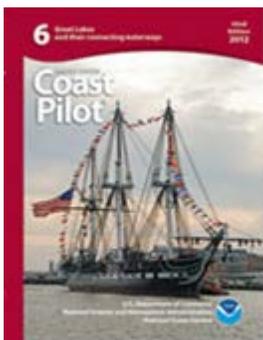
Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at <http://www.NauticalCharts.NOAA.gov>.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.

For latest Coast Pilot excerpt visit the Office of Coast Survey website at <http://www.nauticalcharts.noaa.gov/nsd/searchbychart.php?chart=14907>.



(Selected Excerpts from Coast Pilot)

From Platte River Point southwest for 5.7 miles to Point Betsie, the shore is bold and hilly, and there are no outlying obstructions. **Point Betsie** is a rounding sandy point. **Point Betsie Light** (44°41.5'N., 86°15.3'W.), 52 feet above the water, is shown from a white cylindrical tower with a red roof and attached dwelling on the point. The light marks the turning point for vessels bound between Manitou Passage and the south end of Lake Michigan.

From Point Betsie, the shore continues sandy and hilly for 4.3 miles S to Frankfort Harbor.

Frankfort Harbor, 4.3 miles south of Point Betsie, is in Betsie Lake, connected to Lake Michigan by an entrance channel. The shore south of the entrance channel is bluff, reaching over 300 feet above the lake. The city of **Frankfort, MI**, is on the north side of Betsie Lake. A tank on a hill 0.75 mile northeast of the harbor entrance is prominent from Lake Michigan.

Frankfort North Breakwater Light (44°37'51"N., 86°15'08"W.), 72 feet above the water, is shown from a white square pyramidal tower on the north side of the harbor entrance. A sound signal, which operates by keying the microphone five times on VHF-FM channel 79, is at the light. An aerolight is 2.1 miles northeast of the light.

Channels.—The harbor is entered from Lake Michigan through a dredged entrance channel between converging breakwaters to an outer harbor basin which is not adapted for anchorage but reduces wave action in the inner harbor. From the outer basin, the channel continues east between parallel piers to an inner basin and anchorage area in Betsie Lake. (See Notice to Mariners and the latest edition of the chart for controlling depths.) The outer ends of the breakwaters and piers and marked by lights.

Betsie Lake, extends about 1.5 miles southeast from the inner end of the entrance channel. Outside the dredged areas, the lake is generally shoal, with depths of 8 feet and less. The southeast end of the lake is filled with submerged pilings, and at the extreme end, off the mouth of **Betsie River**, the lake is swampy. Anchorage in the lake is poor. A private channel extends from the inner harbor basin E through Betsie Lake to a private dock.

Bridges.—Betsie River is crossed near its mouth by a fixed highway bridge with a clearance of 4 feet and by a fixed railroad bridge with a 14-foot span and a clearance of 7 feet.

Currents.—Currents in the Frankfort Harbor entrance channel attain velocities up to 3 mph in either direction.

Frankfort Coast Guard Station is on the north side of the harbor entrance channel.

Harbor regulations.—A **speed limit** of 8 mph is enforced in the harbor. (See **33 CFR 162.120**, chapter 2, for regulations.) Mooring to the breakwaters, piers, or revetments is prohibited.

A **special anchorage** area, marked by private buoys, is in Betsie Lake.

Wharves.—Koch Fuels, Inc., receives petroleum products at a 425-foot wharf on the south side of the inner basin. The wharf has a deck height of 8 feet with reported depths of 18 to 20 feet alongside. There is tank storage for 310,000 barrels of petroleum.

Small-craft facilities.—A public dock constructed by the Michigan State Waterways Commission on the north side of the inner basin provides transient berths, gasoline, diesel fuel, water, electricity, sewage pump-out, and harbormaster services. The harbormaster monitors VHF-FM channels 16 and 9. A marine railway for small craft is available in the harbor.

Arcadia Lake, 10 miles south of Frankfort, is an L-shaped lake separated from Lake Michigan by a narrow strip of land. The lake is entered from deep water in Lake Michigan through a dredged entrance channel between parallel piers and revetments to deep water inside the lake; the pierheads are marked by lights. In 2011, the controlling depth was 8 feet (except for lesser depths to 6½ feet along the edges), in the entrance channel to the lake. The entrance channel is subject to extensive shoaling. Mariners are cautioned against navigating outside channel limits in the vicinity of structures protected by stone riprap.

**U.S. Coast Guard Rescue Coordination Center
24 hour Regional Contact for Emergencies**

RCC Cleveland

Commander
9th CG District
Cleveland, OH

(216) 902-6117

Navigation Managers Area of Responsibility



NOAA's navigation managers serve as ambassadors to the maritime community. They help identify navigational challenges facing professional and recreational mariners, and provide NOAA resources and information for safe navigation. For additional information, please visit nauticalcharts.noaa.gov/service/navmanagers

To make suggestions or ask questions online, go to nauticalcharts.noaa.gov/inquiry.
To report a chart discrepancy, please use ocsdata.ncd.noaa.gov/idrs/discrepancy.aspx.

Lateral System As Seen Entering From Seaward

on navigable waters except Western Rivers



For more information on aids to navigation, including those on Western Rivers, please consult the latest USCG Light List for your area. These volumes are available online at <http://www.navcen.uscg.gov>

14907

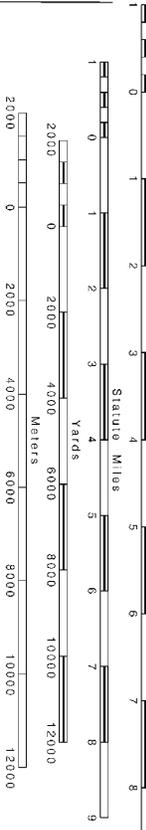
86°50'

86°40'

Latitude and Longitude Plotting Interpolator

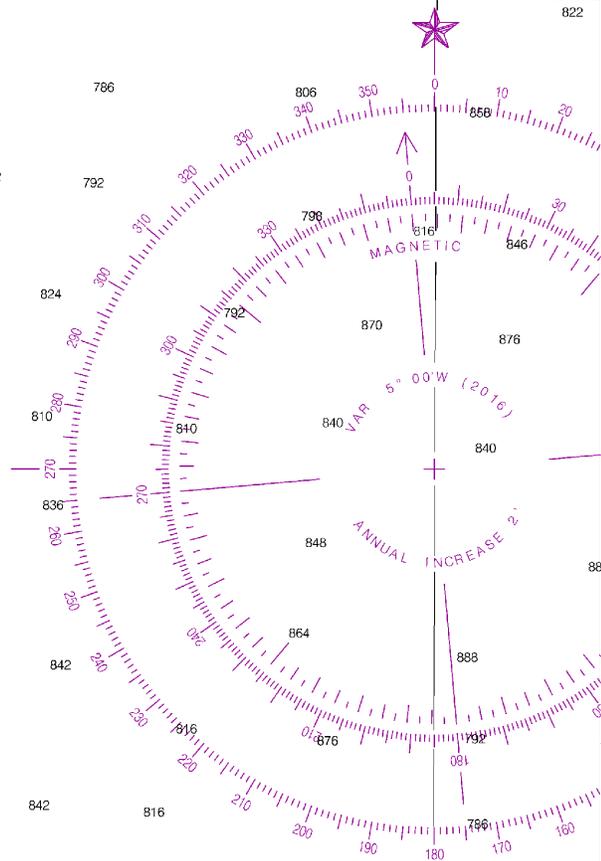
44° 40'

44° 30'



CONTINUED ON CHART 14910

Joins page 8



4

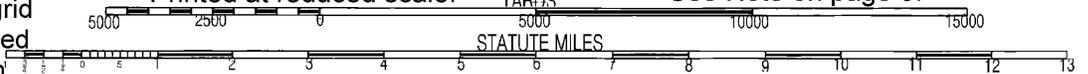
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

YARDS

See Note on page 5.

