



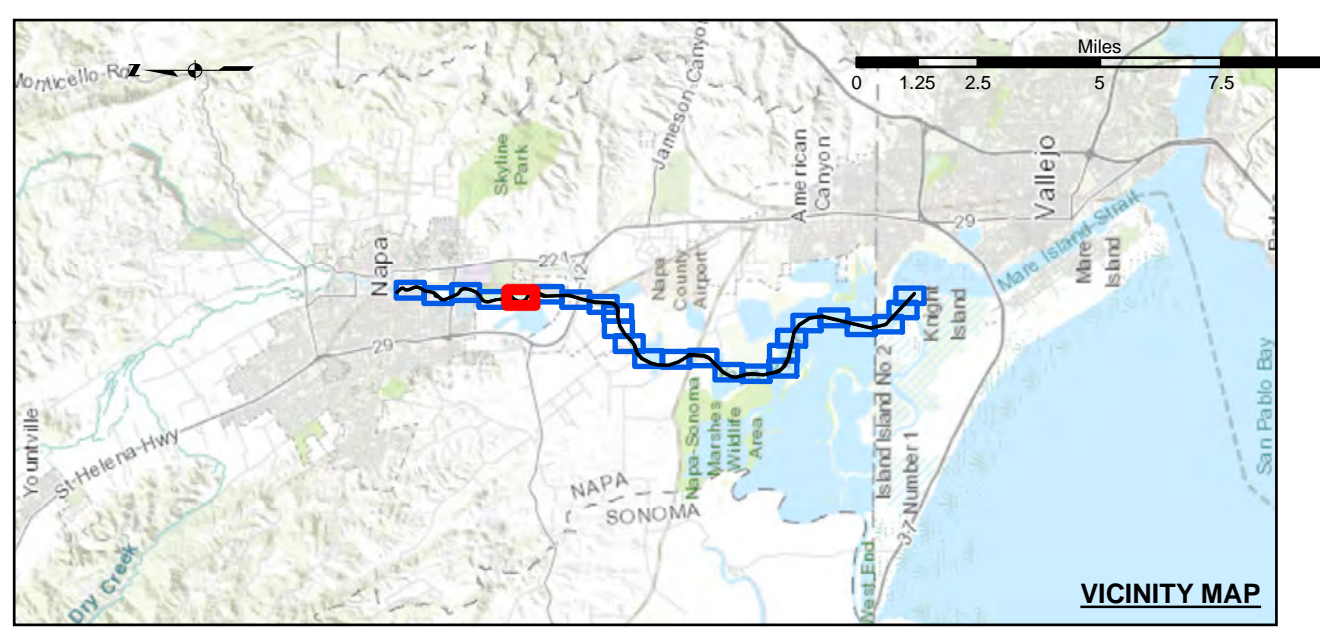
**US Army Corps of Engineers**  
 San Francisco District  
 1455 Market Street  
 San Francisco, CA 94103

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Prepared Under the Direction of	Chart Date:
TRAVIS J. RAYFIELD	May 15, 2018
LT Colonel, C.E. District Engineer	Designed by:
Subproject: Hydro Survey Team Leader	PDT
Recommended by: Chief, Hydro Survey Section	Checked by:
Approved: Chief, Construction Branch	PDT

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER  
 LOWER CHANNEL  
 CONDITION SURVEY  
 9-10 MAY 2018**

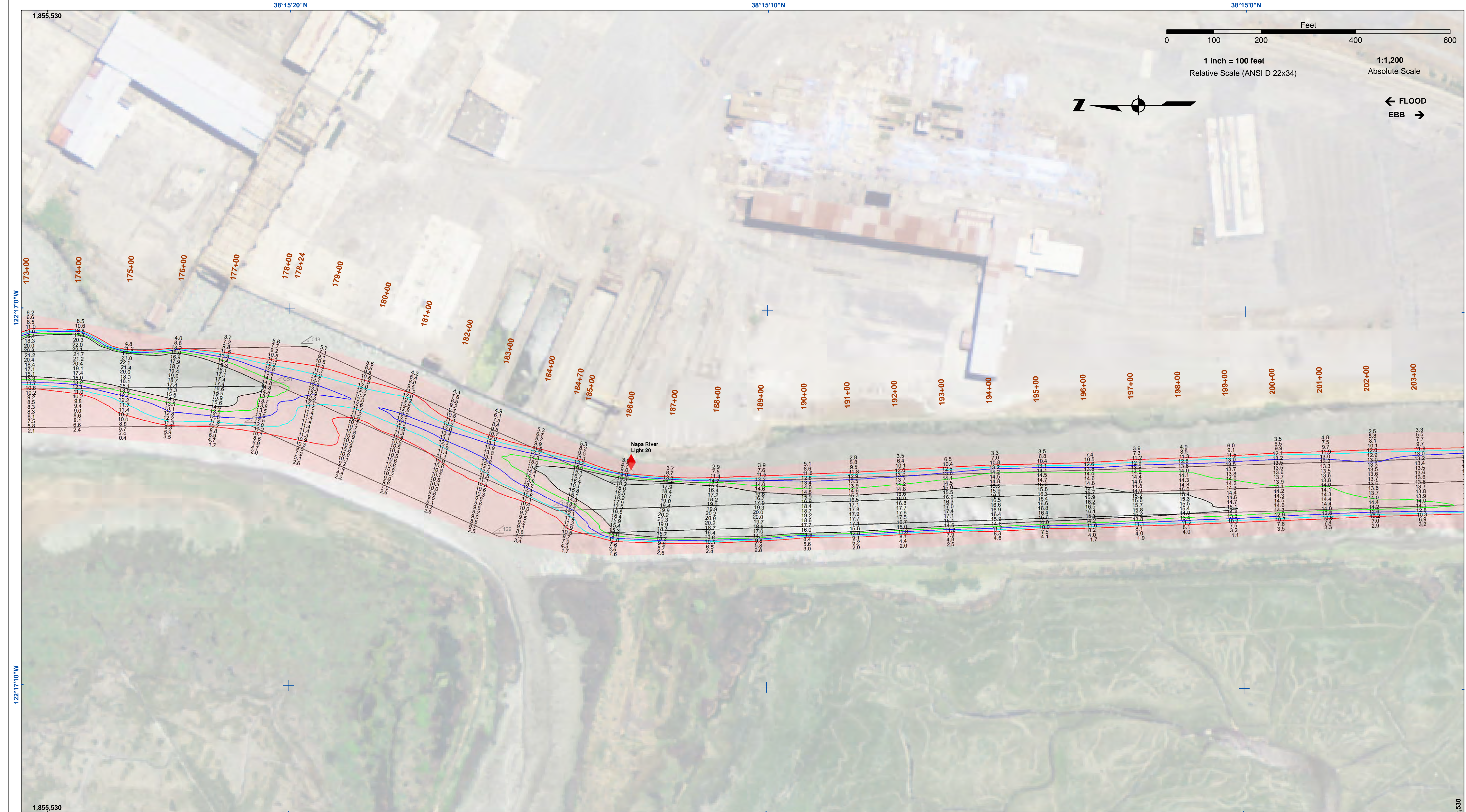
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- |                            |                    |                 |
|----------------------------|--------------------|-----------------|
| Federal Navigation Channel | Beacon, General    | <b>Contours</b> |
| Shoaling Area              | Obstruction Point  |                 |
| Placement Area             | Navigation Buoy    |                 |
| Anchorage Area             | Navigation Buoy    |                 |
| Wreck Area                 | Shoalest Sounding* |                 |
| Submerged Wreck            |                    |                 |
| Angle Point                |                    | -15             |
|                            |                    | -14             |
|                            |                    | -13             |
|                            |                    | -12             |
|                            |                    | -11             |

**NOTES:**  
 HORIZONTAL COORDINATE SYSTEM:  
 NORTH AMERICAN DATUM OF 1983 (NAD83), PROJECTED TO THE STATE PLANE COORDINATE SYSTEM (SPCS), CALIFORNIA ZONE II. DISTANCE UNITS IN U.S. SURVEY FEET.  
 VERTICAL DATUM:  
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 \*SHOALEST SOUNDING PER QUARTER PER REACH

