

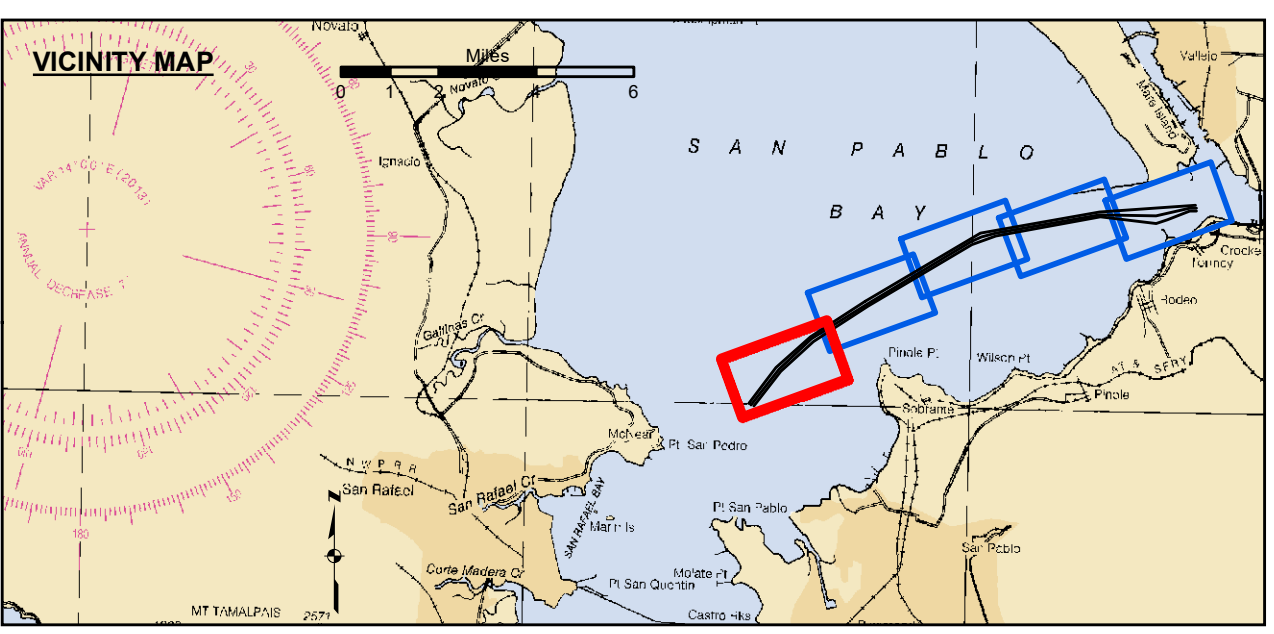
U.S. Army Corps of Engineers
 San Francisco District
 1455 Market Street
 San Francisco, CA 94103

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Prepared Under the Direction of JOHN D. CUNNINGHAM LT COLONEL, C.E. DISTRICT ENGINEER	Chart Date: Jun 12, 2020
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 SHOALS
 CONDITION SURVEY
 4-9 JUNE 2020
 SAN PABLO BAY

