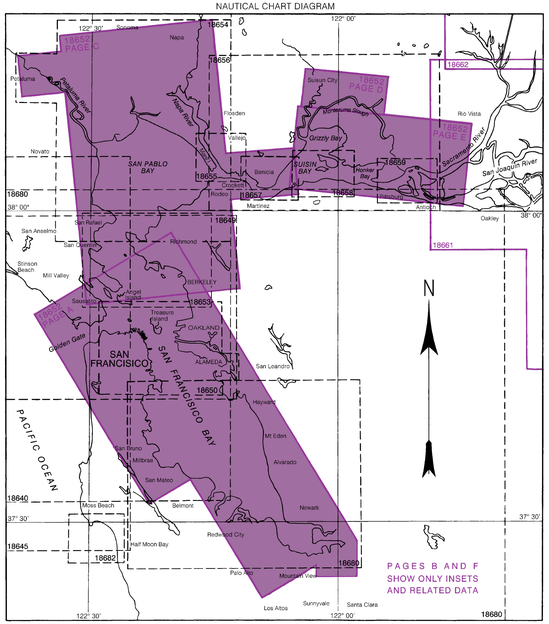
THE NATION'S CHARTMAKER SINCE 1807

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.

SAN FRANCISCO BAY TO ANTIOCH

CALIFORNIA

NAUTICAL CHART DIAGRAM



PAGES B AND F SHOW ONLY INSETS AND RELATED DATA

	DEPTHS			SERVICES								SUPPLIES								
NO.	SMALL CRAFT FACILITY	CHART DATUM	APPROACH FEET (REPORTED)	ALONGSIDE FEET (REPORTED)	BERTH FEET (REPORTED)	TRANSIENT BERTHS	REPAIRS	MARINE SURVEY	LIFT (GANTRY) FEET	BOAT RENTAL	POOL LODGING CAPACITY	TOTAL LODGING CAPACITY	CANOE RENTAL	CHARTER HOUSE SIZE	PUMP-OUT STATION*	WATER	FUEL	ICE	PROVISIONS	MARINE OIL	GASOLINE	DIESEL OIL
13	COYOTE POINT MARINA	A	12	8	B	E	S					M	CHS	F	TS	P	W		Wl			DG
23	SAN LEANDRO MARINA	A	3	8	B	E	S							FL	TS	P			W			DG
24	BALLENA ISLE MARINA	A	7	8	B	E						M	C	S	F	TSLP	WD		Wl	GH		DG
49	EMERYVILLE MARINA	B	8	6	BME	S							C	FL	TSLP	W		Wl	G	BT		DG
50	BERKELEY YACHT HARBOR	B	8	5	B	E	S	HM			25		C	S	FL	TS	P		Wl	H	BT	DG
50B	BERKELEY MARINA	B	7	16	B	E	S				1	M	C	H	FL	TS	P	WD	C	Wl	GH	BT	DG
51	MARINA BAY YACHT HARBOR	B	5	5	B	E	S								F	TSLP		D		Wl	G		DG
53A	BAY SHIP & YACHT CO.	B	12	8	B		S	HM/R							F	TSLP	WD	C	Wl	GH	BT	DG
70	CLIPPER YACHT HARBOR	B	12	8	B	E	S	HM/R			100				F	TSLP	WD	C	Wl	GH	BT	DG
94	LOCH LOMOND MARINA	D	8½	8½	B	E	S	M							F	TS	P	WD	C	Wl	GH	BT	DG
96A	PORT SONOMA MARINA	C	7	7	B						3				F	TS	P	WD	C	Wl		BT	DG
100A	PETALUMA MARINA	C	9	9	BME	S										TS	P	W		W			G
105	VALLEJO MUNICIPAL MARINA	D	12	12	B	E										TSLP				W			DG
111A	NAPA VALLEY MARINA	C	17	8	B	E		HM	50	35					F	TS	P	WD	C	Wl	GH	BT	DG
115	BENICIA MARINA	C	8	8	B	E	S								F	TSLP				Wl			DG
123A	MARTINEZ MARINA	C	8	6	B	E	S								F	TSLP	W		Wl	GH	BT	DG
127	CITY OF PITTSBURG MARINA	F	27	7½	B	E	S	HM					C		F	TS	P	W	C	Wl	G	BT	DG
132	SUISUN CITY MARINA	D	10	10	B	E	S	M							FL	S	P	W		W	G	B	DG
141	ANTIOCH MARINA	F	8	10	B	E									F	TSLP				Wl	GH		DG
145	DRIFTWOOD NARINA	E	6	6	B	E										TS	P	D					G
147	BIG BREAK MARINA	E	10	10	BME	S	HM/R	60	20						FC	TSLP	WD	C	Wl	GH	BT	DG
148	LAURITZEN YATCH HARBOR	E	10	8½	B	S	M									P	WD	C	Wl	H		G
149	JACK LONDON SQUARE MARINA	A	45	15	B	E						CR	C	S	FL	TSLP			Wl	G		DG

THE LOCATIONS OF THE ABOVE PUBLIC MARINE FACILITIES ARE SHOWN ON THE CHART BY MAGENTA NUMBERS AND LEADERS.
THE TABULATED 'APPROACH FEET (REPORTED)' IS THE DEPTH AVAILABLE FROM THE NEAREST NATURAL OR DREDGED CHANNEL TO THE FACILITY.
THE TABULATED *PUMP-OUT STATION' IS DEFINED AS FACILITIES AVAILABLE FOR PUMPING OUT BOAT HOLDING TANKS.

SCALE 1:40,000 Nautical Miles

SCALE 1:80,000 Nautical Miles

MARINE WEATHER FORECASTS

NATIONAL WEATHER SERVICE	TELEPHONE NUMBERS	OFFICE HOURS
Eureka, CA	(707) 443-6484	8:00 AM - 5:00 PM M-F*
San Francisco Bay Area, CA	(831) 656-1725	8:00 AM - 4:00 PM M-F*
Oxnard, CA	(805) 988-6610	7:00 AM - 3:00 PM M-F*
Sacramento, CA	(916)979-3051	8:00 AM - 4:00 PM M-F*
San Diego, CA	(619) 675-8706	8:00 AM - 4:00 PM M-F*

*Recorded forecast only at other times

NOAA WEATHER RADIO BROADCASTS

CITY	STATION	FREQUENCY	BROADCAST TIMES
Mt Pise, CA	KHB-49	162.40 MHz	24 hours daily
Mt Umunhum, CA	KEC-49	162.55 MHz	24 hours daily
	WWF-64	162.45 MHz	24 hours daily
Sacramento, CA	KEC-57	162.55 MHz	24 hours daily