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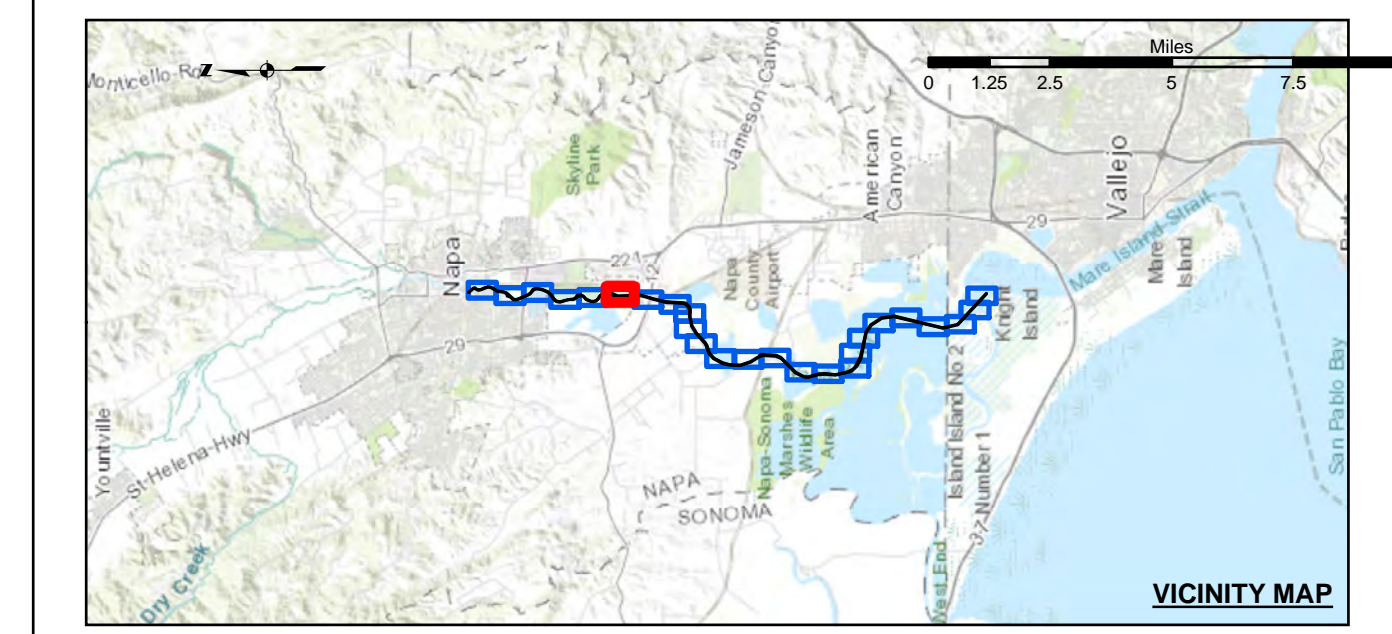
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Chart Date:	May 15, 2018
Designed by:	PDT
Plotted by:	PDT
Checked by:	PDT
Drawn by:	PDT

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER  
 LOWER CHANNEL  
 CONDITION SURVEY  
 9-10 MAY 2018**

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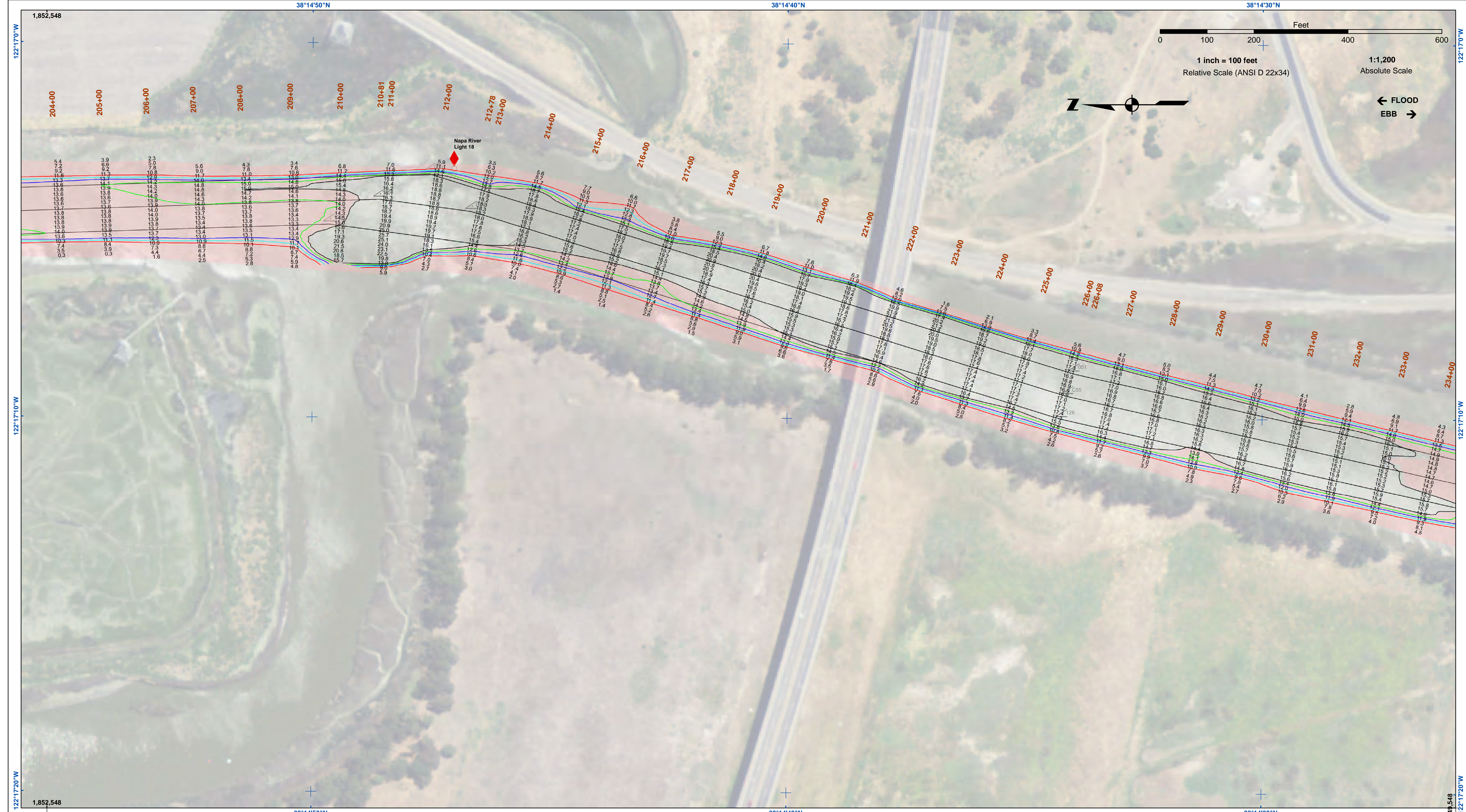
Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	
Anchorage Area	Navigation Buoy	
Wreck Area	Shoalest Sounding*	
Submerged Wreck	Angle Point	-15
		-14
		-13
		-12
		-11

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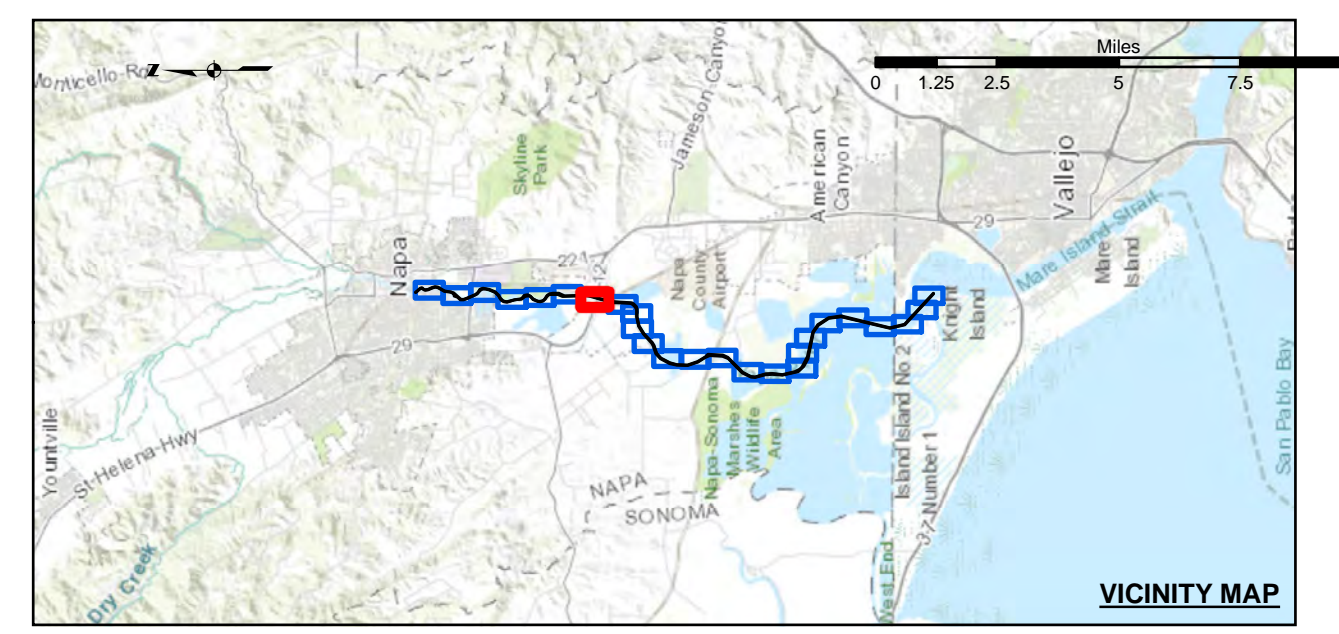
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LT COLONEL C.E. DISTRICT ENGINEER	Designed by:	
Subject: Hydro Survey Team Leader	Plotted by:	PDT
Recommended by: Chief, Hydro Survey Section	Checked by:	PDT
Approved: Chief, Construction Branch	Drawn by:	PDT

