

BookletChart™



Makushin Bay

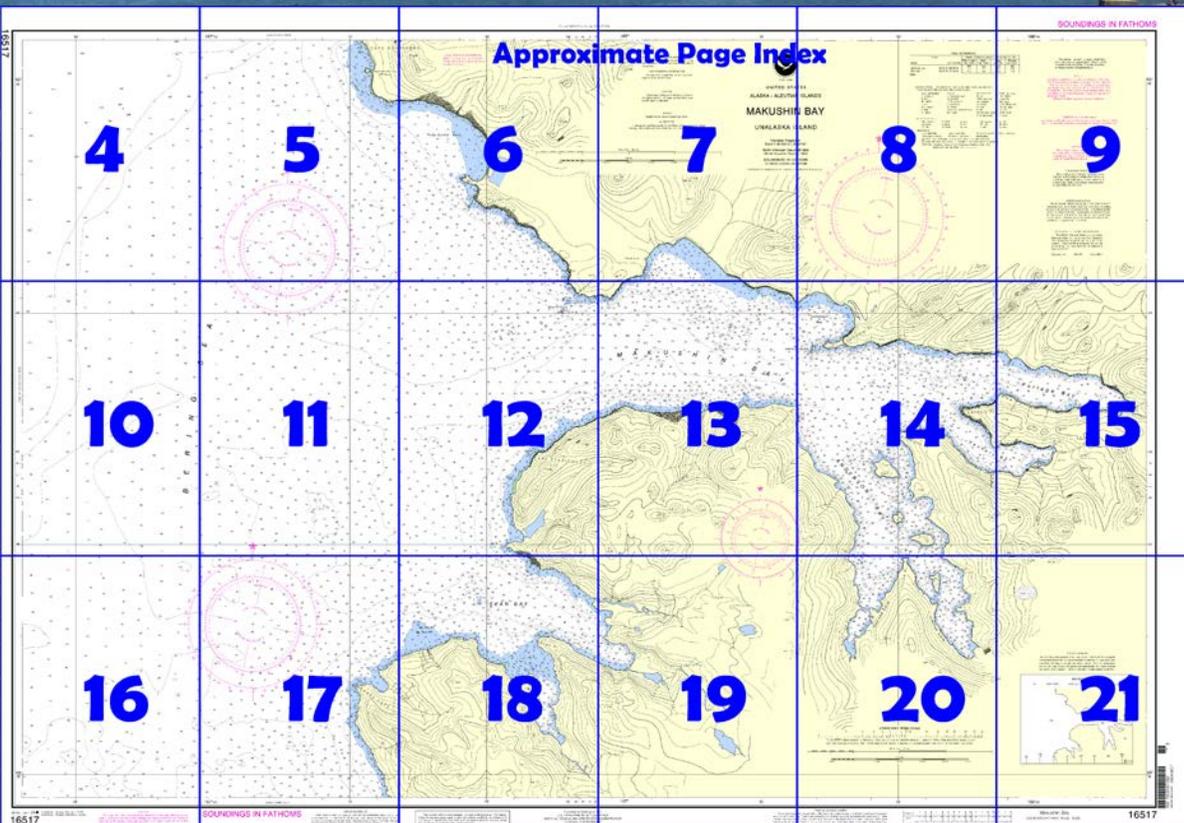
NOAA Chart 16517

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.

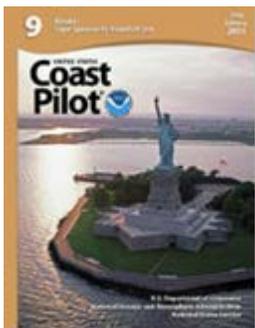
Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at <http://www.NauticalCharts.NOAA.gov>.

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=16517>.



(Selected Excerpts from Coast Pilot)

Volcano Bay, immediately S and E of Cape Kovrizhka, is small and open to the W and S, forming a fair anchorage for E weather. However, strong winds are to be expected, and with winds shifting to the S and W the bay becomes quite rough and dangerous for small craft.

Makushin Bay, indenting the W side of Unalaska Island, is 2.5 miles wide at the entrance and extends in an E direction for 5 miles to the entrance of Anderson, Cannery,

and Portage Bays.

Makushin Point, on the N side of the entrance to Makushin Bay, rises to 762 feet and is grass covered. It is made prominent by a number of small

knolls scattered over its top.

The N side of the entrance to Makushin Bay is marked by **Rock Islet**, 104 feet high, 0.5 mile SW of Makushin Point, with several rocks between it and the point. There are no known dangers if the S shore is given a clearance of at least 0.3 mile. An abrupt shoal, with least depth of 16 fathoms is 1.2 miles SW from Rock Islet.

A prevailing current sets in a N direction off Makushin Bay. The combined effect of the currents, including tidal currents, and winds causes a very noticeable choppy sea with attending tide rips across the entrance of the bay.

Vessels have anchored in 15 fathoms, mud bottom, about 0.3 mile off the beach in the cove E of Makushin Point with **Priest Rock**, 80 feet high just S of the abandoned village, bearing **230°**. This anchorage is good for W and N weather, but with S weather considerable swell makes in, and in E weather, it becomes quite rough.

Humpback Bay, on the NE side of Makushin Bay, offers good anchorage for large vessels in all but W weather. Enter the bay from the SW on a course of 055°, keeping Cathedral Rocks about 600 yards to starboard. Anchorage can be had in 25 to 47 fathoms, mud bottom.

Anderson Bay, the S arm of Makushin Bay, affords several good anchorages of moderate size and at least one anchorage for one or more larger ships. A gravel spit, forming **Tarasof Point**, on the W side of the entrance, is a distinctive feature. The bay extends about 6 miles in a SE direction and terminates in two arms, **Naginak Cove** on the W and **Udamak Cove** on the E, with wedge-shaped **Iksiak Point** between them. Four well-rounded, grass-covered islands are in the E half of the bay.

These islands are well apart from one another; **Peter Island**, the northernmost, is near **Anderson Point**, the E entrance point of the bay, and the southernmost is well inside the entrance to Udamak Cove. Anchorage in Anderson Bay is in 20 fathoms, mud bottom, in a bight between the second island from the N and the main shore. The anchorage in Naginak Cove is in a mud bottom N of the narrow pass formed by two opposing points. The pass is about 1.2 miles from Iksiak Point, and is obstructed by a dangerous 1½-fathom shoal in midchannel. Anchorage in Udamak Cove is E of the fourth island in 22 fathoms, mud bottom, on a ridge that extends from the middle of the island to the main E shore.

Cannery Bay, 1 mile to the E of Anderson Bay, extends about 3 miles in a SE and E direction. Near the head and on the S side of the bay is an abandoned wharf and cannery. The only anchorage in the bay is at the E end, about 0.4 mile NE of the abandoned cannery in 15 to 17 fathoms, soft bottom.

Portage Bay extends about 4 miles in an E direction from **Cannery Point**. Two shoals, with least depths of 5¾ and 6½ fathoms, are almost in midentrance. Indifferent anchorage for small vessels may be had in 19 fathoms, sticky bottom, midway between the N shore and the 1½-fathom shoal and rocks near the head of the bay.

Cape Starichkof, forming the S entrance point to Makushin Bay, is marked by an off-lying rock 27 feet high. Numerous rocks, covered and awash, are found along the shore in this vicinity, but are not known to extend more than 0.3 mile from the beach. The mountains rise abruptly from the beach in this vicinity to 1,600 feet.

Skani Bay, on the W side of Unalaska Island, has its NE entrance point at the ledge 2 miles S of Cape Starichkof. It is 2 miles wide at the entrance and extends about 4 miles in a SE direction.

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

RCC Juneau Commander
17th CG District (907) 463-2000
Juneau, Alaska

Table of Selected Chart Notes

corrected through NM Jan

HEIGHTS
Heights in feet above Mean High Water.

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Notice to Mariners.

Mercator Projection
Scale 1:40,000 at Lat. 53°43'
North American Datum of 1983
(World Geodetic System 1984)
SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER

LOCAL MAGNETIC DISTURBANCE
Differences of as much as 3° from the normal variation have been observed at Cape Kovrizhka.

AIDS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

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.

POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-6802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

NOTE A
Navigation regulations are published in Chapter 2, U.S. Coast Pilot 9. 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, 17th Coast Guard District in Juneau, Alaska, or at the Office of the District Engineer, Corps of Engineers in Anchorage, Alaska.
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 of 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 3.076" southward and 6.761" westward to agree with this chart.

The contour lines are hill shapes, sketched to afford the navigator a generalized indication of the character of the land forms. They should not be relied upon as lines of equal elevation.

IS **UPDATING SERVICE**
FOR THIS CHART, a listing of NOTICE TO MARINER subsequent to the NM corrected through date shown in corner, is available from the Chief, Marine Chart Division, Ocean Service, NOAA, Silver Spring, Maryland 20910

AUTHORITIES
Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the U.S. Coast Guard.

COLREGS, 80.1705 (see note A)
International Regulations for Preventing Collisions at Sea, 1972
The entire area of this chart falls seaward of the COLREGS Demarcation Line.