BROADCASTS OF MARINE WEATHER FORECASTS AND WARNINGS BY MARINE RADIOTELEPHONE STATIONS

CITY	FREQUENCY	BROADCAST TIMES/PST
San Francisco, CA	*157.1 kHz	8:30 & 11:00 AM, 1:30 PM (winter)
	*2670 kHz	6:30 AM & PM

* Preceded by announcement on 2182 kHz and 156.8 MHz

Distress calls for small craft are made on 2182 kHz or channel 16 (156.80 MHz) VHF

PUBLIC BOATING INSTRUCTION PROGRAMS

The United States Power Squadrons (USPS) and U.S. Coast Guard Auxiliary (USCGAUX), national organizations of boatmen, conduct extensive boating instruction programs in communities throughout the United States. For information regarding these educational courses, contact the following sources:

USPS -- Local Squadron Commander or USPS Headquarters, Post Office Box 30423, Raleigh, NC, 27612: 919-821-0281.

USCGAUX -- 11th Coast Guard District, Building 51-1, Coast Guard Island, Alameda, CA. 94501-5100, 510-437-3310, or USCG Headquarters (G-OCX), Washington, D.C., 20593-0001.

LOGARITHMIC SPEED SCALE

To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots.

1 2 3 4 5 6 7 8 9 10 15 20 25 30 40 50 60

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE

18652

18652

EDITION 36

Last Correction: 9/17/2015. Cleared through:
LNM: 4015 (10/6/2015), NM: 4215 (10/17/2015)