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER LOWER CHANNEL CONDITION SURVEY**  
 9-10 MAY 2018

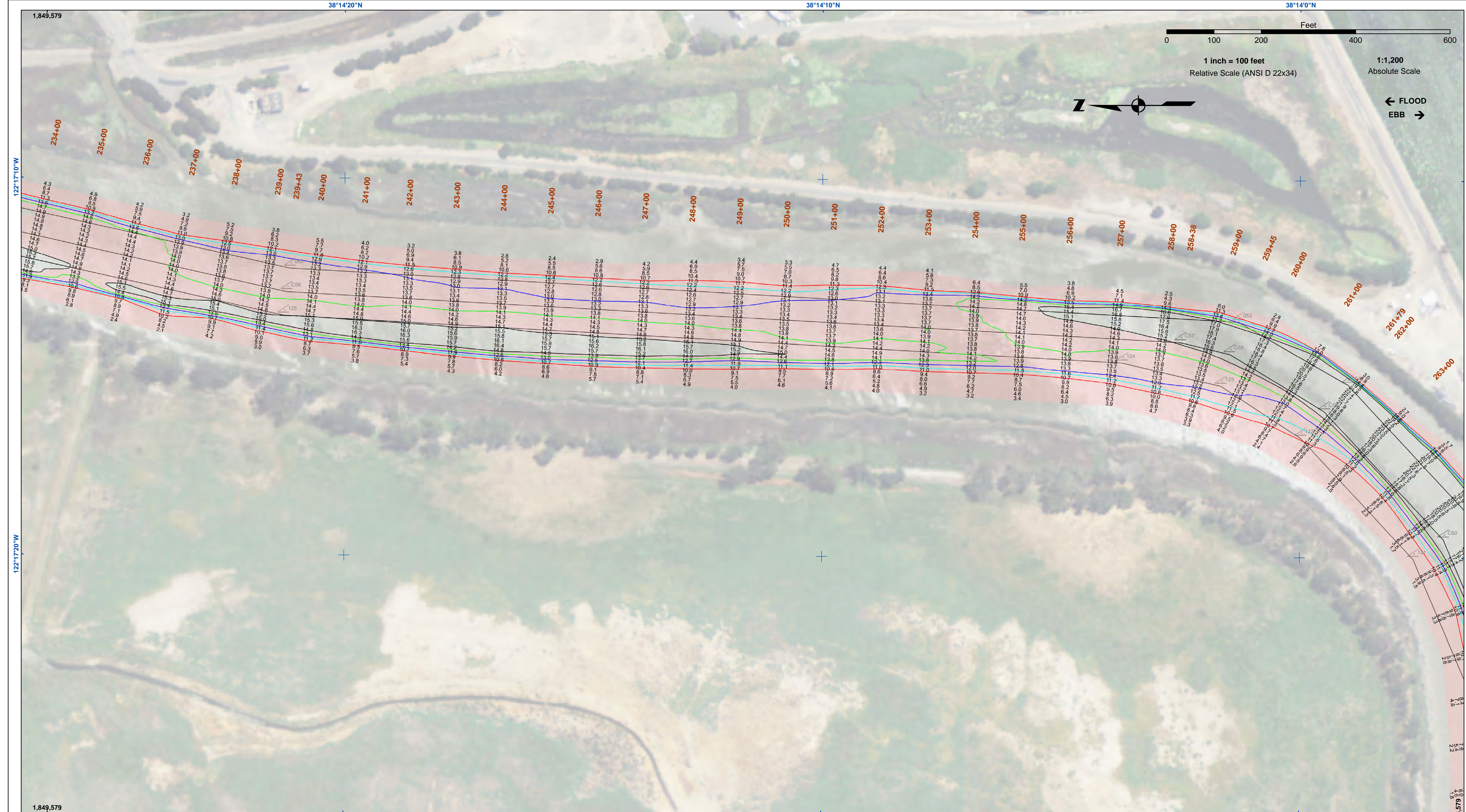
**Sheet Number**  
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Federal Navigation Channel	Shoaling Area	Beacon, General	<b>Contours</b>
Placement Area	Obstruction Point	Navigation Buoy	-15
Anchorage Area	Navigation Buoy	-13	-14
Wreck Area	Shoalest Sounding*	-12	-11
Submerged Wreck			
Angle Point			

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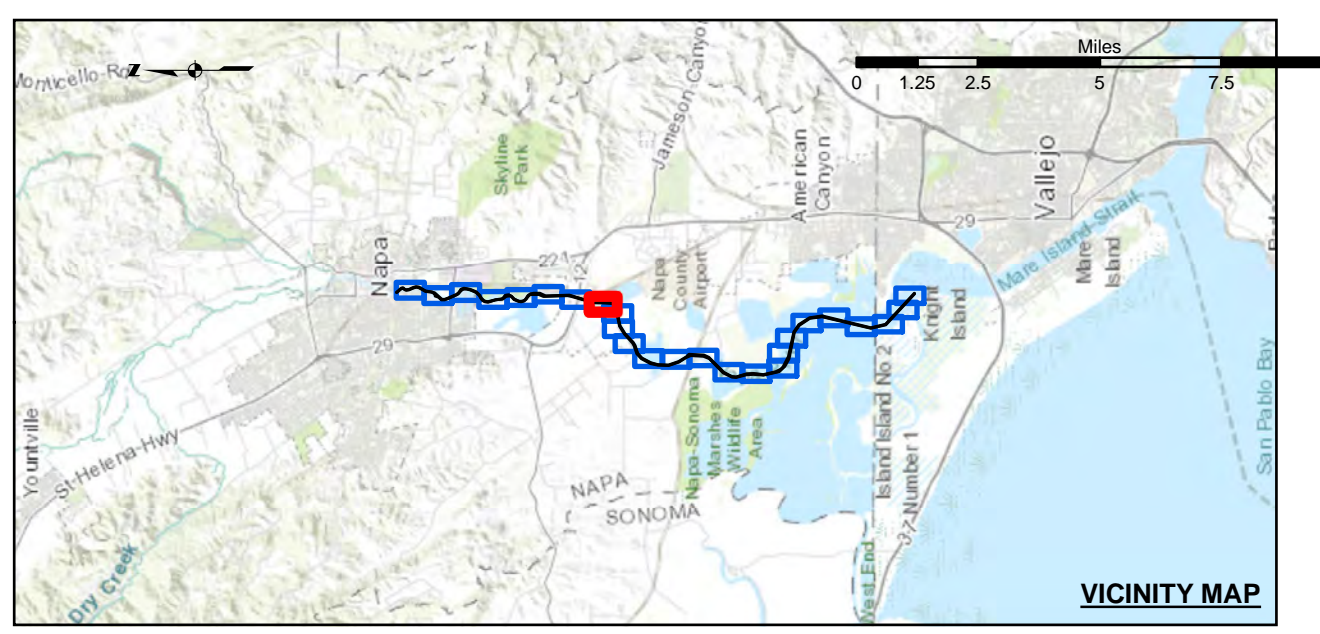
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CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER  
 LOWER CHANNEL  
 CONDITION SURVEY  
 9-10 MAY 2018**