ABBREVIATIONS (For complete list of Symbols and Abbreviations, see Chart No. 1.)
Aids to Navigation (lights are white unless otherwise indicated):

AERO aeronautical	G green	Mo morse code	R TR radio tower
A/ alternating	IQ interrupted quick	N nun	Rot rotating
B black	Isi isophase	OBSC obscured	s seconds
Bn beacon	LT lighthouse	Oc occulting	SEC sector
C can	M nautical mile	Or orange	St M statute miles
DA diaphone	m minutes	Q quick	VQ very quick
F fixed	MICRO TR microwave tower	R red	W white
Fl flashing	Mkr marker	Ra Ref radar reflector	WHIS whistle
		R Bn radiobeacon	Y yellow

Bottom characteristics:

Bds boulders	Co coral	gy gray	Oys oysters	so soft
bk broken	G gravel	h hard	Rk rock	Sh shells
Cy clay	Grs grass	M mud	S sand	sy sticky

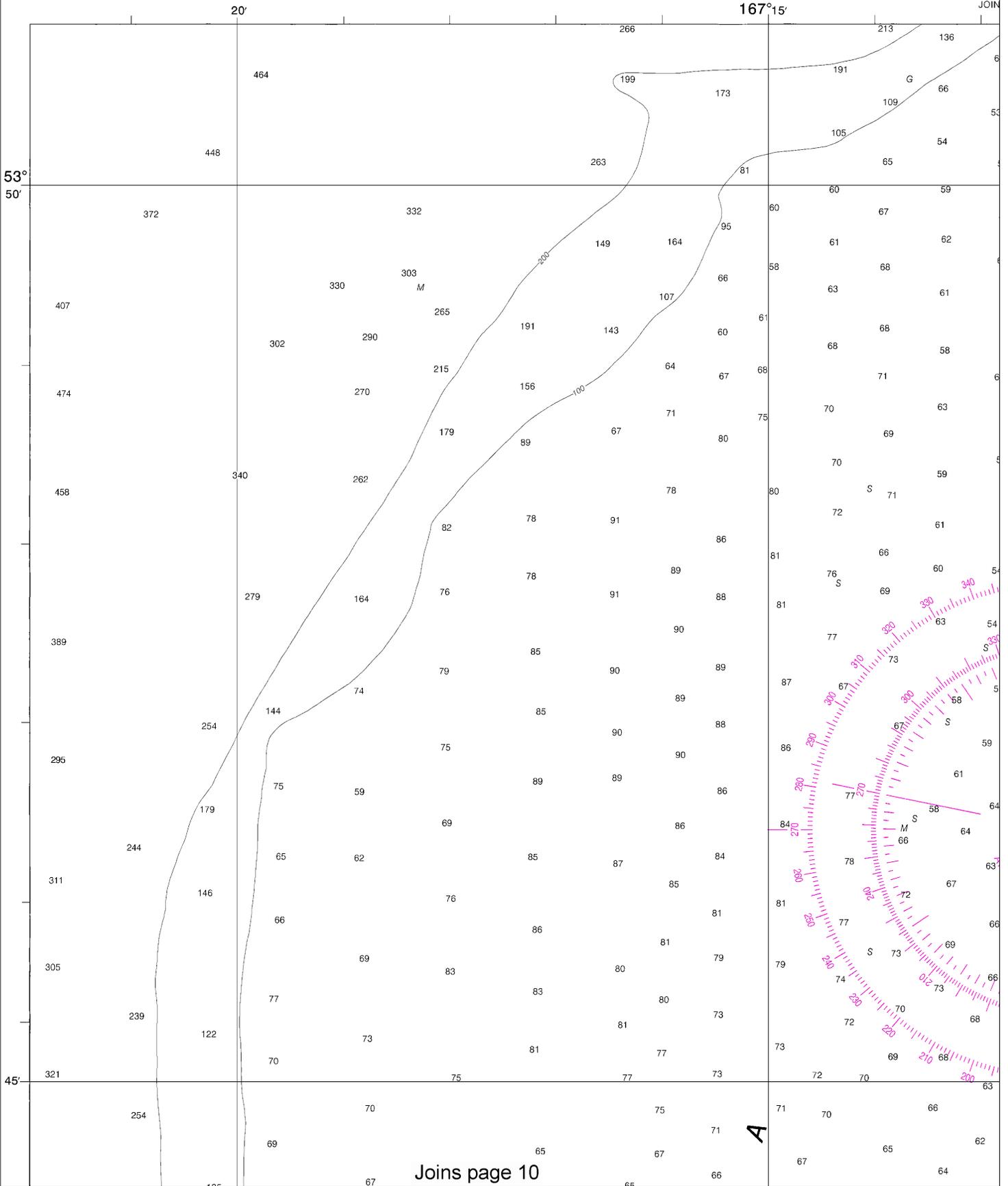
Miscellaneous:

AUTH authorized	Obstn obstruction	PD position doubtful	Subm submerged
ED existence doubtful	PA position approximate	Rep reported	

(1) Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in feet above datum of soundings.
COLREGS: International Regulations for Preventing Collisions at Sea, 1972.
Demarcation lines are shown thus: - - - - -

TIDAL INFORMATION					
Name	Place (LAT/LONG)	Height referred to datum of soundings (ML)			
		Mean Higher High Water	Mean High Water	Mean Low Water	Ext Low
Anderson Bay	(53°41'N/ 166°50'W)	feet 4.0	feet 3.7	feet 1.3	f
Chan Bay	(53°37'N/ 167°03'W)	4.0	3.6	1.3	-
(03)					

16517



Joins page 10

A

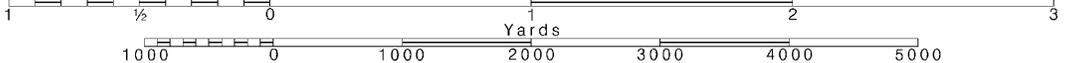
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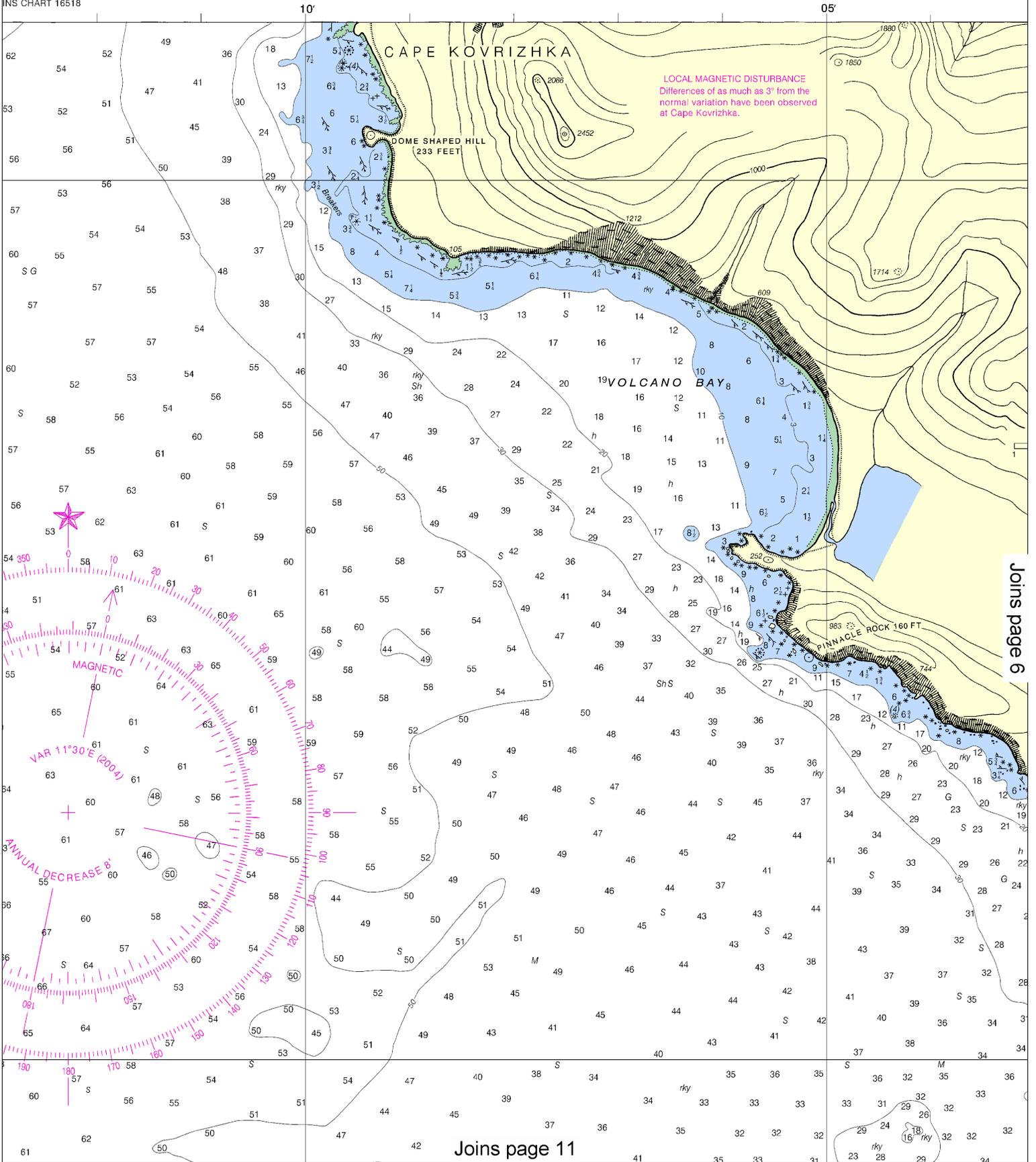
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:40,000
Nautical Miles

See Note on page 5.