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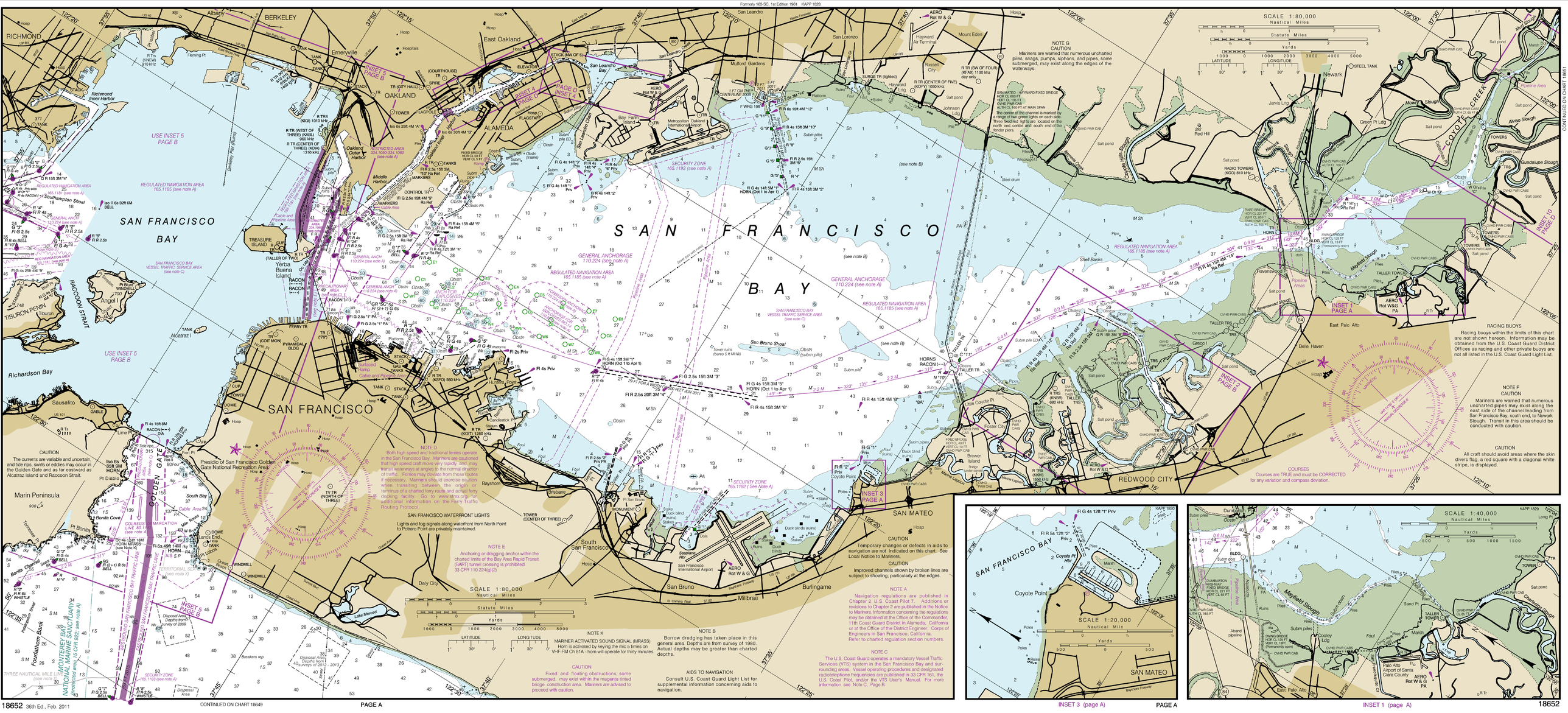
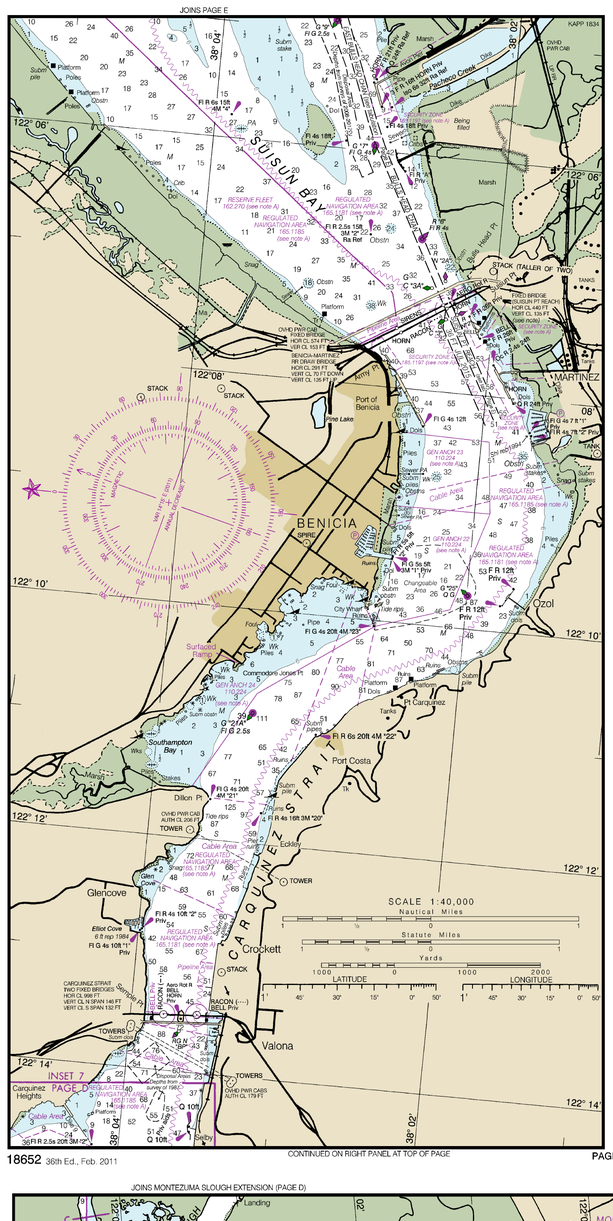
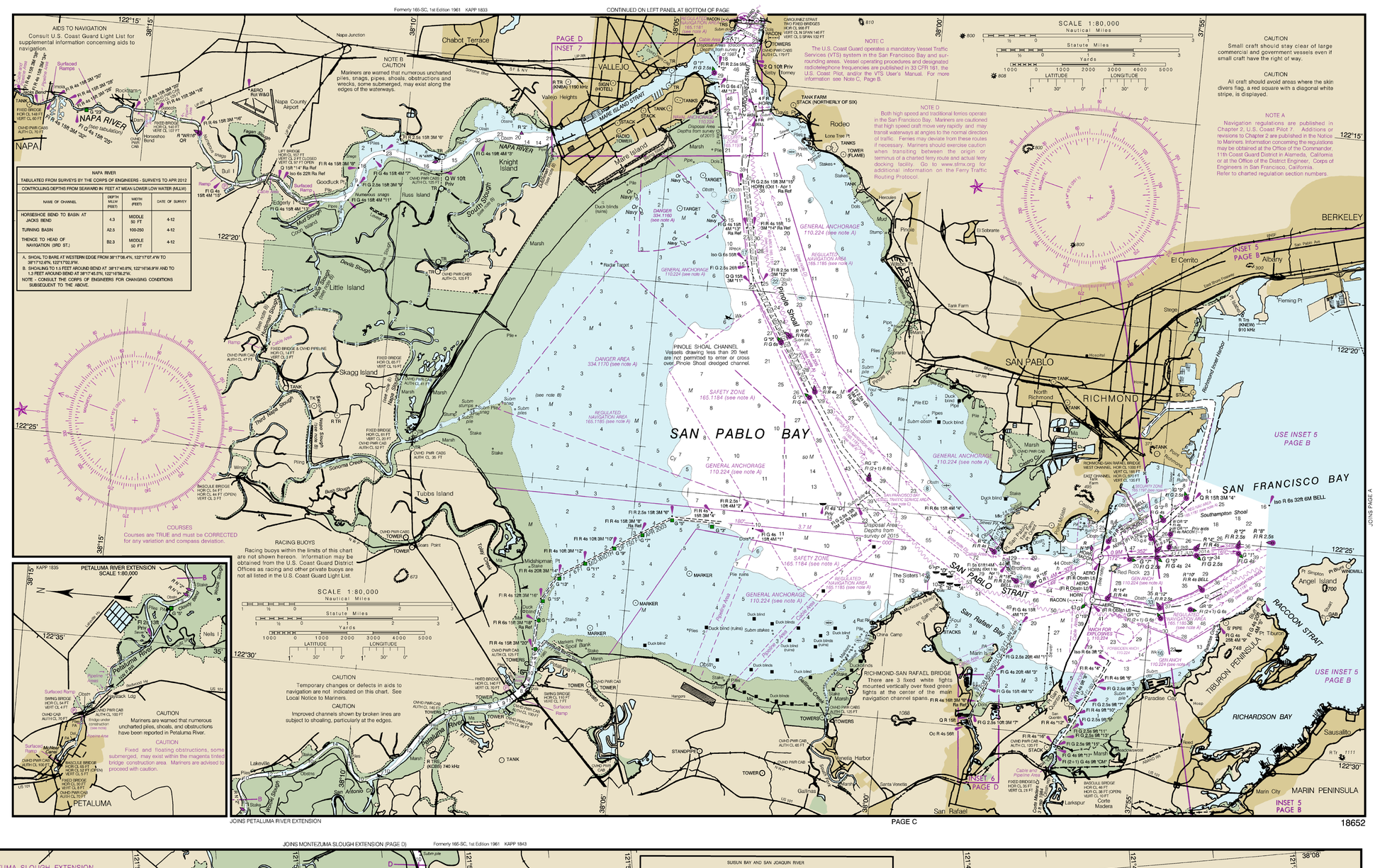
LN: 36
NSN 7642014011643
NGA REFERENCE NO. 18XHA18652







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NAUTICAL CHART 18652

SAN FRANCISCO BAY TO ANTIOCH

CALIFORNIA

THE NATION'S CHARTMAKER SINCE 1807

MERCATOR PROJECTION AT SCALE 1:40,000 & 1:80,000
SOUNDINGS IN FEET AT MEAN LOWER LOW WATER
North American Datum of 1983
(World Geodetic System 1984)

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 0.262" southward and 3.882" westward to agree with this chart.

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

COURSES

Distances are given in International Nautical Miles. Courses are TRUE and must be CORRECTED for any variation and compass deviation.

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.

SUPPLEMENTAL INFORMATION

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

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.

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, 11th Coast Guard District in Alameda, California or at the Office of the District Engineer, Corps of Engineers in San Francisco, California.
Refer to charted regulation section numbers.

