

AnglePoint	POINT_X	POINT_Y
01	6009617.00	2192346.00
02	6012570.00	2196164.00
03	6016237.00	2199512.00
04	6022215.00	2203334.00
05	6034692.58	2210763.40
06	6047610.63	2213082.81
07	6058067.95	2213781.27
08	6058127.86	2213182.59
09	6057419.43	2213135.37
10	6055006.55	2212268.87
11	6053815.20	2211848.50
12	6047716.66	2210452.26
13	6036383.66	2210459.23
14	6033802.66	2209535.23
15	6022551.66	2202836.23
16	6016604.00	2199034.00
17	6013013.00	2195756.00
18	6010090.00	2191976.00
C01	6009631.93	2192304.35
C02	6012791.00	2195960.00
C03	6016421.00	2199273.00
C04	6022385.00	2203086.12
C05	6033649.18	2209793.00
C06	6034836.66	2210359.38
C07	6036340.65	2210754.51
C08	6047663.65	2212787.53
C09	6053760.51	2212668.82
C10	6057399.48	2213434.70
C11	6058107.91	2213481.93

Federal Navigation Channel	Beacon, General	Countours
Shoaling Area	Obstruction Point	-35
Placement Area	Navigation Buoy	-34
Anchorage Area	Navigation Buoy	-33
Wreck Area	Shoalest Sounding*	-32
Submerged Wreck		-31
Angle Point		

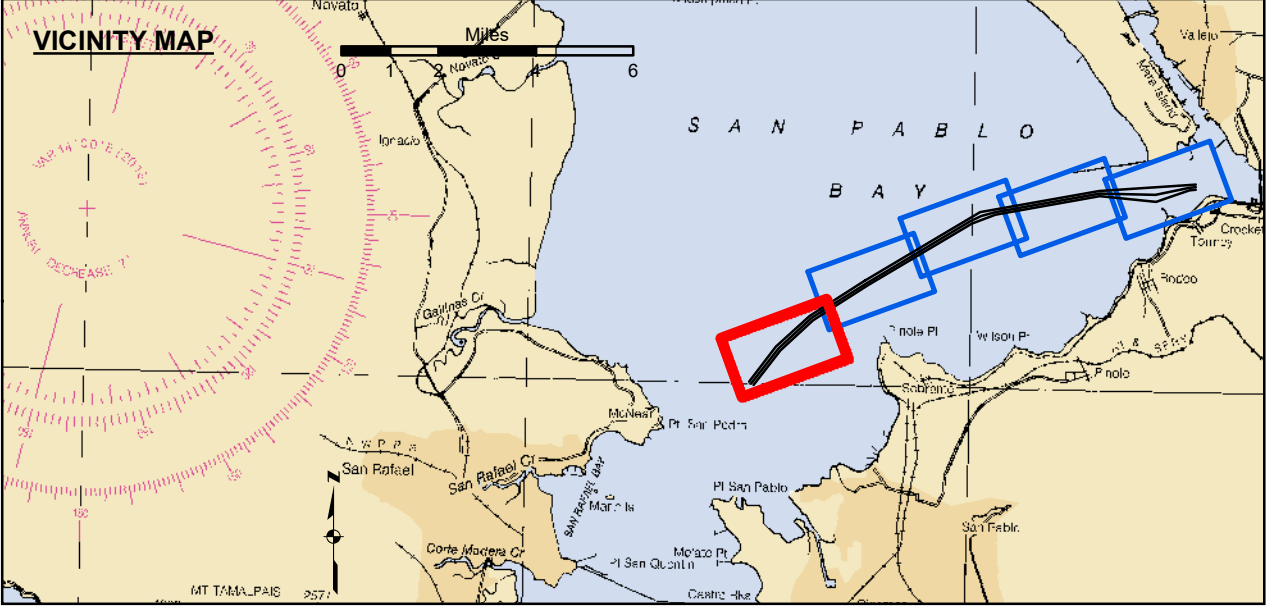
NOTES:  
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COORDINATES ARE BASED ON THE CALIFORNIA STATE PLANE COORDINATE SYSTEM (SPCS) ZONE III, LAMBERT CONFORMAL PROJECTION REFERENCED TO NAD83, AS DESCRIBED IN SPECIAL PUBLICATION NO. 23X, PUBLISHED BY NATIONAL OCEAN SURVEY.  
BASE MAPS ARE USDA NADP 2010.  
\*SHOALEST SOUNDING PER QUARTER PER REACH  
SURVEYED BY THE CORPS OF ENGINEERS.  
SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER (MLLW) AT THE LOCALITY AND ARE SHOWN TO THE TENTHS OF A FOOT.  
TO THE NEAREST TENTH FOOT  
THE PROJECT DEPTH IS 35 FEET MLLW.  
VERTICAL DATUM:  
MLLW (MEAN LOWER LOW WATER)  
TIDAL EPOCH 1983-2001  
TIDAL DATUM CONTROL STATION(S):  
- 8415056 PINOLE POINT - JUNE 2014  
- 8415216 MARE ISLAND - AUG 2013

