

BookletChart™

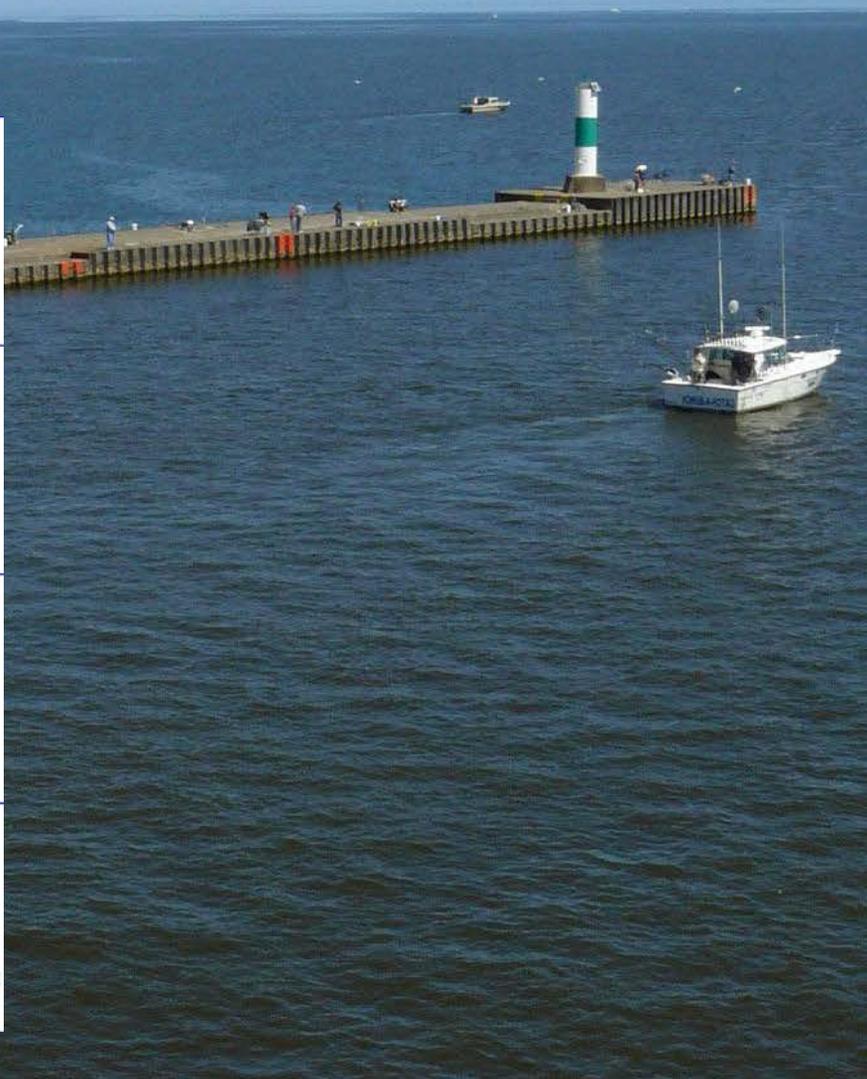
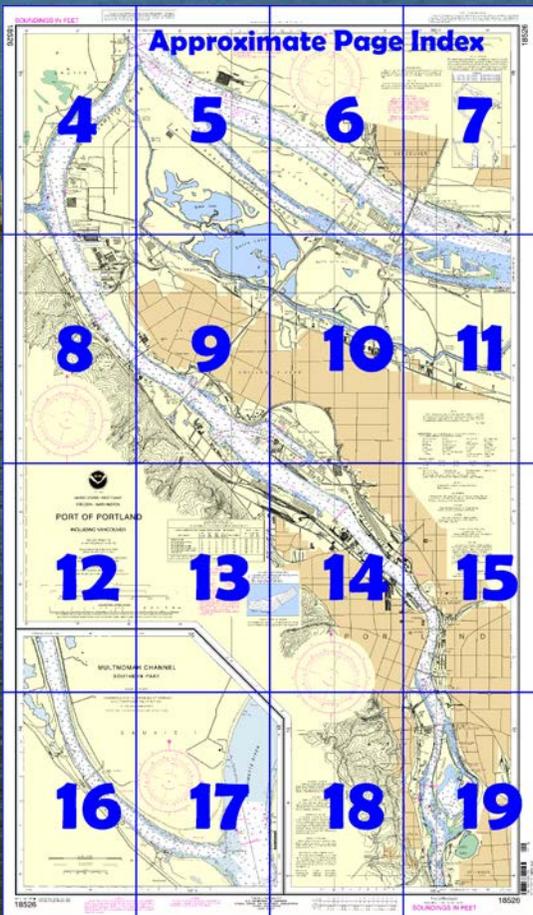
Port of Portland, Including Vancouver NOAA Chart 18526



*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.

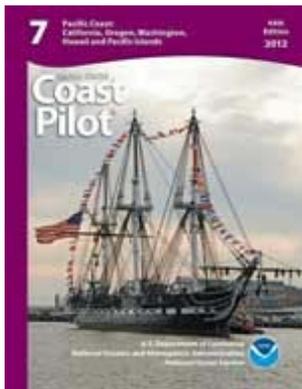
Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at <http://www.NauticalCharts.NOAA.gov>.

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=18526>.



(Selected Excerpts from Coast Pilot)
At Mile 88 (101.2), Columbia River is joined by **Willamette River**, its largest tributary below the Cascade Mountains.
Kelley Point Junction Light (45°39'11"N., 122°45'46"W.), 39 feet above the water, is shown from a pile structure with a red and green triangular daymark on the end of the dike extending from **Kelley Point** on the E side of the entrance to the river.
Columbia Slough, a narrow back channel roughly parallel to Columbia

River, empties into the Willamette about 0.4 (0.5) mile above its mouth. Least depth in the slough is usually less than 2 feet. A dam has been constructed across the slough about 7.3 miles above the mouth. In the vicinity of **Post Office Bar Range**, 2 (2.4) miles above the mouth of Willamette River, deep-draft vessels favor the W side of the river, while smaller vessels and tows prefer the E side because of lesser current. **Portland**, on Willamette River about 9 (10.4) miles from its mouth, is one of the major ports on the Pacific coast. The port has several deep-draft piers and wharves on both sides of the Willamette River between its junction with the Columbia and Ross Island. In addition there are extensive facilities for small vessels and barges S of Hawthorne Bridge and at North Portland Harbor, S of Hayden Island. The **Port of Portland** created by the State in 1891, is controlled by a Port Commission and administered by an executive director. The port owns several marine terminals, Port of Portland Ship Repair Yard, and dredges the channel between Broadway and Ross Island Bridges; it also assists the Corps of Engineers with other dredging in the Willamette and Columbia Rivers.

Vessel Arrival Reports.—The Washington State Department of Ecology requires that all tank vessels, and certain cargo and passenger vessels, submit an Advanced Notice of Entry (ANE) Report at least 24 hours prior to entering Washington waters.

A Safety Report must be submitted with an Advance Notice of Entry, or, if the condition occurs after submittal of an ANE the Department must be notified immediately by phone or facsimile of the condition. To inquire or submit vessel information, vessel owners or operators may contact the Washington State Department of Ecology by calling 24 hours, 503-790-4868 (Columbia River and Grays Harbor) or 360-956-8378 (Strait of Juan de Fuca and Puget Sound). Facsimile Safety Reports should be sent to 1-800-664-9184 or 360-407-7288.

Cargo, passenger, fishing and tank vessels are subject to boarding by Washington State Department of Ecology inspectors when in port. Tank vessels are required to have a Tank Vessel Oil Spill Prevention Plan on file with Ecology or must obtain a waiver prior to entering Washington State waters. Washington State also has safe bunkering procedures that must be followed during fuel transfers. For more information contact Ecology by calling 24 hours, 503-790-4868 (Columbia River and Grays Harbor) or 360-956-8378 (Strait of Juan de Fuca and Puget Sound). **To report oil spills call 1-800-258-5990.**

Anchorage.—The anchorage areas that are generally used in the Columbia River are Kelley Point Anchorage, E of Kelley Point and on the SW side of Vancouver Lower Channel and Hayden Island Anchorage, between the N end of Hayden Island and Vancouver Range (See **110.1** and **110.228**, chapter 2, for limits and regulations.) Hayden Island anchorage has two anchor buoys for use by bulk carriers/large vessels. In 2004, an anchor was reported to have been lost in Hayden Island Anchorage in about 45°38'32"N., 122°44'01"W.

A **special anchorage** in the Columbia River is between Tri-Club Island (Sand Island) and Lemon Island about 6.5 miles above the railroad bridge. (See **110.1** and **110.128**, chapter 2, for limits and regulations.)

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

RCC Seattle Commander
13th CG District (206) 220-7001
Seattle, WA

Table of Selected Chart Notes

Corrected through NM Jun. 23/12
Corrected through LNM Jun. 19/12

HEIGHTS
Heights in feet. Contour elevations referred to Mean Sea Level.

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

CAUTION
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION
Fixed and floating obstructions, some submerged, may exist within the magenta tinted bridge construction area. Mariners are advised to 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.

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 1927 must be corrected an average of 0.575" southward and 4.349" westward to agree with this chart.

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.