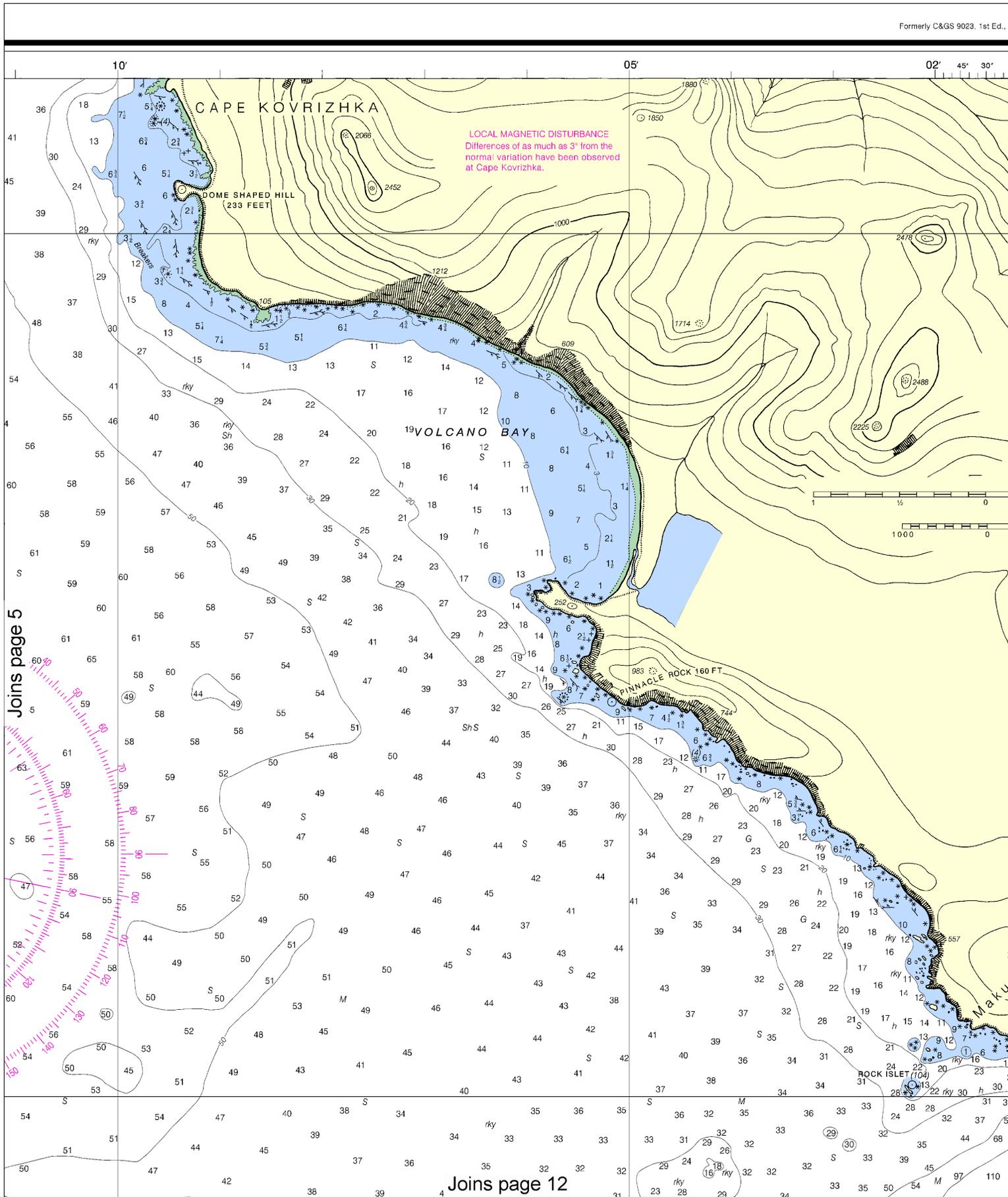


Joins page 6

Joins page 11

This BookletChart was reduced to 75% of the original chart scale.
 The new scale is 1:53333. Barscales have also been reduced and
 are accurate when used to measure distances in this BookletChart.





Joins page 5

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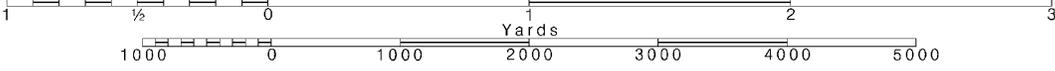


Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:40,000
Nautical Miles

See Note on page 5.



15° 01' 167° 55'

AIDS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

SUPPLEMENTAL INFORMATION
Consult U.S. Coast Pilot 9 for important supplemental information.

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

HEIGHTS
Heights in feet above Mean High Water.

AUTHORITIES
Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the U.S. Coast Guard.



UNITED STATES
ALASKA - ALEUTIAN ISLANDS
MAKUSHIN BAY
UNALASKA ISLAND

Mercator Projection
Scale 1:40,000 at Lat. 53°43'

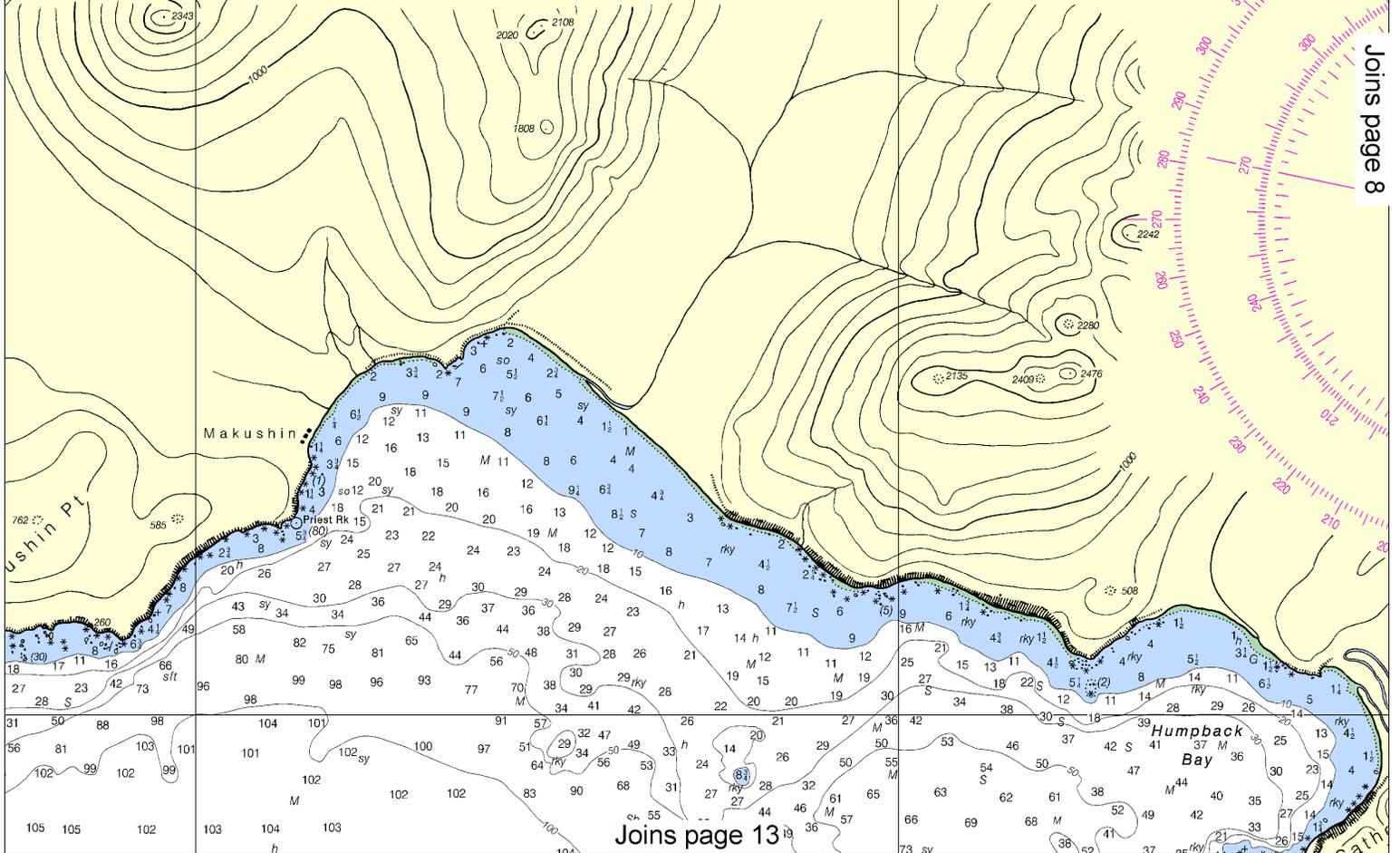
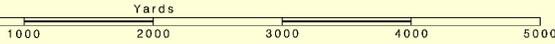
North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER

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

Nautical Miles

Yards



Joins page 8

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55'

50'

AIDS TO NAVIGATION
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SUPPLEMENTAL INFORMATION
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UNITED STATES
ALASKA - ALEUTIAN ISLANDS

MAKUSHIN BAY

UNALASKA ISLAND

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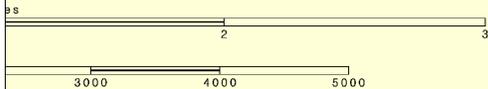
AUTHORITIES
Bathymetry and topography by the National Ocean Service, Coast Survey, with additional data from the U.S. Coast Guard.

Mercator Projection
Scale 1:40,000 at Lat. 53°43'

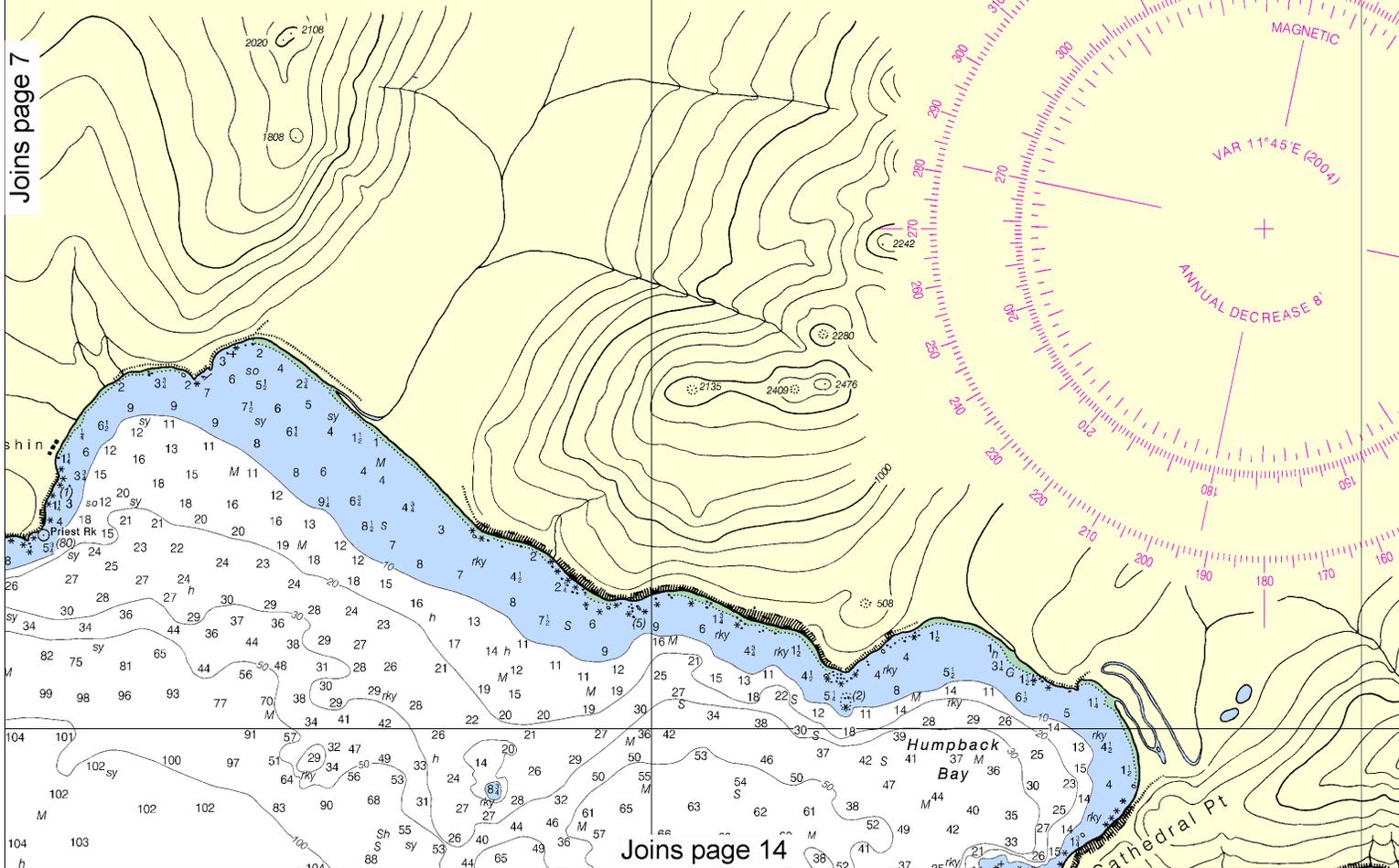
North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FATHOMS
AT MEAN LOWER LOW WATER