Sheet
Reference
Number
1 of 5



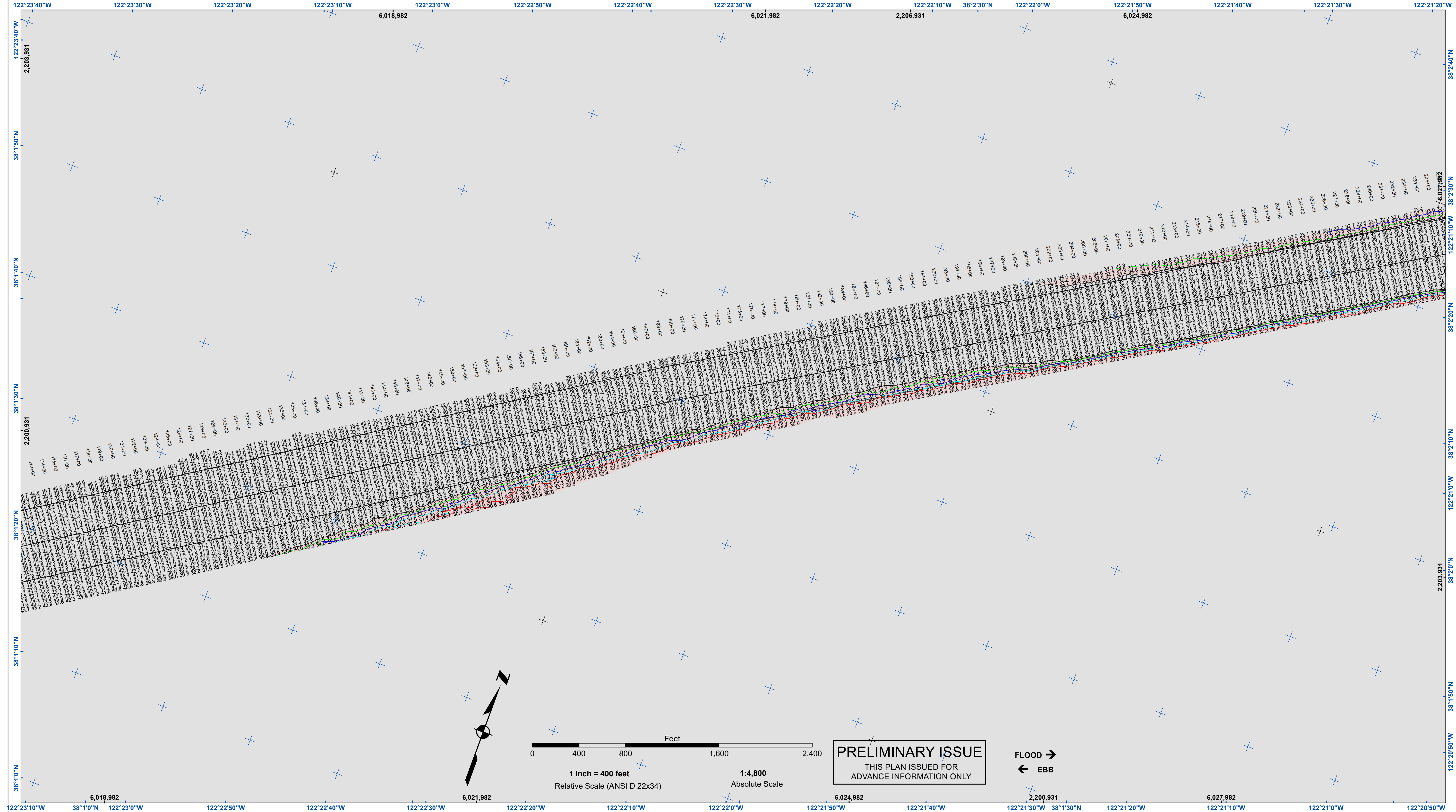
- Federal Navigation Channel
- Shoaling Area
- Placement Area
- Anchorage Area
- Wreck Area
- Submerged Wreck
- Angle Point
- Beacon, General
- Obstruction Point
- Navigation Buoy
- Navigation Buoy
- Shoalest Sounding*
- Countours
- 35
- 34
- 33
- 32
- 31

NOTES:
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 BASE MAPS ARE USDA NAIP 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.
 THE PROJECT DEPTH IS -35 FEET MLLW.
 VERTICAL DATUM:
 MLLW (MEAN LOWER LOW WATER)
 TIDAL EPOCH 1983-2001
 TIDAL DATUM CONTROL STATION(S):
 - 9415056 PINOLE POINT - JUNE 2014
 - 9415218 MARE ISLAND - AUG 2013

HORIZONTAL CONTROL DATUM:
 NAD83(2011) EPOCH 2010.00
 CONTROL:
 POINT PINOLE 4 RESET | PID: JT2895 | BM 5056 A | PID: BBCN55
 OPUS 3/19/2020 | 9415056
 5218 L 1976 | 5218 R 2006 | PID: BBCN57
 PID: BBC281 | OPUS 8/11/2010 | 9415218 | PID: BBCN57
 OPUS 10/31/2011 | 9415218

TIDE GAUGE:
 NAIL & BRASS DISK SET IN DOLPHIN AT 10.0 FT MLLW
 APPROX POSITION: 38° 04' 9.9" N, 122° 15' 4.4" W
 POSITIONS AND SOUNDINGS HAVE BEEN CORRECTED USING PPK TECHNIQUES USING A CORS NETWORK BASE STATION AT OHLN.
 TIDE VALUES HAVE BEEN EXTRAPOLATED USING GEOID18 AND VDATUM V4.0.1.

SURVEY VESSEL / EQUIPMENT:
 S/V RANDY CUMMINGS
 - RESON T50-R, SINGLE-HEAD MULTIBEAM ECHOSOUNDER
 - POS MV 2201 VERS5 HW2.5-12
 - IMU TYPE 42
 - TRIMBLE AT1675-540T5 GPS ANTENNA