STATUTE MILES





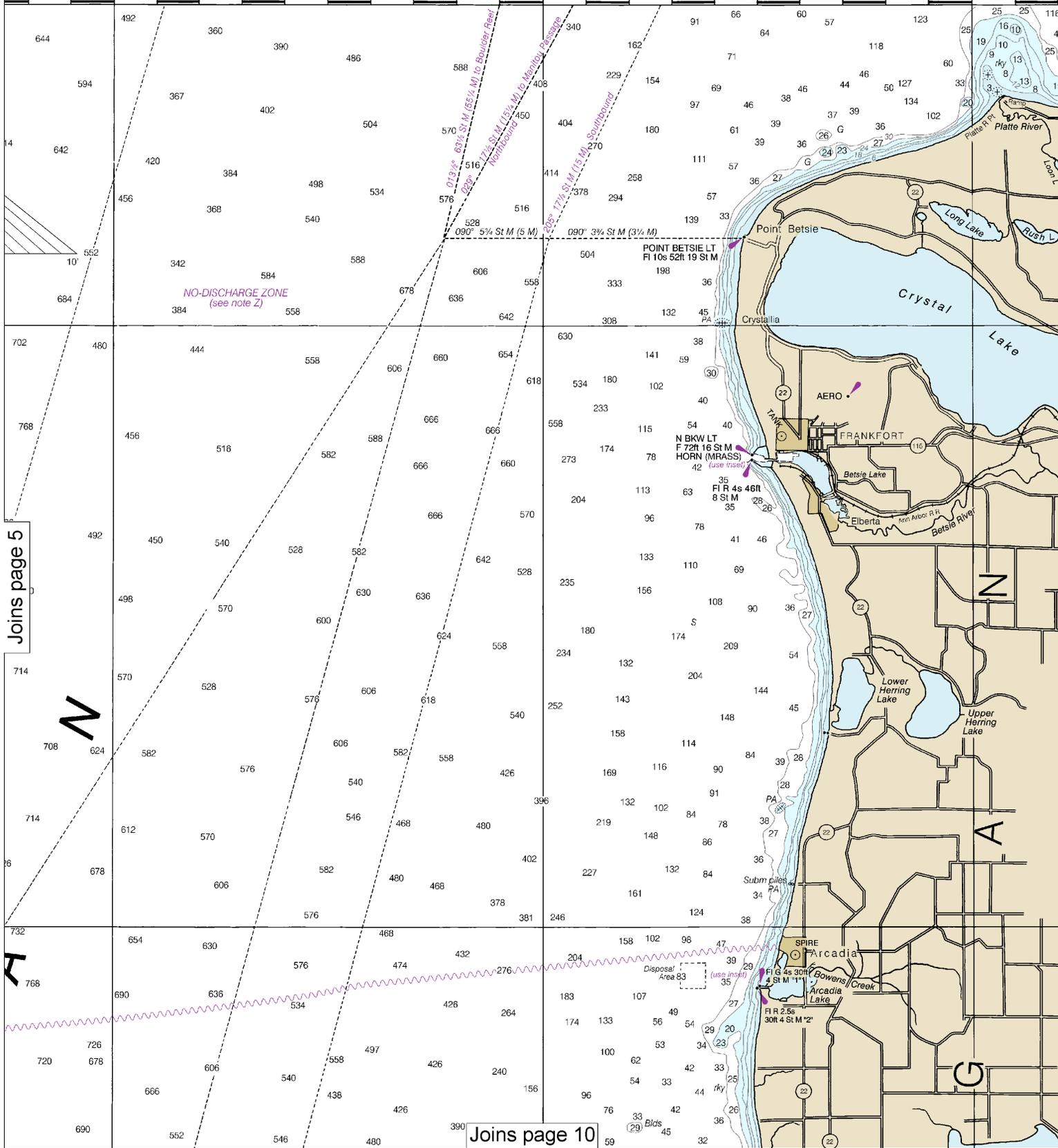
This BookletChart was reduced to 75% of the original chart scale. The new scale is 1:160000. Barscales have also been reduced and are accurate when used to measure distances in this BookletChart.

86°30'

86°20'

CONTINUED ON CHART 14912

86°10'



Joins page 5

Joins page 10



Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

YARDS

See Note on page 5.

STATUTE MILES



86°00'

85°50'



THE NATION'S CHARTMAKER SINCE 1807
 UNITED STATES - GREAT LAKES
 LAKE MICHIGAN - MICHIGAN

STONY LAKE TO POINT BETSIE

Polyconic Projection
 Scale 1:120,000

North American Datum of 1983
 (World Geodetic System 1984)

SOUNDINGS IN FEET

Additional information can be obtained at nauticalcharts.noaa.gov.

NOTES

PLANE OF REFERENCE OF THIS CHART (Low Water Datum).....577.5 ft.
 Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985).
 SAILING DIRECTIONS. Bearings of sailing courses are true and distances given thereon are in statute miles between points of departure.
 AIDS TO NAVIGATION. Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.
 SYMBOLS AND ABBREVIATIONS. For complete list of symbols and abbreviations see Chart No. 1.
 BRIDGE AND OVERHEAD CABLE CLEARANCES. When the water surface is above Low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6.
 AUTHORITIES. Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 6 for important supplemental information.

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

CAUTION

Due to periodic high water conditions in the Great Lakes, some features charted as visible at Low Water Datum may be submerged, particularly in the near shore areas. Mariners should proceed with caution.

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

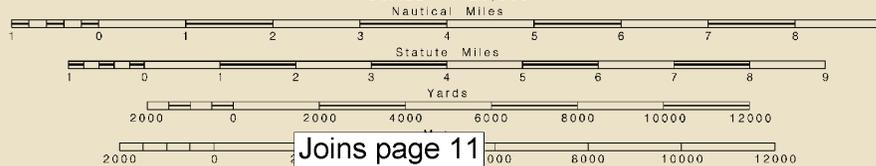
CAUTION

POTABLE WATER INTAKE

Vessels operating in fresh water lakes or rivers shall not discharge sewage, or ballast, or bilge water within such areas adjacent to domestic water intakes as are designated by the Commissioner of Food and Drugs (21 CFR 1250.93). Consult U.S. Coast Pilot 6 for important supplemental information.

Sailing courses and limits indicated in magenta are recommended by the Lake Carriers Association and the Canadian Shipowners Association.

SCALE 1:120,000



NOTE Z
 NO-DISCHARGE ZONE, 40 CFR 140

Michigan waters of Lakes Michigan, Huron, Superior, Erie and St. Clair, all waterways connected thereto, and all inland lakes are designated as a No-Discharge Zone (NDZ). This chart falls entirely within the limits of a No-Discharge Zone (NDZ). Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the waters. Commercial vessel sewage shall include graywater. All vessels with an installed marine sanitation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site: http://www.epa.gov/owow/oceans/regulatory/vessel_sewage/.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 6. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio or at the Office of the District Engineer, Corps of Engineers in Detroit, Michigan.

Refer to charted regulation section numbers.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1902 must be corrected an average of 0.352' southward and 0.684' westward to agree with this chart.

44° 40'

44° 30'

44° 20'

44° 10'

NO-DISCHARGE ZONE
(see note Z)

0321/2 - 1361/2 St. M. (118 1/4 M) from Milwaukee

199° 20' 23" St. M. (101 M) Southbound

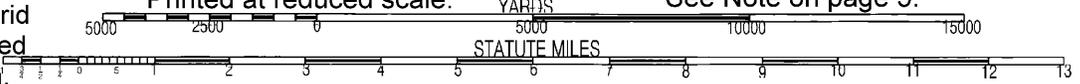
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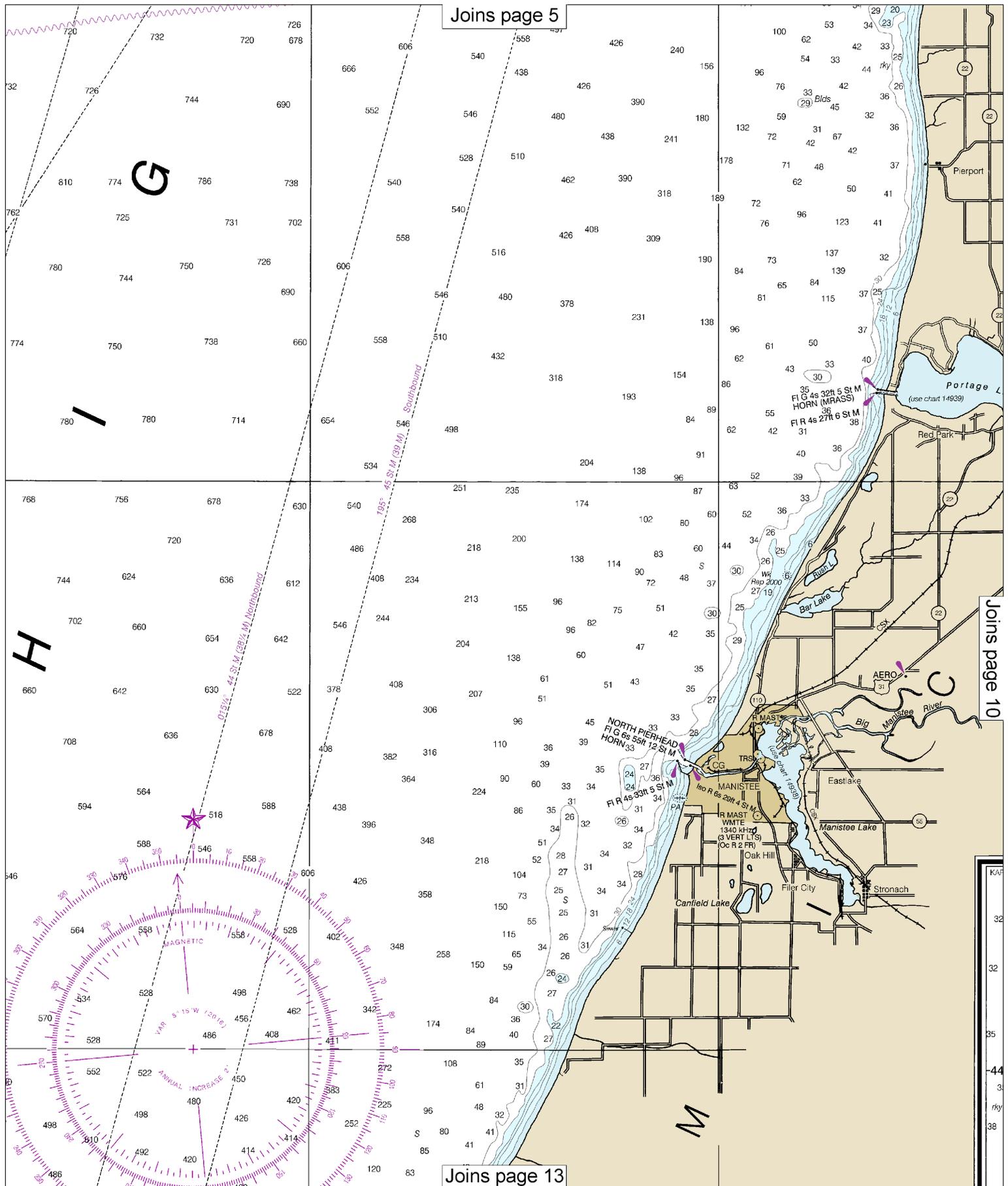