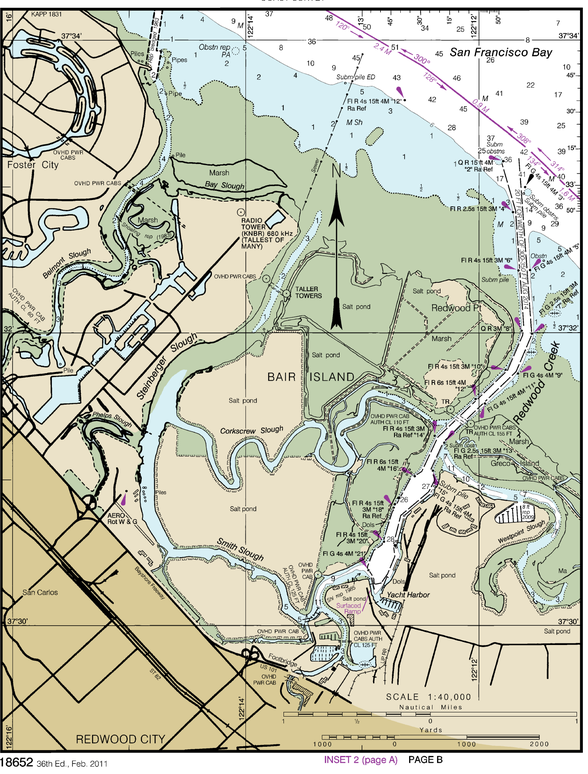
For Symbols and Abbreviations see Chart No. 1

COLREGS: International Regulations for Preventing Collisions at Sea, 1972.
Demarcation lines are shown thus: — — — —

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



INSET 2 (page A)

CONTINUED ON PAGE C

NOTE F

Both high speed and traditional ferries operate in the San Francisco Bay. Mariners are cautioned that high speed craft move very rapidly and may transit waterways at angles to the normal direction of traffic. Ferries may deviate from routes if necessary. Mariners should exercise caution when transiting between the origin or terminus of a charted ferry route and actual ferry docking facility. Go to www.smfx.org for additional information on the Ferry Traffic Routing Protocol.

NOTE C
SAN FRANCISCO VESSEL TRAFFIC SERVICE

The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in the San Francisco Bay and surrounding areas. Vessel operating procedures and designated radiotelephone frequencies are published in 33 CFR 161; the U.S. Coast Pilot, and/or the VTS User's Manual. Mariners should consult these sources for applicable rules and reporting requirements. Although mandatory VTS participation is limited to the navigable waters of the United States, certain vessels are encouraged or may be required, as a condition of port entry to report beyond this area to facilitate advance vessel traffic management within the VTS area.

The U.S. Coast Guard operates a Vessel Traffic Service Offshore Vessel Movement Reporting System covering the seaward approaches to San Francisco Bay. Vessels are requested to monitor VTSSF on Channel 12 at 15 and 45 minutes past each hour for broadcast reports of known shipping traffic in the area.

All of the San Pablo Bay is within the VTS area, with the exception of the Petaluma River Entrance Channel.

PRECAUTIONARY AREA

Traffic within the Precautionary Area consists of vessels maneuvering on various courses. Vessels transiting the Precautionary Area should, when possible, keep the centerline of the area to port providing for a counterclockwise movement of vessels within the area. Mariners are advised to use extreme caution when navigating within this area.

TRAFFIC LANES

Traffic lanes are intended for use by vessels 300 gross tons and over; arrows indicate the approximate direction or traffic flow within each lane.

DEEP WATER ROUTE

Vessels with a draft of 45 feet or greater should use the "Deep Water Route" east of the Golden Gate Bridge. Vessels intending to use the Deep Water Route should notify San Francisco Traffic before passing Mile Rocks. Deep draft vessels will neither meet nor overtake in the Deep Water Route. Deep draft vessels bound for anchorage 9 should pass east of Blossom Rock then through the C-D or D-E span of the San Francisco-Oakland Bay Bridge.

RECREATION AREAS

Recreation areas are intended primarily for use by recreation vessels. Such areas should not be used by vessels 300 gross tons or more, except in case of emergency or special circumstances.

The City of Richmond requests that vessels use extreme caution when turning or anchoring in the vicinity of its 72" diameter outfall pipeline which is located 4700 feet offshore of Point Richmond at a depth of 26 feet below mean lower low water in approximate position 37°54'47"N, 122°23'06"W.

VESSEL TRANSITING

The U.S. Coast Guard and the Pacific States/British Columbia Oil Spill Task Force endorse a system of voluntary measures and minimum distances from shore for certain commercial vessels transiting along the coast anywhere between Cook Inlet, Alaska and San Diego, California. See U.S.Coast Pilot 7, Chapter 3 for details.

CAUTION

The currents are variable and uncertain, and tide rips, swirls or eddies may occur in the Golden Gate and as far eastward as Alcatraz Island and Raccoon Strait.