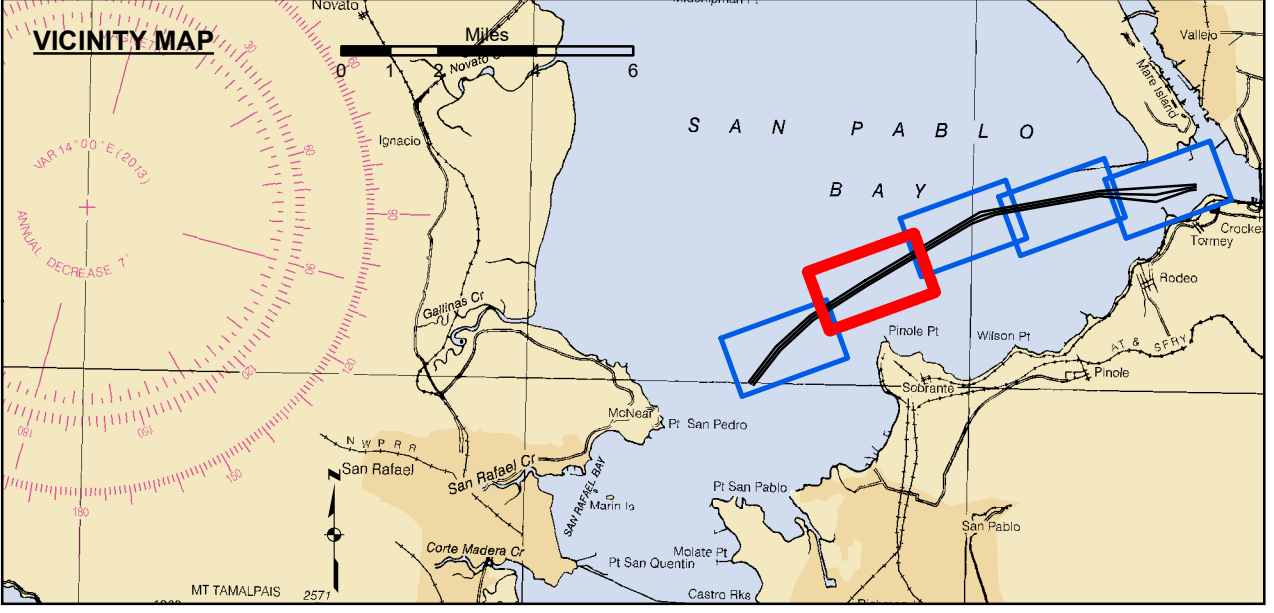
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Submitted: Hydro Survey Team Leader	Designed by: PDT
Recommended: Chief, Hydro Survey Section	Plotted By: PDT
Approved: Chief, Construction Branch	Checked By: PDT
	Drawn by: PDT

CALIFORNIA
PINOLE SHOALS
 CONDITION SURVEY
 4-9 JUNE 2020

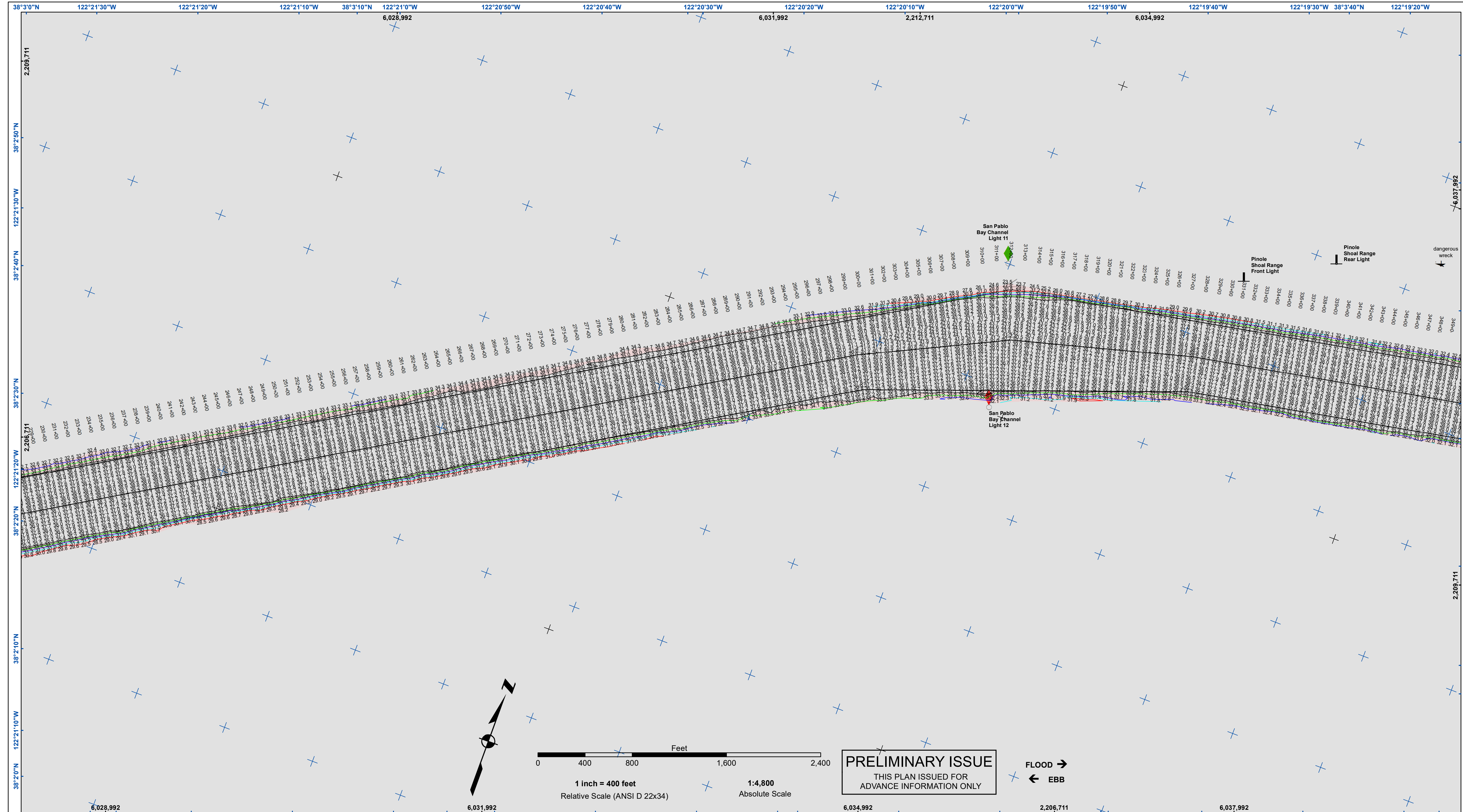
Sheet
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- Federal Navigation Channel
- Shoaling Area
- Placement Area
- Anchorage Area
- Wreck Area
- Submerged Wreck
- Angle Point
- Beacon, General
- Obstruction Point
- Navigation Buoy
- Navigation Buoy
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 THE PROJECT DEPTH IS -35 FEET MLLW.
 VERTICAL DATUM:
 MLLW (MEAN LOWER LOW WATER)
 TIDAL EPOCH 1983-2001
 TIDAL DATUM CONTROL STATION(S):
 - 9415058 PINOLE POINT - JUNE 2014
 - 9415218 MARE ISLAND - AUG 2013