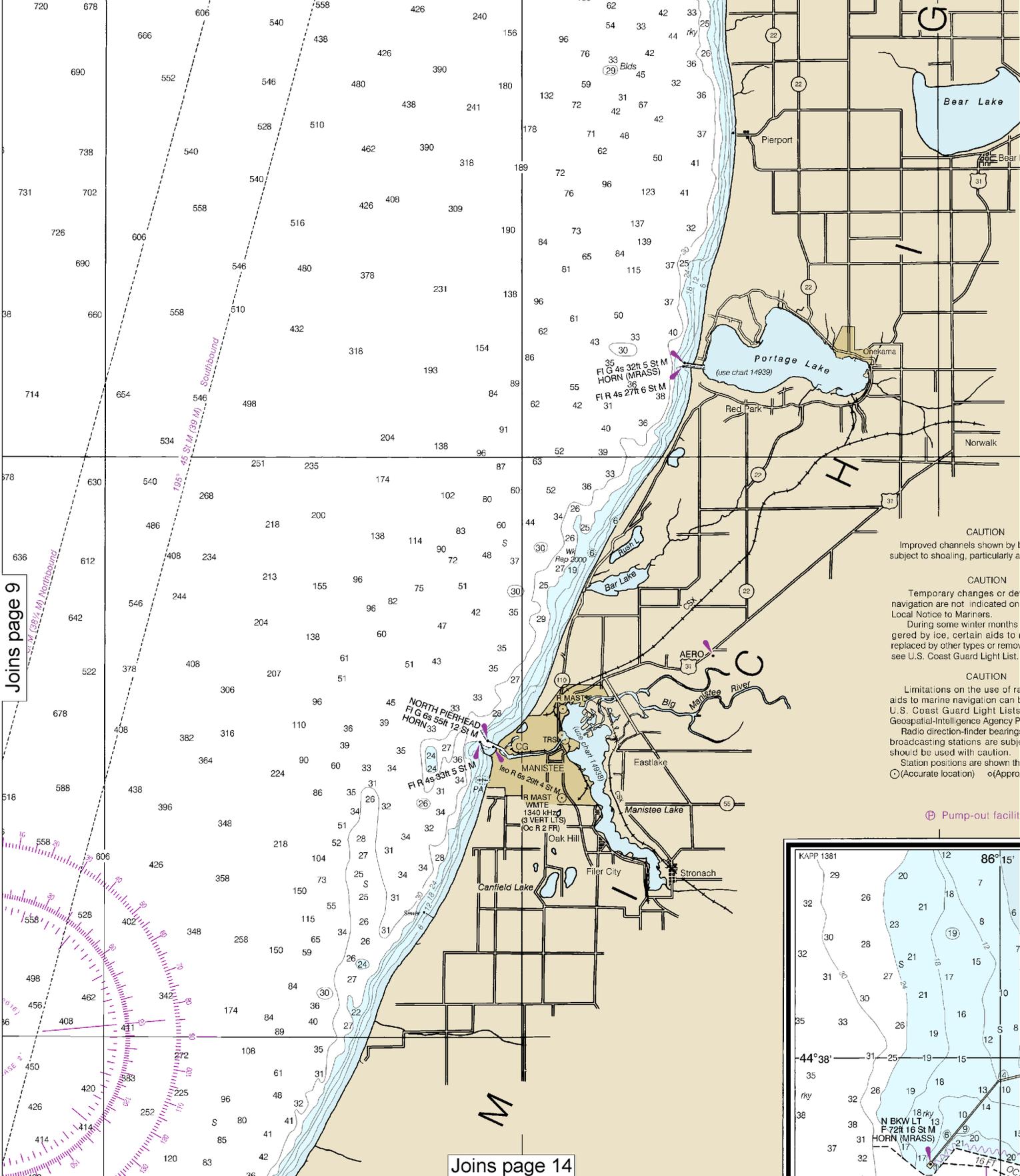
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

See Note on page 5.







Joins page 9

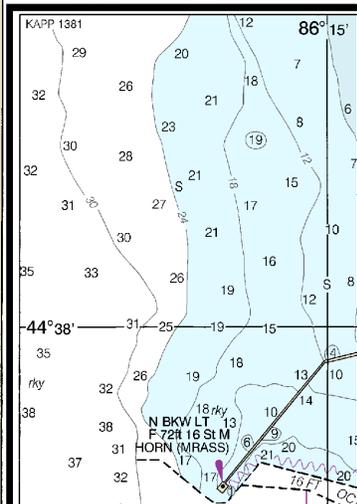
Joins page 14

CAUTION
Improved channels shown by **I** subject to shoaling, particularly at low water.

CAUTION
Temporary changes or deviations of navigation are not indicated on Local Notice to Mariners.
During some winter months, certain aids to navigation may be replaced by other types or removed. See U.S. Coast Guard Light List.

CAUTION
Limitations on the use of radio direction-finder bearings are shown by **R**.
U.S. Coast Guard Light Lists Geospatial-Intelligence Agency Products.
Radio direction-finder bearing broadcasting stations are subject to change without notice. Station positions are shown by **o** (Accurate location) **o** (Approximate location).

P Pump-out facility



10

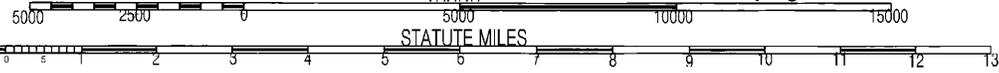
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

YARDS

See Note on page 5.

