TABLE 1

N.A.D. 1983 COORDINATES
OUTER HARBOR CHANNEL ANGLE POINTS AND CONTROL LINE

CHANNEL ∠ PT.	EASTING	NORTHING	CL ∠ PT.	EASTING	NORTHING
O-1	E 6029195.32	N 2121154.59	C1-O	E 6027223.76	N 2120719.23
O-2	E 6032145.86	N 2123096.60	C2-O	E 6028185.70	N 2121144.22
O-3	E 6035035.47	N 2122691.23	C3-O	E 6028997.45	N 2121502.85
O-4	E 6036139.65	N 2123963.51	C4-O	E 6029354.80	N 2121699.81
O-5	E 6038502.15	N 2126685.68	C5-O	E 6030364.92	N 2122333.43
O-6	E 6038225.45	N 2126792.32	C6-O	E 6032165.53	N 2123462.88
O-7	E 6037357.62	N 2126663.70	C7-O	E 6032193.00	N 2123463.27
O-8	E 6035497.65	N 2124519.77	C8-O	E 6034212.79	N 2123492.13
O-9	E 6035435.04	N 2124447.60	C9-O	E 6035180.13	N 2123505.95
O-10	E 6034521.88	N 2124383.85	C10-O	E 6035818.57	N 2124241.71
O-11	E 6034015.75	N 2124177.44	C11-O	E 6036937.35	N 2125530.89
O-12	E 6032185.18	N 2123829.00	C12-O	E 6037620.33	N 2126318.15
O-13	E 6028402.05	N 2121692.56	C13-O	E 6038445.33	N 2126785.15
O-14	E 6027018.64	N 2121132.23			

NOTES:

DRAWINGS NOT TO BE USED AS NAVIGATION. ONLY CHANNEL CONDITION AT DATE OF SURVEY. THE LOCATION OF ALL NAVIGATION AIDS ARE BASED ON INFORMATION PROVIDED BY THE U.S. COAST GUARD. BUOY LOCATIONS REPRESENT THE POSITION OF THE SINKER ONLY.

SURVEYED BY THE CORPS OF ENGINEERS, 20 & 24 MARCH 2014.

SOUNDINGS WERE TAKEN BY FATHOMETER AND ARE SHOWN TO THE NEAREST TENTH OF A FOOT.

SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER AT THE LOCALITY. NAVD 88.

PLANE GRID AND COORDINATES ARE BASED ON LAMBERT PROJECTION, NAD 83, ZONE III CALIFORNIA AS DESCRIBED IN SPECIAL PUBLICATION NO. 235, PUBLISHED BY THE NATIONAL OCEAN SURVEY.

HORIZONTAL CONTROL:
PRIMARY: RTK POSITIONING
SECONDARY: COAST GUARD DGPS D-BEACON

VERTICAL CONTROL:
PPCP: PORT 1 1936 / PID HT0654. OAKLAND INNER, REACH 4-6
DISK SET AT SOUTH END OF CLAY STREET, AT THE PORT OF OAKLAND CLAY STREET PIER.
ELEVATION: 9.56 FEET MLLW - PUBLISHED 21 APR 2003 ON NOAA STATION 941 4764
TIDE GAUGE LOCATION IS CHISEL MARK APPROX. 10 FEET WEST ON TOP OF CONCRETE CURB; CHISEL ELEVATION 10.91 FEET MLLW

LPCP 1: 941 4777 B TIDAL / PID AE5211, OAKLAND INNER REACH 1-3
DISK SET IN BALLARD FOUNDATION NEAR THE NORTHEAST END OF BERTH 40 OF THE OAKLAND MIDDLE HARBOR
ELEVATION: 13.48 FEET MLLW - DERIVED FROM NOAA VDATUM MODEL
TIDE GAUGE LOCATION IS IN FACE OF PILING AT BERTH 38 S/E CORNER; NAIL ELEVATION 9.87 FEET MLLW

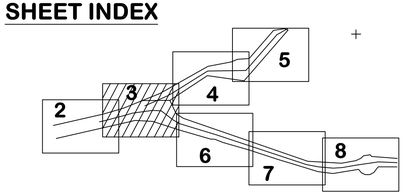
POSITIONING:
RTK BASE STATION SETUP: 941 4777 B TIDAL
HORIZONTAL: RTK CORRECTIONS FROM 4777B
TIDES: RTK TIDE VERIFIED AGAINST BERTH 38 TIDE GAUGE NAIL

LPCP 2: OAK OUTER 1 2012 / NO PID, OAKLAND OUTER REACH 7-10
DISK SET IN PARKING LOT AT PIER 9 AMNAV TUG TERMINAL AT THE EDGE OF THE PIER.
ELEVATION: 14.04 FEET MLLW - DERIVED FROM NOAA VDATUM MODEL
TIDE GAUGE LOCATION IS IN FACE OF PILING AT PIER 6, 10' EAST OF BENCHMARK; NAIL ELEVATION 10.14 FEET MLLW

POSITIONING:
RTK BASE STATION SETUP: OAK OUTER 1 2012
HORIZONTAL: RTK CORRECTIONS FROM OAK OUTER 1 2012
TIDES: RTK TIDE VERIFIED AGAINST PIER 6 TIDE GAUGE NAIL

PROJECT DEPTH OF OUTER AND INNER HARBOR IS -50 FEET. PROJECT DEPTH FROM INNER HARBOR TURNING BASIN TO PARK STREET BRIDGE IS 35 FEET. TIDAL CANAL PROJECT DEPTH IS 18 FEET.

SHEET INDEX



LLNR 4660: OAKLAND 7TH STREET TERMINAL LIGHT 1 (6029791.544, 2120179.441)

LLNR 4669: LIGHTED BUOY 4; 100' OUTSIDE CHANNEL LIMIT (6027847.048, 2119387.609)

GRAPHICS SCALE 1" = 200'

200' 0 100' 200' 400' 800'

MATCH LINE SHEET - 6

MATCH LINE SHEET - 4

US Army Corps of Engineers
San Francisco District
1455 Market Street
San Francisco, CA 94103

Mark	Description	Date	Appr.

DESIGNED BY: PDT | CHECKED BY: PDT | DRAWN BY: PDT
DATE: 1/26/2015 | SHEET NO. 3 OF 8 | DRAWING NO. 2 | 2 | XXX

SUBMITTED: PDT
Hydro. Survey Team Leader
APPROVAL RECOMMENDED:
Chief, Hydro. Survey Section
APPROVED:
Chief, Construction Branch

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

ALAMEDA COUNTY CALIFORNIA

OAKLAND HARBOR
INNER HARBOR
REACH 2
COMPOSITE POSTDREDGE SURVEY
18 DECEMBER 2014 & 22 JANUARY 2015

Sheet reference number
C3