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Joins page 7



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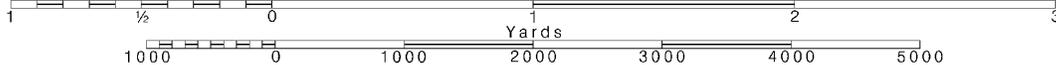


Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:40,000
Nautical Miles

See Note on page 5.



SOUNDINGS IN FATHOMS

166°45'

TIDAL INFORMATION

Name	Place (LAT/LONG)	Height referred to datum of soundings (MLLW)			
		Mean Higher High Water feet	Mean High Water feet	Mean Low Water feet	Extreme Low Water feet
Anderson Bay	(53°41'N/ 166°50'W)	4.0	3.7	1.3	-2.5
Skani Bay (803)	(53°37'N/ 167°03'W)	4.0	3.6	1.3	-2.5

The contour lines are hill shapes, sketched to afford the navigator a generalized indication of the character of the land forms. They should not be relied upon as lines of equal elevation.

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COLREGS, 80.1705 (see note A)

International Regulations for Preventing Collisions at Sea, 1972. The entire area of this chart falls seaward of the COLREGS Demarcation Line.

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NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio station listed below provides 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.

Unalaska, AK WXK-89 162.55 MHz

ABBREVIATIONS

(For complete list of Symbols and Abbreviations, see Chart No. 1.)

Aids to Navigation (lights are white unless otherwise indicated):

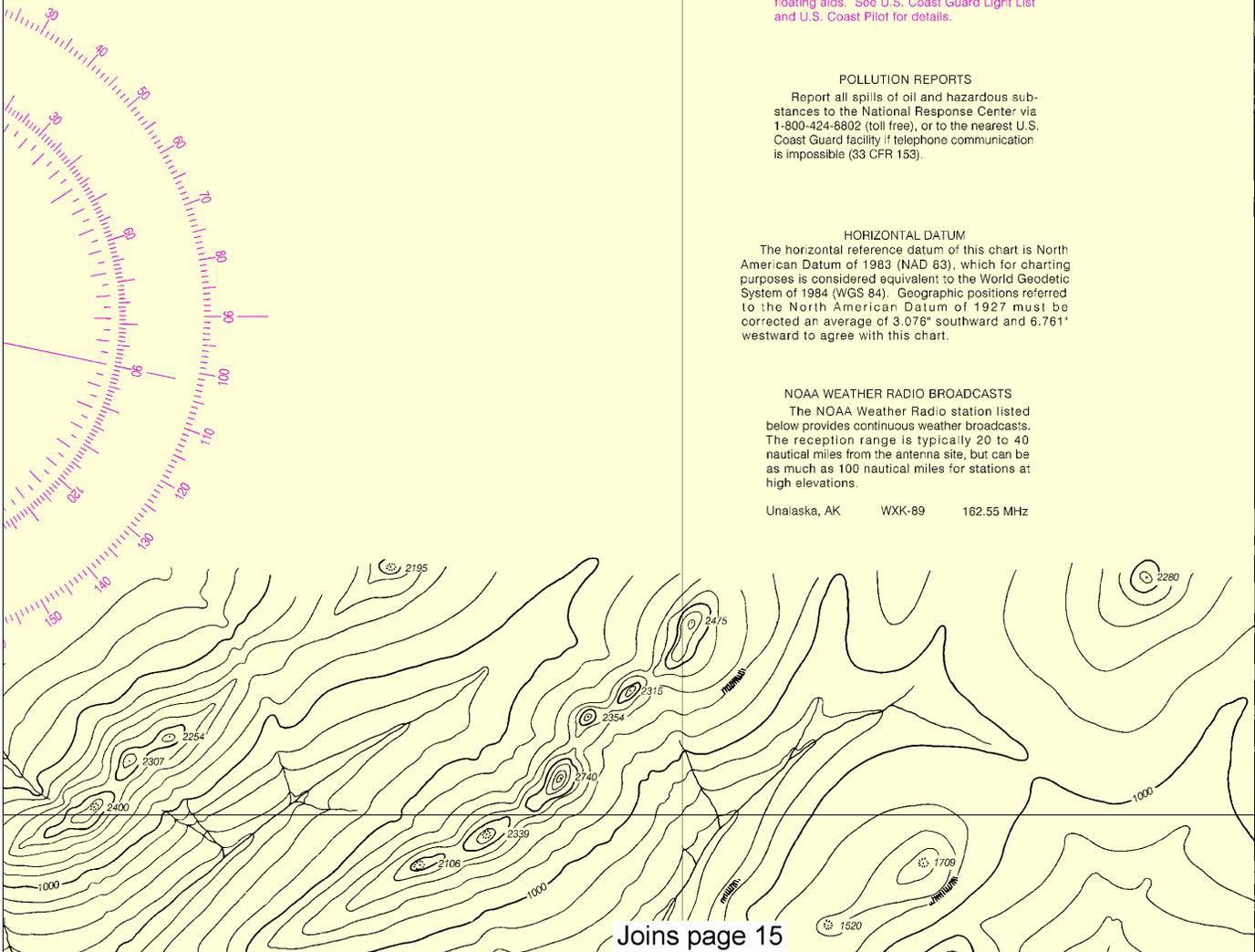
AERO aeronautical	G green	Mo morse code	R TR radio tower
A/ alternating	IO interrupted quick	N nun	Rot rotating
B black	ISO isophase	OBSC obscured	s seconds
Bn beacon	LT lighthouse	Oc occulting	SEC sector
C can	M nautical mile	Or orange	St M statute miles
DIA diaphone	m minutes	Q quick	VQ very quick
F fixed	MICRO TR microwave tower	R red	W white
Fl flashing	Mkr marker	Ra Ref radar reflector	WHIS whistle
		R Bn radiobeacon	Y yellow

Bottom characteristics:

Bds boulders	Co coral	gy gray	Oys oysters	so soft
bk broken	G gravel	h hard	Rk rock	Sh shells
Cy clay	Grs grass	M mud	S sand	sy sticky

Miscellaneous:

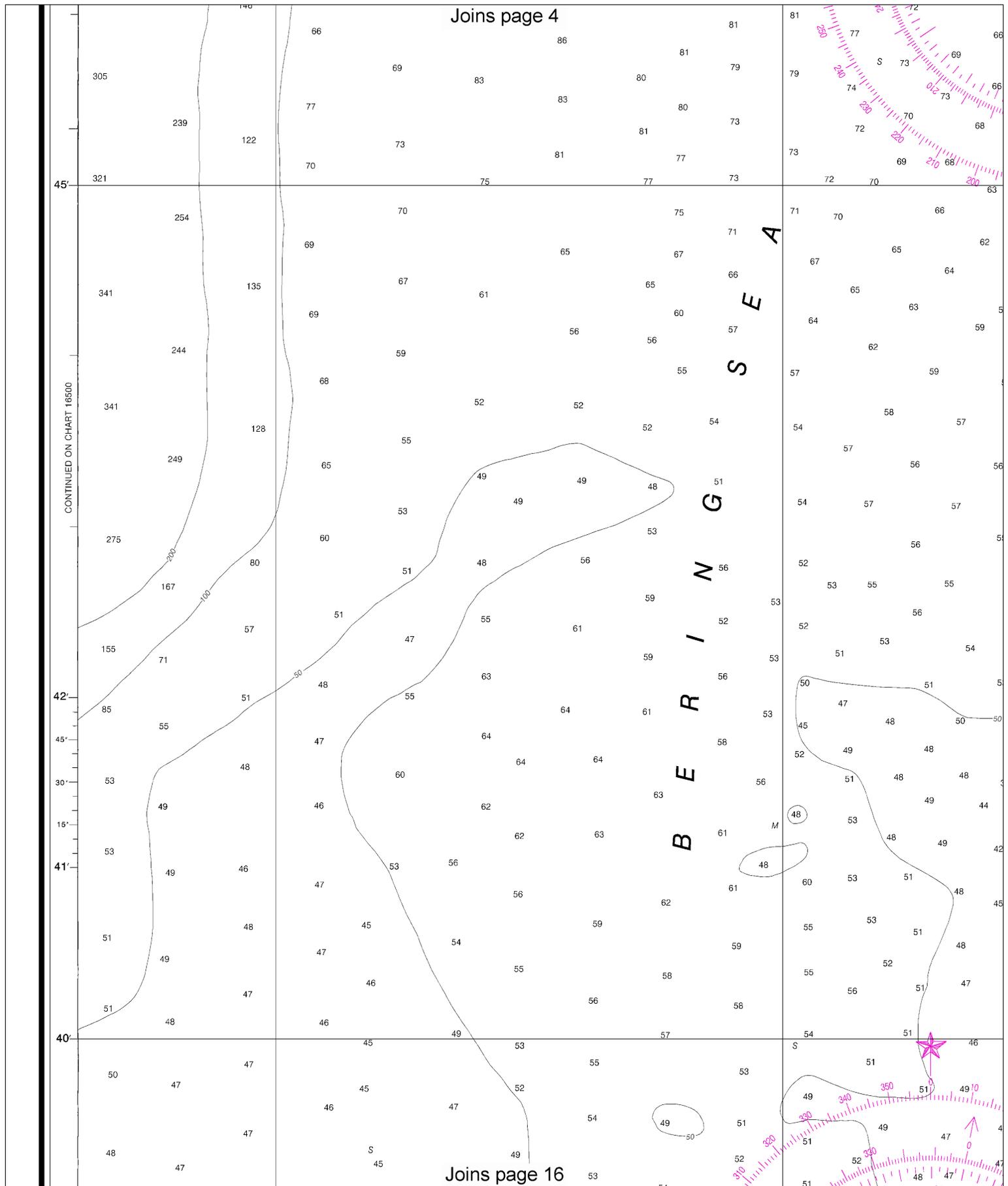
AUTH authorized	Obstn obstruction	PD position doubtful	Subm submerged
ED existence doubtful	PA position approximate	Rep reported	
① Wreck, rock, obstruction, or shoal swept clear to the depth indicated.			
② Rocks that cover and uncover, with heights in feet above datum of soundings.			
COLREGS: International Regulations for Preventing Collisions at Sea, 1972.			
Demarcation lines are shown thus: - - - - -			