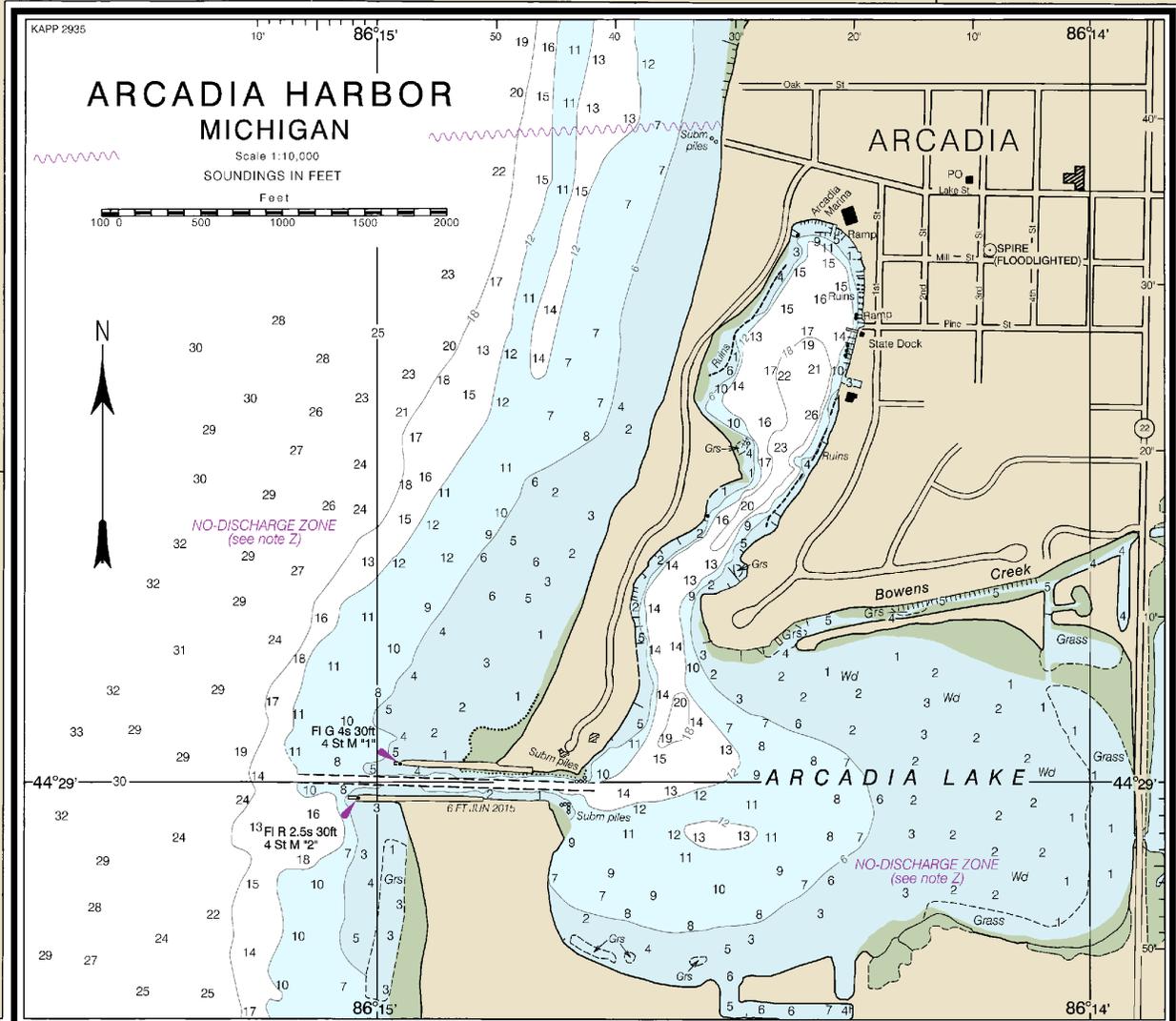
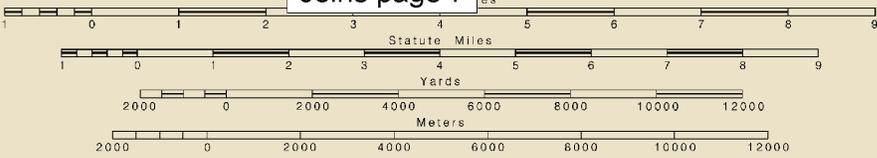
STATUTE MILES



to agree with this chart.

Joins page 7

0,000



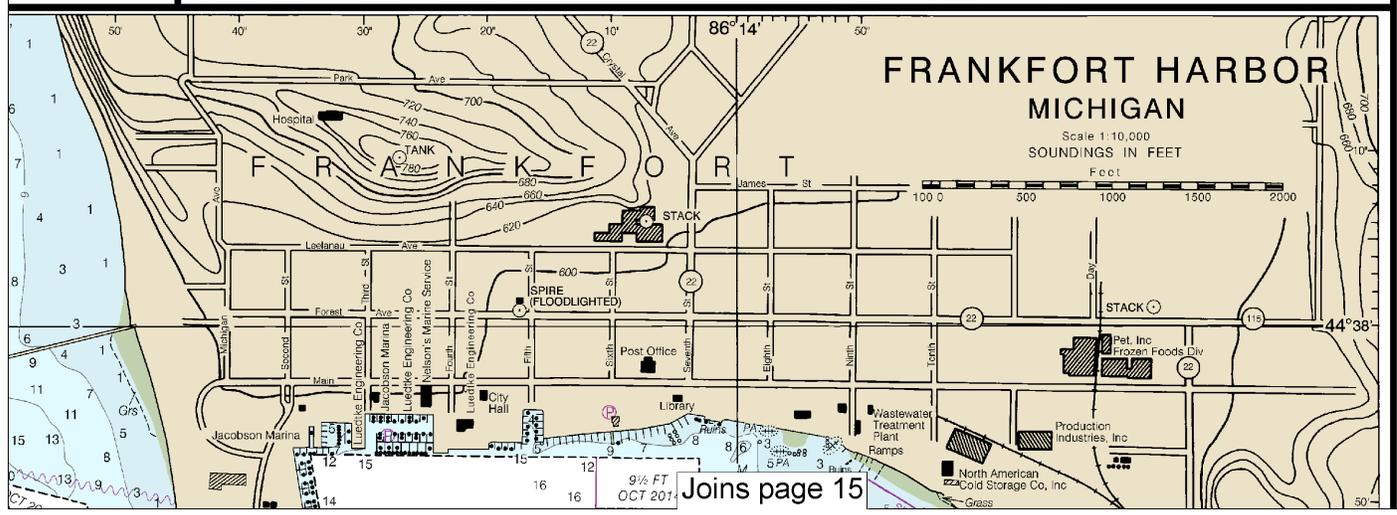
broken lines are at the edges.

fects in aids to on this chart. See is or when endap navigation are oved. For details t.

radio signals as e found in the ts and National Publication 117. gs to commercial oject to error and thus: roximate location)

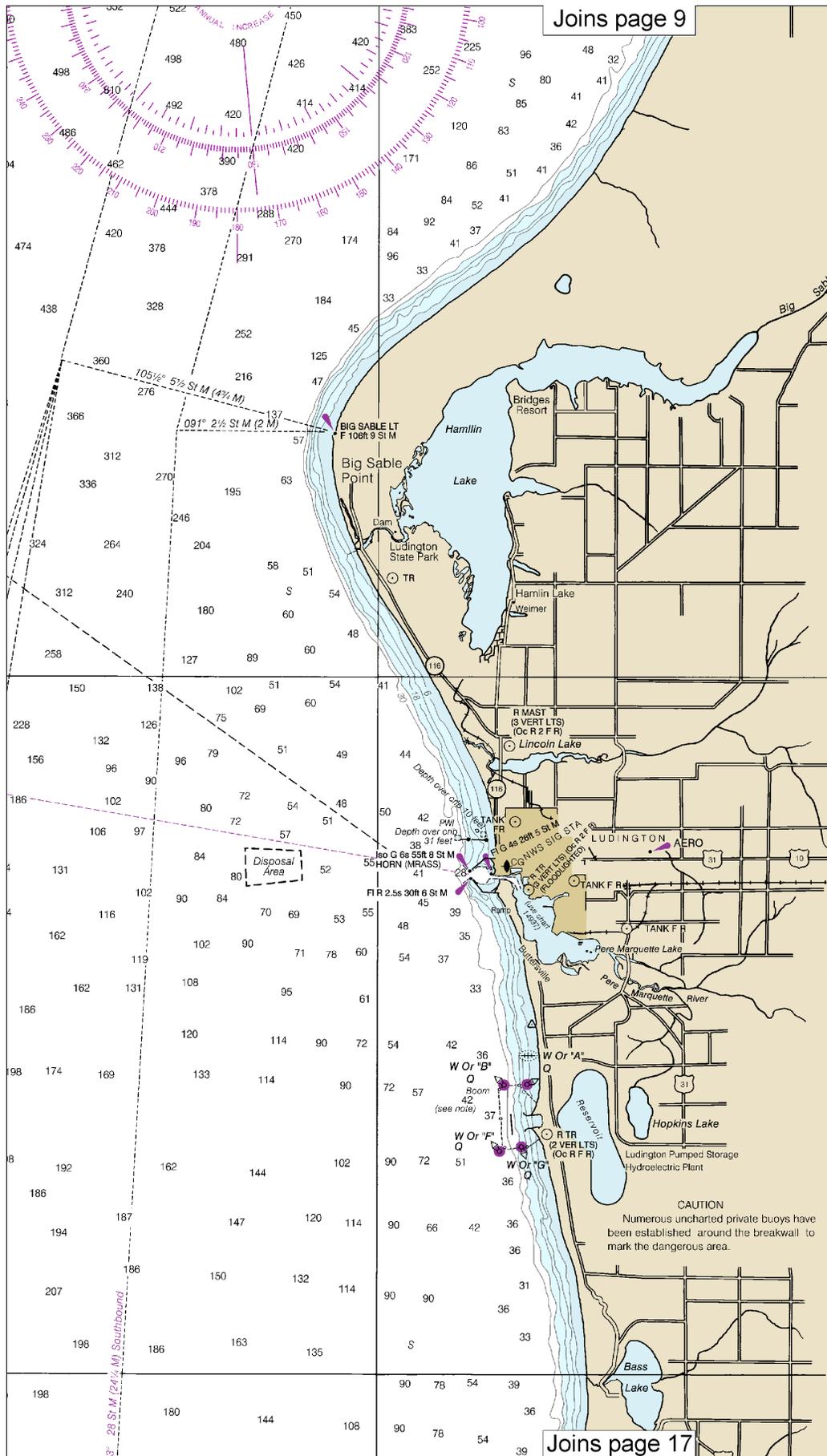
ilities

44° 20'



Joins page 15

44° 10'

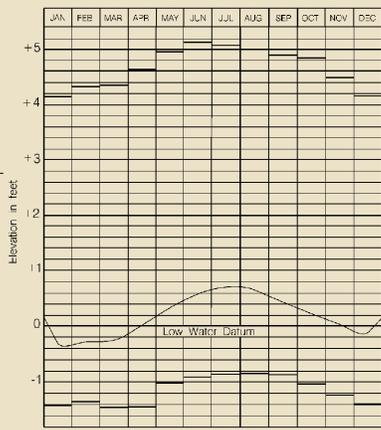


MARINER ACTIVATED SOUND SIGNALS
 Sound signals labeled with (MRASS) require user activation. See USCG Light List.