HORIZONTAL CONTROL DATUM:  
NAD83(2011) EPOCH 2010.00  
CONTROL:  
POINT PINOLE 4 RESET | PID: J72885 | BM 5056 A | PID: BBCN55 | 9415056  
OPUS 3192020  
5215 L 1975 | 5216 R 2006  
PID: BBBZ81 | PID: BBCN7 |  
OPUS 81112010 | 9415218 | OPUS 100312011 | 9415218  
TIDE GAUGE:  
NAI & BRASS DISK SET IN DOLPHIN AT 10.0 FT MLLW APPROX POSITION: 38° 04' 9" N, 122° 15' 4" W  
BASE STATION AT OHLN.  
POSITIONS AND SOUNDINGS HAVE BEEN CORRECTED USING PPK TECHNIQUES USING A CORS NETWORK BASE STATION AT OHLN.  
TIDE VALUES HAVE BEEN EXTRAPOLATED USING GEODID8 AND VDATUM V4.0.1.  
SURVEY VESSEL / EQUIPMENT:  
SV RANDY CUMMINGS  
- RESON TSSR SINGLE-HEAD MULTIBEAM ECHOSOUNDER  
- POS MV 220 VERS HW2 5-12  
- IMU TYPE 42  
- TRIMBLE AT1675-540TS GPS ANTENNA

**US Army Corps of Engineers**  
San Francisco District  
450 Golden Gate Ave.  
San Francisco, CA 94102

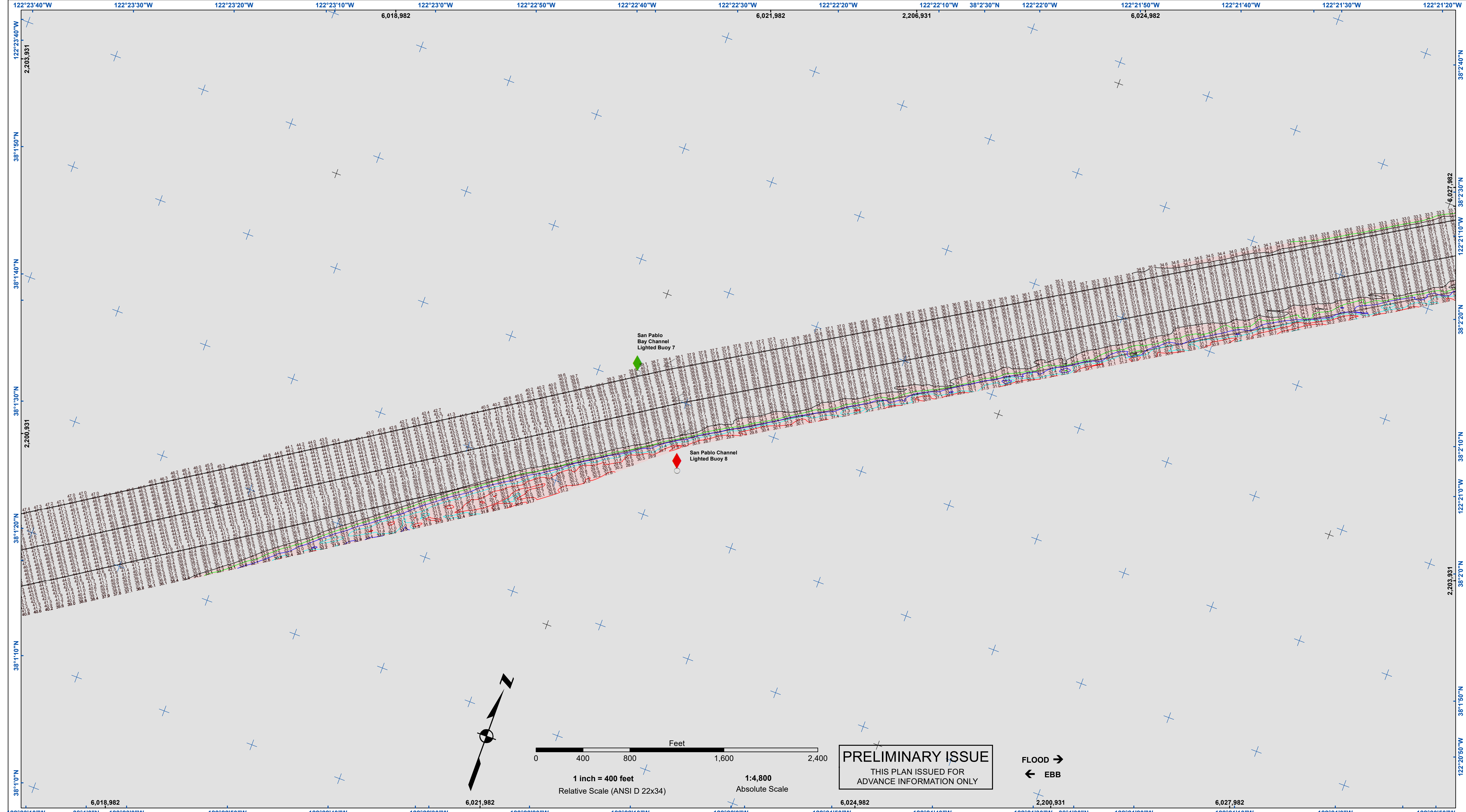
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Prepared Under the Direction of: <b>LT COLONEL W. SHEBESTA</b>	Surveyed By:	Chart Date:
Submitted: Hydro Survey Team Leader	Plotted By: PDT	Feb 06, 2024
Recommended: Chief, Hydro Survey Section	Checked By: PDT	Designed by: PDT
Approved: Chief, Construction Branch	Drawn by: PDT	



CALIFORNIA  
SAN PABLO BAY  
PINOLE SHOAL  
CONDITION SURVEY  
5-30 JANUARY 2024

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Reference  
Number  
**1 of 5**