Joins page 15

B E R I N G S E A

CONTINUED ON CHART 16500

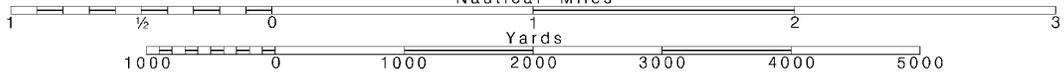


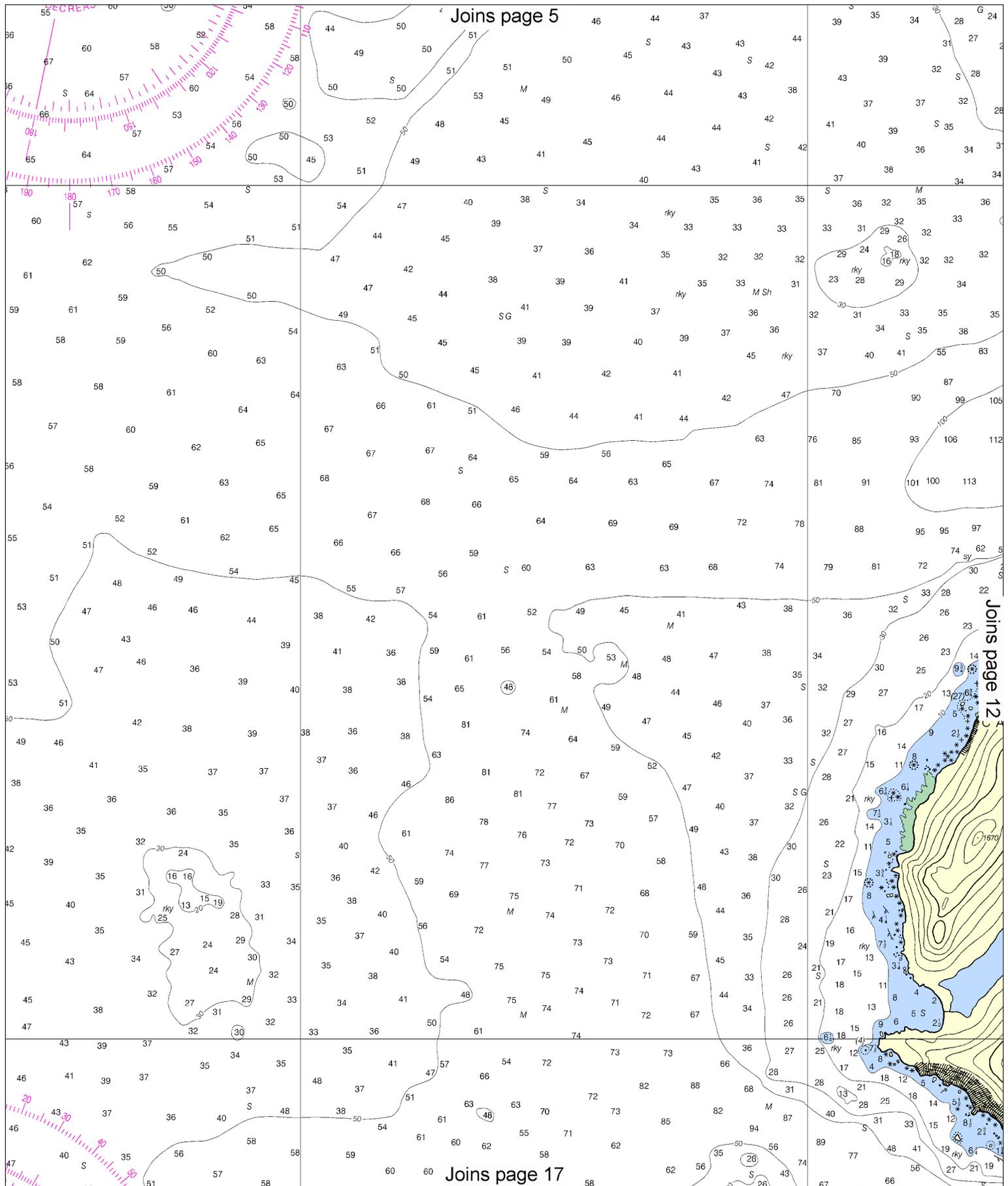
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:40,000
Nautical Miles

See Note on page 5.