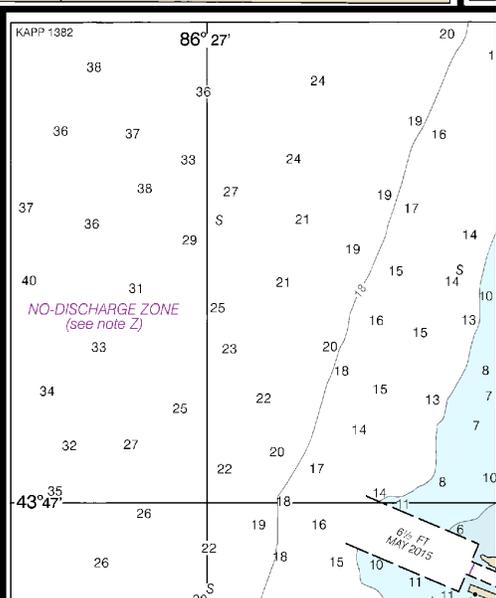
NOAA WEATHER RADIO BROADCASTS
 The NOAA Weather Radio stations listed below provide continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

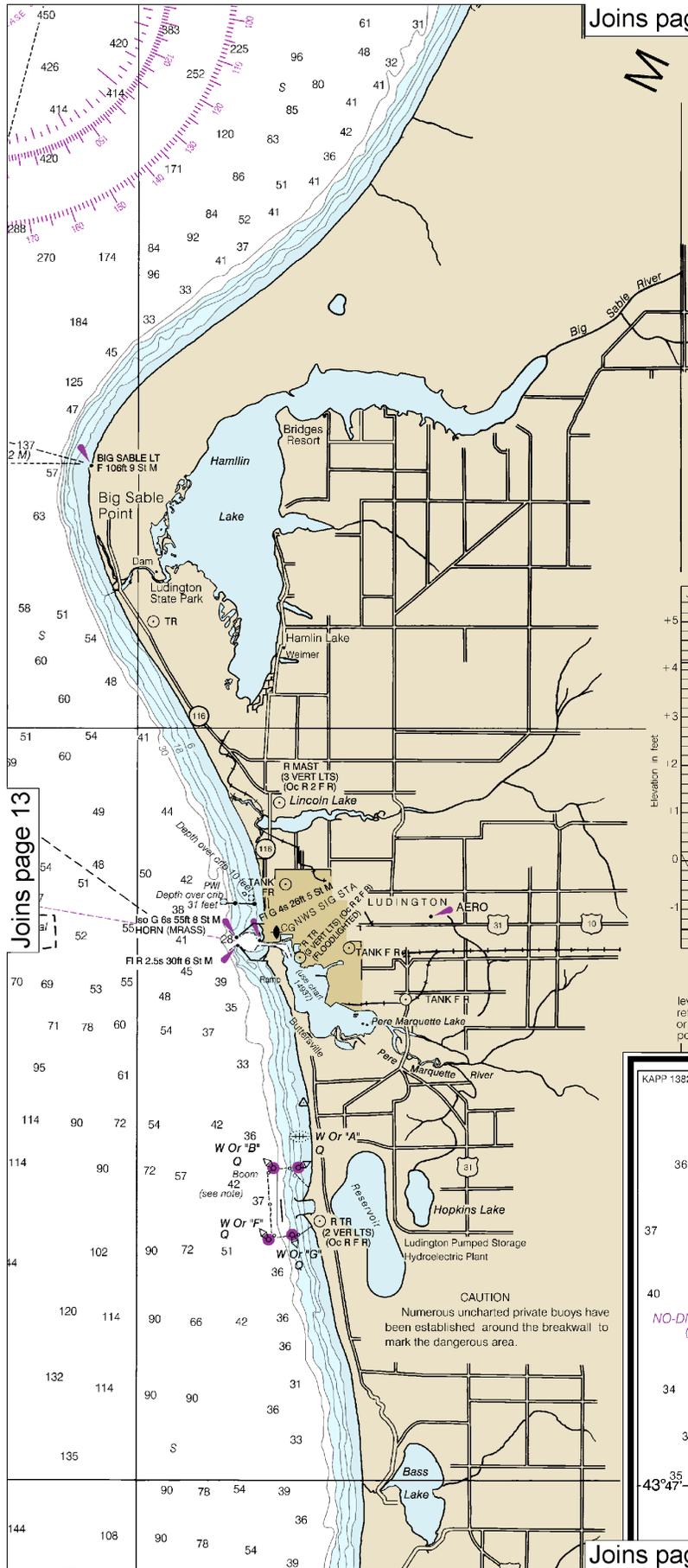
| | | |
|-------------------|--------|-------------|
| Hesperia, MI | WWF-36 | 162.475 MHz |
| Sister Bay, WI | WXN-69 | 162.425 MHz |
| Traverse City, MI | KIH-22 | 162.400 MHz |
| Sheboygan, WI | WWG-91 | 162.425 MHz |

LAKE MICHIGAN - HURON



Average levels (2005-2014)
 Extreme Levels (period of record)
 Low Water Datum, which is the plane of reference for the levels shown on the above hydrograph, is also the plane of reference for the charted depths. If the lake level is above or below Low Water Datum, the existing depths are correspondingly greater or lesser than the charted depths.



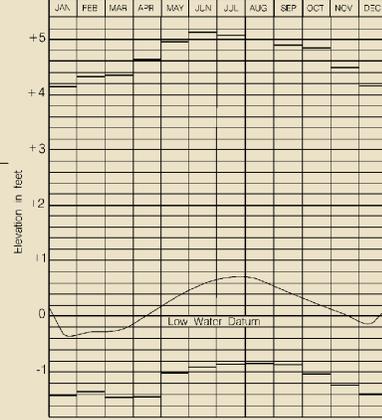


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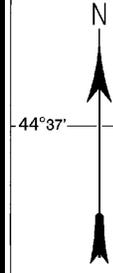
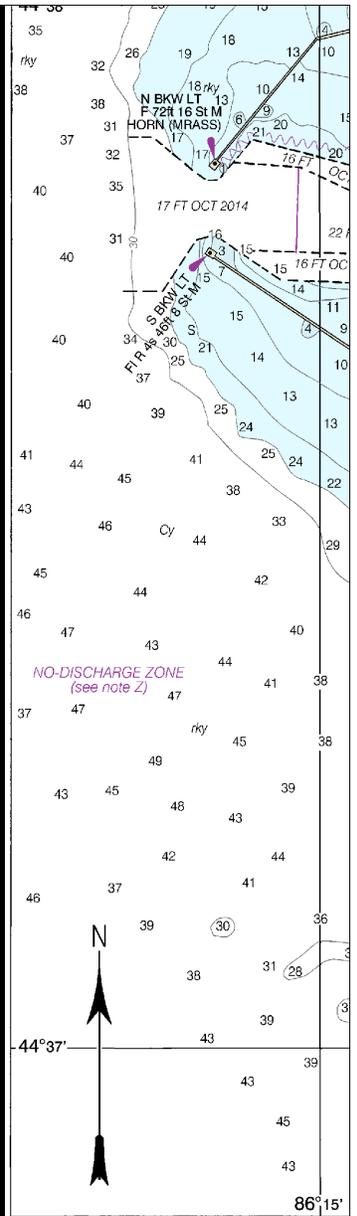
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- Sister Bay, WI WXN-69 162.425 MHz
- Traverse City, MI KIH-22 162.400 MHz
- Sheboygan, WI WWG-91 162.425 MHz