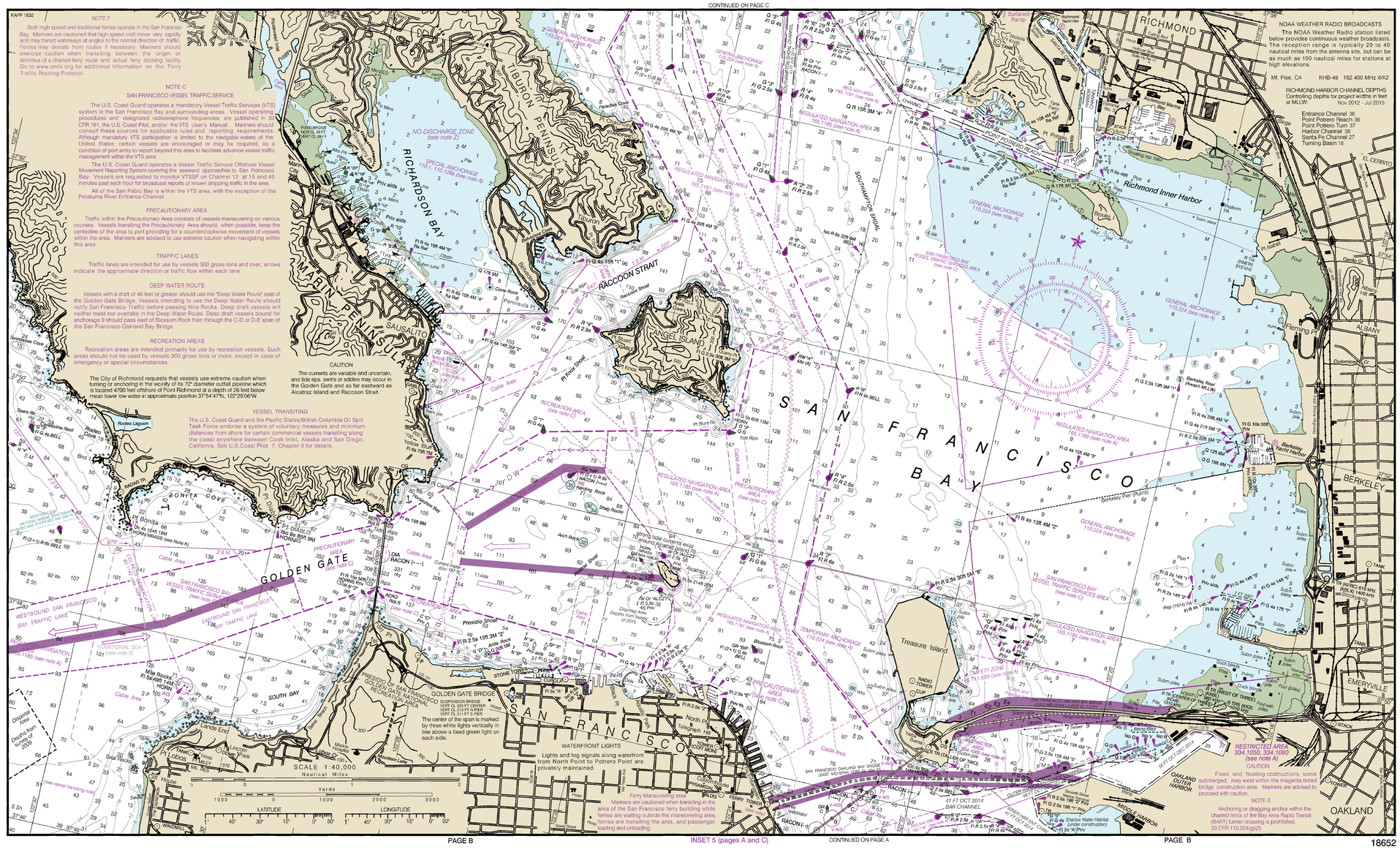
NOAA WEATHER RADIO BROADCASTS

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.

Mt. Pise, CA KHB-49 162.400 MHz WX2

RICHMOND HARBOR CHANNEL DEPTHS
Controlling depths for project widths in feet at MLLW.
Nov 2012 - Jul 2015

Entrance Channel 36
Point Potrero Reach 36
Point Potrero Turn 37
Harbor Channel 36
Santa Fe Channel 27
Turning Basin 18



INSET 5 (pages A and C)

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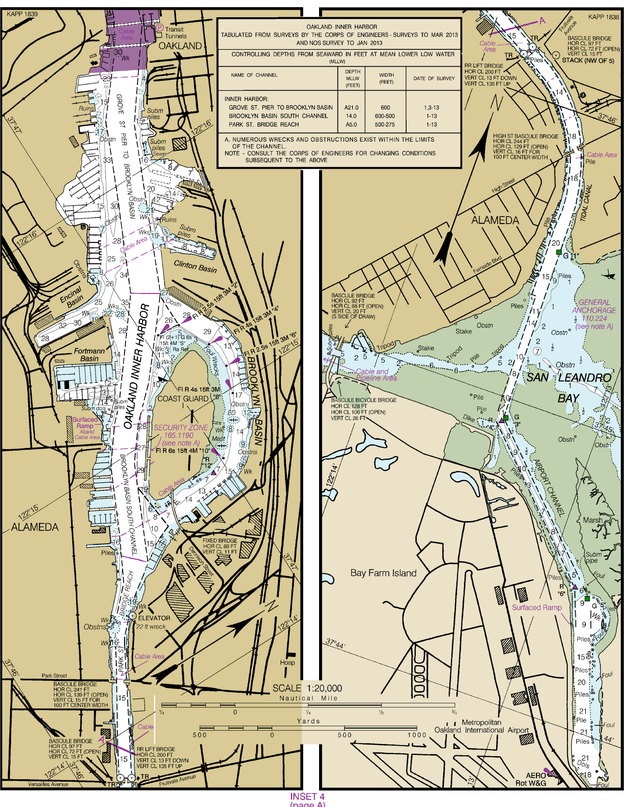
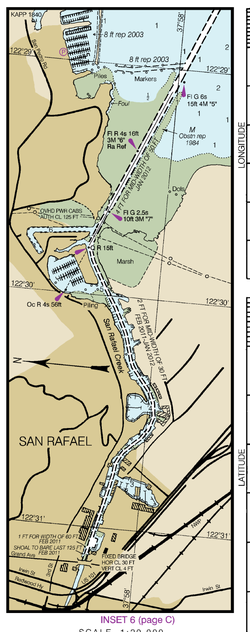


INSET 4 (page A)



INSET 6 (page C)

CAUTION

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

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.

RACING BUOYS

Racing buoys within the limits of this chart are not shown hereon. Information may be obtained from the U.S. Coast Guard District Offices as racing and other private buoys are not all listed in the U.S. Coast Guard Light List.

NOTE A

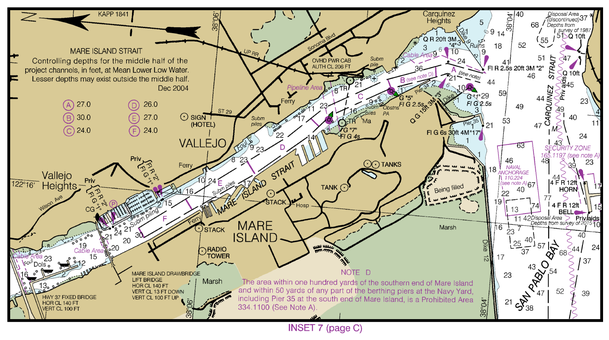
Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 11th Coast Guard District in Alameda, California or at the Office of the District Engineer, Corps of Engineers in San Francisco, California.
Refer to charted regulation section numbers.

SAFETY HINTS

1. Keep your chart up to date by applying all Notices to Mariners corrections when ou receive them.
2. Read carefully all notes printed on your chart, each is vital to your safety afloat.
3. Learn the meaning of each symbol and abbreviation on your chart from Chart No. 1.
4. The compass on your chart shows the variation from true north, however you must also correct your bearing for the deviation of your boat.
5. Constantly use your chart from the beginning to end of each trip. Keep in mind the orientation of your boat with respect to the chart.
6. Maintain your position on the chart by relating charted features with those you can identify in your surroundings.

RULES OF THE ROAD
(ABRIDGED)

Motorless craft have the right-of-way in most cases.
Sailing vessels and motorboats less than twenty meters in length, shall not hamper, in a narrow channel, the safe passage of a vessel which can navigate only inside that channel.
A motorboat being overtaken has the right-of-way.
Motorboats approaching head to head or nearly so should pass port to port.
When motorboats approach each other at right angles or obliquely, the boat on the right has the right-of-way in most cases.
Motorboats must keep to the right in narrow channels, when safe and practicable.
Mariners are urged to become familiar with the complete text of the Rules of the Road in U. S. Coast Guard publication "Navigation Rules."