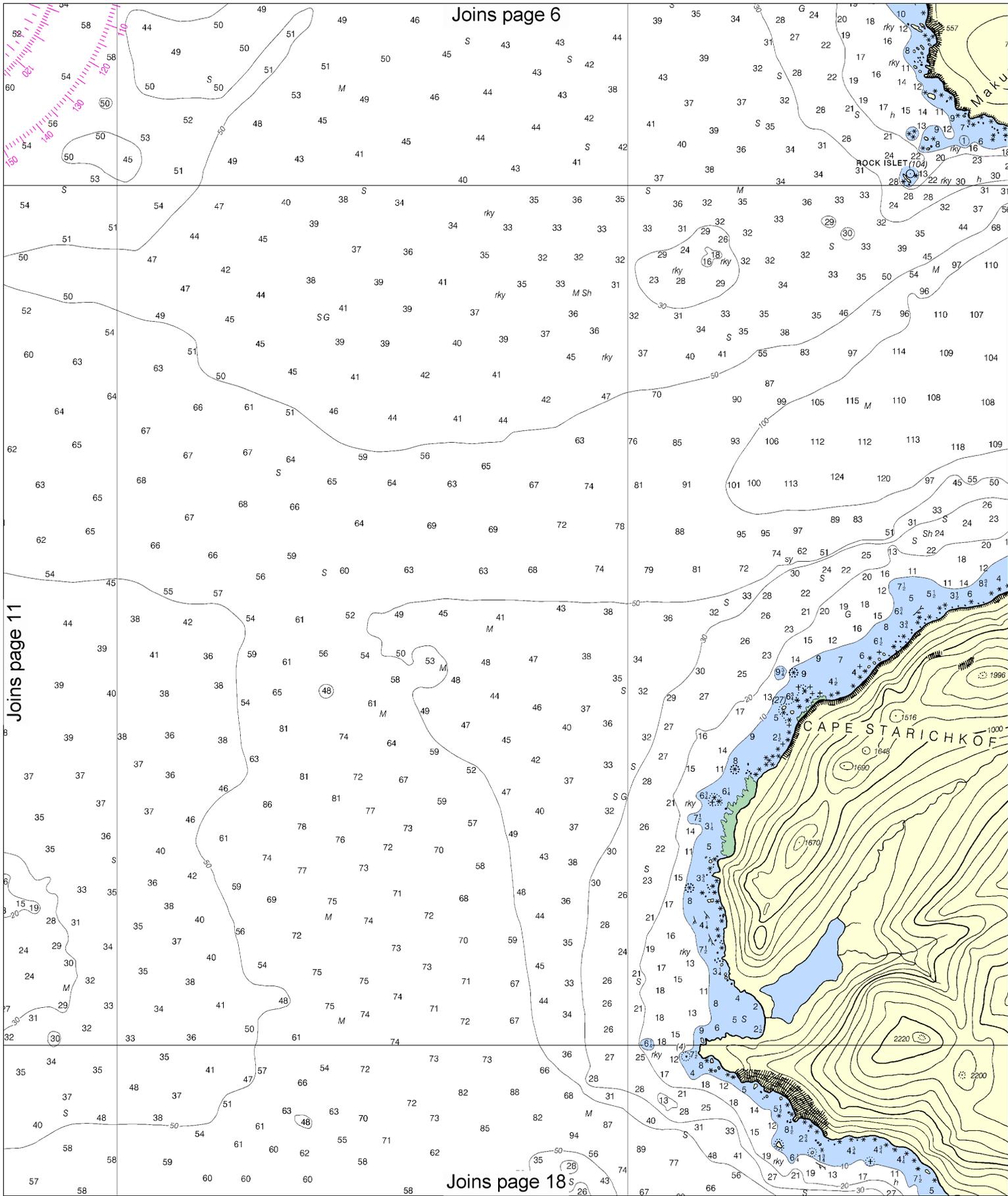




Joins page 5

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Joins page 11

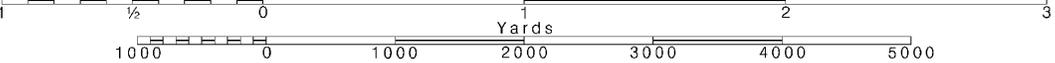
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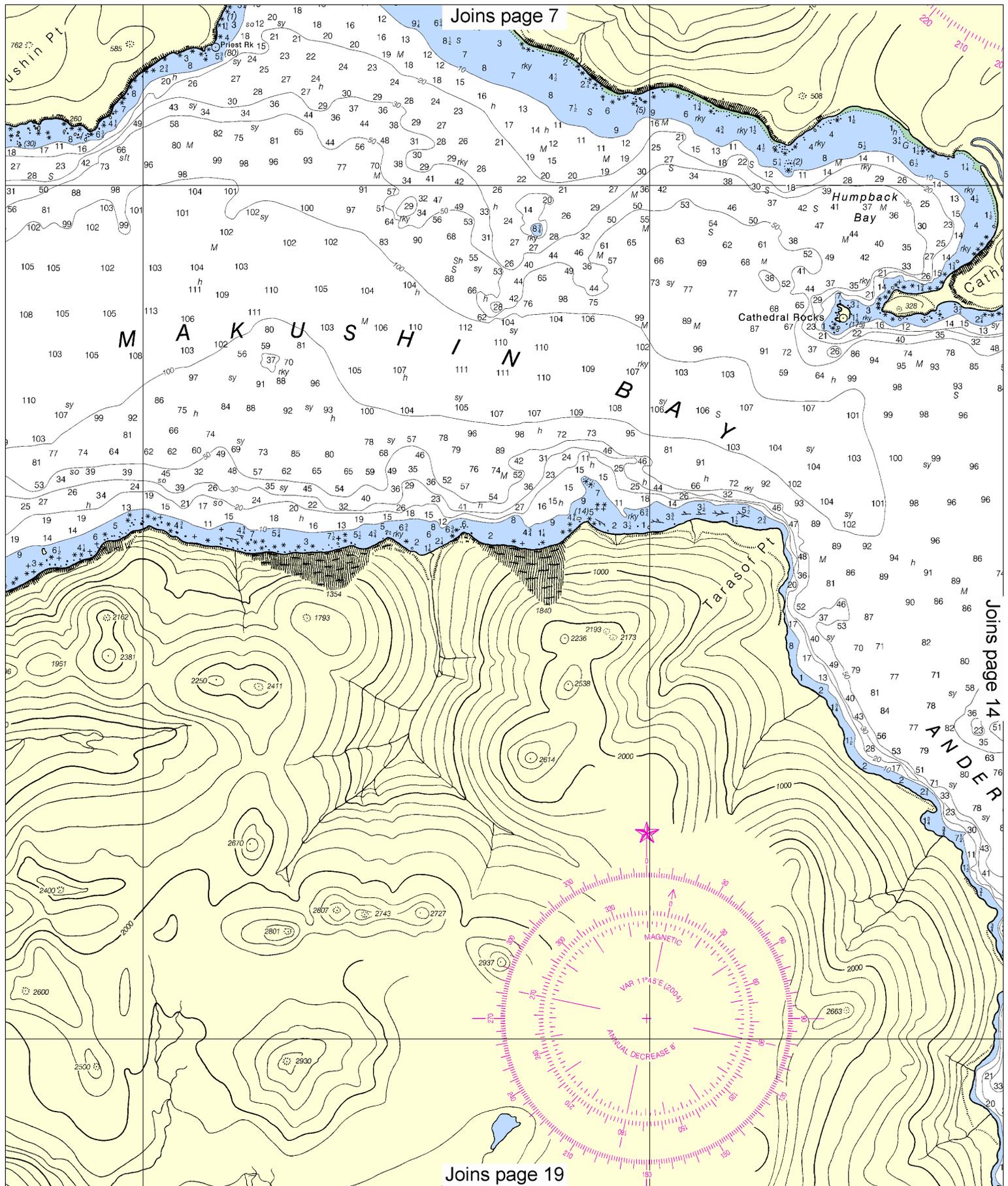
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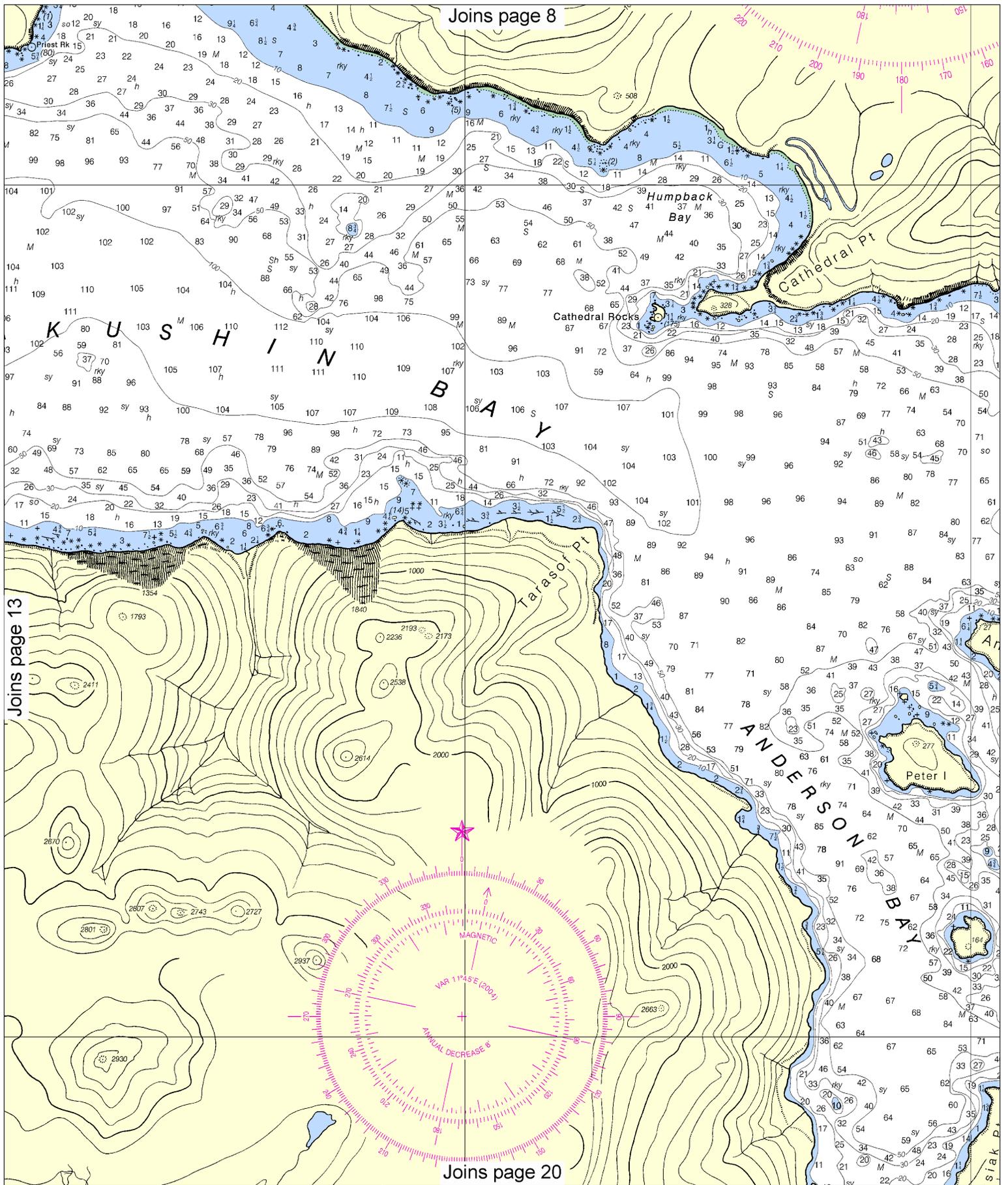
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SCALE 1:40,000
Nautical Miles

See Note on page 5.







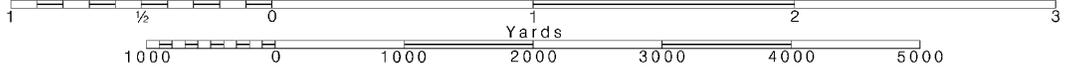
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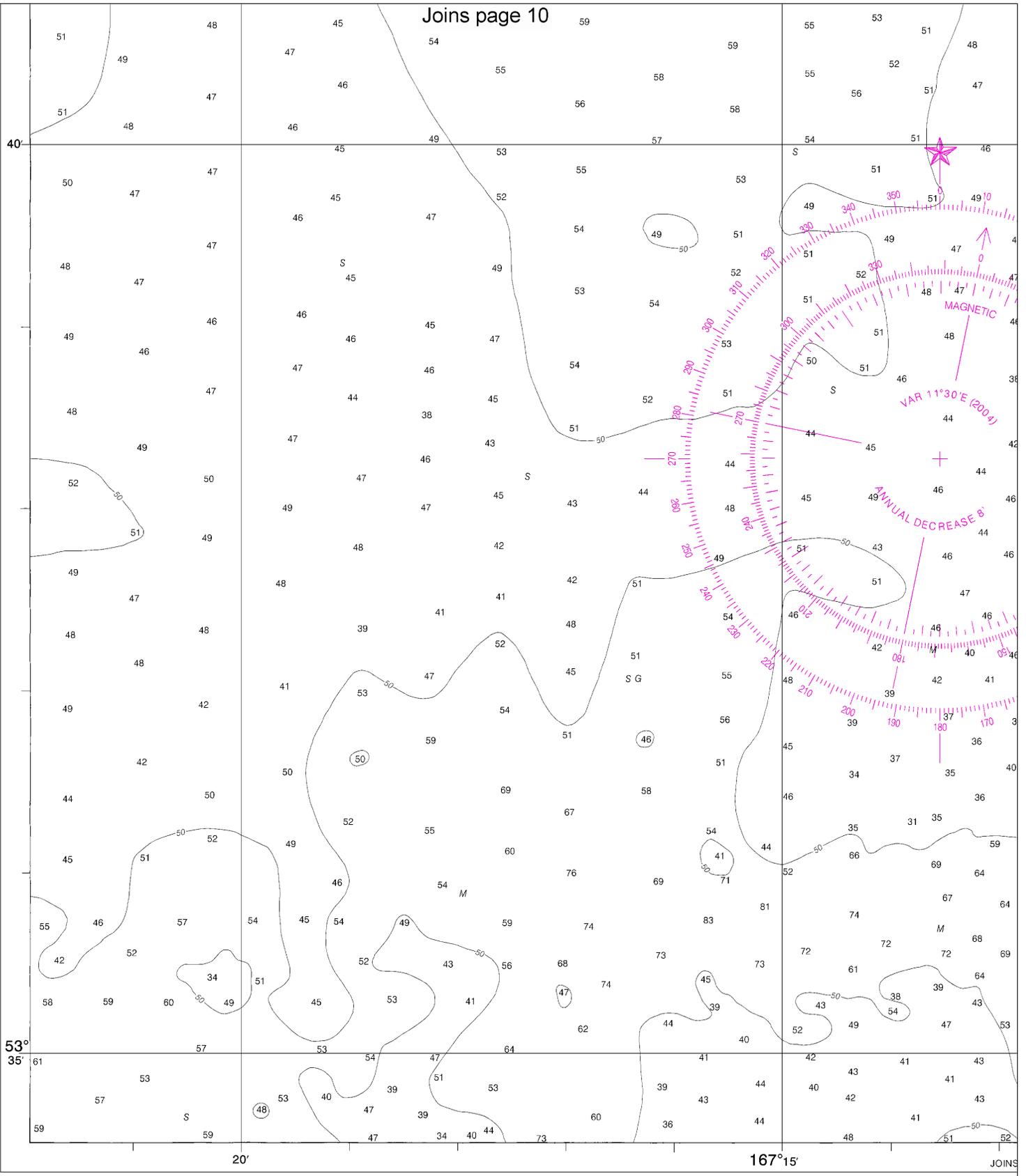
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:40,000
Nautical Miles