HORIZONTAL CONTROL DATUM:
 NAD83(2011) EPOCH 2010.00
 CONTROL:
 POINT PINOLE 4 RESET | PID: JT2895 BM 5056 A | PID: BBCN55
 OPUS 3/19/2020 9415056
 5218 L 1976 5218 R 2006
 PID: BBCN281 PID: BBCN57
 OPUS 8/11/2010 | 9415218 OPUS 10/31/2011 | 9415218
 TIDE GAUGE:
 NAIL & BRASS DISK SET IN DOLPHIN AT 10.0 FT MLLW
 APPROX POSITION: 38° 04' 9.9" N, 122° 15' 4.4" W
 POSITIONS AND SOUNDINGS HAVE BEEN CORRECTED USING PPK TECHNIQUES USING A CORS NETWORK BASE STATION AT OHLN.
 TIDE VALUES HAVE BEEN EXTRAPOLATED USING GEOD18 AND VDATUM V4.0.1.
 SURVEY VESSEL / EQUIPMENT:
 S/V RANDY CUMMINGS
 - RESON 150-R SINGLE-HEAD MULTIBEAM ECHOSOUNDER
 - POS MV 2201 VERS HW2.5-12
 - IMU TYPE 42
 - TRIMBLE AT1675-540TS GPS ANTENNA



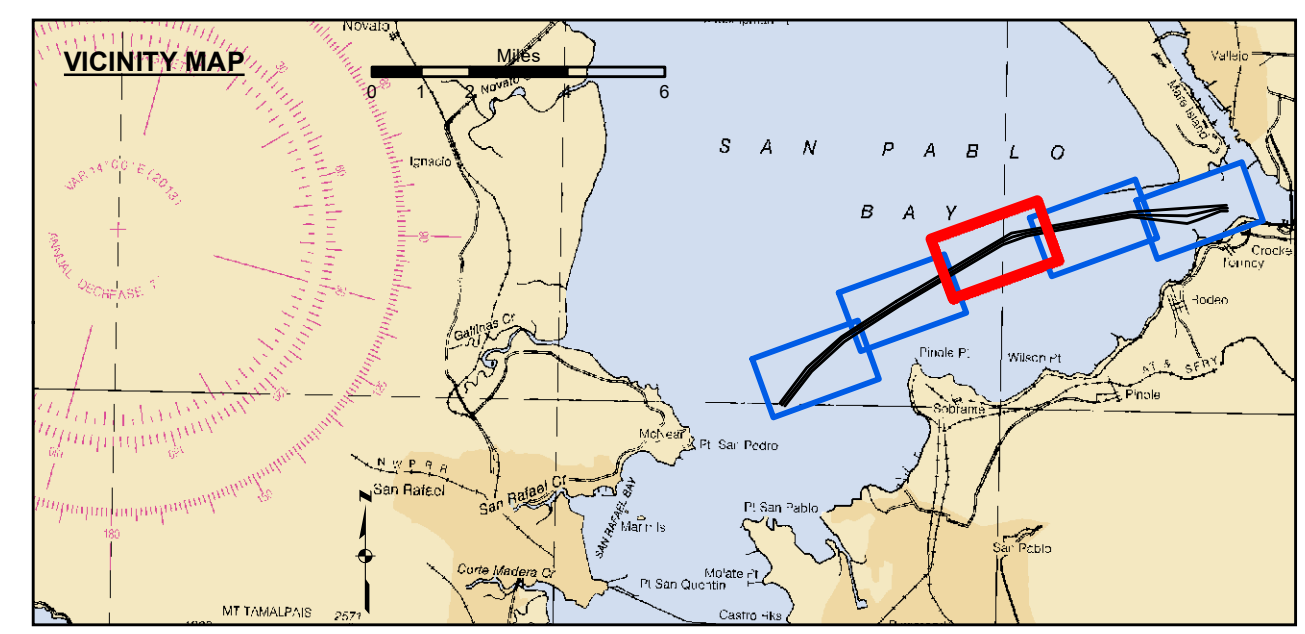
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Recommended: Chief, Hydro Survey Section	Drawn by: PDT
Approved: Chief, Construction Branch	PDT

