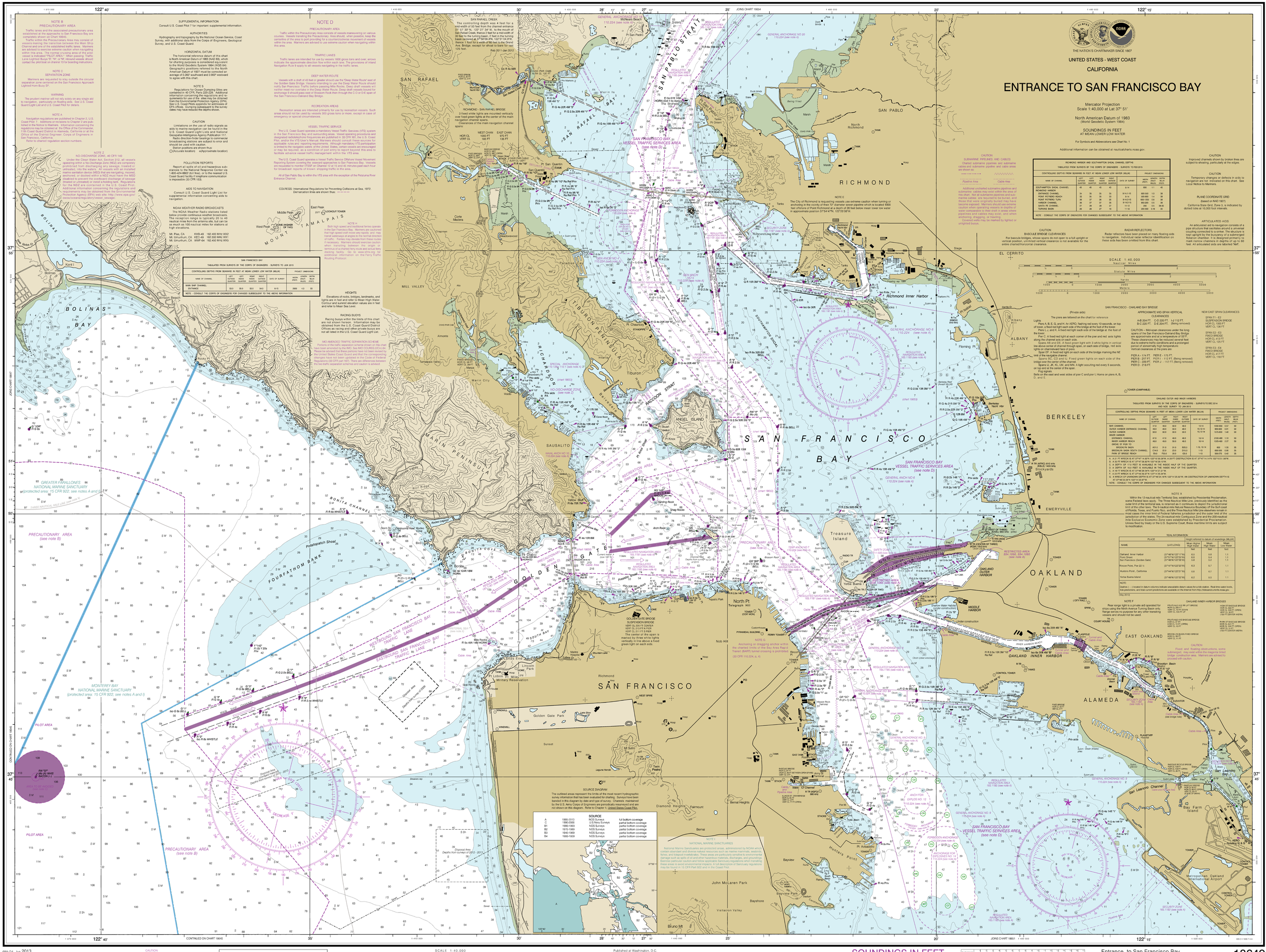

Formerly C&GS 5532, 1st Ed., Jan. 1993 KAPP 1623

NOTE B
PRECAUTIONARY AREA

Traffic lanes and the associated precautionary area established at the approaches to San Francisco Bay are completely shown on Chart 18645.

Traffic within the Precautionary Area may consist of vessels making the transition between the Main Ship Channel and one of the established traffic lanes. Mariners are advised to exercise extreme caution when navigating within this area. The normal cruising area of the pilot vessel is indicated "PILOT AREA." Within passing Traffic Lane Lighted Buoys "B", "M", or "N", inbound vessels should contact the pilot boat on channel 13 for boarding instructions.

NOTE C
SEPARATION ZONE

Mariners are requested to stay outside the circular separation zone centered on the San Francisco Approach Lighted Horn Buoy SF.

WARNING

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

NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 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.

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/.

SUPPLEMENTAL INFORMATION

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

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.

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 0.265' southward and 3.900' westward to agree with this chart.

NOTE S

Regulations for Ocean Dumping Sites are contained in 40 CFR, Parts 220-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See U.S. Coast Pilots appendix for addresses of EPA offices. Dumping subsequent to the survey dates may have reduced the depths shown.