See Note on page 5.





6th Ed., Jan./ 04 ■ Corrected through NM Jan. 17/04
 Corrected through LNM Dec. 30/03

16517

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.

SOUNDINGS IN FA

16

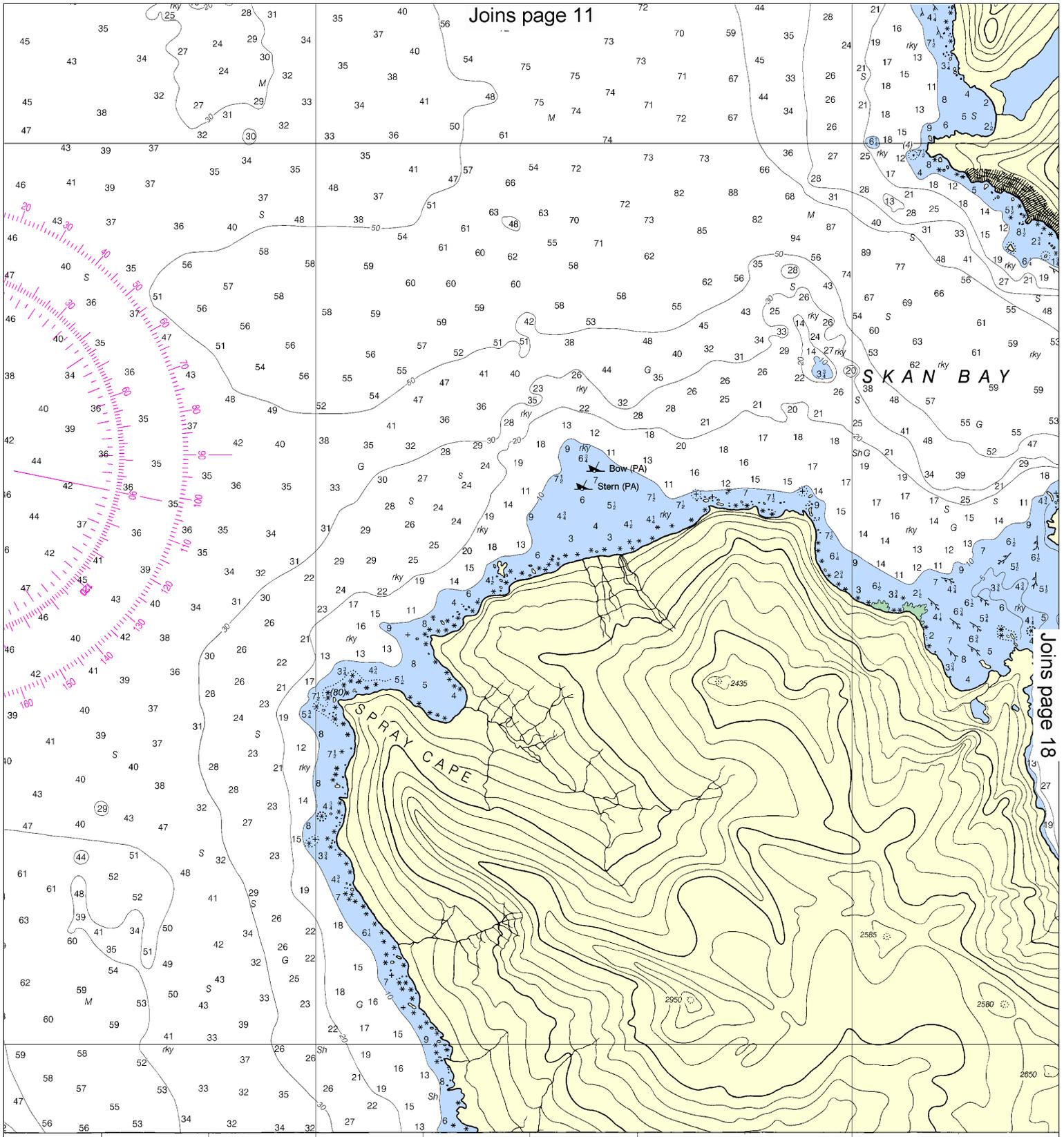
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:40,000
 Nautical Miles

See Note on page 5.





IS CHART 16515

10'

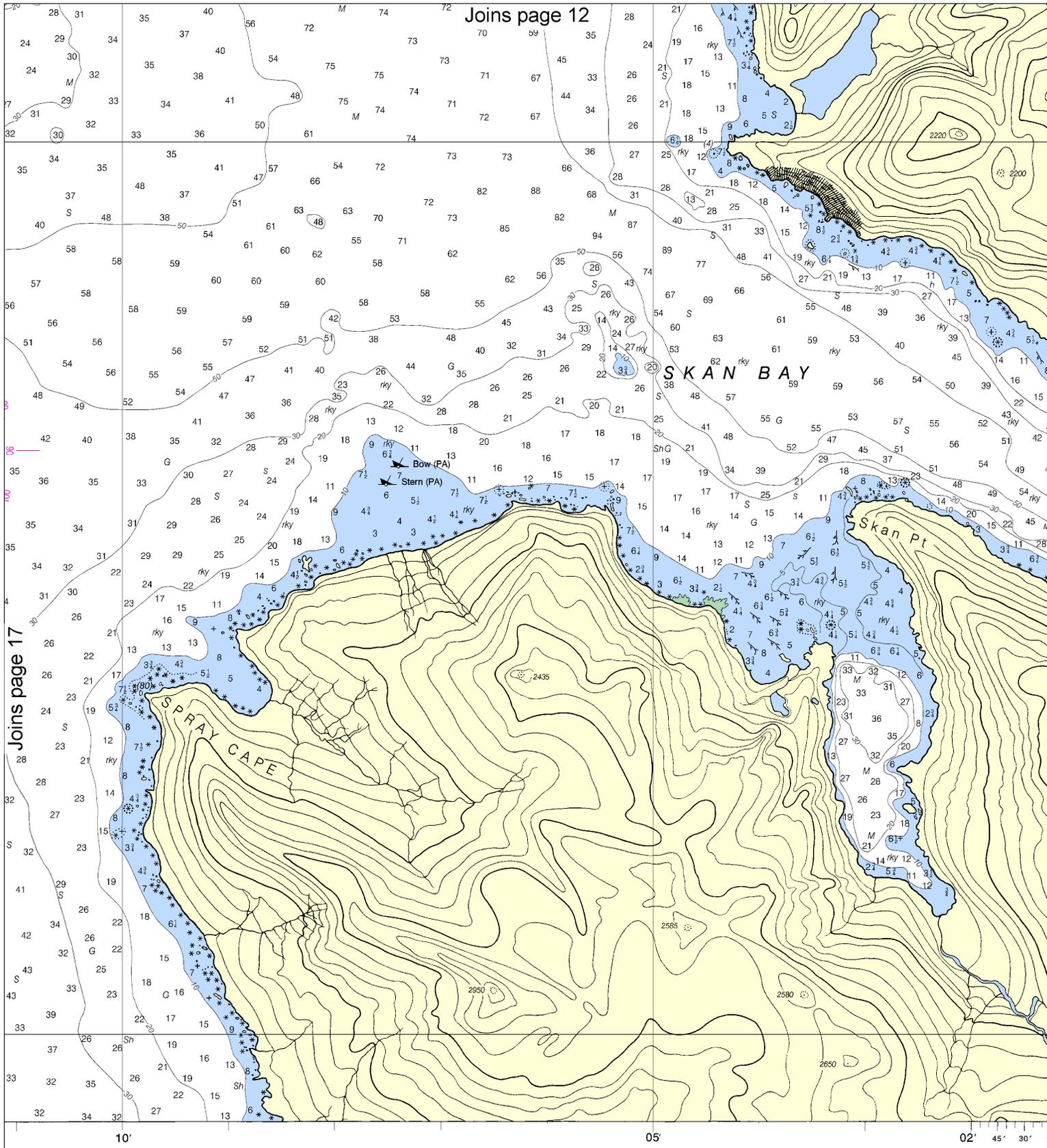
05'

FATHOMS

UPDATING SERVICE

FOR THIS CHART, a listing of NOTICE TO MARINERS (NM) corrections subsequent to the NM corrected through date shown in the lower left hand corner, is available from the Chief, Marine Chart Division (N/CS2), National Ocean Service, NOAA, Silver Spring, Maryland 20910-3282.

This nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for improving this chart to the Chief, Marine Chart Division (N/CS2), National Ocean Service, NOAA, Silver Spring, Maryland 20910-3282.



Joins page 17

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

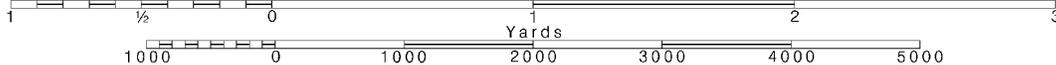
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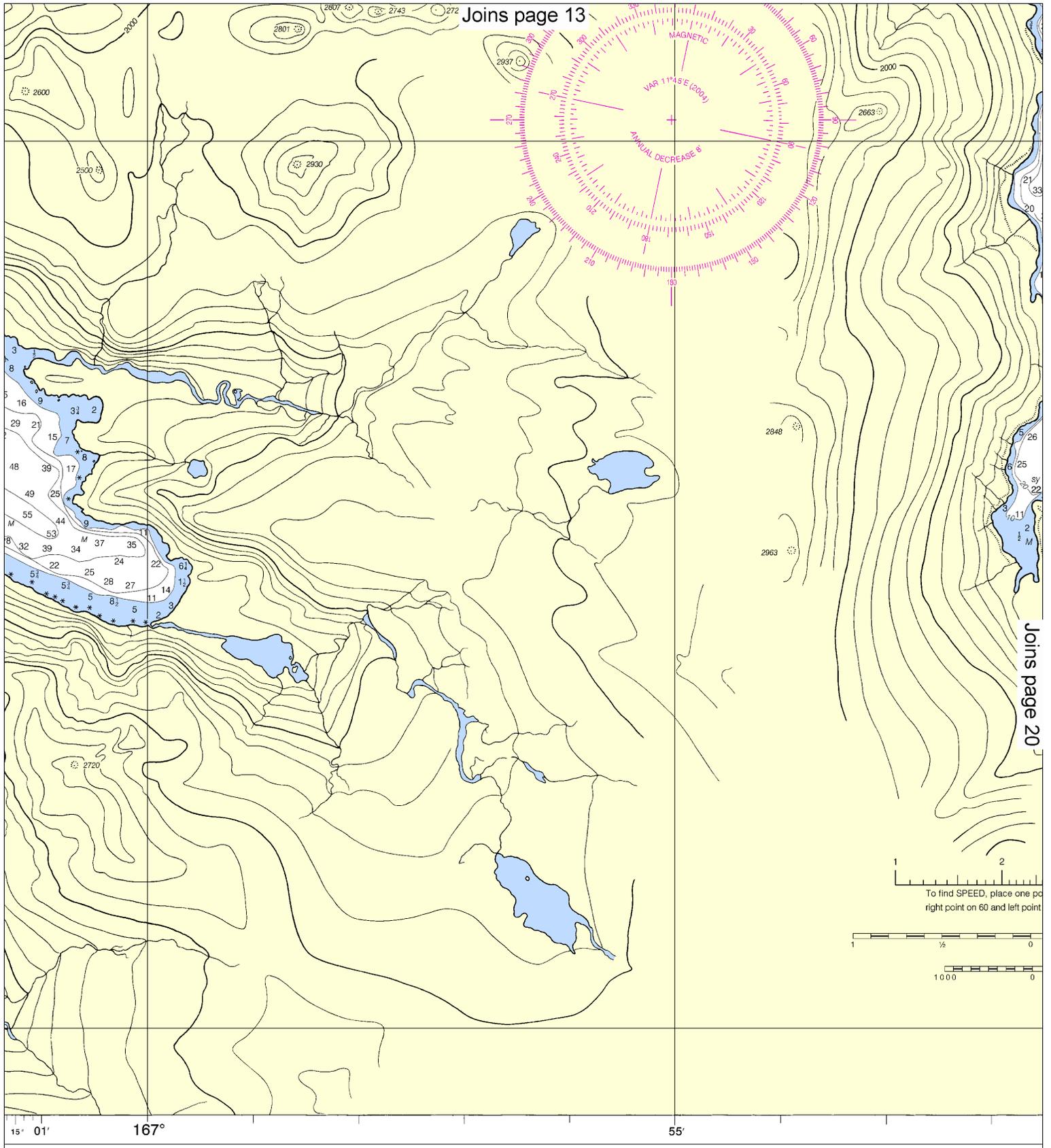
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:40,000
Nautical Miles

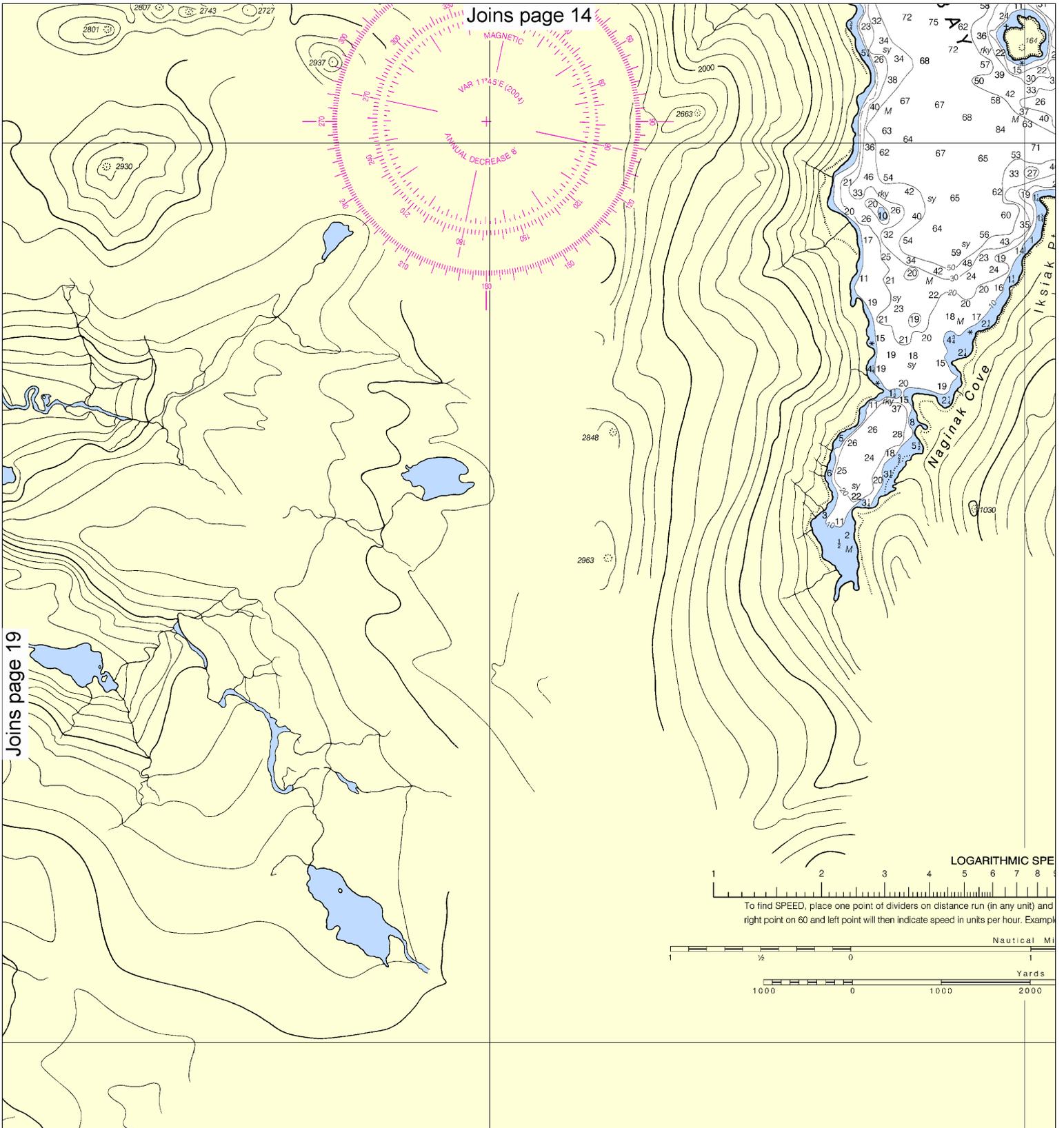
See Note on page 5.





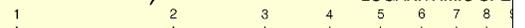
ington, D.C.
 OF COMMERCE
 SPHERIC ADMINISTRATION
 N SERVICE
 VEY

PRINT-ON-DEMAND CHARTS
 NOAA and its partner, OceanGrafix, offer this chart updated weekly by N
 and critical corrections. Charts are printed when ordered using Print-on-
 Editions are available 5-8 weeks before their release as traditional NOAA c
 about Print-on-Demand charts or contact NOAA at 1-800-584-4683, h
 help@NauticalCharts.gov, or OceanGrafix at 1-877-56CHART, ht
 help@OceanGrafix.com.

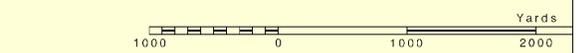
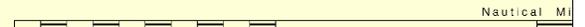


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LOGARITHMIC SPE



To find SPEED, place one point of dividers on distance run (in any unit) and right point on 60 and left point will then indicate speed in units per hour. Example



55'

50'

PRINT-ON-DEMAND CHARTS

NOAA and its partner, OceanGrafix, offer this chart updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts or contact NOAA at 1-800-584-4683, <http://NauticalCharts.gov>, help@NauticalCharts.gov, or OceanGrafix at 1-877-56CHART, <http://OceanGrafix.com>, or help@OceanGrafix.com.

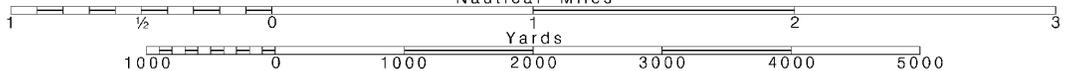


Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:40,000
Nautical Miles

See Note on page 5.





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>
- Online chart viewer — <http://www.nauticalcharts.noaa.gov/mcd/NOAChartViewer.html>
- 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>



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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.

NOAA's Office of Coast Survey



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