LAKE MICHIGAN - HURON

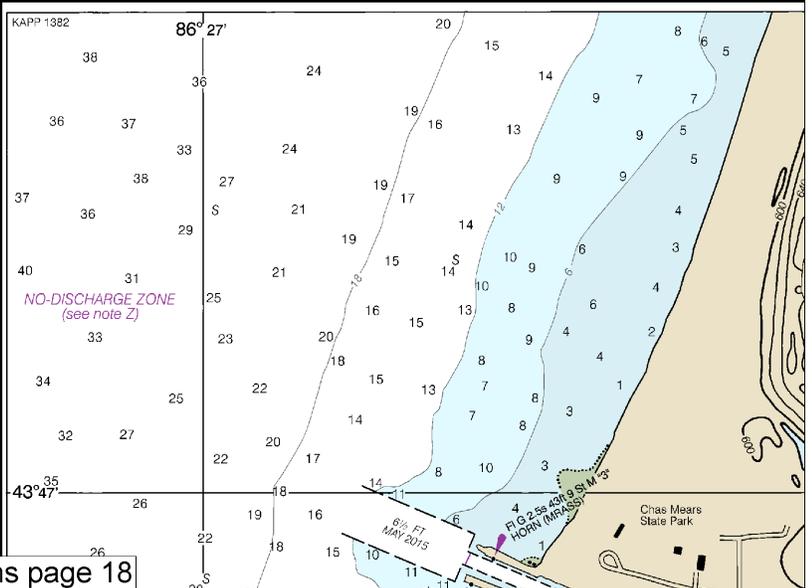


Average Levels (2005-2014)
 Extreme Levels (period of record)
 Low Water Datum, which is the plane of reference for the levels shown on the above hydrograph, is also the plane of reference for the charted depths. If the lake level is above or below Low Water Datum, the existing depths are correspondingly greater or lesser than the charted depths.

Joins page 13



86°15'

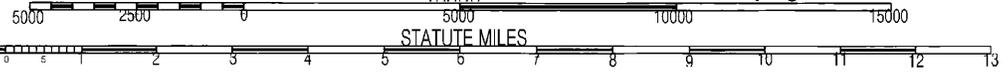


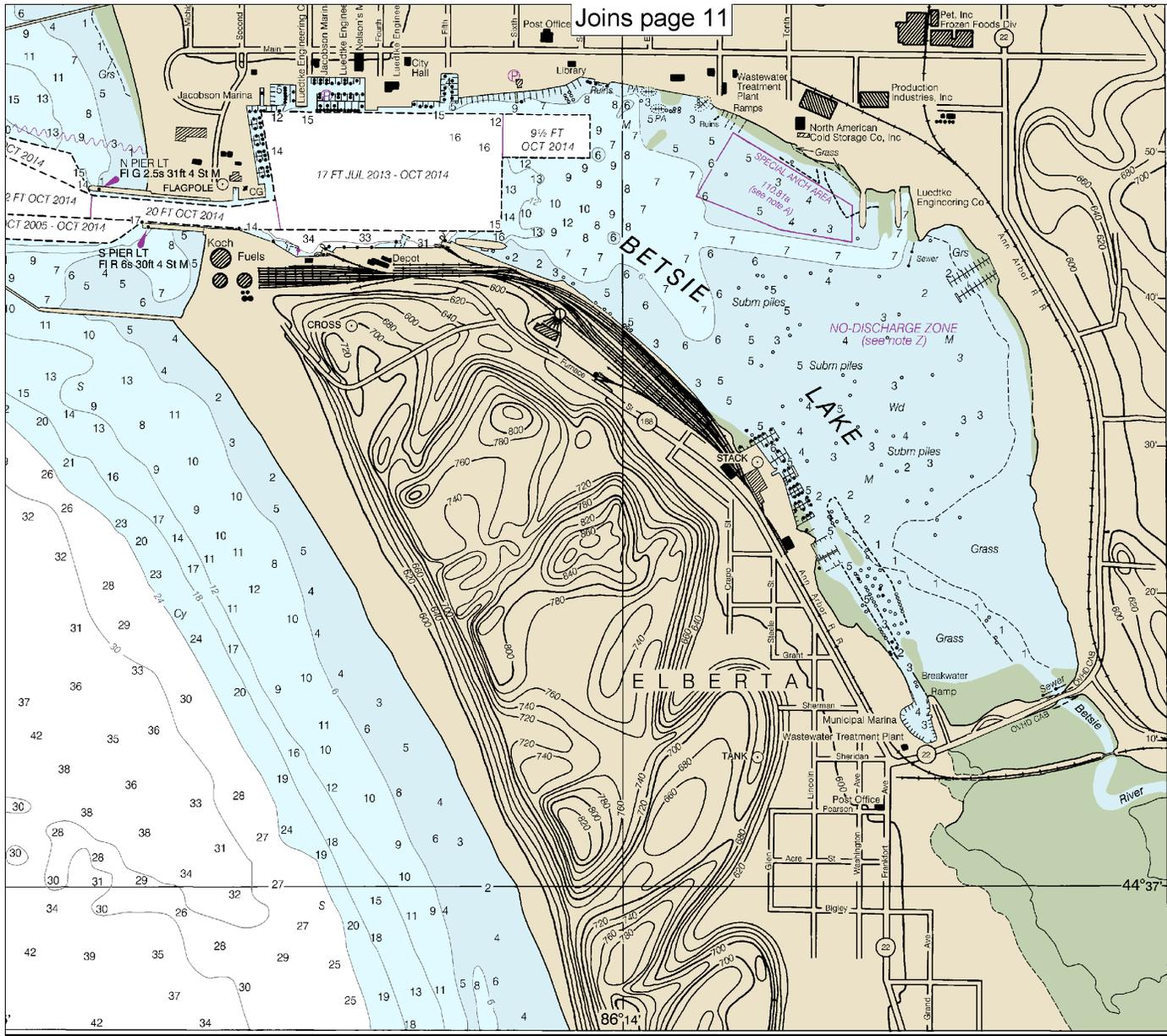
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

YARDS
 STATUTE MILES

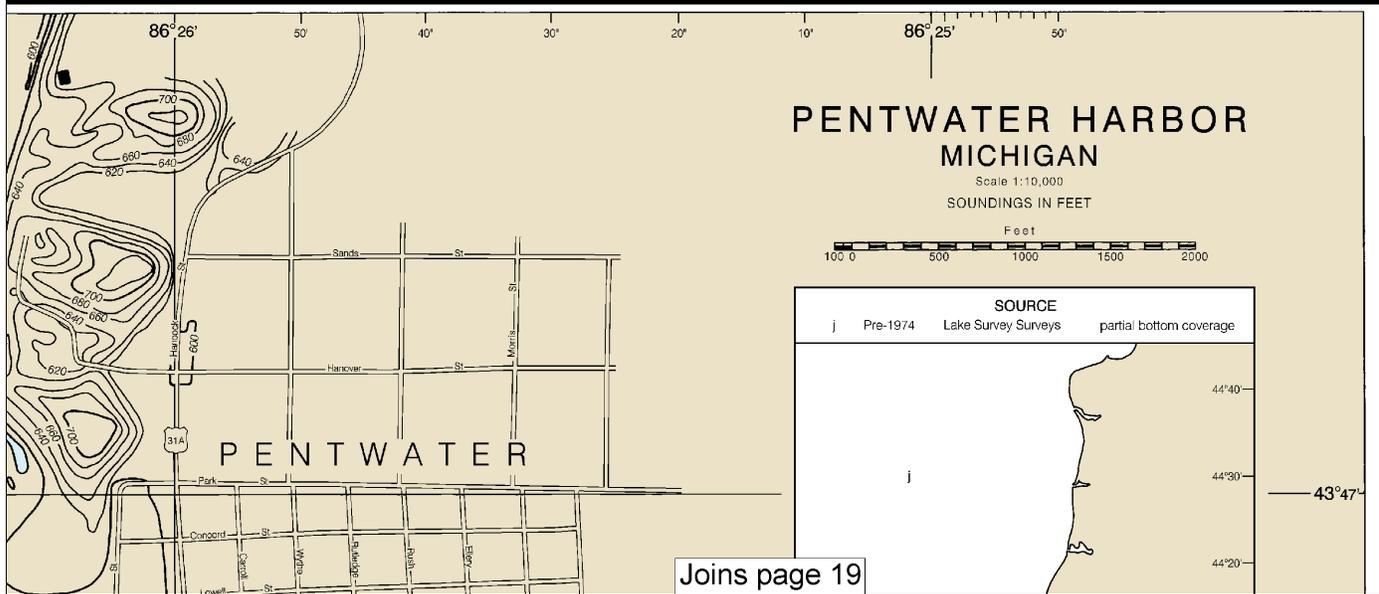
See Note on page 5.