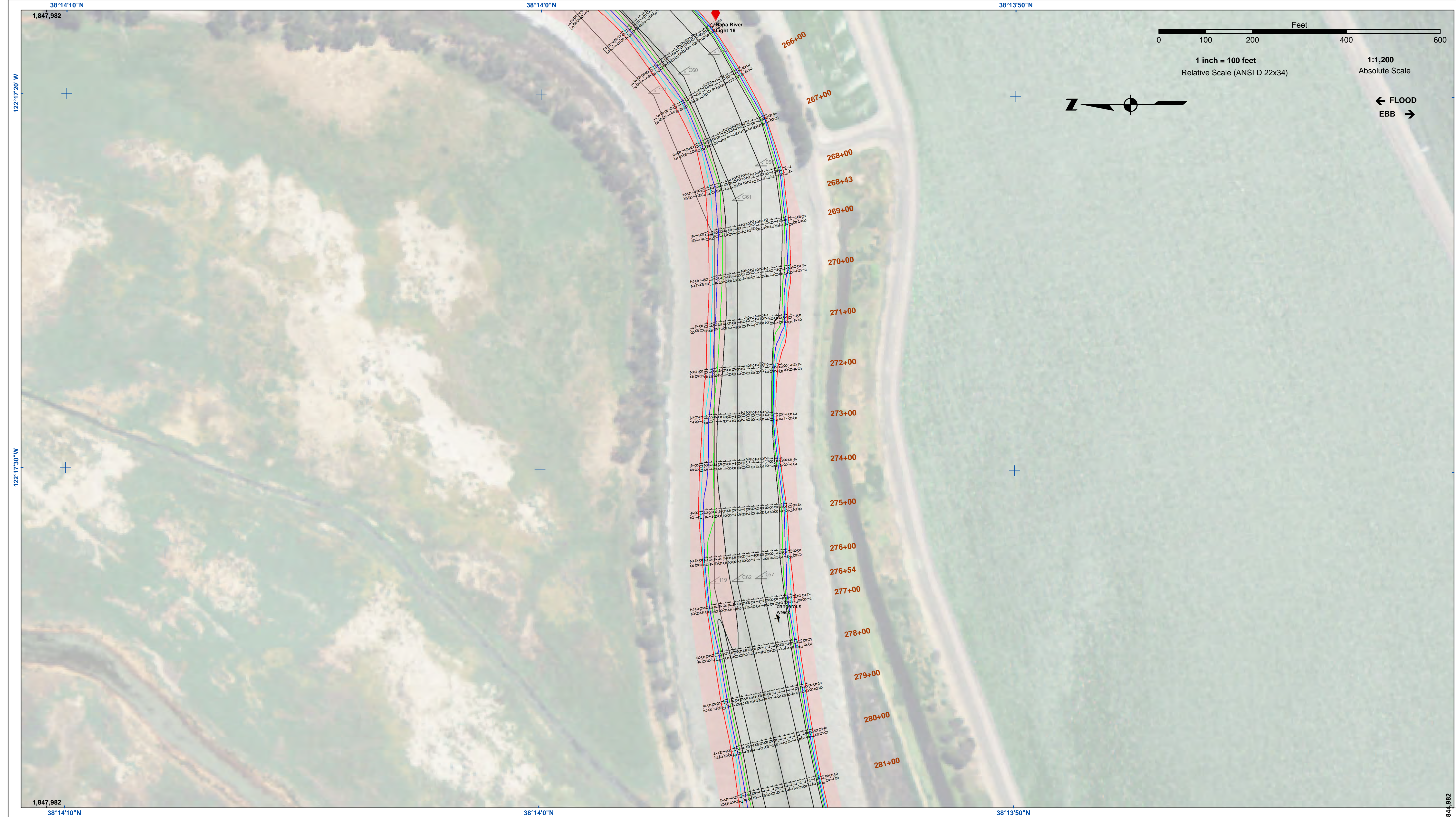
**Sheet  
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Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	
Anchorage Area	Navigation Buoy	
Wreck Area	Shoalest Sounding*	
Submerged Wreck		-15
Angle Point		-14
		-13
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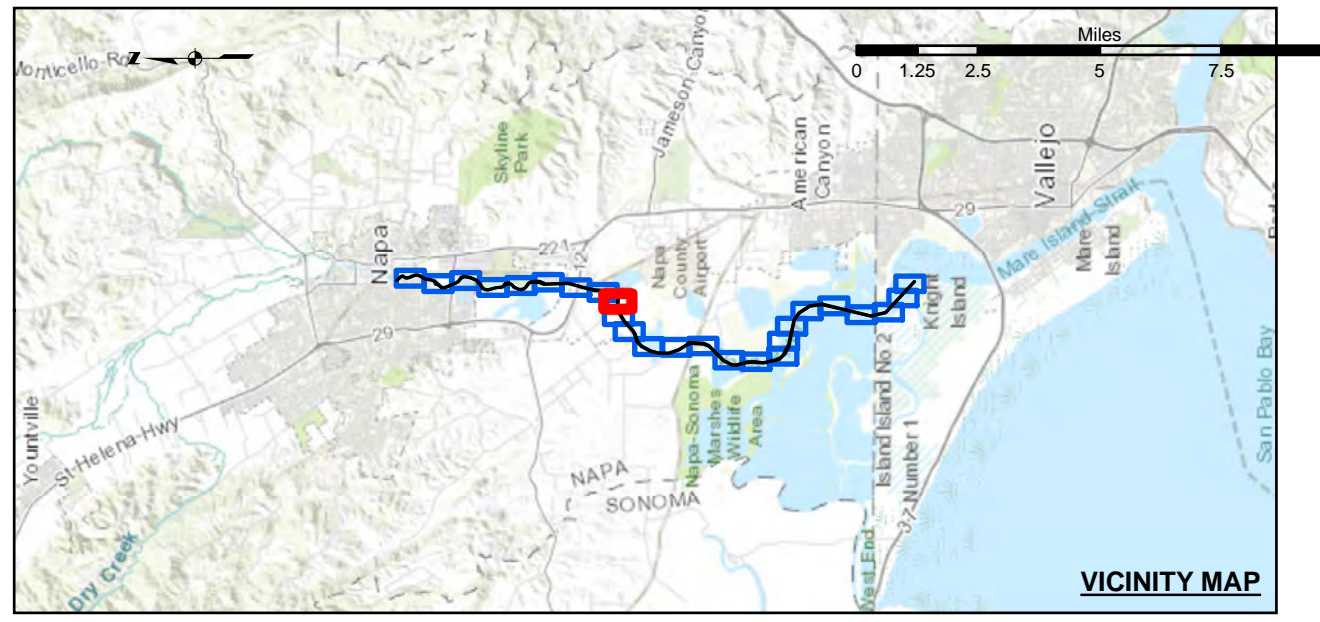


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**NAPA RIVER  
 LOWER CHANNEL  
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 9-10 MAY 2018