Portland, OR	KIG-98	162.550 MHz
Woodland, WA	WNG-604	162.525 MHz
Astoria, OR	WNG-697	162.525 MHz

CAUTION
SUBMARINE PIPELINES AND CABLES
Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:



Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling. Covered wells may be marked by lighted or unlighted buoys.

CAUTION
Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117. Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution. Station positions are shown thus:
○ (Accurate location) ○ (Approximate location)

CAUTION
Numerous obstructions found in 2009, consisting mainly of submerged snags and ruined piles, are not charted in the Willamette and Columbia Rivers and Multnomah channel south of the Sawie Island Fixed Bridge. These obstructions do not present a hazard to surface navigation, but should be taken into consideration for ground fishing and anchoring.

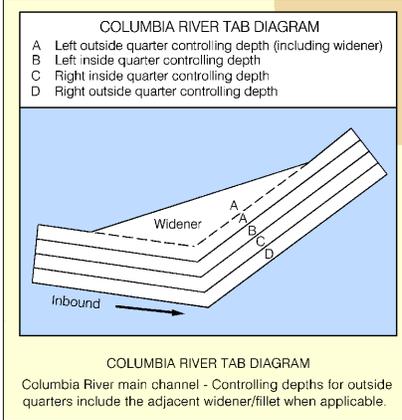
STATUTE MILES
COLUMBIA AND WILLAMETTE RIVERS
Mileage distances along the Columbia and Willamette Rivers are in Statute Miles. Distances along the Columbia River are eastward from the mouth, and along the Willamette River are southward from the junction of the Columbia River and are indicated thus: —●—

Tables for converting Statute Miles to International Nautical Miles are given in U.S. Coast Pilot 7.

CAUTION
BASCULE BRIDGE CLEARANCES
For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

NOTE A
Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. 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, 13th Coast Guard District in Seattle, Washington or at the Office of the District Engineer, Corps of Engineers in Seattle, Washington.
Refer to charted regulation section numbers.

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.



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.

Mercator Projection
Scale 1:20,000 at Lat 45° 34'
North American Datum of 1983
(World Geodetic System 1984)
SOUNDINGS AND CLEARANCES OF BRIDGES AND OVERHEAD CABLES IN FEET
AT COLUMBIA RIVER DATUM
(MEAN LOWER LOW WATER DURING LOWEST RIVER STAGES)

CAUTION
Freshets occur annually during the months of May, June, and July which may cause some shoaling; however, channels are restored to project depths as soon thereafter as possible.

SOURCE DIAGRAM
The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

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).

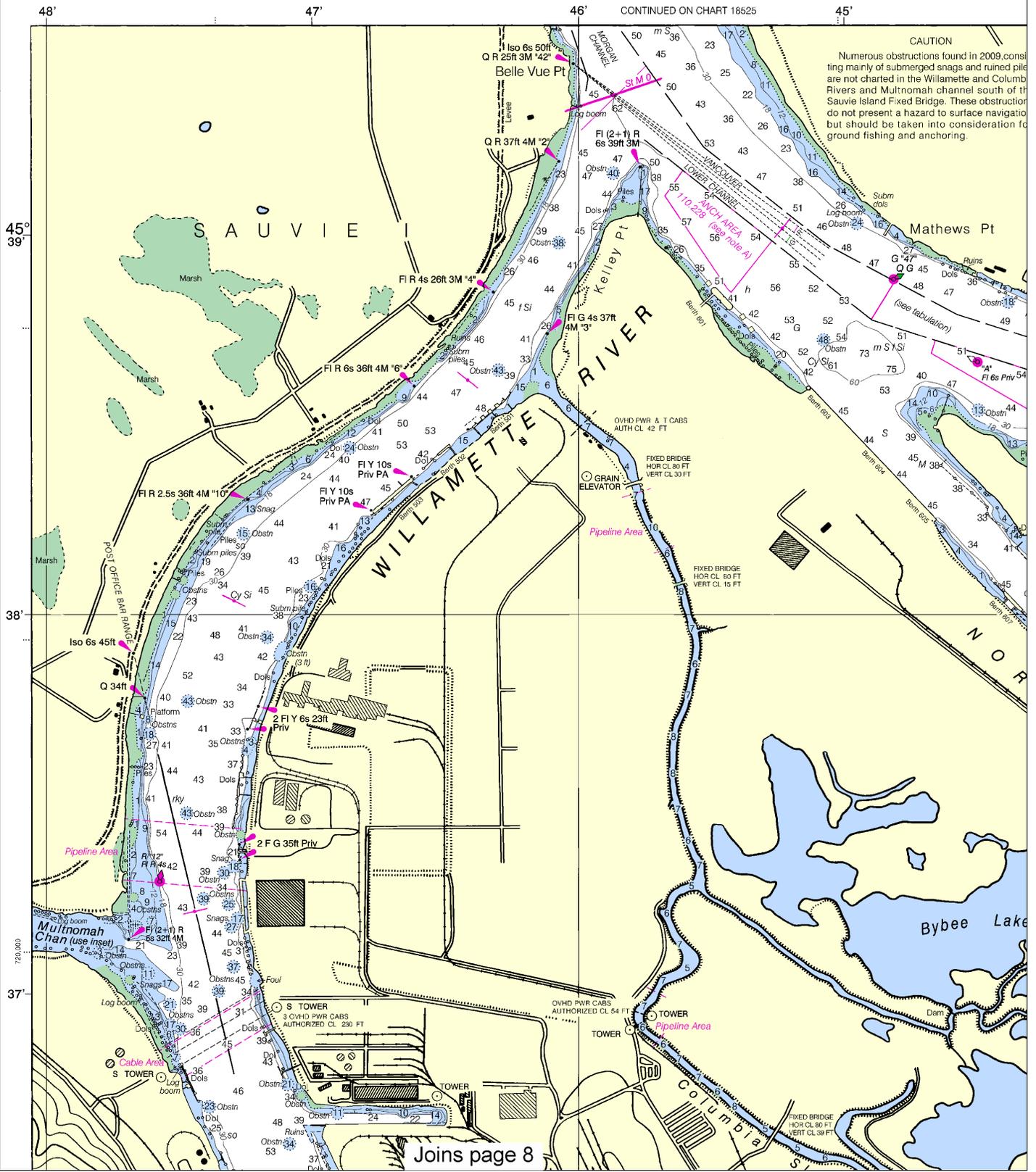
TIDES
The diurnal range of the tide during low river stages is 1.8 feet at Vancouver (45°37'N, 122°40'W), 2.2 feet at St. Johns (45°35'N, 122°46'W), and 2.4 feet at Portland (45°31'N, 122°40'W). The range becomes progressively smaller with higher stages of the river.
May 2012

Scale 1:10,000
SOUNDINGS AND CLEARANCES OF BRIDGES AND OVERHEAD CABLES IN FEET
AT COLUMBIA RIVER DATUM
(MEAN LOWER LOW WATER DURING LOWEST RIVER STAGES)

SOUNDINGS IN FEET

18526

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.



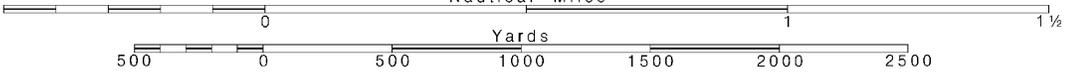
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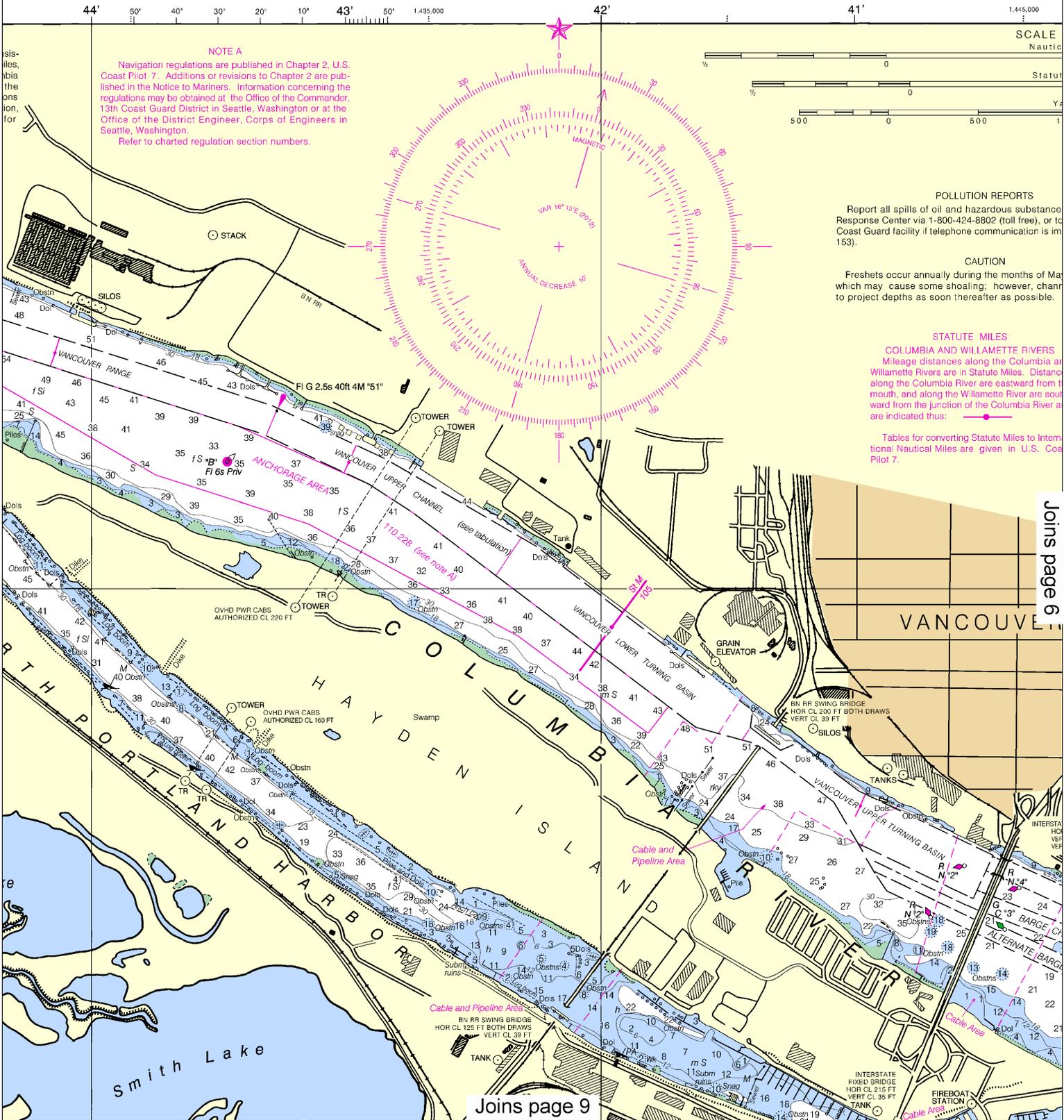
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:20,000