44° 00'

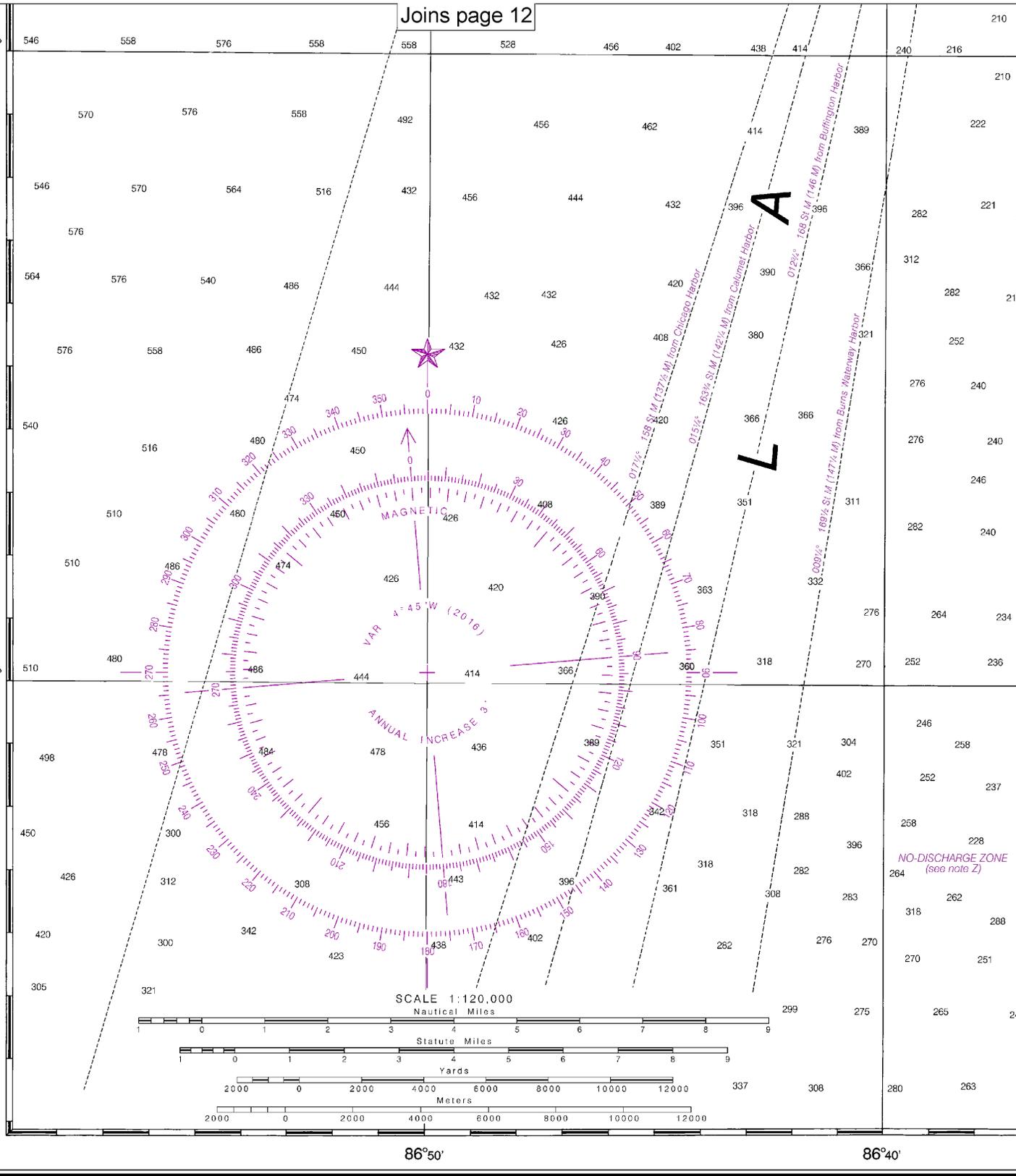
44° 37'



43° 50'

43° 50'

43° 40'



28th Ed., Feb. 2016

14907

Last Correction: 2/2/2016. Cleared through:
LNM: 4616 (11/15/2016), NM: 4616 (11/12/2016), CHS: 1016 (10/28/2016)

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

SOUNDING

16

Note: Chart grid lines are aligned with true north.

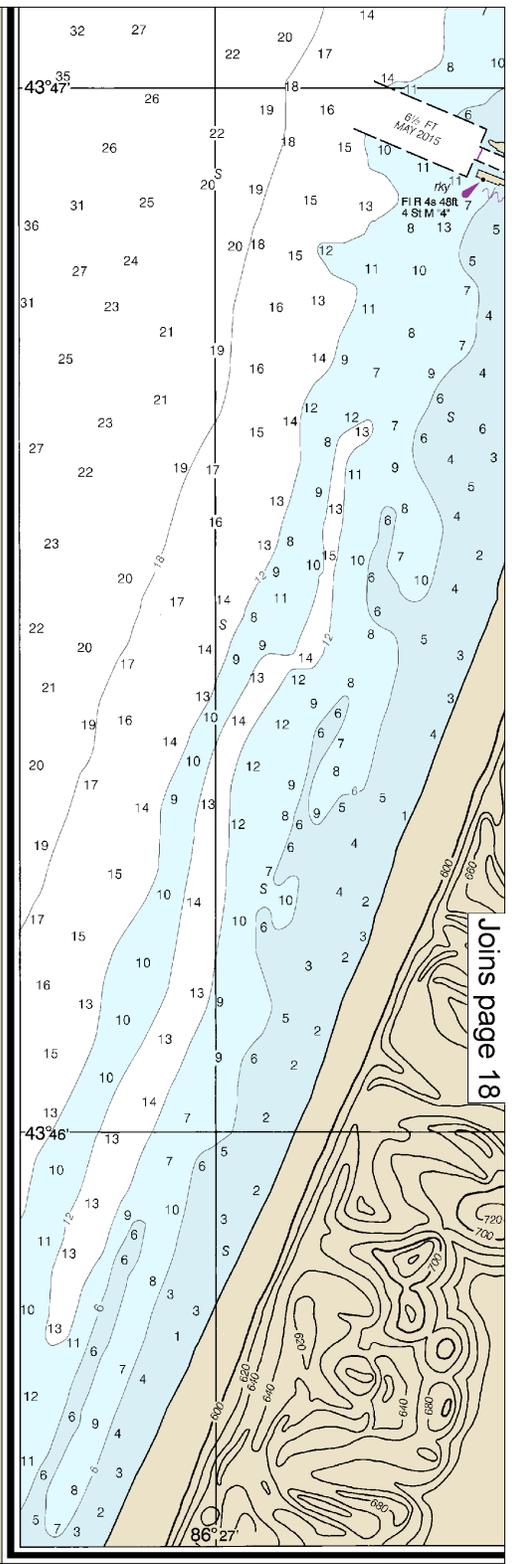
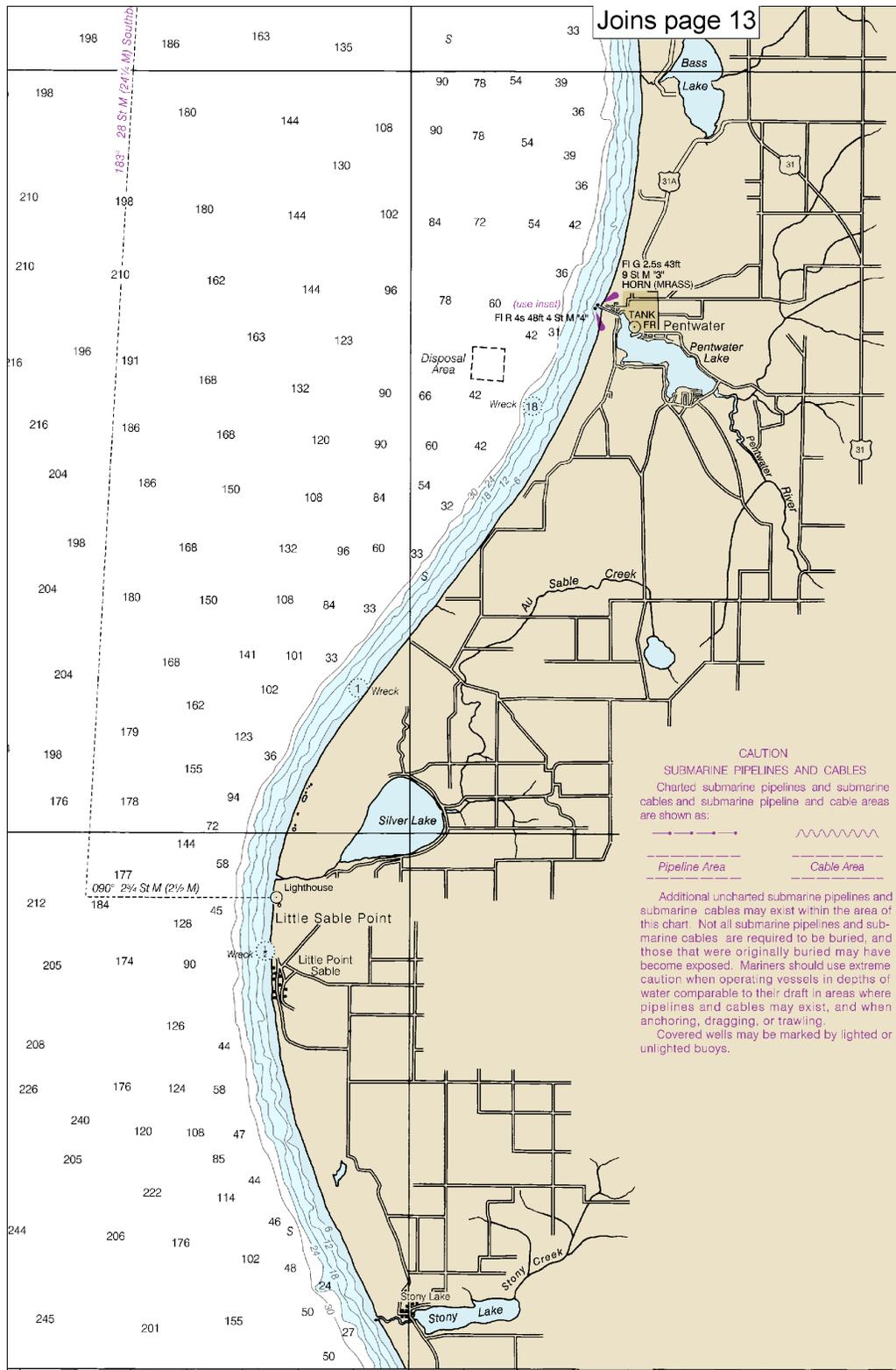
Printed at reduced scale.

