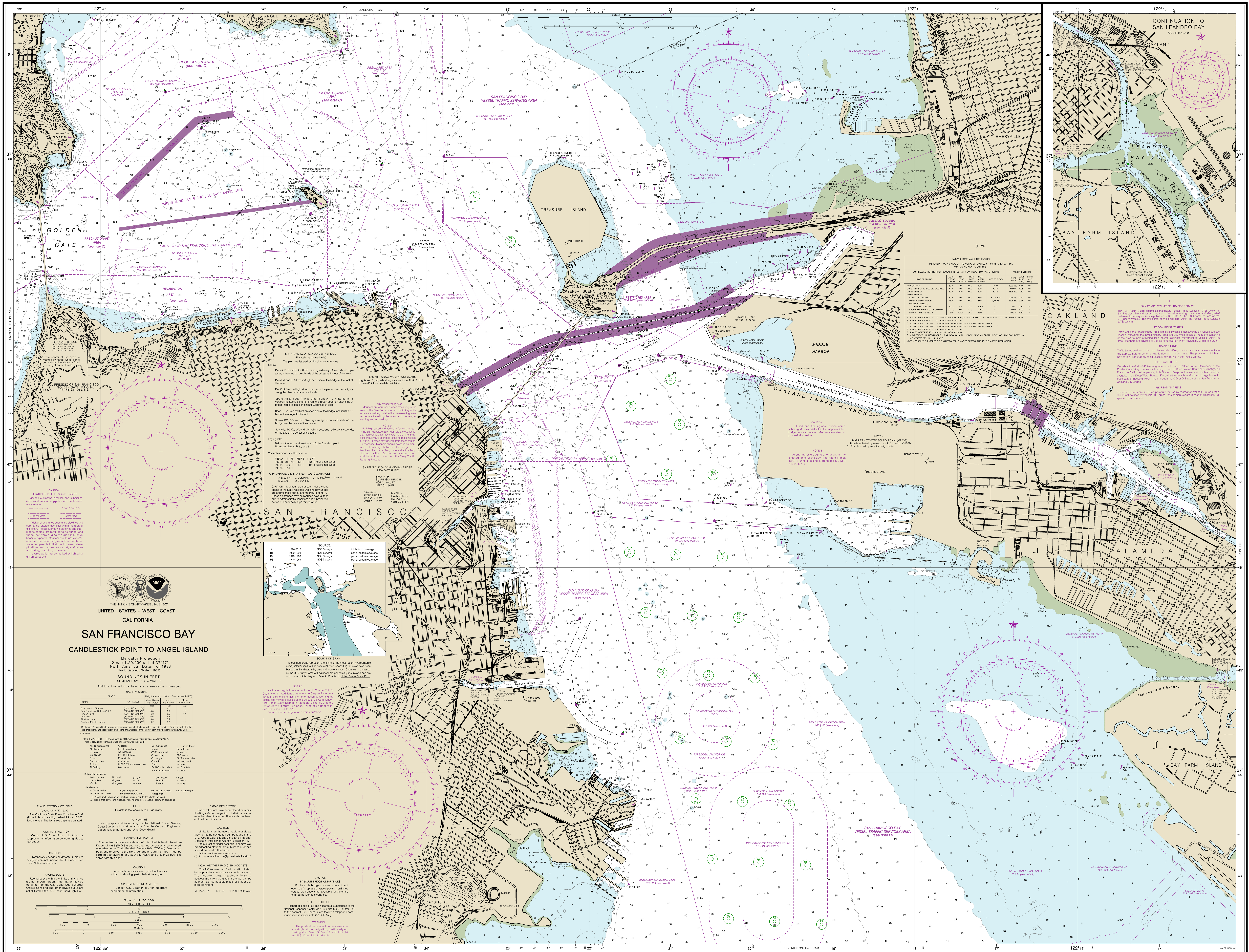
SOUNDINGS IN FEET

18650



THE NATION'S CHARTMAKER SINCE 1807

UNITED STATES - WEST COAST

CALIFORNIA

SAN FRANCISCO BAY

CANDLESTICK POINT TO ANGEL ISLAND

Mercator Projection
Scale 1:20,000 at Lat 37°47'
North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