CALIFORNIA
PINOLE SHOALS
 CONDITION SURVEY
 4-9 JUNE 2020
 SAN PABLO BAY

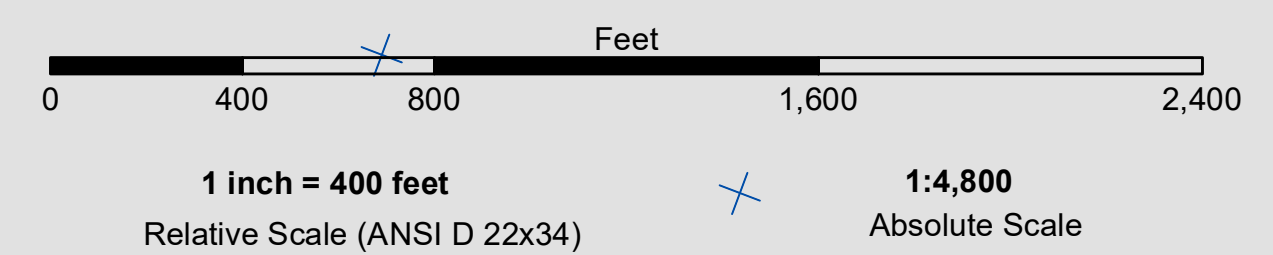
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Reference
Number
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Federal Navigation Channel	Beacon, General	Countours
Shoaling Area	Obstruction Point	-35
Placement Area	Navigation Buoy	-34
Anchorage Area	Navigation Buoy	-33
Wreck Area	Shoalest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