YARDS

See Note on page 5.

STATUTE MILES





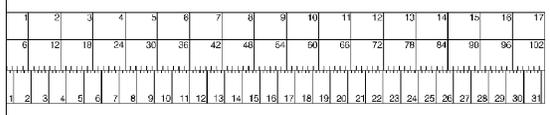
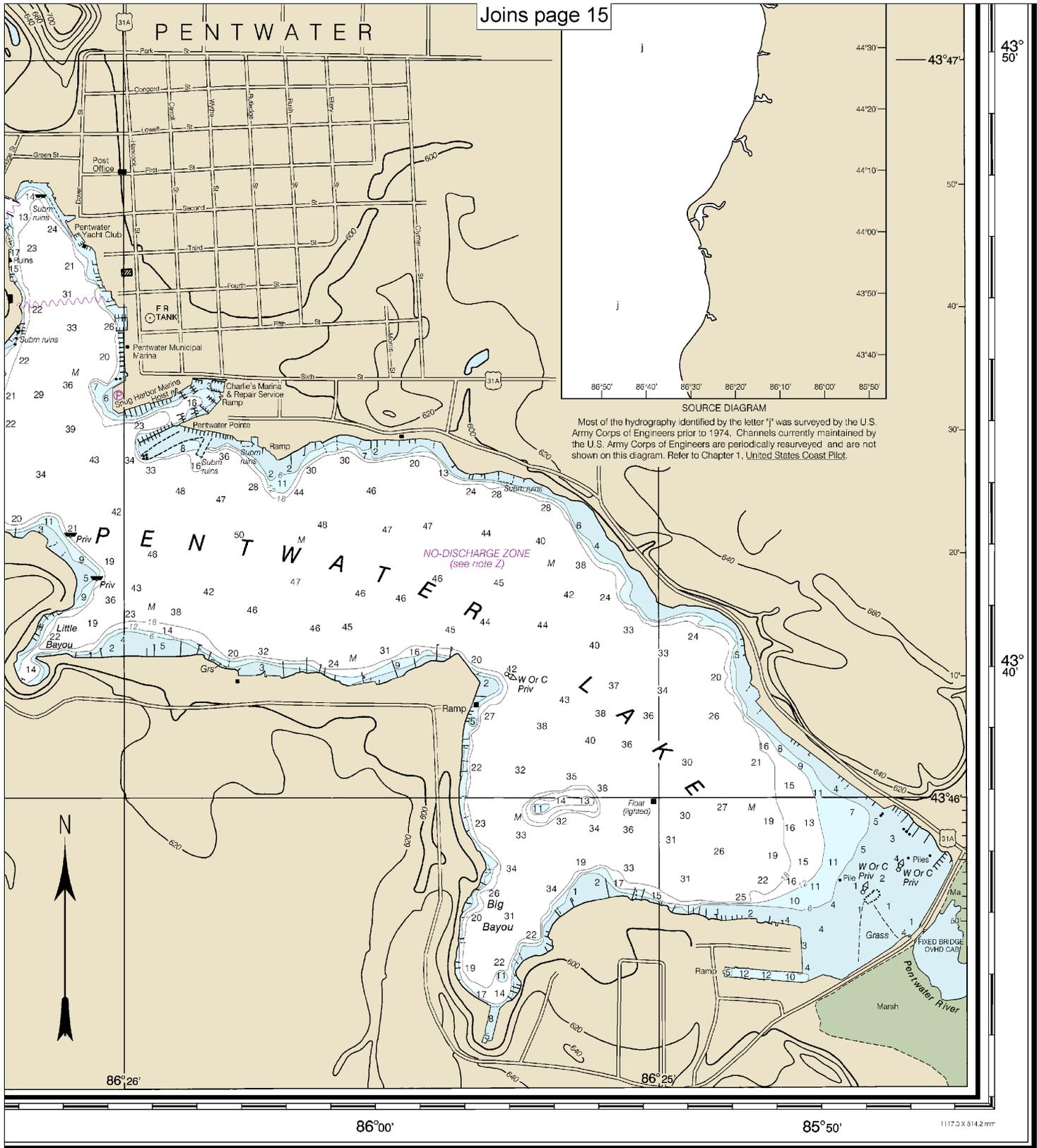
JOINS CHART 14906

86°30'

86°20'

INGS IN FEET

Published at Washington, D.C.
 U.S. DEPARTMENT OF COMMERCE
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE
 COAST SURVEY



Stony Lake to Point Betsie
SOUNDINGS IN FEET - SCALE 1:120,000

14907



EMERGENCY INFORMATION

VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.

Channel 9 – Communications between boats and ship-to-coast.

Channel 13 – Navigation purposes at bridges, locks, and harbors.

Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.

Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.

Channels 68, 69, 71, 72 and 78A – Recreational boat channels.

Getting and Giving Help – Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

Distress Call Procedures

- Make sure radio is on.
- Select Channel 16.
- Press/Hold the transmit button.
- Clearly say: "MAYDAY, MAYDAY, MAYDAY."
- Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
- Release transmit button.
- Wait for 10 seconds — If no response Repeat MAYDAY call.

HAVE ALL PERSONS PUT ON LIFE JACKETS!



NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.

<http://www.nws.noaa.gov/nwr/>

Quick References

- Nautical chart related products and information — <http://www.nauticalcharts.noaa.gov>
- Interactive chart catalog — <http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml>
- Report a chart discrepancy — <http://ocsddata.ncd.noaa.gov/idrs/discrepancy.aspx>
- Chart and chart related inquiries and comments — <http://ocsddata.ncd.noaa.gov/idrs/inquiry.aspx?frompage=ContactUs>
- Chart updates (LNM and NM corrections) — http://www.nauticalcharts.noaa.gov/mcd/updates/LNM_NM.html
- Coast Pilot online — <http://www.nauticalcharts.noaa.gov/nsd/cpdownload.htm>
- Tides and Currents — <http://tidesandcurrents.noaa.gov>
- Marine Forecasts — <http://www.nws.noaa.gov/om/marine/home.htm>
- National Data Buoy Center — <http://www.ndbc.noaa.gov/>
- NowCoast web portal for coastal conditions — <http://www.nowcoast.noaa.gov/>
- National Weather Service — <http://www.weather.gov/>
- National Hurricane Center — <http://www.nhc.noaa.gov/>
- Pacific Tsunami Warning Center — <http://ptwc.weather.gov/>
- Contact Us — <http://www.nauticalcharts.noaa.gov/staff/contact.htm>



— For the latest news from Coast Survey, follow @NOAAcharts



This Booklet chart has been designed for duplex printing (printed on front and back of one sheet). If a duplex option is not available on your printer, you may print each sheet and arrange them back-to-back to allow for the proper layout when viewing.