INSET 7 (page C)

SCALE 1:40,000
Nautical Miles
Statute Miles
Yards
LATITUDE
LONGITUDE

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.

CAUTION

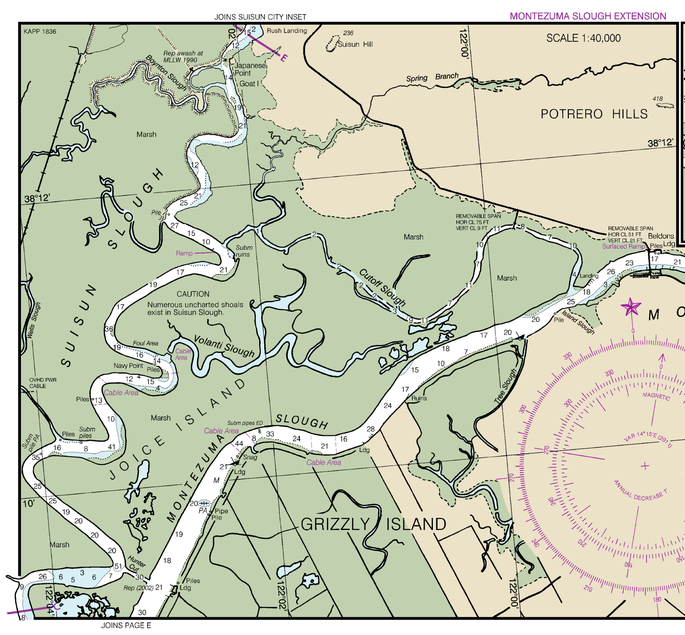
Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

CAUTION

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

INSET 10 (page A)

PAGE D

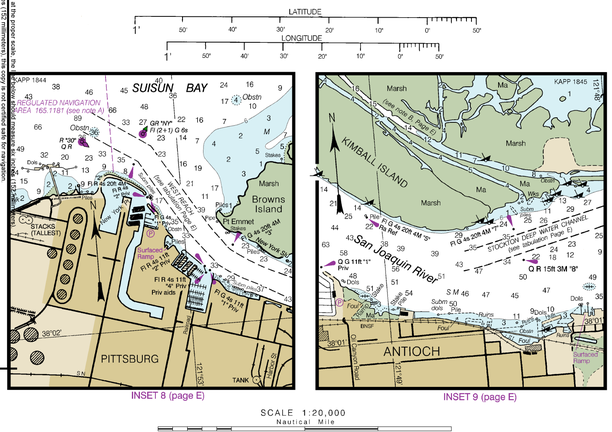


JOINS PAGE E

TIDAL CURRENT DATA

PLACE	Position Lat.	Position Long.	Maximum Currents Flood Direction (true)	Flood Average velocity	Ebb Direction (true)	Ebb Average velocity
	° ′ N.	° ′ W.	deg.	knots	deg.	knots
GOLDEN GATE and APPROACHES†						
Point Lobos, 2.5 miles west of*	37 46	122 34	80	0.9	270	1.7
South Channel	37 45	122 32	25	1.2	180	1.4
Bonita Channel, off Tennessee Cove*	37 50	122 34	110	1.1	325	0.8
Bonita Channel, off Point Bonita	37 49	122 32	115	1.3	355	0.3
Pt. Bonita-Pt. Lobos, midway between	37 46	122 31	45	2.3	225	2.6
Point Diablo, 0.8 mile SE. of	37 49	122 30	80	1.8	265	3.0
SAN FRANCISCO BAY ENTRANCE	37 49	122 29	65	2.0	245	3.4
Golden Gate Bridge, 0.8 mile east of	37 49	122 28	70	2.5	255	2.3
SAN FRANCISCO BAY, South						
Alcatraz Island, 0.2 mile west of	37 50	122 26	70	2.3	265	2.1
Alcatraz Island, south of	37 49	122 25	95	1.8	285	1.9
Alcatraz Island, 0.8 mile east of	37 50	122 24	155	1.1	315	2.1
Treasure Island, 0.8 mile west of	37 49	122 24	150	1.2	335	2.5
Treasure Island, 0.2 mile west of	37 49	122 23	170	1.3	345	1.9
Yerba Buena Island, west of	37 49	122 23	170	1.4	315	2.5
San Francisco-Oakland Bay Bridge†						
Treasure Island, 0.5 mile north of	37 50	122 22	120	1.1	305	1.2
Treasure Island, 0.3 mile east of	37 50	122 21	140	1.4	325	1.5
Yerba Buena Island, 0.3 mile south of	37 48	122 22	140	1.6	345	2.2
Oakland Outer Harbor entrance	37 48	122 21	170	1.4	355	1.7
Oakland Inner Harbor entrance	37 48	122 20	180	1.0	340	1.5
Oakland inner Harbor channel	37 48	122 19	120	0.5	300	0.7
Oakland Harbor, Webster Street	37 48	122 16	120	0.9	300	1.0
Oakland Harbor, High Street Bridge	37 46	122 13	150	1.4	330	1.4
Rincon Point, 0.5 mile east of	37 47	122 22	160	2.0	340	2.4
Rincon Point, midway	37 47	122 21	145	2.1	320	2.1
Mission Rock, 0.6 mile east of	37 46	122 22	160	2.5	320	2.3
Mission Rock, 1.3 miles east of	37 47	122 21	180	2.1	345	2.0
Mission Rock, 2 miles east of	37 47	122 20	140	1.7	330	2.3
Potrero Point, 2 miles east of	37 45	122 20	160	1.6	330	1.6
Point Avisadero, 0.3 mile east of	37 44	122 21	155	1.6	335	1.9
Point Avisadero, 1 mile east of	37 44	122 20	155	1.6	350	1.5
Point Avisadero, 2 miles east of	37 44	122 19	150	1.5	335	1.6
Sierra Point, 1.3 miles ENE. of	37 41	122 22	180	1.0	5	1.0
Oyster Point, 2.8 miles east of	37 40	122 19	170	1.0	345	1.2
Sierra Point, 4.4 miles east of	37 40	122 18	150	1.0	330	0.8
San Mateo Bridge	37 35	122 15	140	1.5	310	1.5
Dumbarton Bridge	37 31	122 07	150	1.5	340	1.1
Dumbarton Point, 2.2 miles SE. of	37 28	122 04	125	1.8	300	1.1
SAN FRANCISCO BAY, North						
Yellow Bluff, 0.8 mile east of	37 50	122 27	20	2.9	255	2.3
Point Cavallo, 1.3 miles east of	37 50	122 27	65	2.4	255	2.6
Alcatraz Island, 0.5 mile north of*	37 50	122 25	65	1.8	285	2.4
Pt. Blunt, Angel I., 0.2 mile S. of	37 51	122 25	105	1.7	260	2.2
Pt. Blunt, Angel I., 0.8 mile SE. of	37 51	122 24	85	1.0	295	1.3
Angel Island, off Quarry Point	37 52	122 25	25	0.5	130	1.9
Angel Island, 0.8 mile east of	37 52	122 24	350	1.1	190	0.9
Angel Island, Pt. Knox, 1 mile SW. of	37 50	122 27	35	2.2	255	1.7
Richardson Bay entrance	37 51	122 28	75	0.9	225	0.5
Raccoon Strait, off Point Stuart	37 52	122 27	15	1.3	225	1.9
Raccoon Strait, off Hospital Cove	37 52	122 26	35	1.5	225	1.6
Bluff Point, 0.1 mile east of	37 53	122 26	10	1.7	145	1.9
Southampton Shoal Lt., 0.2 mi. E. of	37 53	122 24	20	0.9	190	1.1
Point Chauncey, 1.3 miles east of	37 54	122 25	340	1.3	160	1.4
Point Richmond, 0.5 mile west of	37 54	122 24	330	0.8	140	0.9
Red Rock, east of	37 56	122 26	320	1.3	175	1.4
Point San Quentin, 1.9 miles east of	37 57	122 26	15	1.4	170	2.1
SAN PABLO BAY						
Point San Pablo, midchannel	37 58	122 26	15	1.8	180	2.8
Pinole Point, 1.8 miles off	38 02	122 23	40	1.3	235	1.6
Petaluma River approach	38 04	122 25	20	0.6	185	0.7
Petaluma River entrance	38 07	122 30	295	1.2	90	1.0
Davis Point, midchannel	38 04	122 16	90	1.6	250	2.1
CARQUINEZ STRAIT						
Mare Island Strait ent., between dikes	38 04	122 15	40	1.3	210	1.7
Mare Island Strait, off South Vallejo	38 05	122 15	325	1.4	165	1.8
Crockett	38 04	122 13	125	2.8	275	2.7
Benicia, south of	38 02	122 08	80	1.9	260	2.2
SUISUN BAY						
Roe Island, south of	38 04	122 02	90	1.3	270	1.7
Chipps Island, south of	38 03	121 55	90	2.2	270	2.2
Suisun Slough entrance	38 07	122 04	290	1.2	110	1.3
Montezuma Slough, west entrance	38 06	122 03	355	1.4	175	1.4
Between Roe Island and Ryer Island	38 04	122 01	115	1.3	295	1.6
Suisun Cutoff	38 05	122 00	120	1.6	300	1.8
Spoonbill Creek, near bridge	38 04	121 54	105	1.5	285	1.3
Montezuma Slough, E. end, near bridge	38 05	121 53	135	1.0	315	1.2
New York Slough	38 08	121 52	110	1.2	295	1.3
SACRAMENTO RIVER†						
Entrance, 0.7 mile SW. of Chain I	38 03	121 52	55	1.2	210	1.3
Point Sacramento, 0.5 mile NE. of	38 04	121 50	100	1.1	285	0.8
SAN JOAQUIN RIVER†						
Point Beenar, 0.8 mile north of	38 03	121 50	155	1.0	355	1.4
Antioch Point, 0.3 mile east of	38 02	121 49	130	1.5	305	1.4
West Island Light, 0.5 mile SE. of	38 03	121 46	90	0.4	270	0.7