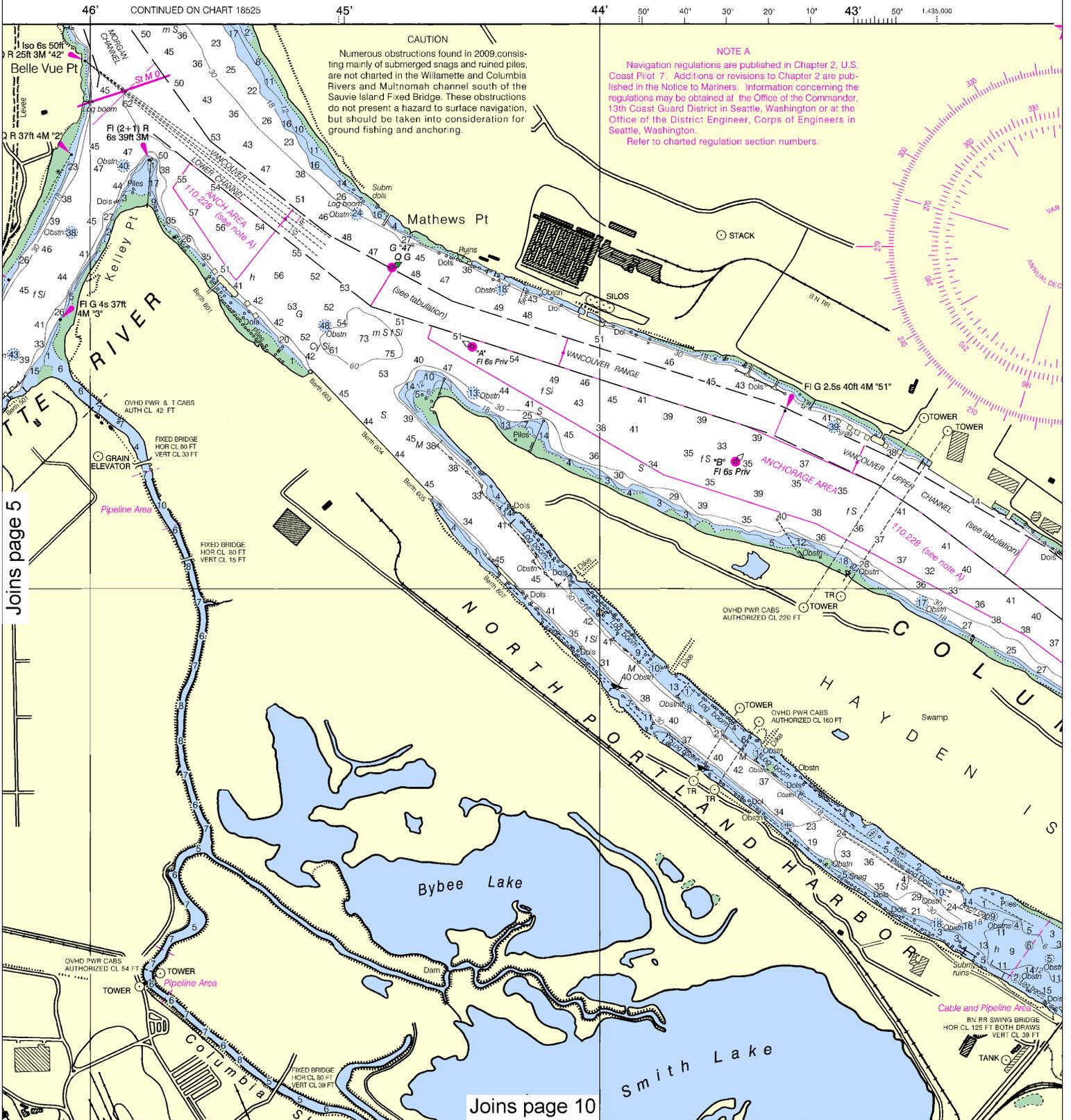
See Note on page 5.





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

Formerly C&GS 6155, 1st Ed., Feb 1925 G-1951-776 KAPP 1743



CAUTION
 Numerous obstructions found in 2009, consisting mainly of submerged snags and ruined piles, are not charted in the Willamette and Columbia Rivers and Multnomah channel south of the Sauvie Island Fixed Bridge. These obstructions do not present a hazard to surface navigation, but should be taken into consideration for ground fishing and anchoring.

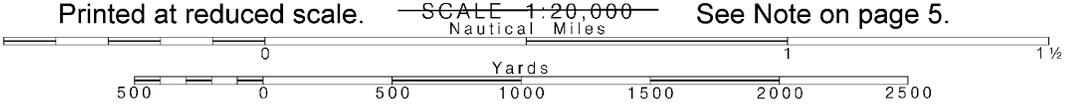
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 Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 13th Coast Guard District in Seattle, Washington or at the Office of the District Engineer, Corps of Engineers in Seattle, Washington.
 Refer to charted regulation section numbers.