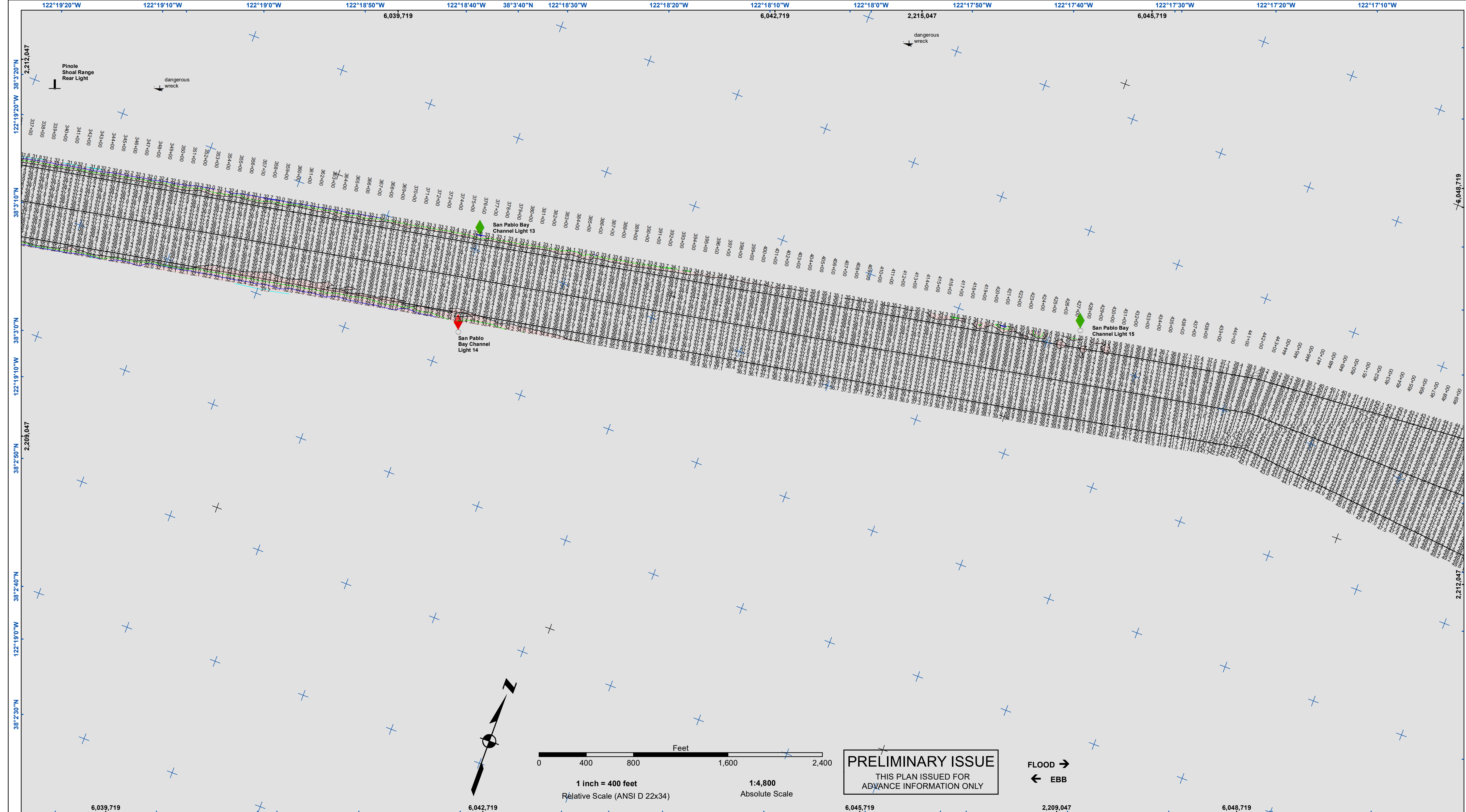
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 VERTICAL DATUM:
 MLLW (MEAN LOWER LOW WATER)
 TIDAL EPOCH 1983-2001
 TIDAL DATUM CONTROL STATION(S):
 - 9415056 PINOLE POINT - JUNE 2014
 - 9415218 MARE ISLAND - AUG 2013

HORIZONTAL CONTROL DATUM:
 NAD83(2011) EPOCH 2010.00
 CONTROL:
 POINT PINOLE 4 RESET | PID: JT2895 | BM 5056 A | PID: BBCN55
 OPUS 3/19/2020 | 9415056
 5218 L 1976 | 5218 R 2006 | PID: BBCN57
 PID: BBC281 | OPUS 10/31/2011 | 9415218
 OPUS 8/11/2010 | 9415218
 TIDE GAUGE:
 NAIL & BRASS DISK SET IN DOLPHIN AT 10.0 FT MLLW
 APPROX POSITION: 38° 04' 9.9" N, 122° 15' 4.4" W
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 SURVEY VESSEL / EQUIPMENT:
 S/V RANDY CUMMINGS
 - RESON 750-R SINGLE-HEAD MULTIBEAM ECHOSOUNDER
 - POS MV 2201 VER5 HW2.5-12
 - IMU TYPE 42
 - TRIMBLE AT1675-540TS GPS ANTENNA