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

TIDAL INFORMATION

PLACE		Height referred to datum of soundings (MLLW)		
NAME	(LAT/LONG)	Mean Higher High Water	Mean High Water	Mean Low Water
		feet	feet	feet
San Leandro Channel	(37°42'N/122°12'W)	7.2	6.6	1.1
San Francisco (Golden Gate)	(37°48'N/122°28'W)	5.8	5.2	1.1
Rincon Point	(37°47'N/122°23'W)	6.3	5.7	1.1
Alameda	(37°46'N/122°18'W)	6.6	5.8	1.1
Alcatraz Island	(37°50'N/122°25'W)	5.8	5.2	1.1
Oakland Middle Harbor	(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.

(Jul 2013)

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

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

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

Bottom characteristics:

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

Miscellaneous:

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

(21) 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.

PLANE COORDINATE GRID
(based on NAD 1927)
The California State Plane Coordinate Grid (Zone III) is indicated by dashed ticks at 10,000 foot intervals. The last three digits are omitted.

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

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

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.

HEIGHTS
Heights in feet above Mean High Water.

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

HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83) and 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 0.260" southward and 3.891" westward to agree with this chart.

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

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.

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) o(Approximate location)

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

SCALE 1:20,000

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.

The center of the span is marked by three white lights vertically in line above a fixed green light on each side.

SAN FRANCISCO - OAKLAND BAY BRIDGE
(Privately maintained aids)
The piers are lettered on the chart for reference

Lights:

Piers A, B, E and G. An AERO, flashing red every 10 seconds, on top of tower; a fixed red light each side of the bridge at the foot of the tower.

Piers I, J, and K. A fixed red light each side of the bridge at the foot of the tower.

Pier C. A fixed red light at each corner of the pier and red axis lights along the channel axis on each side.

Spans AB and DE. A fixed green light with 3 white lights in vertical line above center of channel through span, on each side of bridge; red axis lights on channelward face of piers.

Span EF. A fixed red light on each side of the bridge marking the NE limit of the navigable channel.

Spans BC, CD and IJ. Fixed green lights on each side of the bridge over the center of the channel.

Spans IJ, JK, KL, LM, and MN. A light occulting red every 5 seconds, on top and at the center of the span.

Fog signals:

Bells on the east and west sides of pier C and on pier I.
Horns on piers A, B, D, and E.

Vertical clearances at the piers are:

PIER A - 174 FT. PIER E - 175 FT.
PIER B - 217 FT. PIER I - 112 FT.(Being removed)
PIER C - 220 FT. PIER J - 112 FT.(Being removed)
PIER D - 218 FT.

APPROXIMATE MID-SPAN VERTICAL CLEARANCES
A-B 204 FT. C-D 220 FT. I-J 112 FT.(Being removed)
B-C 220 FT. D-E 204 FT.

CAUTION – Mid-span clearances under the long spans of the San Francisco-Oakland Bay Bridge are approximate and at a temperature of 55°F. These clearances may be reduced several feet due to extreme traffic conditions and a prolonged period of abnormally high temperature.

SAN FRANCISCO WATERFRONT LIGHTS
Lights and fog signals along waterfront from North Point to Potrero Point are privately maintained.

Ferry Maneuvering Area
Mariners are cautioned when transiting in the area of the San Francisco ferry building while ferries are waiting outside the maneuvering area, ferries are transiting the area, and passenger loading and unloading.

NOTE D
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 these 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.sfmx.org for additional information on the Ferry Traffic Routing Protocol.