* Large current eddies which cause ships to shear off course are reported near the foundation piers of Golden Gate Bridge and San Francisco-Oakland Bay Bridge.
† Current is somewhat rotary, turning clockwise.
‡ Current is somewhat rotary, turning counterclockwise.
§ Data do not apply during freshets.



INSET 8 (page E)

INSET 9 (page E)

SCALE 1:20,000
Nautical Mile
Yards

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
Al 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	WHS 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: — — — —

WARNINGS CONCERNING LARGE VESSELS

The "Rules of the Road" state that recreational boats shall not impede the passage of a vessel that can navigate only within a narrow channel or fairway. Large vessels may appear to move slowly due to their large size, but actually transit at speeds in excess of 12 knots requiring a great distance in which to maneuver or stop. A large vessel's superstructure may block the wind with the result that sailboats and sailboards may unexpectedly find themselves unable to maneuver. Bow and stern waves can be hazardous to small vessels. Large vessels may not be able to see small craft close to their bows.

DETERMINATION OF WIND SPEED FROM SEA CONDITION				
Wind Speed (knots)	Wind Description	Sea Conditions	Wind Force (Beaufort)	Probable Wave Height (feet)
0-1	Calm	Sea smooth and mirror-like.	0	-
1-3	Light air	Scale-like ripples without foam crests.	1	½
4-6	Light breeze	Small, short wavelets; crests have a glassy appearance and do not break.	2	½
7-10	Gentle breeze	Large wavelets; some crests begin to break; foam of glassy appearance. Occasional white foam crests.	3	2
11-16	Moderate breeze	Small waves, becoming longer; fairly frequent white foam crests.	4	4
17-21	Fresh breeze	Moderate waves, taking a more pronounced long form; many white foam crests; there may be some spray.	5	6
22-27	Strong breeze	Large waves begin to form; white foam crests are more extensive everywhere; there may be some spray.	6	10
28-33	Near gale	Sea heaps up and white foam from breaking waves begin to be blown in streaks along the direction of the wind; spindrift begins.	7	14
34-40	Gale	Moderately high waves of greater length; edges of crests break into spindrift; foam is blown in well-marked streaks along the direction of the wind.	8	18

Pump out facilities

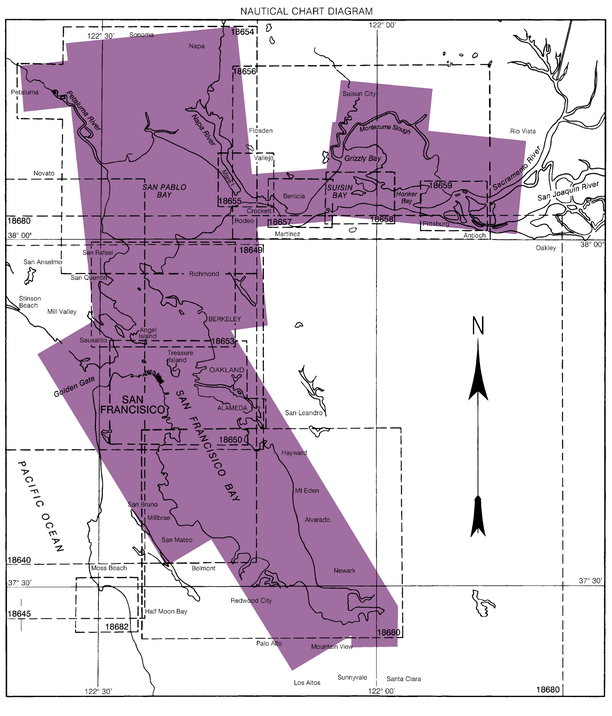
NOTE Z
NO-DISCHARGE ZONE, 40 CFR 140

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. 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/.