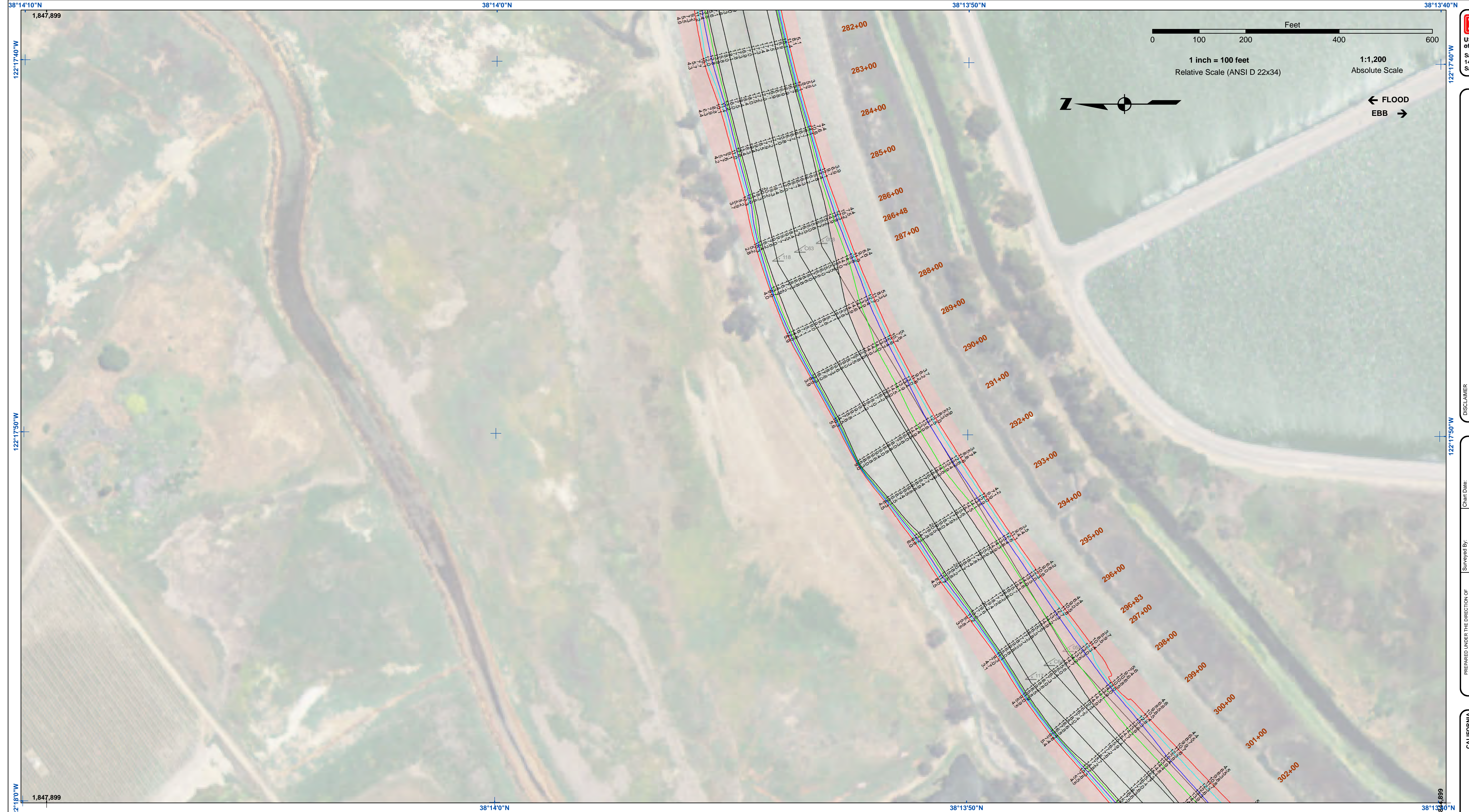


Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	
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Wreck Area	Shoalest Sounding*	
Submerged Wreck	Angle Point	-15
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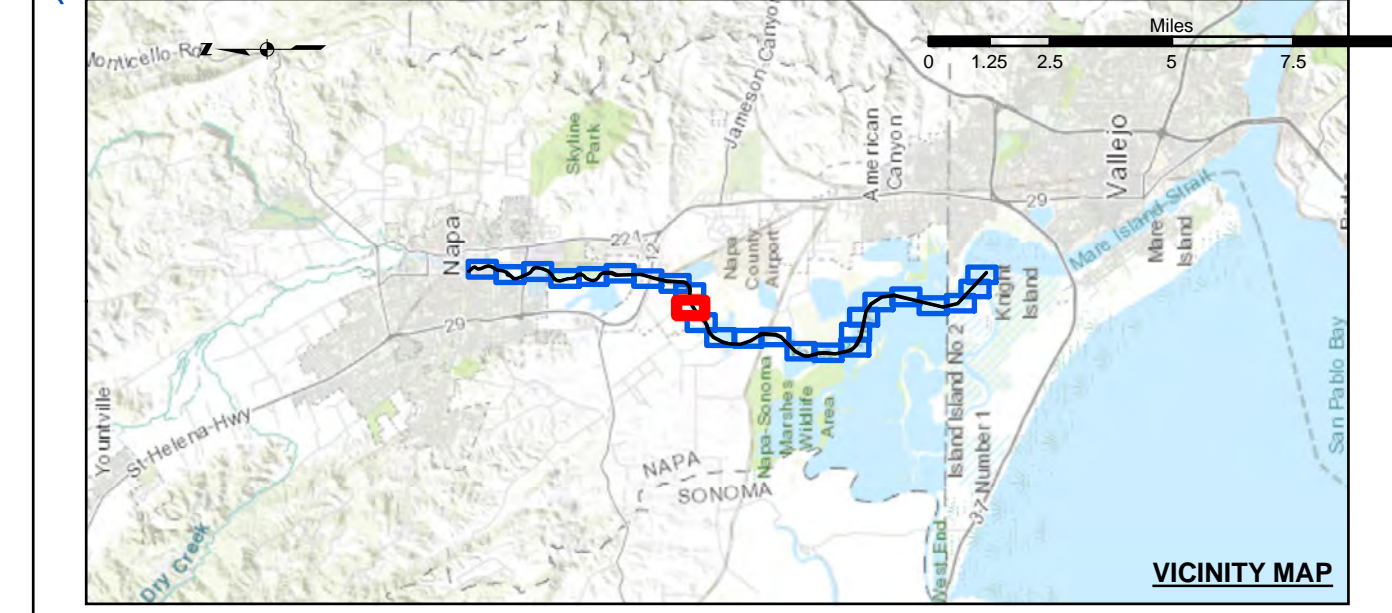
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Submitted	Hydro Survey Team Leader	Plotted By:	PDT	Designed by:	
Recommended:	Chief, Hydro Survey Section	Checked By:	PDT	Drawn by:	PDT
Approved:	Chief, Construction Branch				

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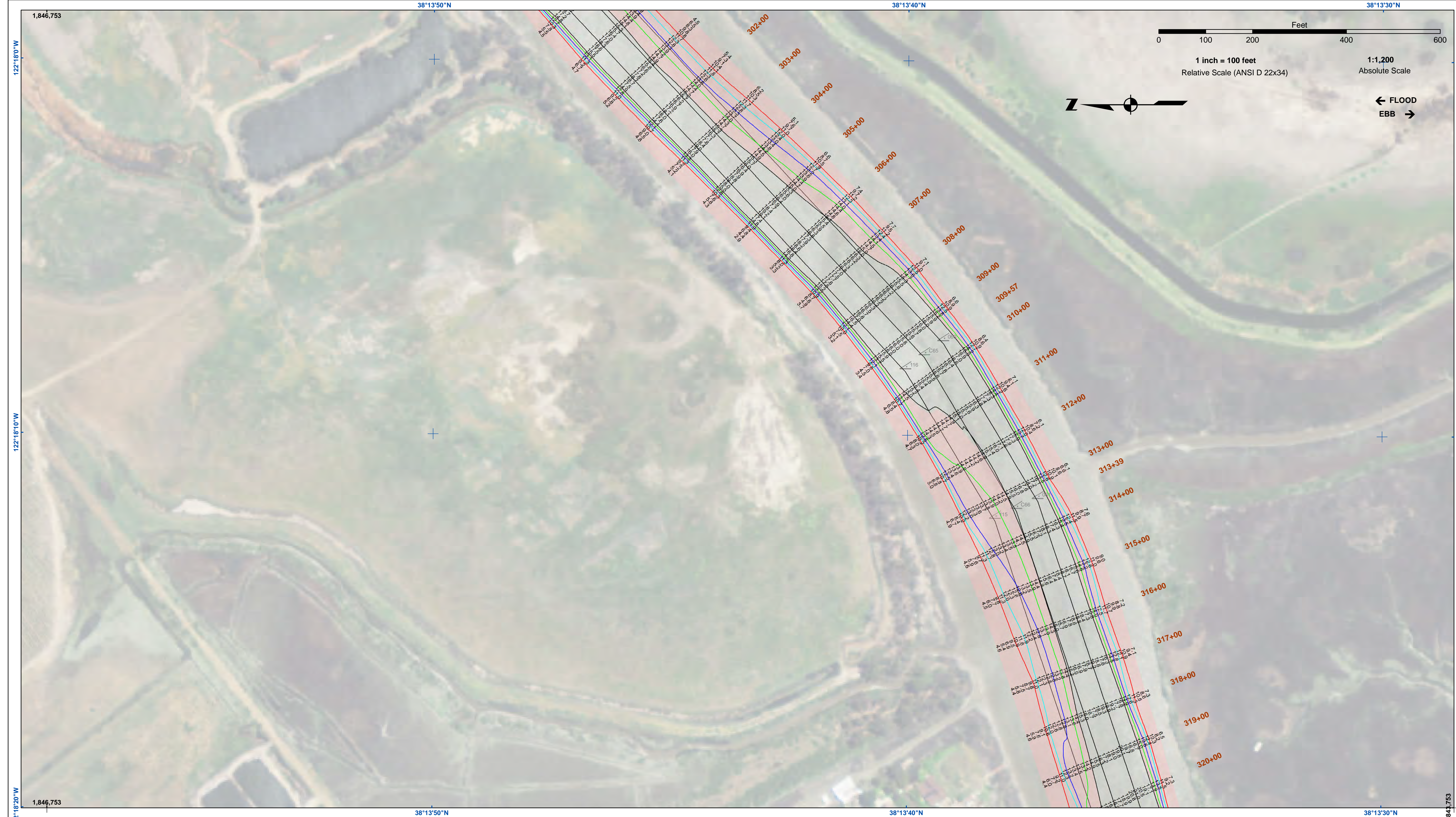
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Federal Navigation Channel	Shoaling Area	Beacon, General	<b>Contours</b>
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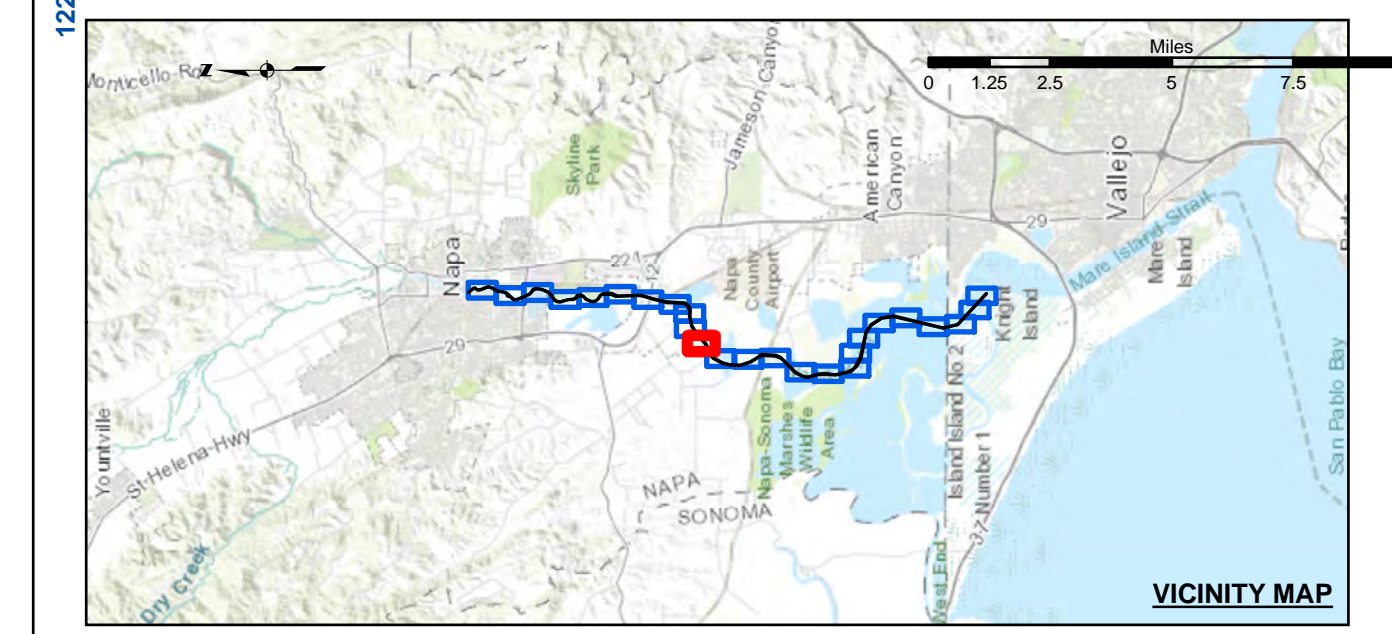
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Chart Date:	May 15, 2018
Designed by:	PDT
Plotted by:	PDT
Checked by:	PDT
Drawn by:	PDT