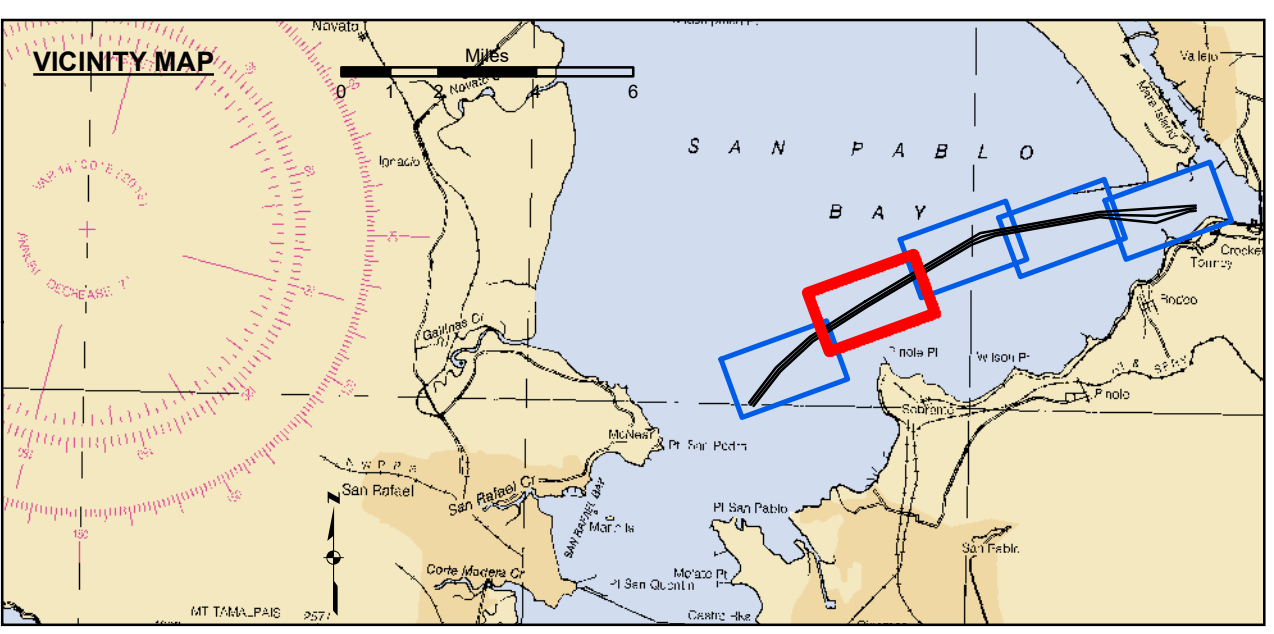
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 San Francisco District  
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Prepared Under the Direction of <b>TIMOTHY W. SHEBESTA</b> LT COLONEL, C.E., DISTRICT ENGINEER	Chart Date: Feb 06, 2024
Submitted: Hydro Survey Team Leader	Designed by: PDT
Recommended: Chief, Hydro Survey Section	Flatted by: PDT
Approved: Chief, Construction Branch	Checked by: PDT
	Drawn by: PDT