NOTE X

Within the 12-nautical mile Territorial Sea, established by Presidential Proclamation, some Federal laws apply. The Three Nautical Mile Line, previously identified as the outer limit of the territorial sea, is retained as it continues to depict the jurisdictional limit of the other laws. The 9-nautical mile Natural Resource Boundary off the Gulf coast of Florida, Texas, and Puerto Rico, and the Three Nautical Mile Line elsewhere remain in most cases the inner limit of Federal fisheries jurisdiction and the outer limit of the jurisdiction of the states. The 24-nautical mile Contiguous Zone and the 200-nautical mile Exclusive Economic Zone were established by Presidential Proclamation. Unless fixed by treaty or the U.S. Supreme Court, these maritime limits are subject to modification.

NAUTICAL CHART DIAGRAM



SCALE 1:80,000
Nautical Miles

TIDAL INFORMATION

PLACE NAME	(LAT/LONG)	Height referred to datum of soundings (MLLW) Mean Higher High Water	Mean High Water	Mean Low Water
		feet	feet	feet
Point Orient	(37°58'N/122°26'W)	6.0	5.4	1.1
San Francisco (Golden Gate)	(37°48'N/122°28'W)	5.8	5.2	1.1
Hunters Point	(37°44'N/122°21'W)	6.8	6.2	1.1
Oyster Point Marina	(37°40'N/122°23'W)	7.1	6.4	1.1
San Mateo Bridge (West End)	(37°35'N/122°15'W)	7.7	7.1	1.2
Dumbarton Highway Bridge	(37°30'N/122°07'W)	8.5	7.9	1.2
Redwood City, Wharf 5	(37°30'N/122°13'W)	8.2	7.6	1.2
Alameda (Naval Air Station)	(37°46'N/122°18'W)	6.6	5.8	1.1
Sausalito, USACE Dock	(37°52'N/122°30'W)	5.7	5.1	1.1
Richmond Inner Harbor	(37°55'N/122°21'W)	6.0	5.4	1.1
Point San Quentin	(37°57'N/122°29'W)	5.8	5.2	1.1
Antioch	(38°01'N/121°49'W)	3.9	3.4	0.6
Benicia	(38°03'N/122°08'W)	5.3	4.8	0.9
Mallard Island Ferry Wharf	(38°03'N/121°55'W)	4.1	3.6	0.6
Crockett	(38°04'N/122°13'W)	5.9	5.4	1.0
Port Chicago	(38°03'N/122°02'W)	4.9	4.4	0.7
Collinsville	(38°04'N/121°51'W)	4.0	3.5	0.6
Mare Island	(38°04'N/122°15'W)	5.9	5.3	1.0
Petaluma River Entrance	(38°07'N/122°30'W)	6.1	5.6	1.0
Suisun Slough Entrance	(38°07'N/122°04'W)	4.7	4.2	0.7
Oakland Middle Harbor, Pier 40	(37°48'N/122°20'W)	6.2	5.6	1.1

Dashes (- - -) located in datum columns indicate unavailable datum values for a tide station. Real-time water levels, tide predictions, and tidal current predictions are available on the Internet from http://tidesandcurrents.noaa.gov.
(Dec 2010)

TIDAL INFORMATION

Near real time water level data, predictions and weather data are available via Internet at http://tidesandcurrents.noaa.gov. Annual predictions of the rise and fall of the tides are available in printed form from private sector printers.

MARINE WEATHER FORECASTS

NATIONAL WEATHER SERVICE	TELEPHONE NUMBERS	OFFICE HOURS
Eureka, CA	(707) 443-6484	8:00 AM - 5:00 PM M-F*
San Francisco Bay Area, CA	(831) 656-1725	8:00 AM - 4:00 PM M-F*
Oxnard, CA	(805) 988-6610	7:00 AM - 3:00 PM M-F*
Sacramento, CA	(916)979-3051	8:00 AM - 4:00 PM M-F*
San Diego, CA	(619) 675-8706	8:00 AM - 4:00 PM M-F*

*Recorded forecast only at other times

NOAA WEATHER RADIO BROADCASTS

CITY	STATION	FREQUENCY	BROADCAST TIMES
Mt Pisgo, CA	KHB-49	162.40 MHz	24 hours daily
Mt Umunhum, CA	KEC-49	162.55 MHz	24 hours daily
	WWF-64	162.45 MHz	24 hours daily
Sacramento, CA	KEC-57	162.55 MHz	24 hours daily

BROADCASTS OF MARINE WEATHER FORECASTS
AND WARNINGS BY MARINE RADIOTELEPHONE STATIONS

CITY	FREQUENCY	BROADCAST TIMES/PST
San Francisco, CA	*157.1 MHz	8:30 & 11:00 AM, 1:30 PM (winter)
	*2670 kHz	6:30 AM & PM

* Preceded by announcement on 2182 kHz and 156.8 MHz

Distress calls for small craft are made on 2182 kHz or channel 16 (156.80 MHz) VHF

PUBLIC BOATING INSTRUCTION PROGRAMS

The United States Power Squadrons (USPS) and U.S. Coast Guard Auxiliary (USCGAUX), national organizations of boatmen, conduct extensive boating instruction programs in communities throughout the United States. For information regarding these educational courses, contact the following sources:

USPS -- Local Squadron Commander or USPS Headquarters, Post Office Box 30423, Raleigh, NC, 27612, 919-821-0281.

USCGAUX -- 11th Coast Guard District, Building 51-1, Coast Guard Island, Alameda, CA, 94501-5100, 510-437-3310, or USCG Headquarters (G-OCX), Washington, D.C., 20593-0001.

NOAA encourages users to submit inquiries, discrepancies or comments about this chart at http://www.nauticalcharts.noaa.gov/staff/contact.htm.

Last Correction: 10/9/2015. Cleared through:
LNM: 4015 (10/6/2015), NM: 4215 (10/17/2015)

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