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER  
 LOWER CHANNEL  
 CONDITION SURVEY**  
 9-10 MAY 2018

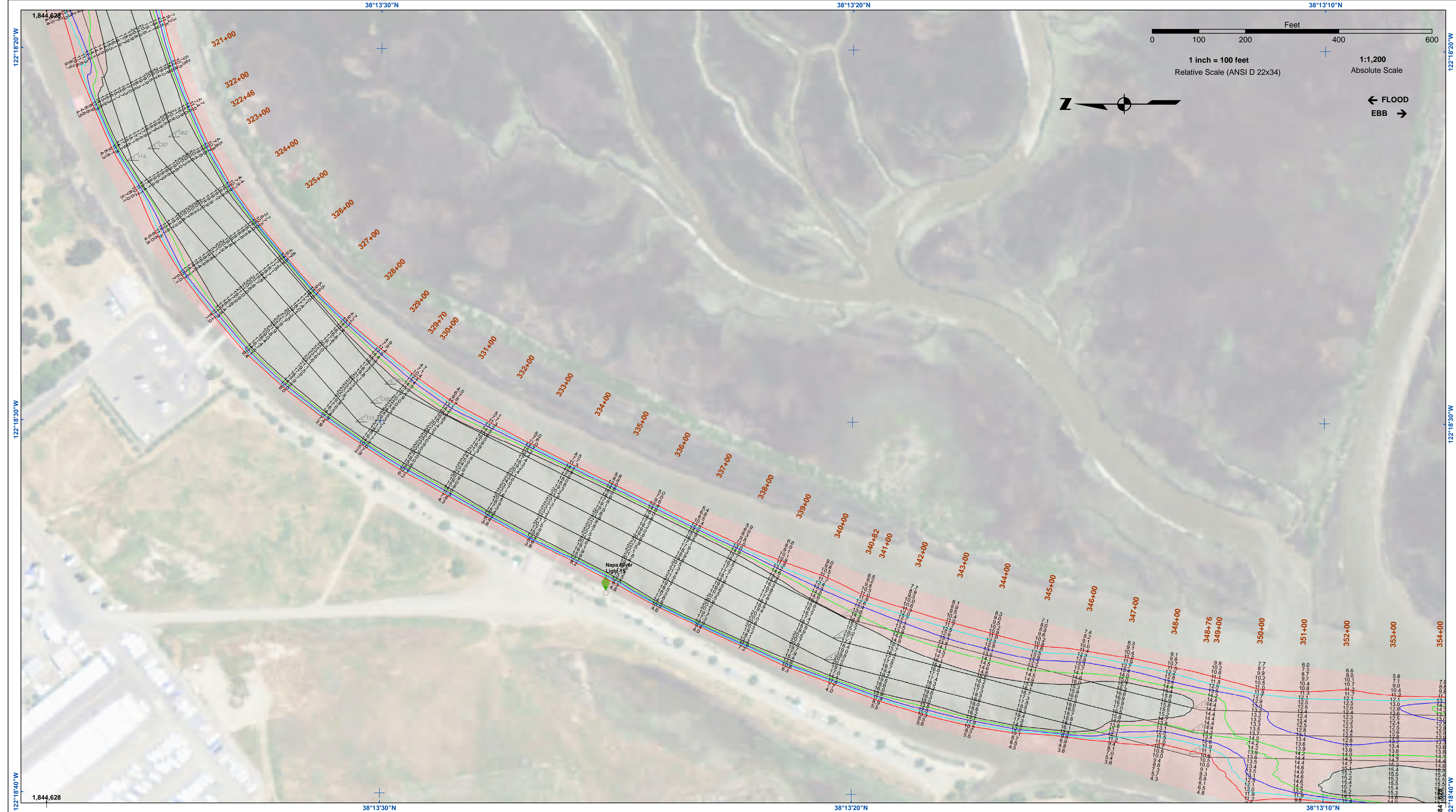
**Sheet  
 Reference  
 Number**  
**11 of 25**



Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	
Anchorage Area	Navigation Buoy	
Wreck Area	Shoalest Sounding*	
Submerged Wreck	Angle Point	-15
		-14
		-13
		-12
		-11

**NOTES:**  
 HORIZONTAL COORDINATE SYSTEM:  
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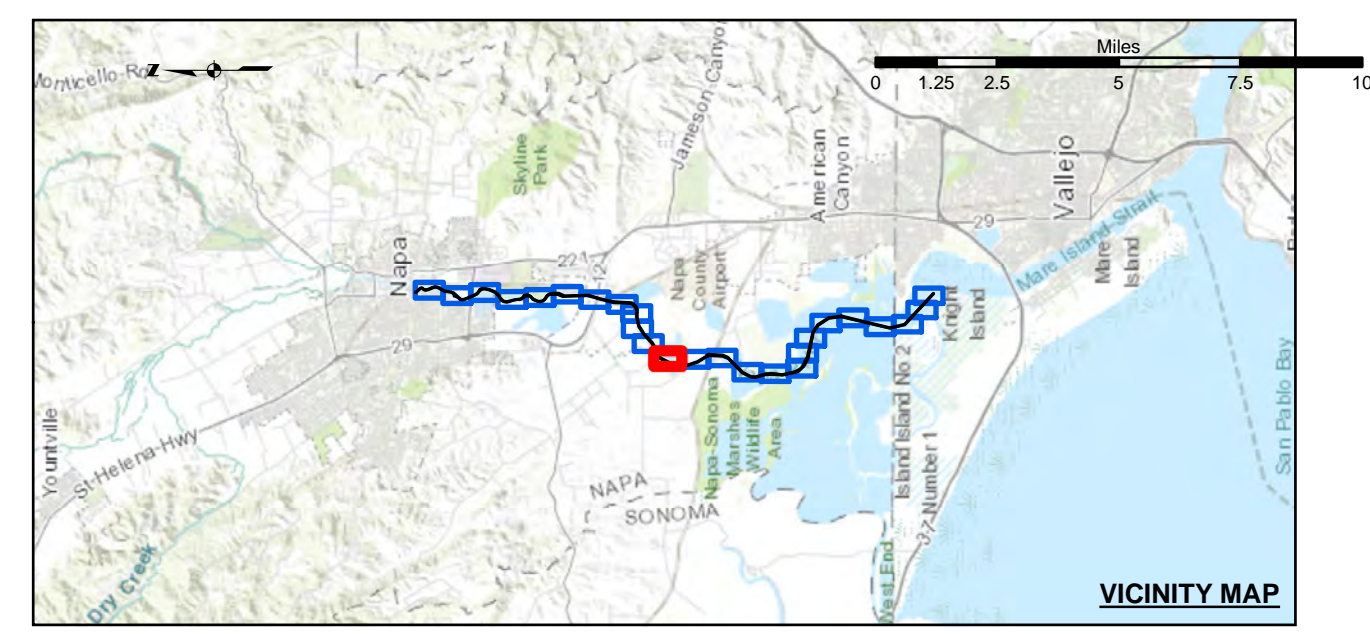


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Chart Date:	May 15, 2018
Surveyed By:	TRAVIS J. RAYFIELD
Plotted By:	PDT
Designed By:	PDT
Checked By:	PDT
Drawn by:	PDT

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER  
 LOWER CHANNEL  
 CONDITION SURVEY  
 9-10 MAY 2018**