PRELIMINARY ISSUE
 THIS PLAN ISSUED FOR
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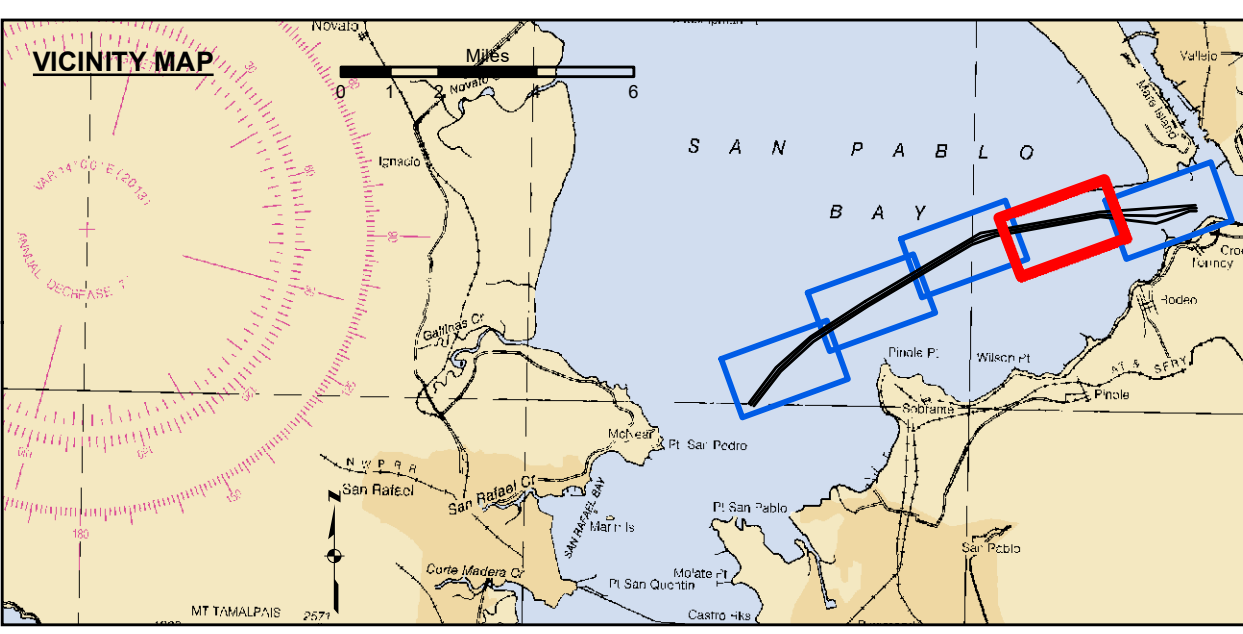
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Submitted: Hydro Survey Team Leader	Designed by: PDT
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Approved: Chief, Construction Branch	Checked by: PDT
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CALIFORNIA
SAN PABLO BAY
PINOLE SHOALS
CONDITION SURVEY
4-9 JUNE 2020

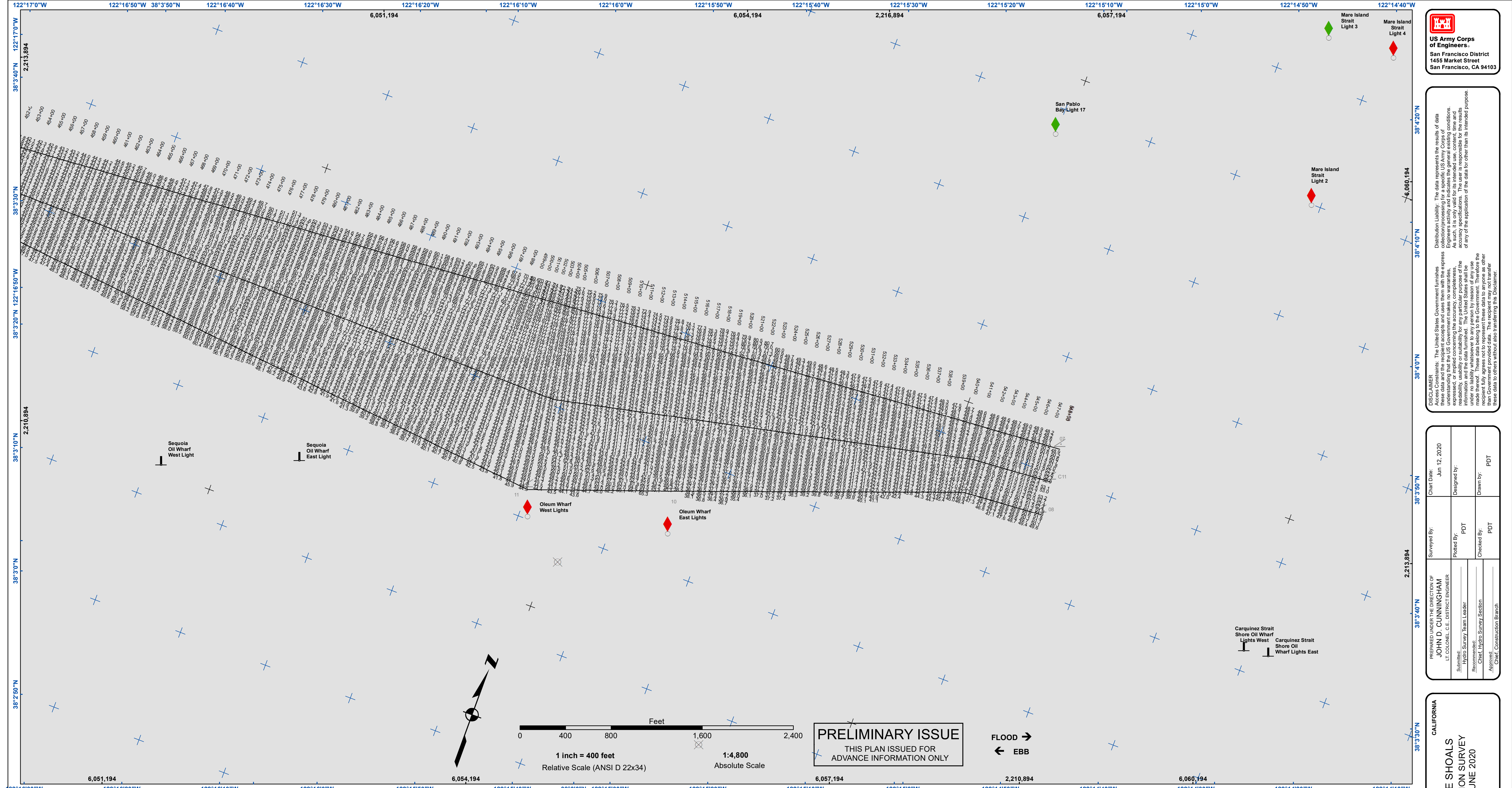
Sheet
Reference
Number
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- | | | |
|----------------------------|--------------------|-----------------|
| Federal Navigation Channel | Beacon, General | Contours |
| Shoaling Area | Obstruction Point | -35 |
| Placement Area | Navigation Buoy | -34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