CALIFORNIA  
**PINOLE SHOAL**  
 CONDITION SURVEY  
 5-30 JANUARY 2024  
 SAN PABLO BAY

**Sheet**  
**Reference**  
**Number**  
**2 of 5**



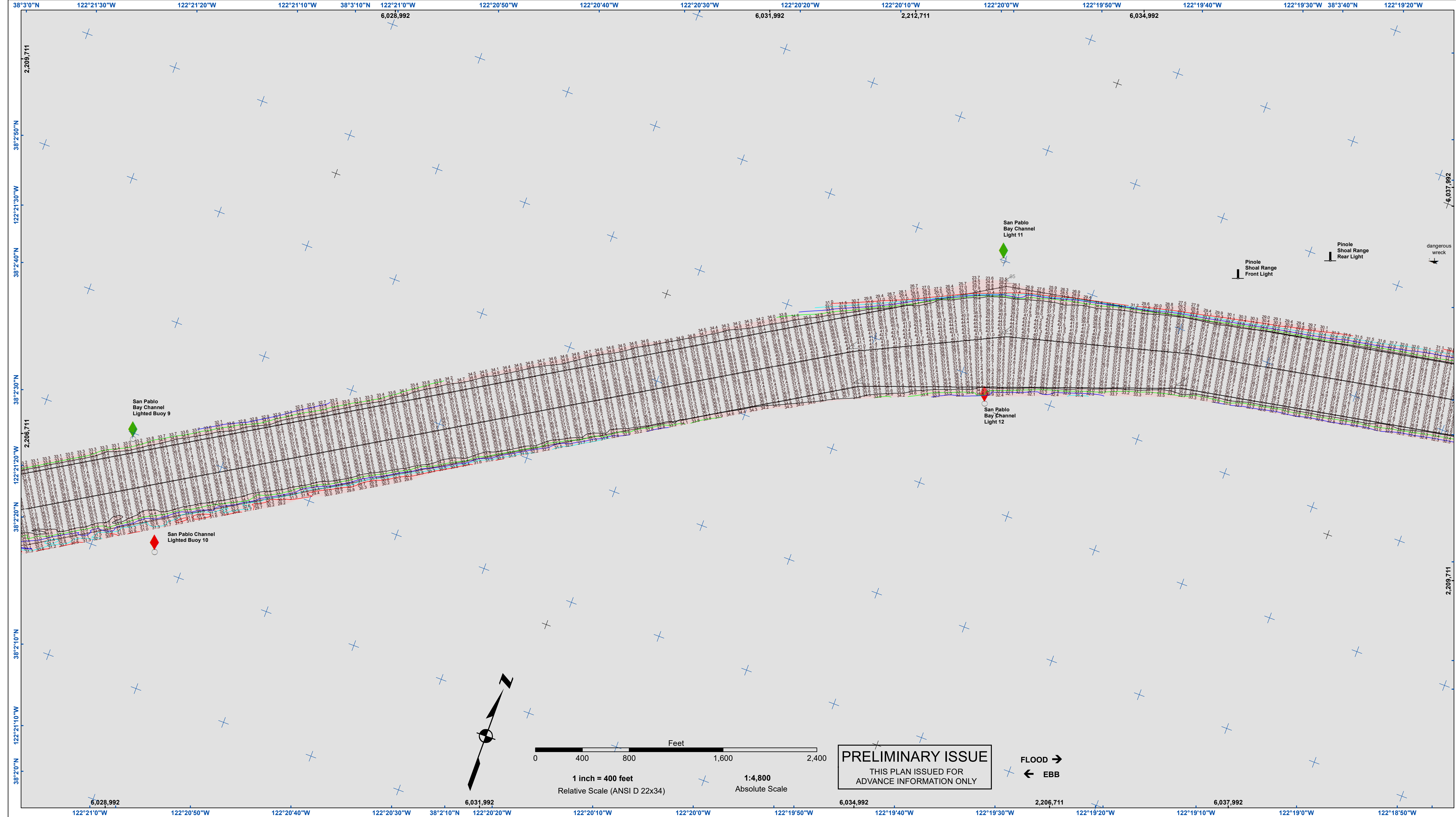
- Federal Navigation Channel
- Shoaling Area
- Placement Area
- Anchorage Area
- Wreck Area
- Submerged Wreck
- Angle Point
- Beacon, General
- Obstruction Point
- Navigation Buoy
- Navigation Buoy
- Shoalest Sounding\*
- Countours
- 35
- 34
- 33
- 32
- 31

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 \*SHOALEST SOUNDING PER QUARTER PER REACH  
 SURVEYED BY THE CORPS OF ENGINEERS.  
 SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER (MLLW) AT THE LOCALITY AND ARE SHOWN TO THE NEAREST TENTH FOOT.  
 SOUNDINGS FOR THE CHANNEL MEASURED WITH MULTIBEAM ECHOSOUNDER AND ARE SHOWN TO THE NEAREST TENTH FOOT.  
 THE PROJECT DEPTH IS -35 FEET MLLW.  
 VERTICAL DATUM:  
 MLLW (MEAN LOWER LOW WATER)  
 TIDAL EPOCH 1983-2001  
 TIDAL DATUM CONTROL STATION(S):  
 - 8415056 PINOLE POINT - JUNE 2014  
 - 8415216 MARE ISLAND - AUG 2013

HORIZONTAL CONTROL DATUM:  
 NAD83(2011) EPOCH 2010.00  
 CONTROL:  
 POINT PINOLE 4 RESET | PID: J72885 | BM 5056 A | PID: BBCN55 | 9415056  
 OPUS 3192020  
 5215 L 1975 | 5216 R 2006 | 5216 R 2006 | PID: BBCN7 | OPUS 100312011 | 9415216  
 PID: BBXZ81 | OPUS 81112010 | 9415216

TIDE GAUGE:  
 NAL & BRASS DISK SET IN DOLPHIN AT 10.0 FT MLLW APPROX POSITION: 38° 04' 9.9" N, 122° 15' 4.4" W  
 BASE STATION AT OHLN.  
 TIDE VALUES HAVE BEEN EXTRAPOLATED USING GEOD18 AND VDATUM V4.0.1.

SURVEY VESSEL / EQUIPMENT:  
 S/V RANDY CUMMINGS  
 - RESON TSS-R SINGLE-HEAD MULTIBEAM ECHOSOUNDER  
 - POS MV 220 VERS HW2 5-12  
 - IMU TYPE 42  
 - TRIMBLE AT1675-540TS GPS ANTENNA