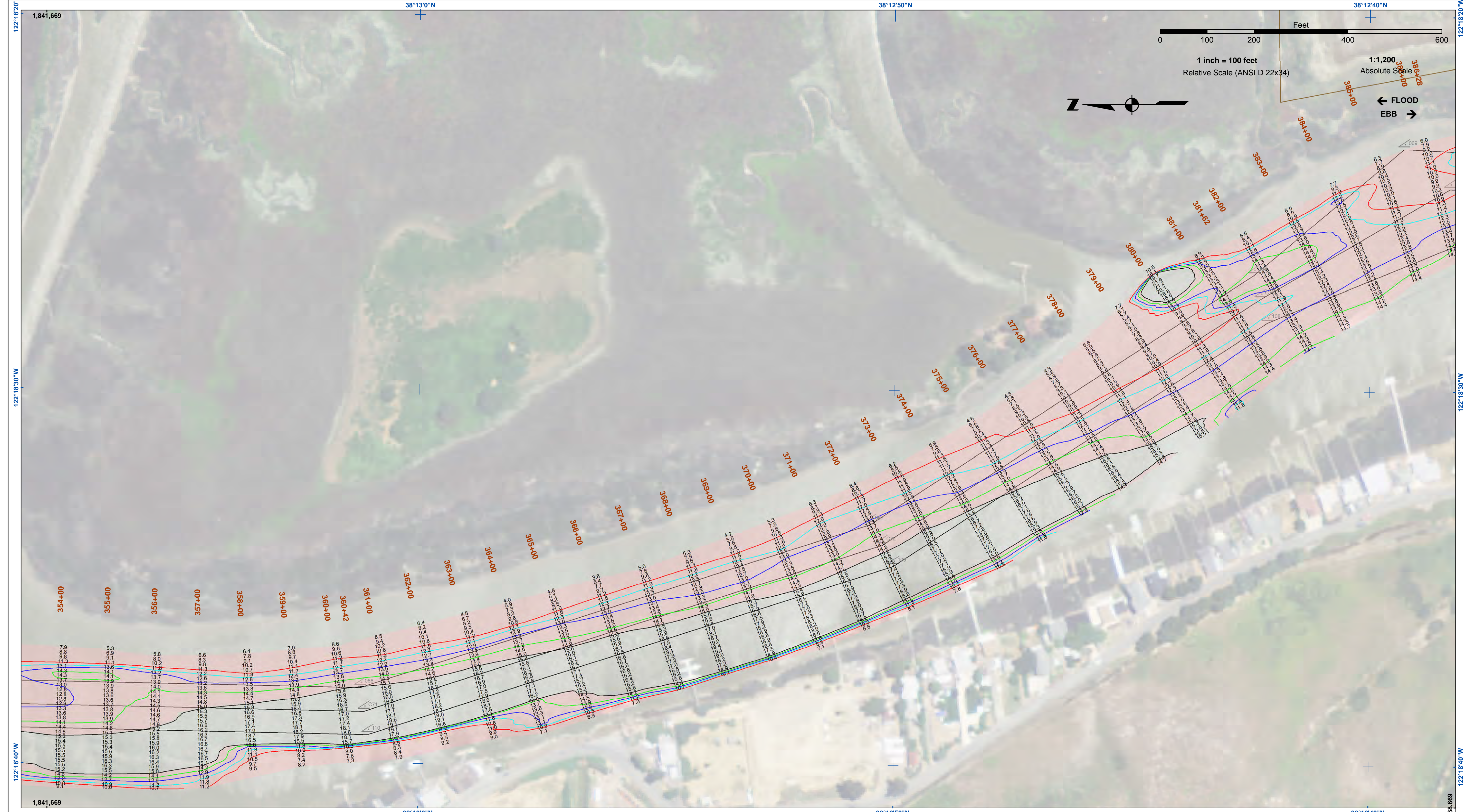


Federal Navigation Channel	Shoaling Area	Beacon, General	<b>Contours</b>
Placement Area	Obstruction Point	Navigation Buoy	
Anchorage Area	Navigation Buoy	-15	
Wreck Area	Shoalest Sounding*	-14	
Submerged Wreck		-13	
Angle Point		-12	
		-11	

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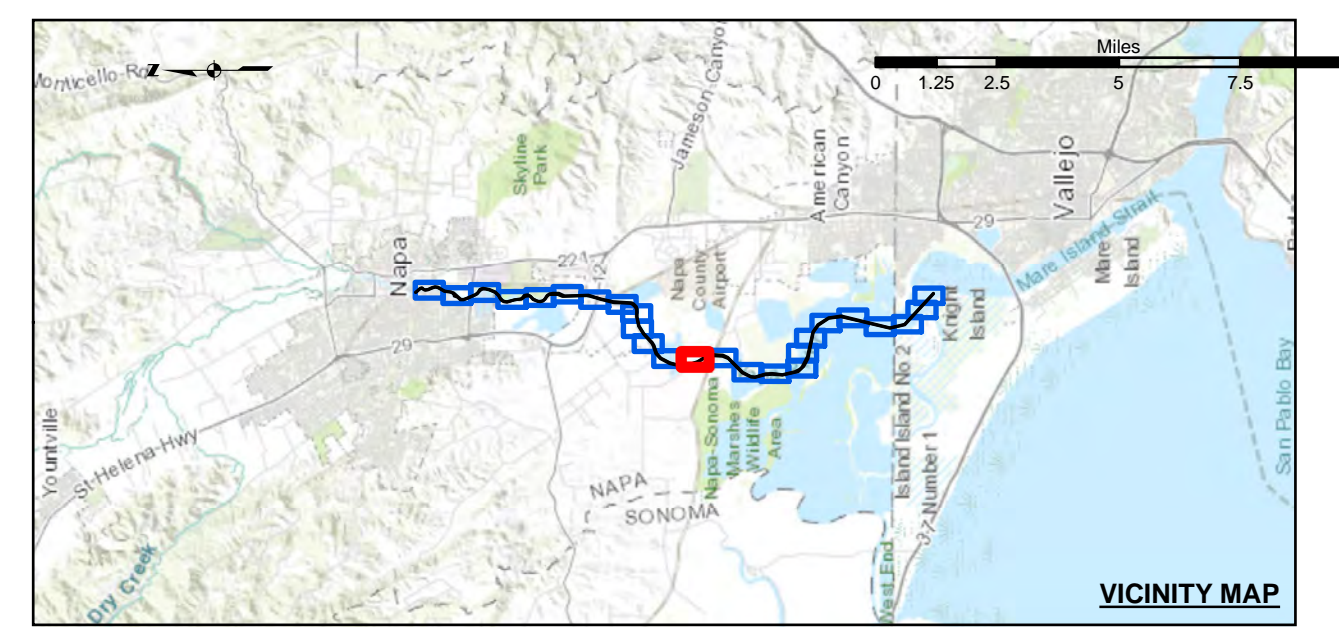
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Prepared Under the Direction of:	TRAVIS J. RAYFIELD LT COLONEL, C.E. DISTRICT ENGINEER	Surveyed By:	May 15, 2018
Subject:	Hydro Survey Team Leader	Plotted By:	PDT
Recommended:	Chief, Hydro Survey Section	Checked By:	PDT
Approved:	Chief, Construction Branch	Drawn by:	PDT

CALIFORNIA  
**NAPA RIVER  
 LOWER CHANNEL  
 CONDITION SURVEY**  
 9-10 MAY 2018

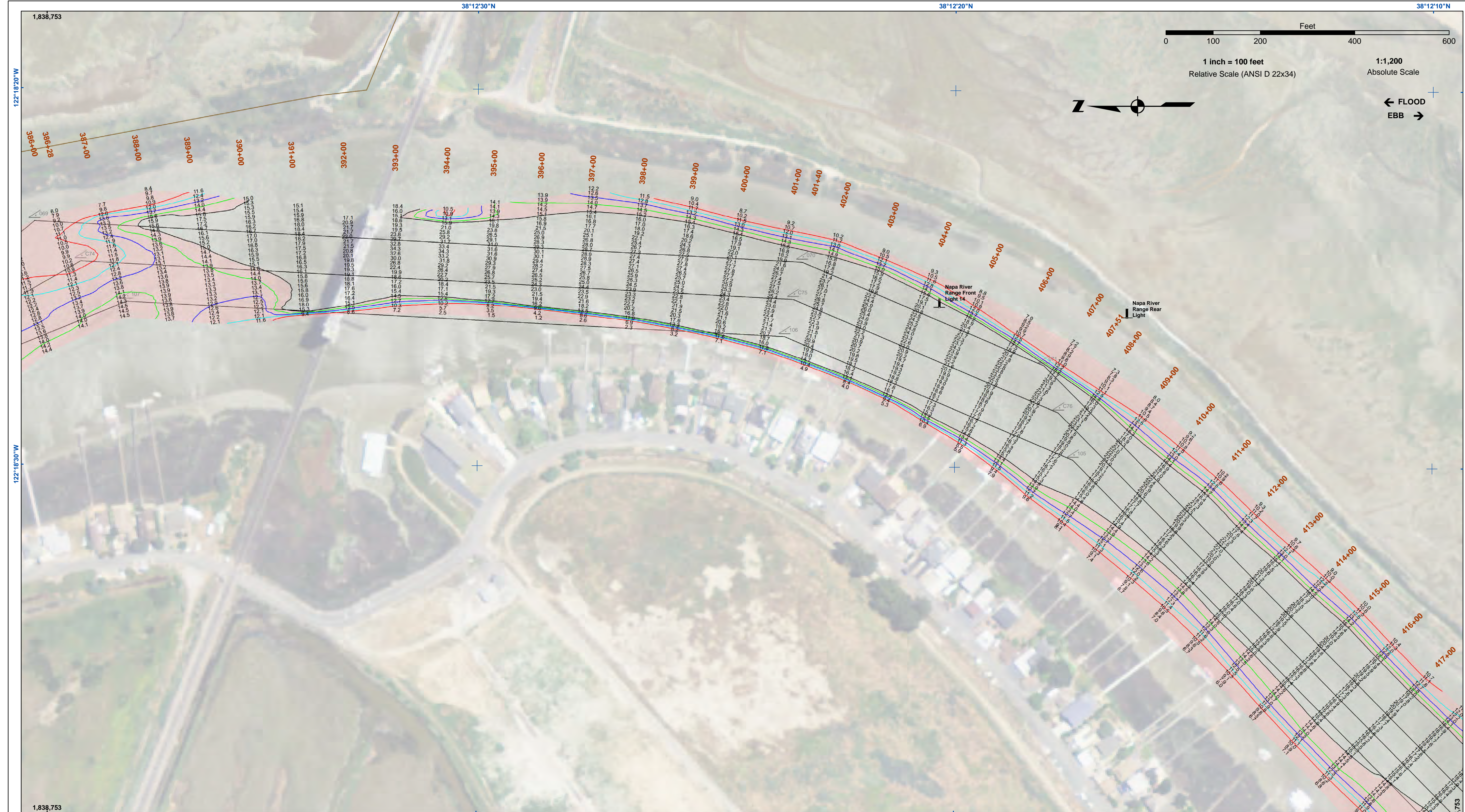
**Sheet  
 Reference  
 Number**  
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Federal Navigation Channel	Shoaling Area	Beacon, General	<b>Contours</b>
Placement Area	Obstruction Point	Navigation Buoy	
Anchorage Area	Navigation Buoy	-13	
Wreck Area	Shoalest Sounding*	-12	
Submerged Wreck		-11	
Angle Point			