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 VERTICAL DATUM:
 MLLW (MEAN LOWER LOW WATER)
 TIDAL EPOCH 1983-2001
 TIDAL DATUM CONTROL STATION(S):
 - 941556 PINOLE POINT - JUNE 2014
 - 9415218 MARE ISLAND - AUG 2013

HORIZONTAL CONTROL DATUM:
 NAD83(2011) EPOCH 2010.00
 CONTROL:
 POINT PINOLE 4 RESET | PID: JT2895 | BM 5056 A | PID: BBCN55
 OPUS 3/19/2020 | 9415056
 5218 L 1976 | 5218 R 2006 | PID: BBCN57
 PID: BBC281 | OPUS 8/11/2010 | 9415218
 OPUS 10/31/2011 | 9415218
 TIDE GAUGE:
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 SURVEY VESSEL / EQUIPMENT:
 S/V RANDY CUMMINGS
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 - POS MV 220, VER5 HW2.5-12
 - IMU TYPE 42
 - TRIMBLE AT1675-540TS GPS ANTENNA



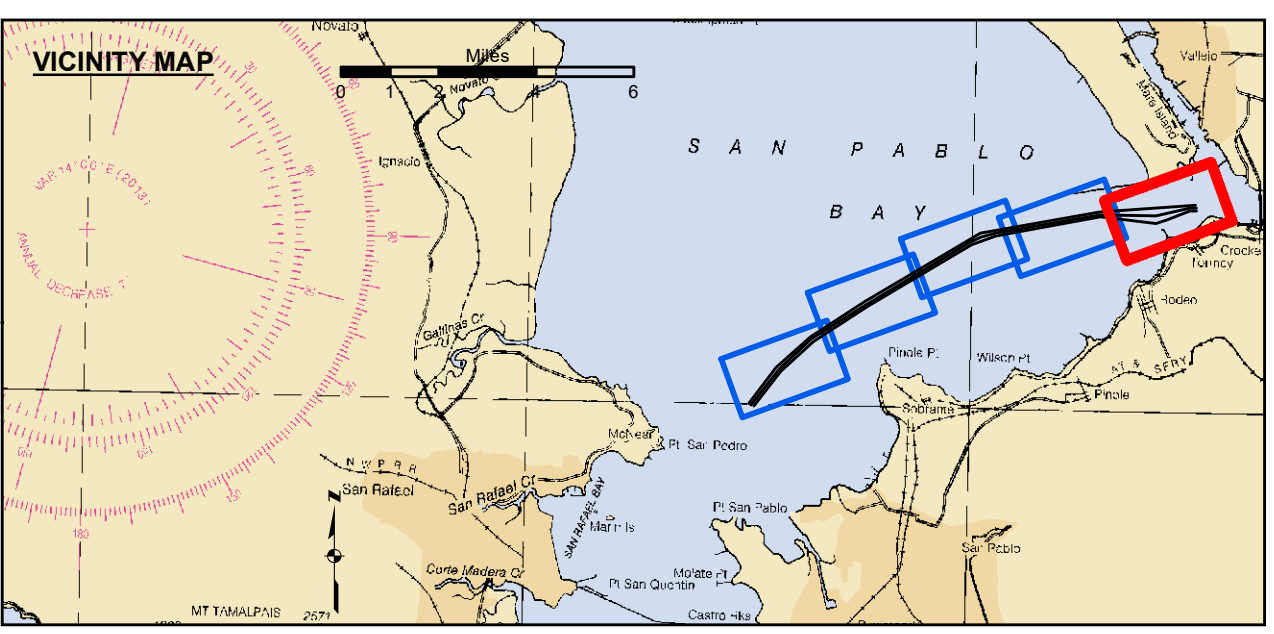
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CALIFORNIA
PINOLE SHOALS
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 4-9 JUNE 2020
 SAN PABLO BAY

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