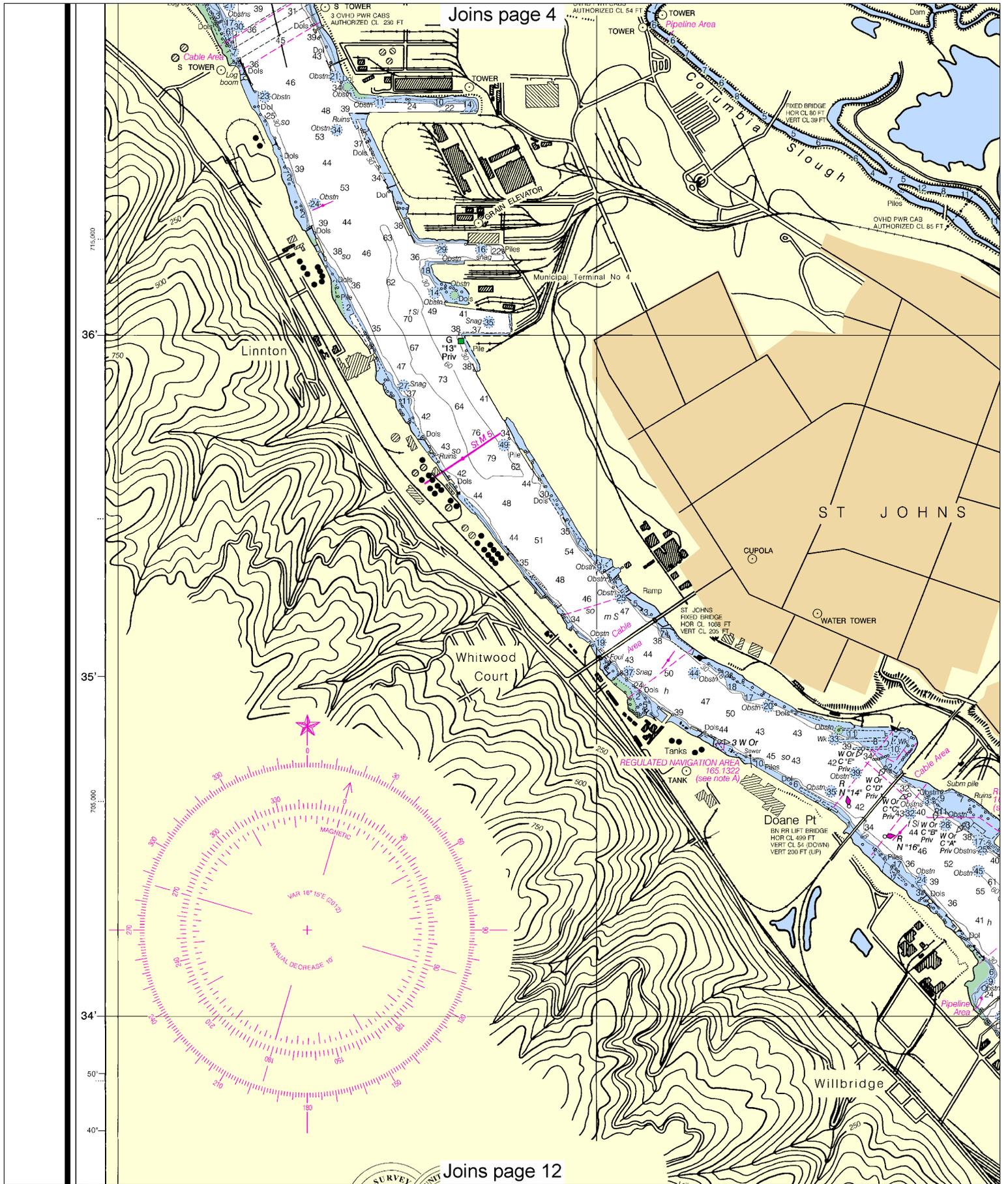
Joins page 5

Joins page 10

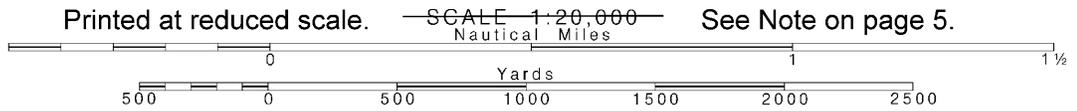
6

Note: Chart grid lines are aligned with true north.

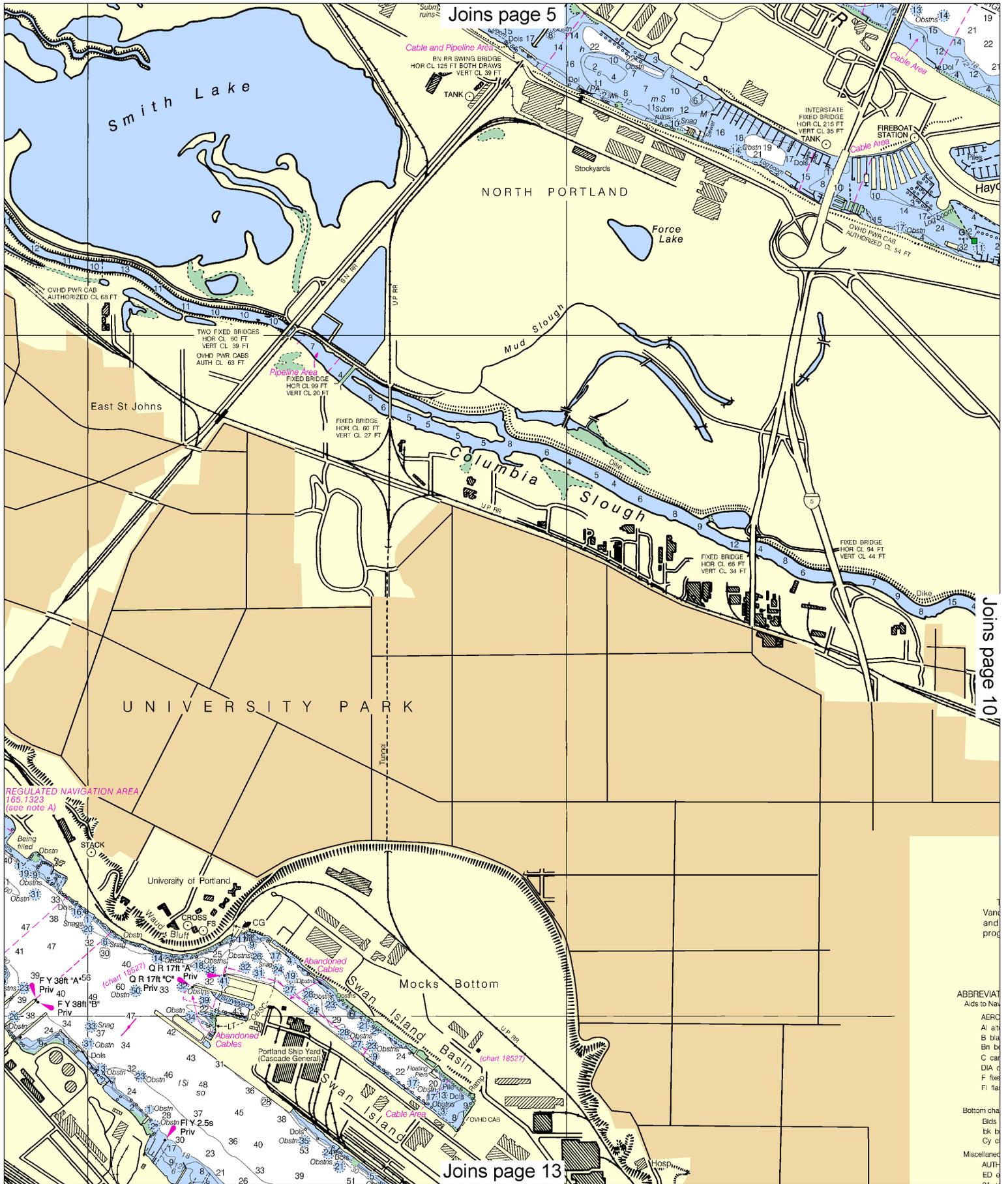




Note: Chart grid lines are aligned with true north.



See Note on page 5.





CONTINUED ON CHART 18531

TIDES
The diurnal range of the tide during low river stages is 1.8 feet at Vancouver (45°37'N, 122°40'W), 2.2 feet at St. Johns (45°35'N, 122°46'W) and 2.4 feet at Portland (45°31'N, 122°40'W). The range becomes progressively smaller with higher stages of the river.
May 2012

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
Ai alternating	IQ interrupted quick	N nun	Rot rotating
B black	ISO isophase	OBSC obscured	s seconds
Bn beacon	LT HO 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:

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

Miscellaneous:

Obstr obstruction	PD position doubtful	Subm submerged
PA position approximate	Rep reported	

Joins page 15

Joins page 8

Willbridge



THE NATION'S CHARTMAKER SINCE 1807

UNITED STATES - WEST COAST

OREGON - WASHINGTON

PORT OF PORTLAND

INCLUDING VANCOUVER

Mercator Projection
Scale 1:20,000 at Lat 45° 34'

North American Datum of 1983
(World Geodetic System 1984)

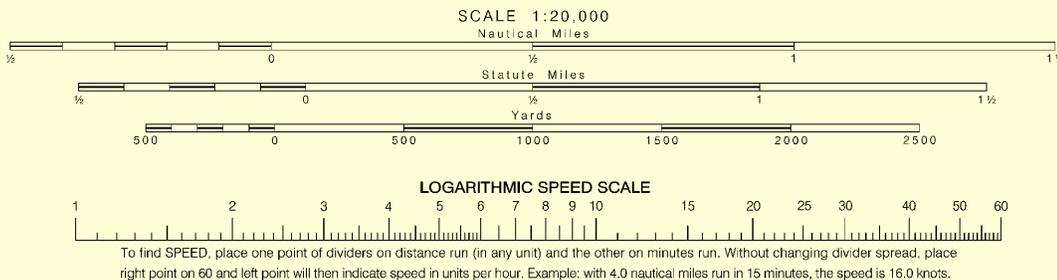
SOUNDINGS AND CLEARANCES OF BRIDGES
AND OVERHEAD CABLES IN FEET

AT COLUMBIA RIVER DATUM
(MEAN LOWER LOW WATER DURING LOWEST RIVER STAGES)
Additional information can be obtained at nauticalcharts.noaa.gov.

NAME OF CHANNEL	CONTROLLING DEPTHS FROM SEAWARD IN FEET AT COLUMBIA RIVER		Rtg Ins Qua
	Left Outside Quarter	Left Inside Quarter	
Morgan Channel	45	43	4
Vancouver Lower Channel	48	49	4
Vancouver Range	43	42	4
Vancouver Upper Channel	47	44	4
Vancouver Lower Turning Basin	34	40	4
Vancouver Upper Turning Basin	36	30	2
Mid Channel for Half Pr			
L Outside Mid Ch			
14 1			

Tomahawk Bar

* For Controlling Depth Information, consult the Local Notice to District US Army Corps of Engineers website: <http://www.nwp.d>
Channel status reports

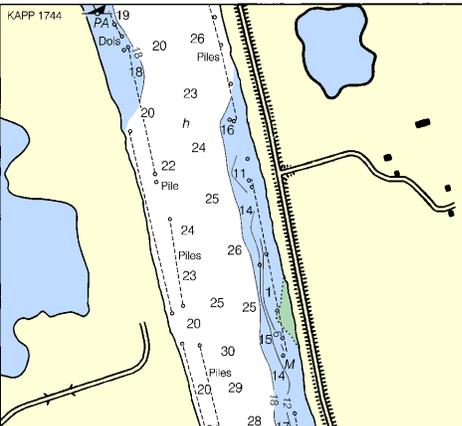


SUBMARINE F
Charted subma
cables and subma
are shown as:

Pipeline Area

Additional unch
submarine cables
this chart. Not all
marine cables are
those that were e
become exposed.
caution when ope
water comparable
pipelines and ca
anchoring, dragg
Covered wells
unlighted buoys.