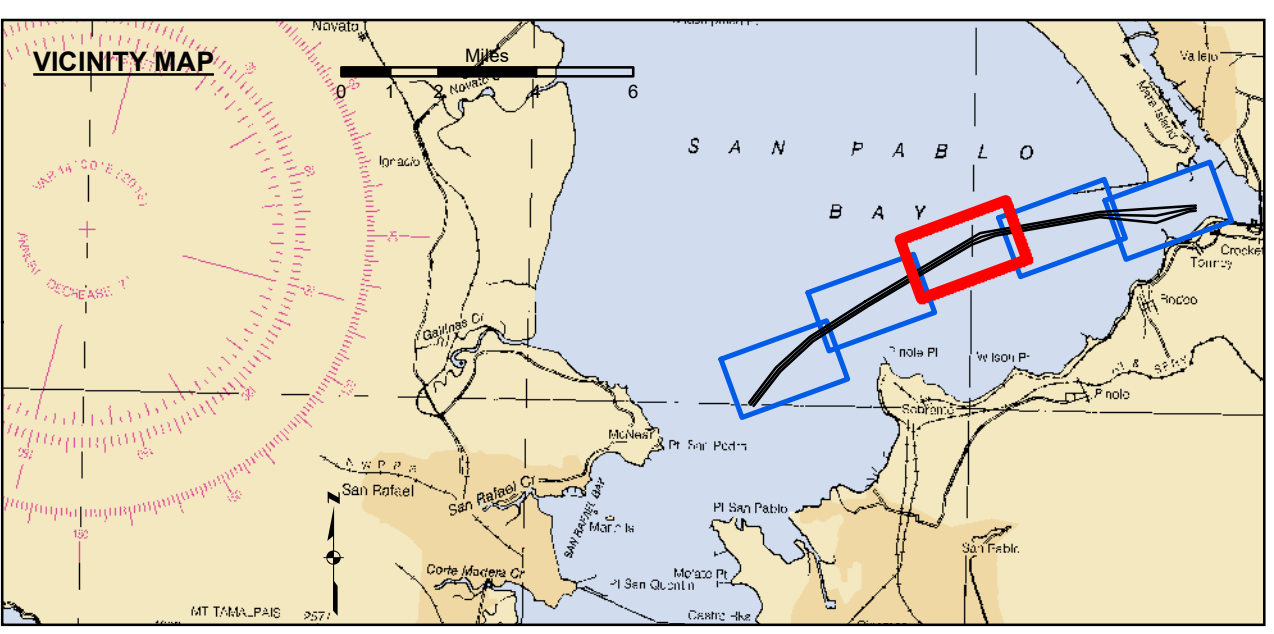
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Prepared Under the Direction of	Chart Date
TIMOTHY W. SHEBESTA	Feb 06, 2024
Submittal	Designed by:
Hydro Survey Team Leader	PDT
Recommendation	Checked By:
Chief, Hydro Survey Section	PDT
Approval	Drawn by:
Chief, Construction Branch	PDT

CALIFORNIA  
 SAN PABLO BAY  
**PINOLE SHOAL  
 CONDITION SURVEY**  
 5-30 JANUARY 2024

**Sheet  
 Reference  
 Number**  
 3 of 5



- Federal Navigation Channel
- Shoaling Area
- Placement Area
- Anchorage Area
- Wreck Area
- Submerged Wreck
- Angle Point
- Beacon, General
- Obstruction Point
- Navigation Buoy
- Navigation Buoy
- Shoalest Sounding\*
- Countours
- 35
- 34
- 33
- 32
- 31

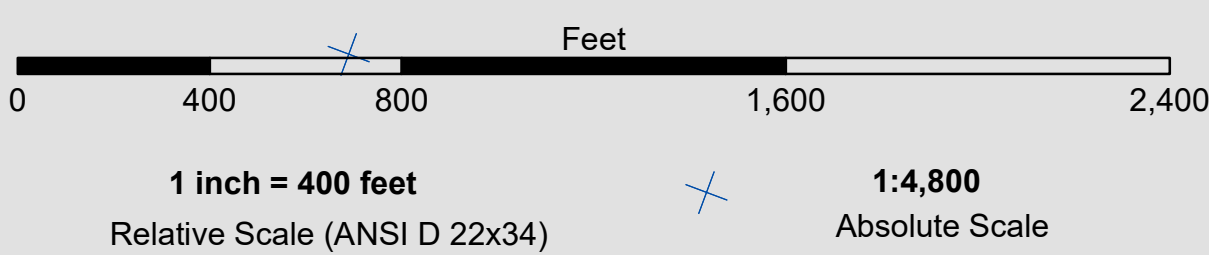
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 THE PROJECT DEPTH IS -35 FEET MLLW.  
 VERTICAL DATUM:  
 MLLW (MEAN LOWER LOW WATER)  
 TIDAL EPOCH 1983-2001  
 TIDAL DATUM CONTROL STATION(S):  
 - 8415056 PINOLE POINT - JUNE 2014  
 - 8415216 MARE ISLAND - AUG 2013

HORIZONTAL CONTROL DATUM:  
 NAD83(2011) EPOCH 2010.00  
 CONTROL:  
 POINT PINOLE 4 RESET | PID: J72865 | BM 5056 A | PID: BBCN55 | 9410566  
 OPUS 3192020  
 5215 L 1975 | 5216 R 2006 | 5216 R 2006 | PID: BBCN97 | 9410566  
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 OPUS 100312011 | 9415216