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)

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).

AIDS TO NAVIGATION

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

NOAA WEATHER RADIO BROADCASTS

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

Mt. Pisa, CA	KHB-49	162.400 MHz WX2
Mt. Umunhum, CA	KEC-49	162.550 MHz WX1
Mt. Umunhum, CA	WWF-64	162.450 MHz WX5

SAN FRANCISCO BAY
TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO JUN 2015

CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)

NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	PROJECT DIMENSIONS: WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH (MLLW FEET)
MAIN SHIP CHANNEL ENTRANCE	53.0	55.0	55.0	54.0	6-15	2000	4.3	55

NOTE: CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

HEIGHTS

Elevations of rocks, bridges, landmarks, and lights are in feet and refer to Mean High Water. Contour and summit elevation values are in feet and refer to Mean Sea Level.

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.

IMO AMENDED TRAFFIC SEPARATION SCHEME

Portions of the traffic separation scheme shown on this chart have been amended by the IMO. See IMO COURSE 2/Circ.64. Please be advised that these portions have not been revised by the United States Coast Guard and that the corresponding changes have not been updated in the Code of Federal Regulations (33 CFR part 167). There are differences between the two traffic separation schemes and caution is advised.

NOTE D
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 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.

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

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

NOTE H

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 RAFAEL CREEK

The controlling depth was 4 feet for a mid-width of 50 feet from the channel entrance 31° 57' 30" N, 122° 27' 34" W, to the mouth of San Rafael Creek; thence 2 feet for a mid-width of 30 feet to the turning basin; 2 feet in the turning basin centered at 37°58'09.4"N, 122°31'04.9"W; thence 1 foot for a width of 60 feet to the Grand Ave. Bridge, except for shoal to bare for last 125 feet.

Feb 2011-Jan 2012

RICHMOND - SAN RAFAEL BRIDGE

3 fixed white lights are mounted vertically over fixed green lights at the center of the main navigation channel spans.

Clearances of the main navigation channel spans:

	WEST CHAN	EAST CHAN
HOR CL	1000 FT	970 FT
VERT CL	185 FT	135 FT

SAN FRANCISCO BAY VESSEL TRAFFIC SERVICES AREA (see note D)

NOTE E

The City of Richmond is requesting vessels use extreme caution when turning or anchoring in the vicinity of their 72" diameter sewer pipeline which is located 9000 feet offshore of Point Richmond at a depth of 26 feet below mean lower low water in approximate position 37°54'47"N, 122°25'06"W.

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.

RICHMOND HARBOR AND SOUTHAMPTON SHOAL CHANNEL DEPTHS
TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO FEB 2015

CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)

NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	PROJECT DIMENSIONS: WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH (MLLW FEET)
SOUTHAMPTON SHOAL CHANNEL	43	45	45	43	6-14	600	1.1	45
RICHMOND HARBOR								
ENTRANCE CHANNEL	34	35	35	35	9-14-15	800-550	1.0	38
POINT PEPINEO REACH	32	35	35	35	9-14	300-600	1.4	38
POINT PEPINEO TURN	36	37	36	35	9-14-15	600-1000	0.6	38
HARBOR CHANNEL	36	37	37	35	9-14-15	300-500	0.5	38
SANTA FE CHANNEL	27	29	29	27	11-12	200	0.5	38-50
TURNING BASIN	26	28	27	18	11-12	200-500	0.16	30

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

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.

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

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)

California State Grid, Zone 3, is indicated by dotted ticks at 10,000 foot intervals.

ARTICULATED AIDS

An articulated aid to navigation consists of a pipe structure that oscillates around a universal coupling connected to a sinker. The structure is kept upright by the buoyancy of a submerged flotation chamber. It is designed primarily to mark narrow channels in depths of up to 60 feet. All articulated aids are labelled "Art".

SAN FRANCISCO - OAKLAND BAY BRIDGE

(Private aids)

The piers are lettered on the chart for reference

Lights

Piers A, B, E, G, and H: 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 L, 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 U, 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 pier I, Horns on piers A, B, D, and E.

APPROXIMATE MID-SPAN VERTICAL CLEARANCES

A-B 204 FT. C-D 200 FT. I-J 112 FT.
B-C 220 FT. D-E 204 FT. (Being removed)

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. 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.