CONTINUED ON CHART 18525



MULTNOMAH CHANNEL SOUTHERN PART

Scale 1:10,000

Joins page 16

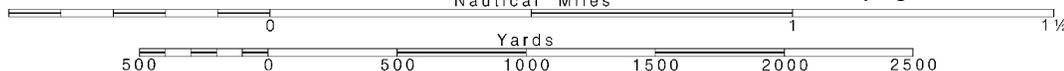
12

Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:20,000
Nautical Miles

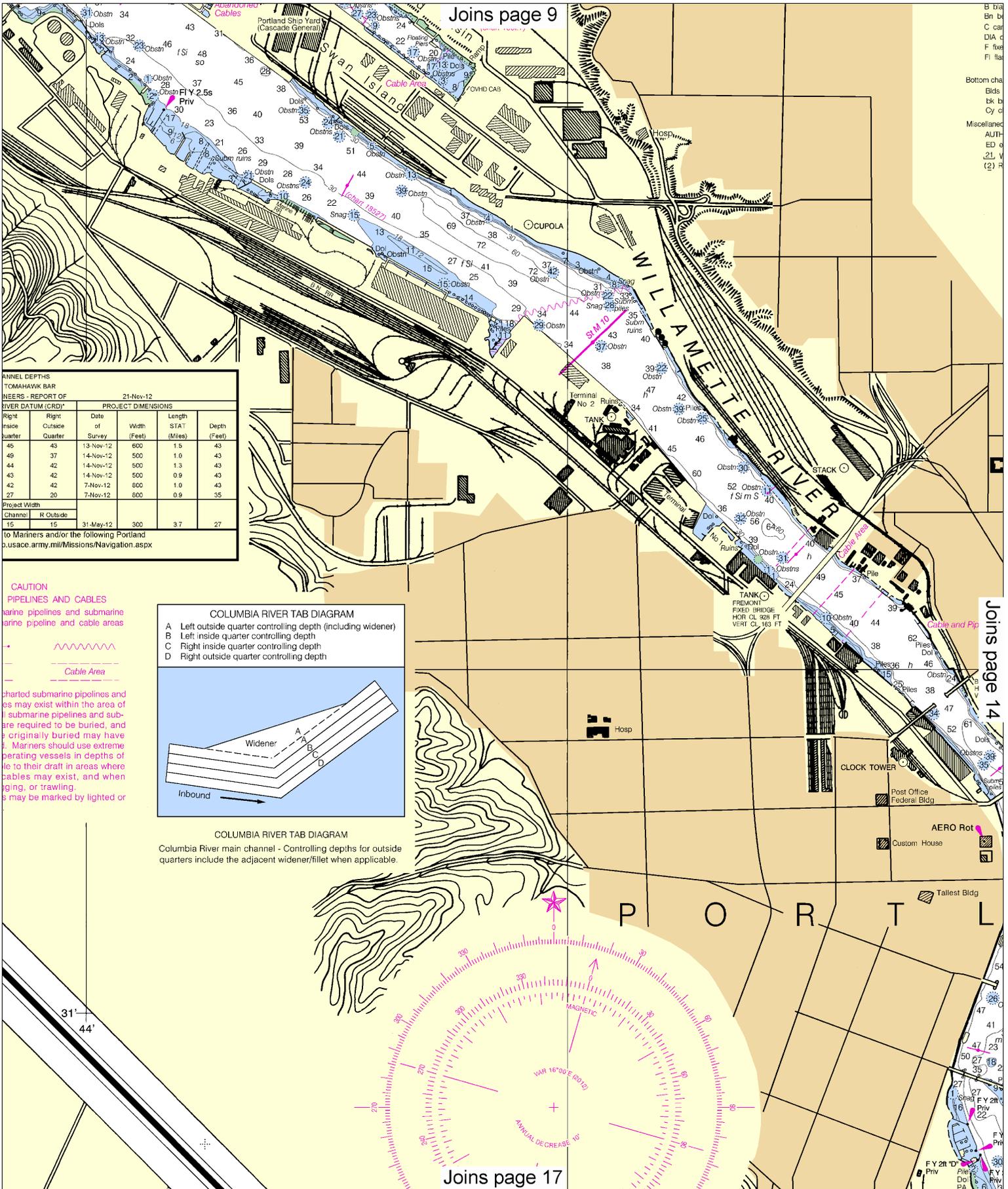
See Note on page 5.



B Dia
Bn br
C car
DIA d
F fix
FI fla

Bottom cha
Blds
bk bk
Cy c

Miscellaneous
AUFH
ED e
.2L V
(2) P

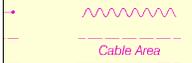


ANNEL DEPTHS
TCMAHAWK BAR
NEERS - REPORT OF
RIVER DATUM (CRD)¹ 21-Nov-12

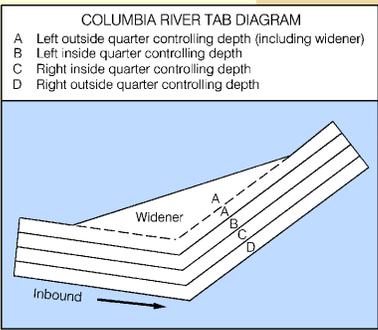
PROJECT DIMENSIONS		Date of Survey	Width (Feet)	Length STAT (Miles)	Depth (Feet)
Right Inside Quarter	Right Outside Quarter				
45	43	13-Nov-12	600	1.5	43
49	37	14-Nov-12	500	1.0	43
44	42	14-Nov-12	500	1.3	43
43	42	14-Nov-12	500	0.9	43
42	42	7-Nov-12	800	1.0	43
27	20	7-Nov-12	800	0.9	35
Project Width					
Channel	R Outside				
15	15	31-May-12	300	3.7	27

to Mariners and/or the following Portland
b.usace.army.mil/Missions/Navigation.aspx

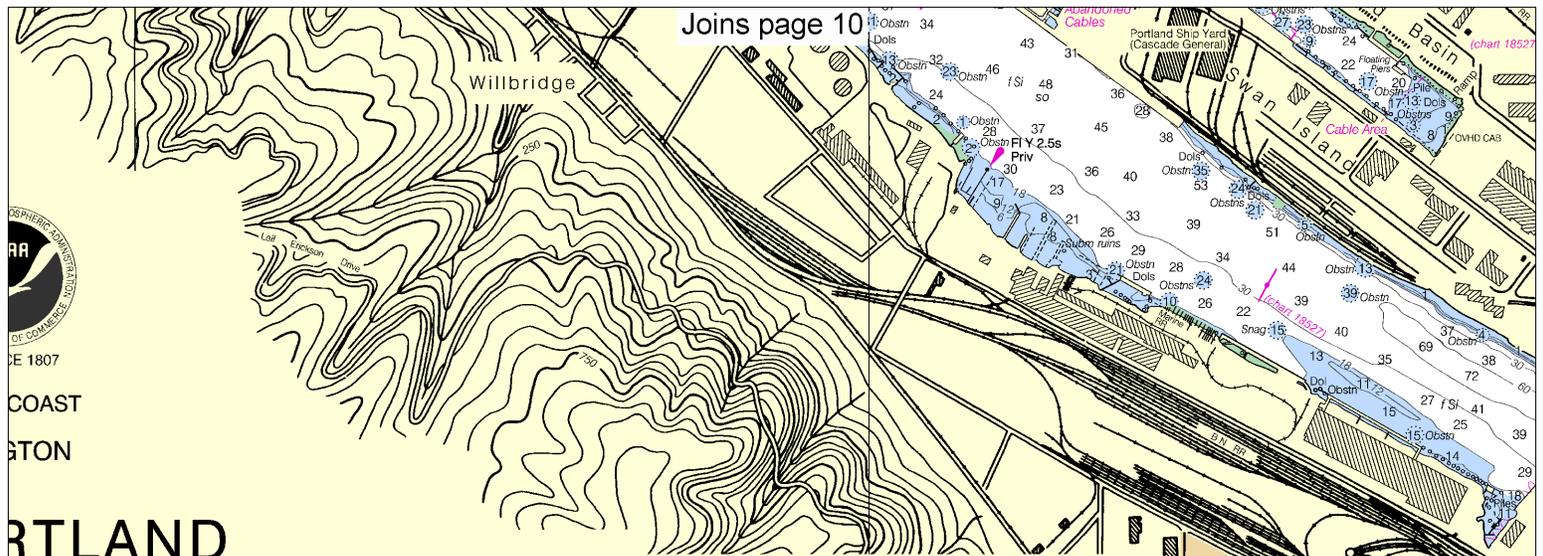
CAUTION
PIPELINES AND CABLES
marine pipelines and submarine
marine pipeline and cable areas



charted submarine pipelines and
es may exist within the area of
submarine pipelines and sub-
are required to be buried, and
originally buried may have
2. Mariners should use extreme
erating vessels in depths of
le to their draft in areas where
cables may exist, and when
ging, or trawling.
s may be marked by lighted or



COLUMBIA RIVER TAB DIAGRAM
Columbia River main channel - Controlling depths for outside
quarters include the adjacent widener/fillter when applicable