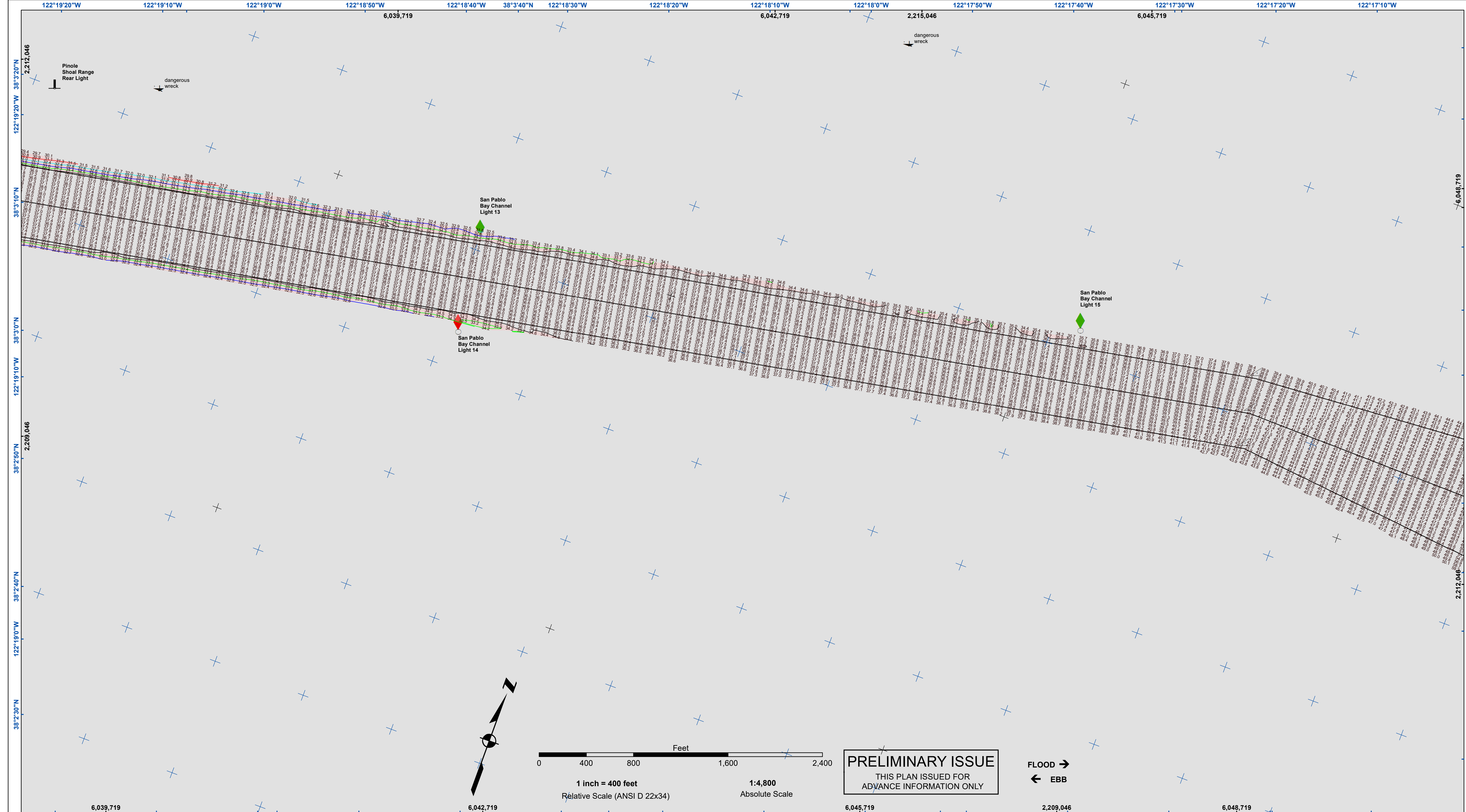
TIDE GAUGE:  
 NAL & BRASS DISK SET IN DOLPHIN AT 10.0 FT MLLW APPROX POSITION: 38° 04' 9.9" N, 122° 15' 4.4" W  
 BASE STATION AT OHLN.  
 POSITIONS AND SOUNDINGS HAVE BEEN CORRECTED USING PPK TECHNIQUES USING A CORS NETWORK.  
 TIDE VALUES HAVE BEEN EXTRAPOLATED USING GEOD18 AND VDATUM V4.0.1.

SURVEY VESSEL / EQUIPMENT:  
 S/V RANDY CUMMINGS  
 - RESON TSS-R SINGLE-HEAD MULTIBEAM ECHOSOUNDER  
 - POS MV 220 VERS HW2 5-12  
 - IMU TYPE 42  
 - TRIMBLE AT1675-540TS GPS ANTENNA

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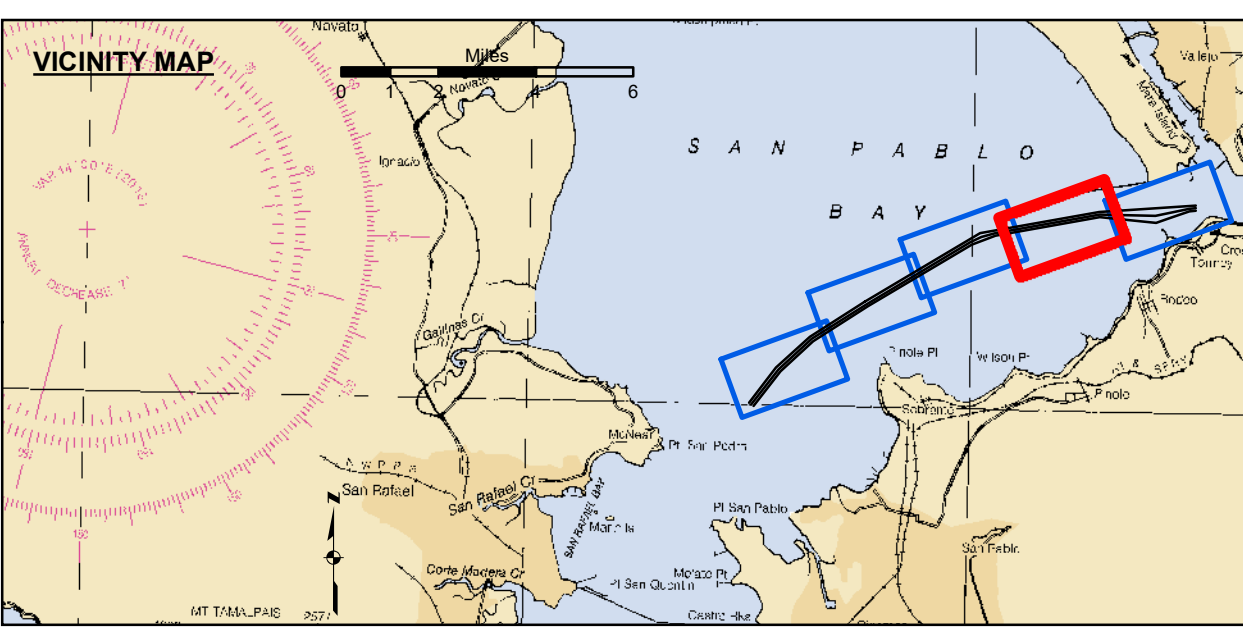