SAN FRANCISCO - OAKLAND BAY BRIDGE
(NEW EAST SPANS)

SPAN G - H
SUSPENSION BRIDGE
HOR CL 1000 FT
VERT CL 136 FT

SPAN H - I
FIXED BRIDGE
HOR CL 413 FT
VERT CL125 FT

SPAN I - J
FIXED BRIDGE
HOR CL 417 FT
VERT CL 118 FT

SOURCE

A	1990-2013	NOS Surveys	full bottom coverage
B1	1990-1993	NOS Surveys	partial bottom coverage
B2	1970-1989	NOS Surveys	partial bottom coverage
B3	1940-1969	NOS Surveys	partial bottom coverage

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.

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.

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.

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).

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.

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

NOTE K
MARINER ACTIVATED SOUND SIGNAL (MRASS)
Horn is activated by keying the mic 5 times on VHF-FM Ch 81A - horn will operate for thirty minutes.

NOTE B
Anchoring or dragging anchor within the charted limits of the Bay Area Rapid Transit (BART) tunnel crossing is prohibited (33 CFR 110.224, a, 4).

OAKLAND OUTER AND INNER HARBORS

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO OCT 2016 AND NOS SURVEY TO JAN 2013

NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH MLLW (FEET)
CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)						PROJECT DIMENSIONS		
BAR CHANNEL	50.0	50.0	50.0	50.0	10-16	1000-930	0.57	50
OUTER HARBOR ENTRANCE CHANNEL	50.0	50.0	50.0	50.0	10-16	900-600	0.91	50
OUTER HARBOR	50.0	50.0	50.0	50.0	10-16	1575-600	1.40	50
INNER HARBOR								
ENTRANCE CHANNEL	50.0	49.0	49.0	48.0	10-14, 3-16	2100-480	1.10	50
INNER HARBOR REACH	45.0	50.0	50.0	47.0	3,4,5-16	1325-480	2.27	50
GROVE ST PIER TO BROOKLYN BASIN	A21.0	31.0	31.0	B25.0	1-13	600	1.30	35
BROOKLYN BASIN SOUTH CHANNEL	C14.0	22.0	23.0	D15.0	1-13	600-500	0.90	35
PARK ST BRIDGE REACH	E9.0	F20.0	20.0	G5.0	1-13	500-275	0.42	35

A. A 21 FT WRECK IS AT 37°47'14.93"N 122°15'50.26"W; A 28 FT OBSTRUCTION IS AT 37°47'14.14"N 122°15'51.56"W.
B. A 30 FT WRECK IS AT 37°47'26.83"N 122°16'29.13"W.
C. A DEPTH OF 17.0 FEET IS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
D. A DEPTH OF 18.0 FEET IS AVAILABLE IN THE INSIDE HALF OF THE QUARTER.
E. A 19 FT WRECK IS AT 37°46'29.04"N 122°14'27.21"W.
F. A 22 FT WRECK IS AT 37°46'26.57"N 122°14'25.04"W.
G. A WRECK OF UNKNOWN DEPTH IS AT 37°46'24.16"N 122°14'25.02"W; AN OBSTRUCTION OF UNKNOWN DEPTH IS AT 37°46'23.09"N 122°14'23.67"W.
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

CONTINUATION TO SAN LEANDRO BAY
SCALE 1:20,000

NOTE C
SAN FRANCISCO VESSEL TRAFFIC SERVICE
The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in 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 the VTS User's Manual. The entire area of the chart falls within the Vessel Traffic Services (VTS) system.

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 1600 gross tons and over; arrows indicate the approximate direction of traffic flow within each lane. The provisions of Inland Navigation Rule 9 apply to all vessels navigating in the Traffic Lanes.

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.

SOUNDINGS IN FEET

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

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.

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

57th Ed., Dec. 2013. Last Correction: 11/30/2016. Cleared through:
LNM: 4816 (11/29/2016), NM: 5016 (12/10/2016)

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If the line does not measure six inches (152 millimeters), this copy is not certified safe for navigation.

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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

San Francisco Bay
SOUNDINGS IN FEET - SCALE 1:20,000

18650