COLUMBIA RIVER CHANNEL DEPTHS
MORGAN CHANNEL TO TOMAHAWK BAR

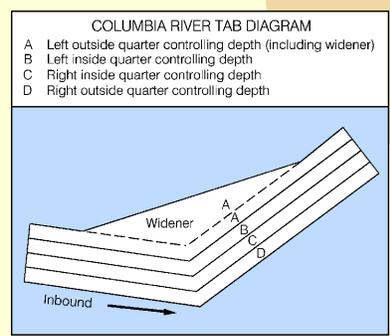
TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - REPORT OF 21-Nov-12

NAME OF CHANNEL	CONTROLLING DEPTHS FROM SEAWARD IN FEET AT COLUMBIA RIVER DATUM (CRD) ¹				PROJECT DIMENSIONS			
	Left Outside Quarter	Left Inside Quarter	Right Inside Quarter	Right Outside Quarter	Date of Survey	Width (Feet)	Length STAT (Miles)	Depth (Feet)
Morgan Channel	46	43	45	43	13-Nov-12	600	1.5	43
Vancouver Lower Channel	46	49	49	37	14-Nov-12	500	1.0	43
Vancouver Range	43	42	44	42	14-Nov-12	500	1.3	43
Vancouver Upper Channel	47	44	43	42	14-Nov-12	500	0.9	43
Vancouver Lower Turning Basin	34	40	42	42	7-Nov-12	800	1.0	43
Vancouver Upper Turning Basin	36	30	27	20	7-Nov-12	800	0.9	35
Mid Channel for Half Project Width								
	L Outside	Mid Channel	R Outside					
Tomahawk Bar	14	15	15		31-May-12	300	3.7	27

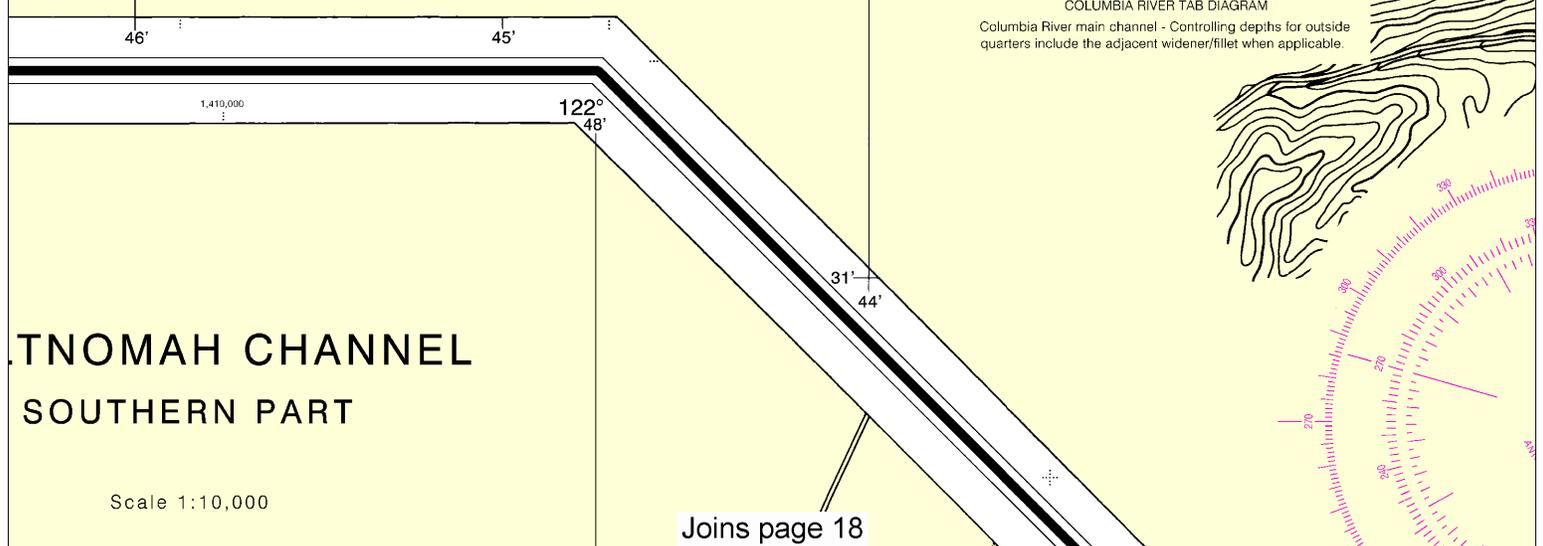
¹ For Controlling Depth Information, consult the Local Notice to Mariners and/or the following Portland District US Army Corps of Engineers website: <http://www.nwp.usace.army.mil/Missions/Navigation.aspx>
Channel status reports

RA
OF COMMERCE, WASH
1807
COAST
STON
PORTLAND
DUVER
34'
1983
4)
OF BRIDGES
N FEET
JM
STAGES)
arts.noaa.gov.
20,000
Miles
Miles
1000 1500 2000 2500
IC SPEED SCALE
7 8 9 10 15 20 25 30 40 50 60
unit) and the other on minutes run. Without changing divider spread, place
r. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots.

CAUTION
SUBMARINE PIPELINES AND CABLES
Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:
----- Pipeline Area -----
----- Cable Area -----
Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.
Covered wells may be marked by lighted or unlighted buoys.



COLUMBIA RIVER TAB DIAGRAM
Columbia River main channel - Controlling depths for outside quarters include the adjacent widener/filllet when applicable.



Note: Chart grid lines are aligned with true north.

- | | | |
|--------------------------|------------------------|--------------------|
| ISO isophase | OBSC obscured | s seconds |
| LT HO lighthouse | Oc occulting | SEC sector |
| M nautical mile | Or orange | St M statute miles |
| m minutes | Q quick | VQ very quick |
| MICRO TR microwave tower | R red | W white |
| Mkr marker | Ra Ref radar reflector | WHIS whistle |
| | R Bn radiobeacon | Y yellow |
- Bottom characteristics:
- | | | | | |
|---------------|-----------|---------|-------------|-----------|
| Blds 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 | Obstr 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.

HEIGHTS

Heights in feet. Contour elevations referred to Mean Sea Level.

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.

CAUTION

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION

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

PLANE COORDINATE GRID

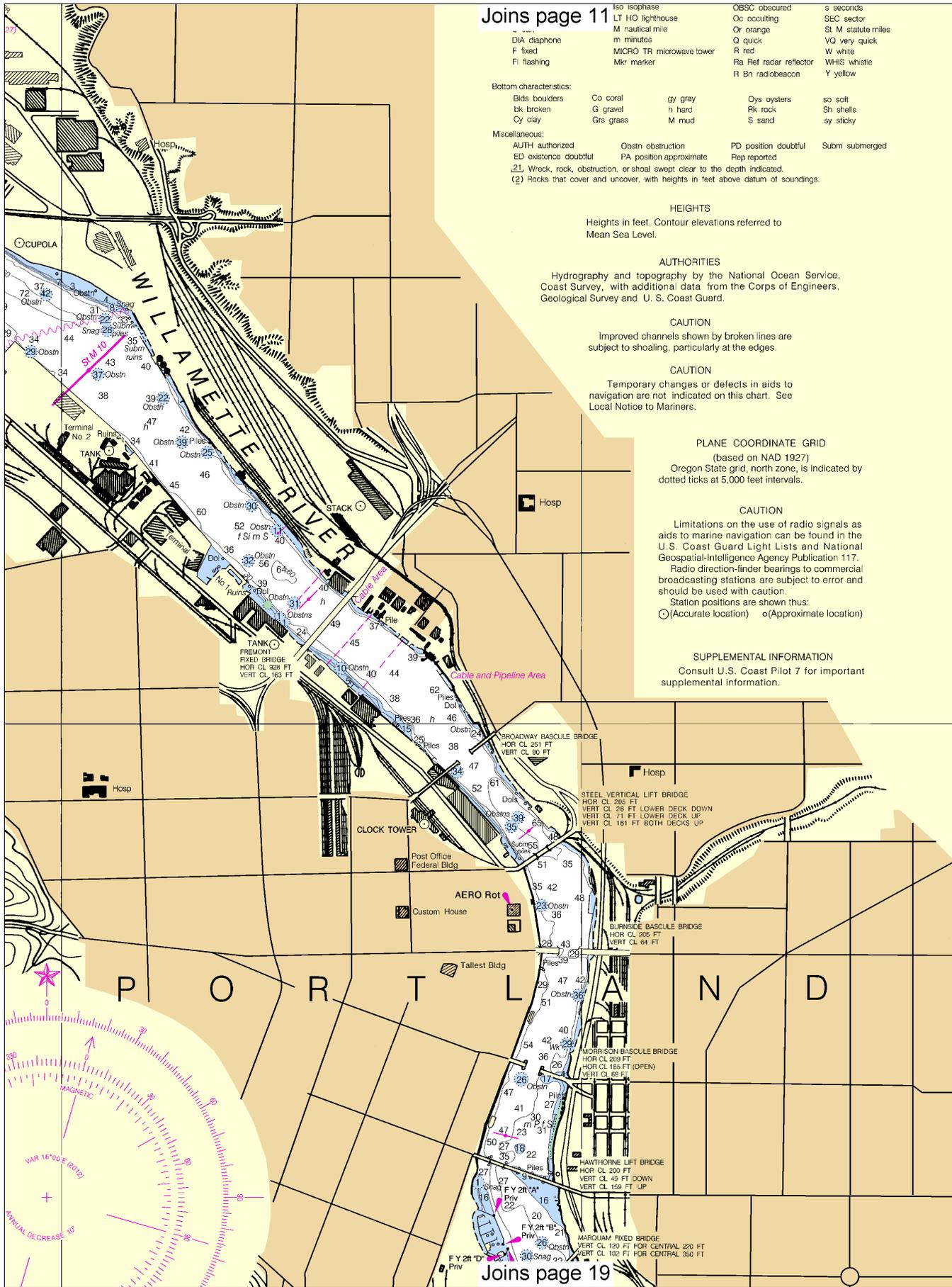
(based on NAD 1927)
Oregon State grid, north zone, is indicated by dotted ticks at 5,000 feet intervals.

CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U. S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117. Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution. Station positions are shown thus:
 (Accurate location) (Approximate location)

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 7 for important supplemental information.



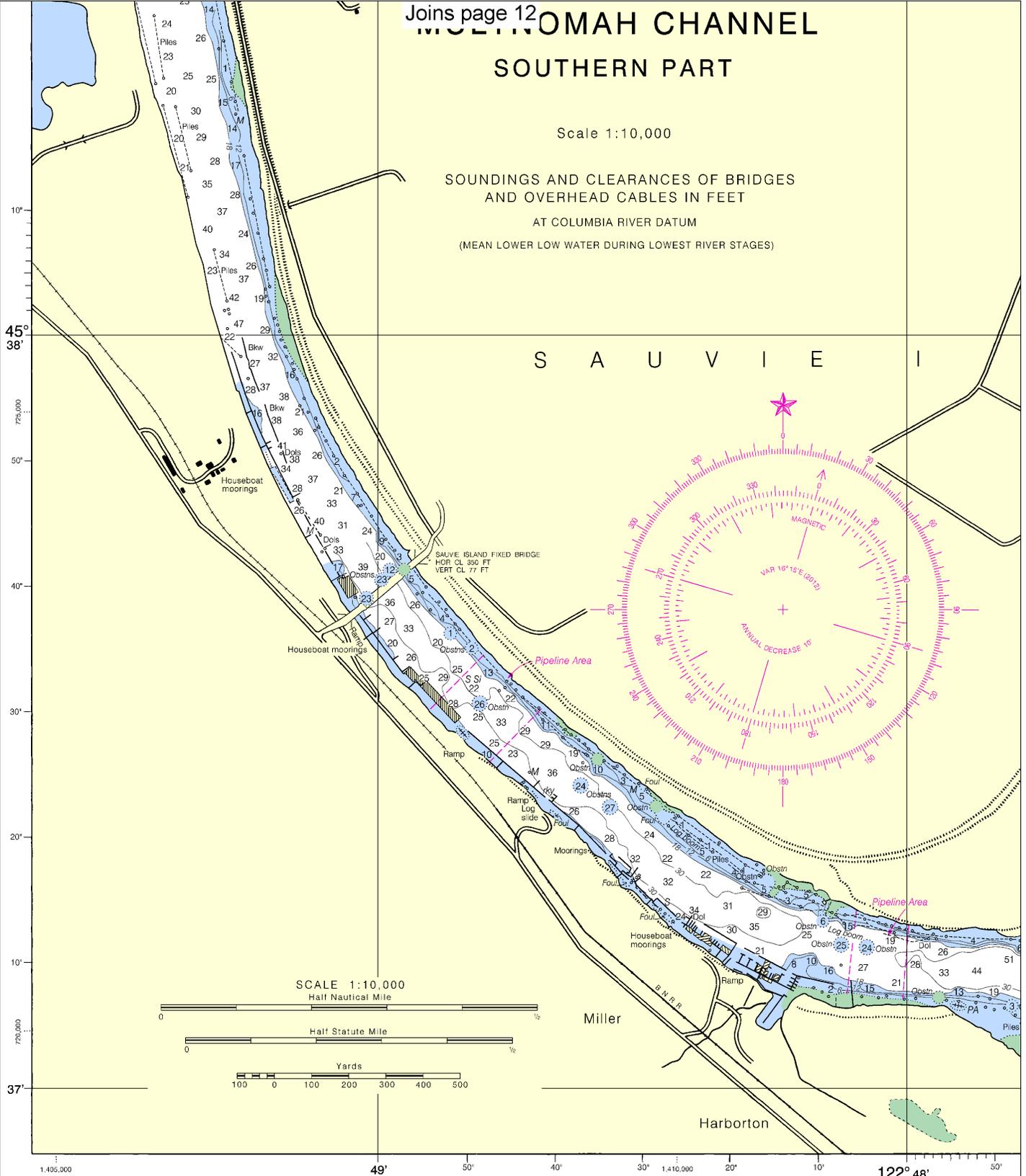
Joins page 12

METROMAH CHANNEL SOUTHERN PART

Scale 1:10,000

SOUNDINGS AND CLEARANCES OF BRIDGES
AND OVERHEAD CABLES IN FEET
AT COLUMBIA RIVER DATUM
(MEAN LOWER LOW WATER DURING LOWEST RIVER STAGES)

S A U V I E



SCALE 1:10,000
Half Nautical Mile

Half Statute Mile
Yards
0 100 200 300 400 500

60th Ed., Jun. / 12
18526

Corrected through NM Jun. 23/12
Corrected through LNM Jun. 19/12

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.

WARNING

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

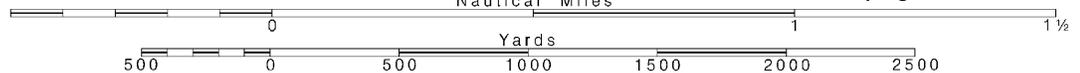
16

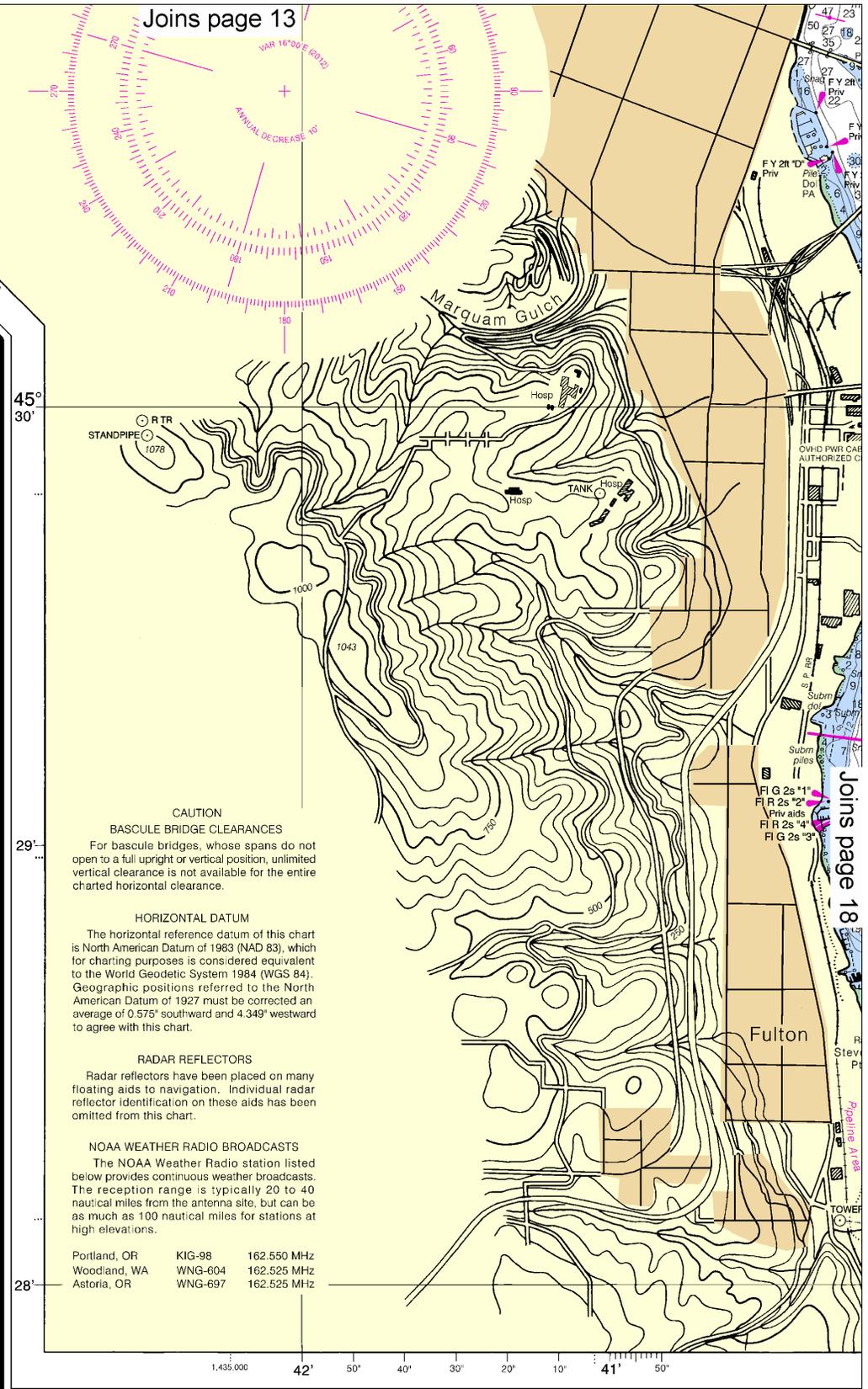
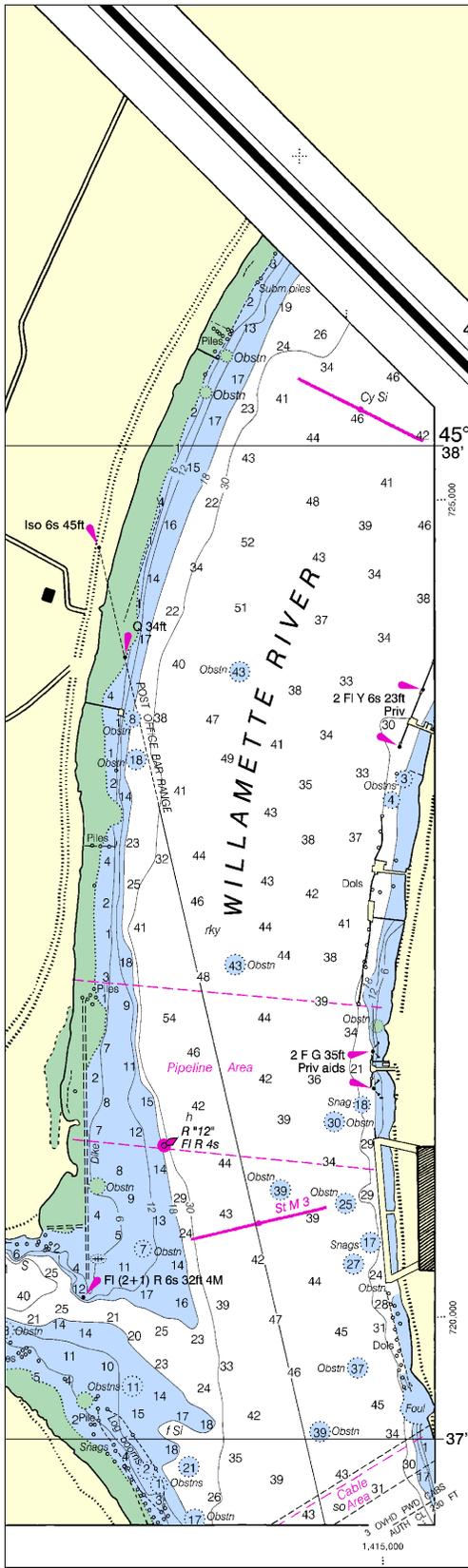
Note: Chart grid lines are aligned with true north.