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Prepared Under the Direction of <b>TIMOTHY W. SHEBESTA</b> LT COLONEL, C.E., DISTRICT ENGINEER	Chart Date: Feb 06, 2024
Submitted: Hydro Survey Team Leader	Designed by: PDT
Recommended: Chief, Hydro Survey Section	Plotted by: PDT
Approved: Chief, Construction Branch	Checked by: PDT
	Drawn by: PDT

CALIFORNIA  
**PINOLE SHOAL**  
 CONDITION SURVEY  
 5-30 JANUARY 2024

**Sheet**  
**Reference**  
**Number**  
**4 of 5**



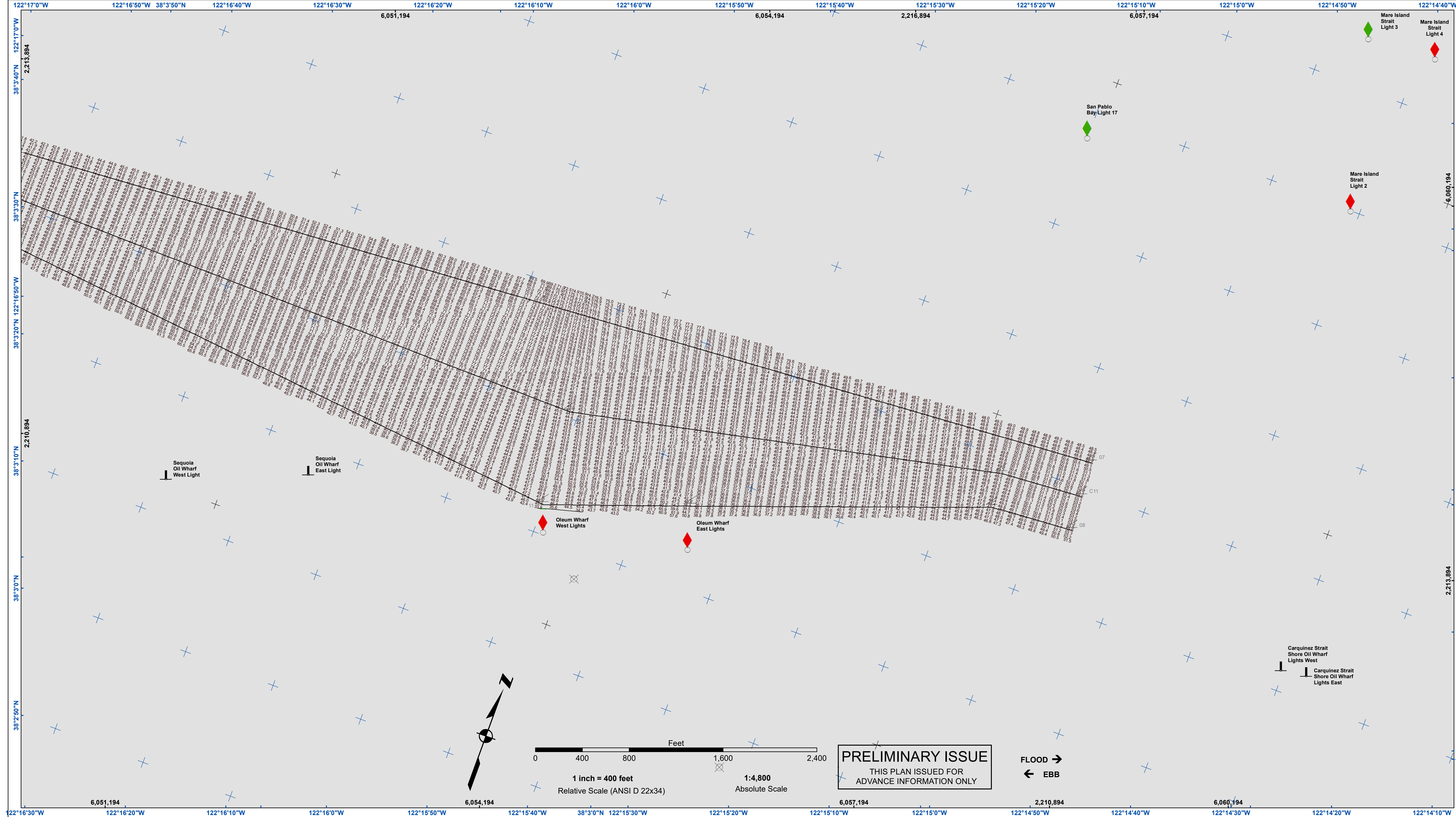
- |                            |                    |           |
|----------------------------|--------------------|-----------|
| Federal Navigation Channel | Beacon, General    | Countours |
| Shoaling Area              | Obstruction Point  | -35       |
| Placement Area             | Navigation Buoy    | -34       |
| Anchorage Area             | Navigation Buoy    | -33       |
| Wreck Area                 | Shoalest Sounding* | -32       |
| Submerged Wreck            |                    | -31       |
| Angle Point                |                    |           |