NEW EAST SPAN CLEARANCES

SPAN T1 - E2
SUSPENSION BRIDGE
HOR CL 1000 FT
VERT CL 136 FT

SPAN E2 - E3
FIXED BRIDGE
HOR CL 413 FT
VERT CL 125 FT

SPAN E3 - E4
FIXED BRIDGE
HOR CL 417 FT
VERT CL 118 FT

TOWER (CAMPANILE)

OAKLAND OUTER AND INNER HARBORS
TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO DEC 2014
AND NOS SURVEY TO JAN 2013

CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)

NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	PROJECT DIMENSIONS: WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH (MLLW FEET)
BAR CHANNEL	47.0	48.0	50.0	48.0	10-14	1000-500	0.57	50
OUTER HARBOR ENTRANCE CHANNEL	48.0	49.0	50.0	49.0	10-12-14	900-600	0.91	50
OUTER HARBOR	50.0	50.0	50.0	50.0	10-12-14	1575-600	1.40	50
INNER HARBOR								
ENTRANCE CHANNEL	47.0	47.0	49.0	49.0	10-14	2100-480	1.10	50
INNER HARBOR REACH	49.0	49.0	50.0	49.0	10-14	1335-480	2.27	50
GROVE ST. PIER TO BROOKLYN BASIN	A21.0	31.0	31.0	B25.0	1-13, 10-14	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	29.0	29.0	26.0	05.0	1-13	500-275	0.42	35

A. A 21 FT WRECK IS AT 37°47'14.59"N 122°19'30.26"W. A 28 FT OBSTRUCTION IS AT 37°47'14.14"N 122°19'31.58"W.
B. A 30 FT WRECK IS AT 37°47'26.83"N 122°19'29.13"W.
C. A DEPTH OF 17.5 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°46'26.54"N 122°14'27.21"W.
F. A 21 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°46'23.92"N 122°14'23.87"W.

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

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.

TOTAL INFORMATION

PLACE		Height referred to datum of soundings (MLLW)		
NAME	(LAT,LONG)	Mean Higher High Water feet	Mean High Water feet	Mean Low Water feet
Oakland Inner Harbor	(37°48'N/122°17'W)	6.5	5.8	1.1
Point Orient	(37°57'N/122°23'W)	6.0	5.4	1.1
San Francisco (Golden Gate)	(37°48'N/122°28'W)	5.8	5.2	1.1
Rincon Point, Pier 22 ½	(37°47'N/122°23'W)	6.3	5.7	1.1
Hunters Point, California	(37°44'N/122°21'W)	6.8	6.2	1.1
Yerba Buena Island	(37°49'N/122°22'W)	6.2	5.5	1.1

NOTE:
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.

May 2013

NOTE F

Rear range light is a private aid operated for ships using the North Avenue Turning Basin only. Range serves no purpose for any other transiting vessels and should not be used.

OAKLAND INNER HARBOR BRIDGES

FRUITVALE AVE RR LIFT BRIDGE
HOR CL 200 FT
VERT CL 15 FT CLOSE
VERT CL 135 FT OPEN

FRUITVALE AVE BASCULE BRIDGE
HOR CL 75 FT
VERT CL 15 FT CLOSE
VERT CL 15 FT

BROOKLYN BASIN FIXED BRIDGE
HOR CL 100 FT
VERT CL 51 FT

HIGH ST BASCULE BRIDGE
HOR CL 144 FT
VERT CL 135 FT CLOSE
VERT CL 135 FT OPEN
VERT CL 135 FT
(100 FT CENTER WIDTH)

PARK ST BASCULE BRIDGE
HOR CL 241 FT
VERT CL 135 FT CLOSE
VERT CL 135 FT
(100 FT CENTER WIDTH)

CAUTION

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

SOURCE DIAGRAM

The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been bonded 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.

		SOURCE	
A	1990-2013	NOS Surveys	full bottom coverage
C	1990-2000	U.S.Navy Surveys	partial 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
B4	1900-1939	NOS Surveys	partial bottom coverage

NOTE I
NATIONAL MARINE SANCTUARIES

National Marine Sanctuaries are protected areas, administered by NOAA which contain abundant and diverse natural resources such as marine mammals, seabirds, fishes, and tidepool invertebrates. These areas are particularly sensitive to environmental damage such as spills of oil and other hazardous materials, discharges, and groundings. Exercise particular caution and follow applicable Sanctuary regulations when transiting these areas to avoid environmental impacts. A full description of Sanctuary regulations may be found in 15 CFR Part 922 and in the Coast Pilot.

6th Ed., Jun. 2013
18649

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 www.nauticalcharts.noaa.gov.

Last Correction: 7/14/2015. Cleared through:
LNM: 2915 (7/21/2015), NM: 3115 (8/1/2015)

To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
If the line does not measure six inches (152 millimeters), this copy is not certified safe for navigation.

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

SCALE 1:40,000
Nautical Miles
Yards
1000 2000 3000 4000 5000

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

This chart was distributed as a PDF (Portable Document Format). Printing PDFs may alter the chart scale, color, or legibility that may impact suitability for navigation. Printed charts provided by NOAA certified Print on Demand (POD) providers fulfill a vessel's requirement to carry a navigational chart "published by the National Ocean Service" in accordance with federal regulations, including but not limited to 33 C.F.R. 164.33(a), 33 C.F.R. 164.72(b), and 46 C.F.R. 28.225(a). POD charts meet stringent print standards and can be recognized by an official certification of authenticity printed on the chart. A list of POD providers can be found at: nauticalcharts.noaa.gov/pod

SOUNDINGS IN FEET

FATHOMS
FEET
METERS

Entrance to San Francisco Bay
SOUNDINGS IN FEET - SCALE 1:40,000