Printed at reduced scale.

SCALE 1:20,000
Nautical Miles

See Note on page 5.





CAUTION
BASCULE BRIDGE CLEARANCES
 For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

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 1927 must be corrected an average of 0.575' southward and 4.349' westward to agree with this chart.

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.

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.

Portland, OR	KIG-98	162.550 MHz
Woodland, WA	WNG-604	162.525 MHz
Astoria, OR	WNG-697	162.525 MHz

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

FATHOMS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
FEET	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102
METERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

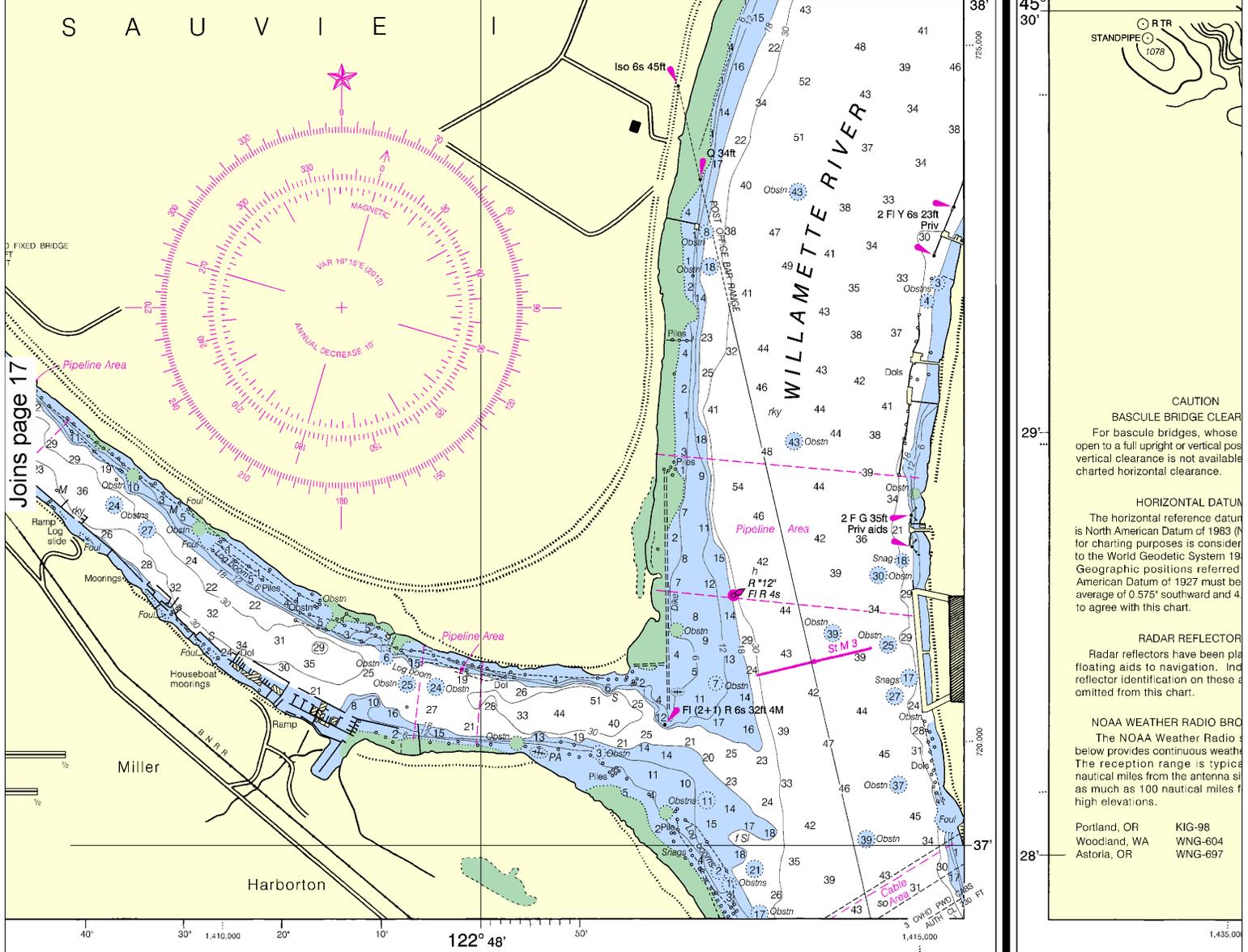
SOU

TNOMAH CHANNEL SOUTHERN PART

Joins page 14

Scale 1:10,000

FOUNDINGS AND CLEARANCES OF BRIDGES
AND OVERHEAD CABLES IN FEET
AT COLUMBIA RIVER DATUM
(IN LOWER LOW WATER DURING LOWEST RIVER STAGES)



CAUTION
BASCULE BRIDGE CLEARANCE
For bascule bridges, whose openings to a full upright or vertical position, vertical clearance is not available, charted horizontal clearance.

HORIZONTAL DATUM
The horizontal reference datum is North American Datum of 1983 (NAD 83). For charting purposes, it is considered to be the World Geodetic System 1984 datum. Geographic positions referred to the American Datum of 1927 must be corrected by an average of 0.575' southward and 4' eastward to agree with this chart.

RADAR REFLECTOR
Radar reflectors have been placed on floating aids to navigation. Identification of these aids is omitted from this chart.

NOAA WEATHER RADIO BROADCAST
The NOAA Weather Radio Broadcast below provides continuous weather information. The reception range is typically 20 nautical miles from the antenna site, but may be as much as 100 nautical miles from high elevations.

Portland, OR KIG-98
Woodland, WA WNG-604
Astoria, OR WNG-697

CAUTION
Noted in the Notice to Mariners (NM) published in the Federal Register and the Local Notice to Mariners by each U.S. Coast Guard district in the lower left hand corner are available at the end of each issue.

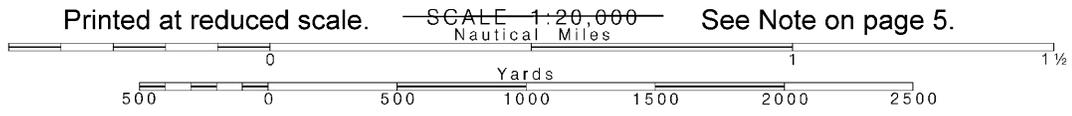
WARNING
The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

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

FATHOMS	1	2	3	4	5	6	7	8	9	10
FEET	6	12	18	24	30	36	42	48	54	60
METERS	1.1	2.2	3.3	4.4	5.5	6.6	7.7	8.8	9.9	11.0

18

Note: Chart grid lines are aligned with true north.



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>



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



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.