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 THE PROJECT DEPTH IS -35 FEET MLLW.  
 VERTICAL DATUM:  
 MLLW (MEAN LOWER LOW WATER)  
 TIDAL EPOCH 1983-2001  
 TIDAL DATUM CONTROL STATION(S):  
 - 8415056 PINOLE POINT - JUNE 2014  
 - 8415216 MARE ISLAND - AUG 2013

HORIZONTAL CONTROL DATUM:  
 NAD83(2011) EPOCH 2010.00  
 CONTROL:  
 POINT PINOLE 4 RESET | PID: J72885 | BM 5056 A | PID: BBCN55 | 9415056  
 OPUS 3192020  
 5215 L 1975 | 5216 R 2006 | 5216 R 2006 | PID: BBCN57 | OPUS 100312011 | 9415216  
 PID: BBXZ81 | OPUS 81112010 | 9415216

TIDE GAUGE:  
 NAL & BRASS DISK SET IN DOLPHIN AT 10.0 FT MLLW APPROX POSITION: 38° 04' 9.9" N, 122° 15' 4.4" W  
 BASE STATION AT OHLN.  
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SURVEY VESSEL / EQUIPMENT:  
 S/V RANDY CUMMINGS  
 - RESON TSS-R SINGLE-HEAD MULTIBEAM ECHOSOUNDER  
 - POS MV 220 VERS HW2 5-12  
 - IMU TYPE 42  
 - TRIMBLE AT1675-540TS GPS ANTENNA



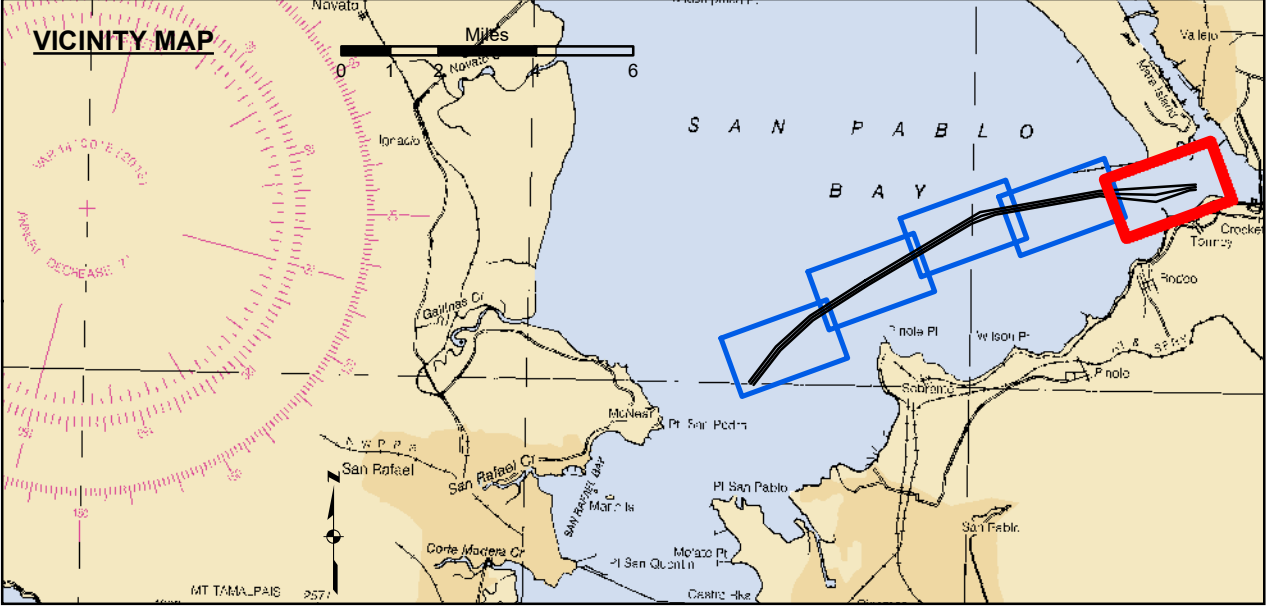
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Prepared Under the Direction of: <b>LT COLONEL W. SHEBESTA</b>	Chart Date: Feb 06, 2024
Submitted: Hydro Survey Team Leader	Designed by: PDT
Recommended: Chief, Hydro Survey Section	Checked by: PDT
Approved: Chief, Construction Branch	Drawn by: PDT

CALIFORNIA  
**PINOLE SHOAL**  
 CONDITION SURVEY  
 5-30 JANUARY 2024

**Sheet**  
**Reference**  
**Number**  
**5 of 5**



- Federal Navigation Channel
- Shoaling Area
- Placement Area
- Anchorage Area
- Wreck Area
- Submerged Wreck
- Angle Point
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- Navigation Buoy
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 NAD83(2011) EPOCH 2010.00  
 CONTROL:  
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 OPUS 3192020  
 5215 L 1975 | 5216 R 2006  
 PID: BBN281 | PID: BBN57  
 OPUS 81112010 | 9415216 | OPUS 100312011 | 9415216  
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 - IMU TYPE 42  
 - TRIMBLE AT1675-540TS GPS ANTENNA