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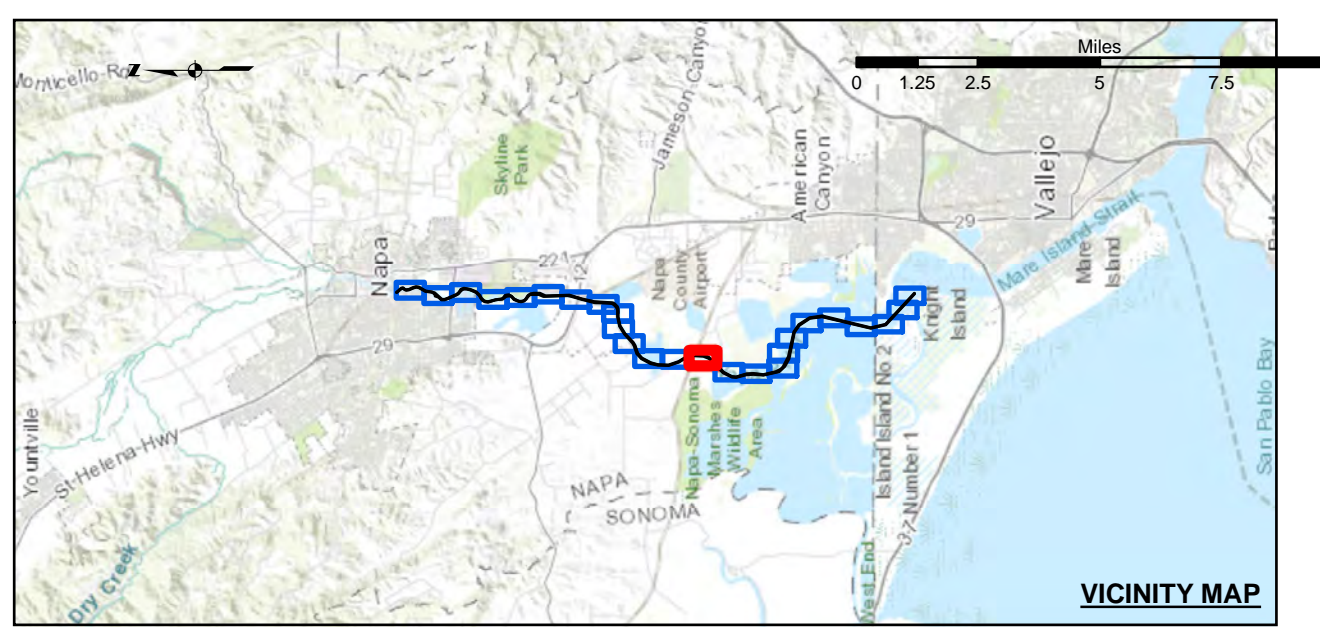
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Designed by:	PDT
Plotted by:	PDT
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**CALIFORNIA**  
**NAPA COUNTY**  
**NAPA RIVER**  
**LOWER CHANNEL**  
**CONDITION SURVEY**  
 9-10 MAY 2018

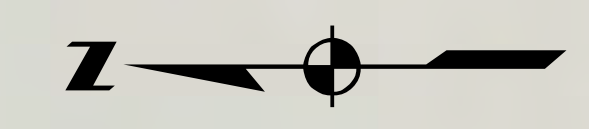
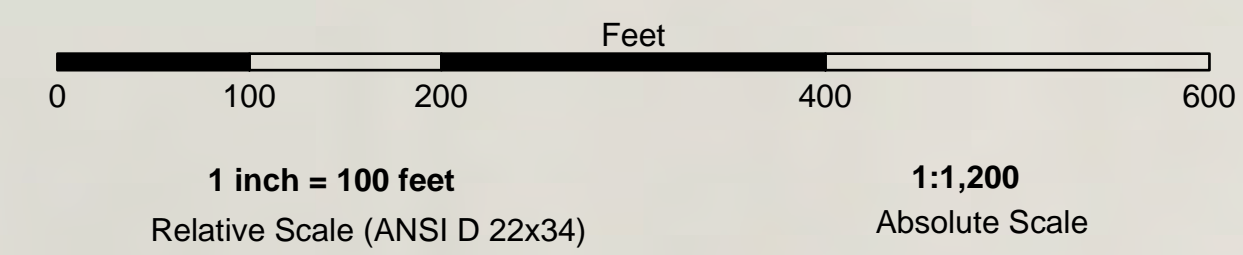
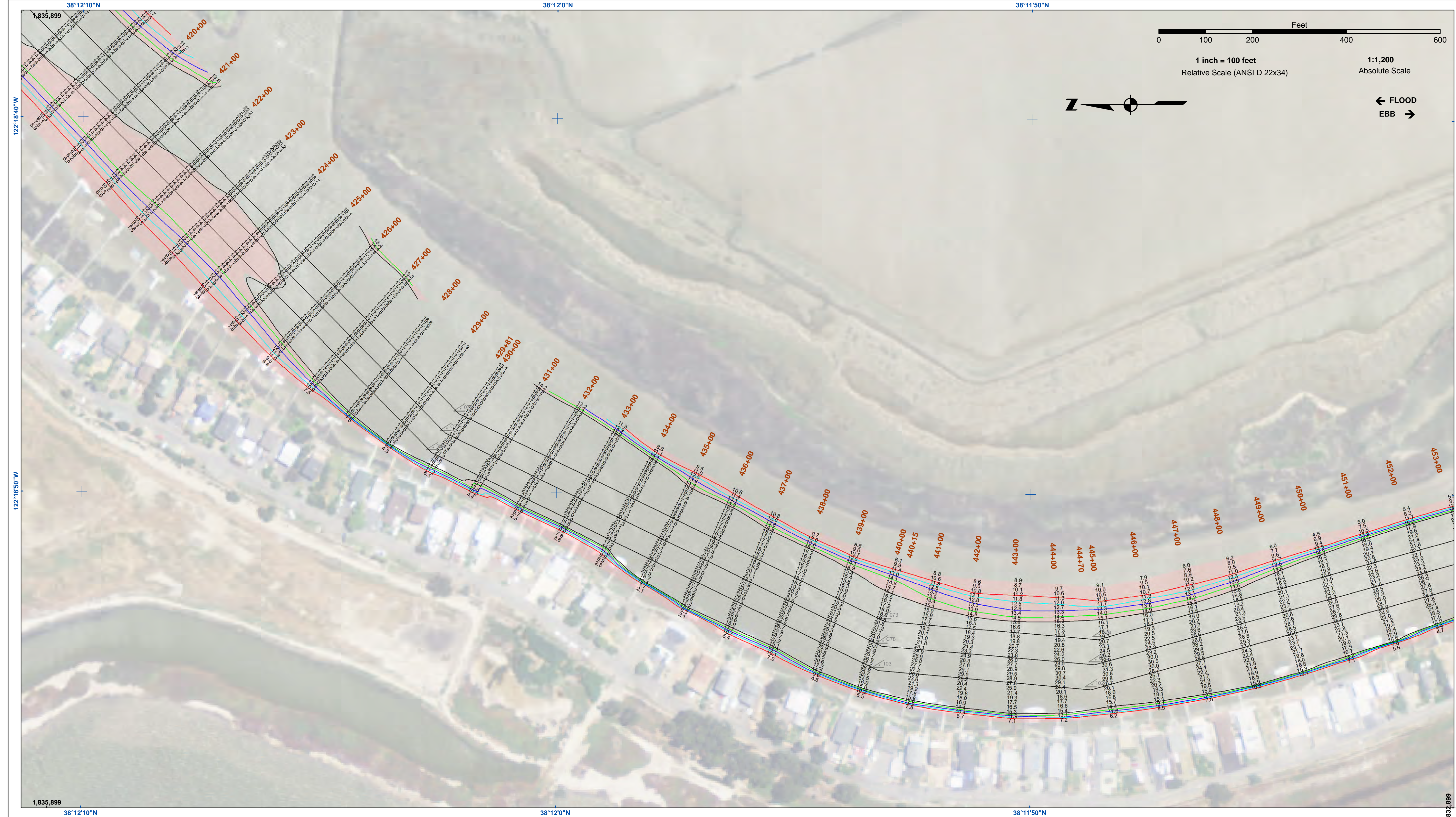
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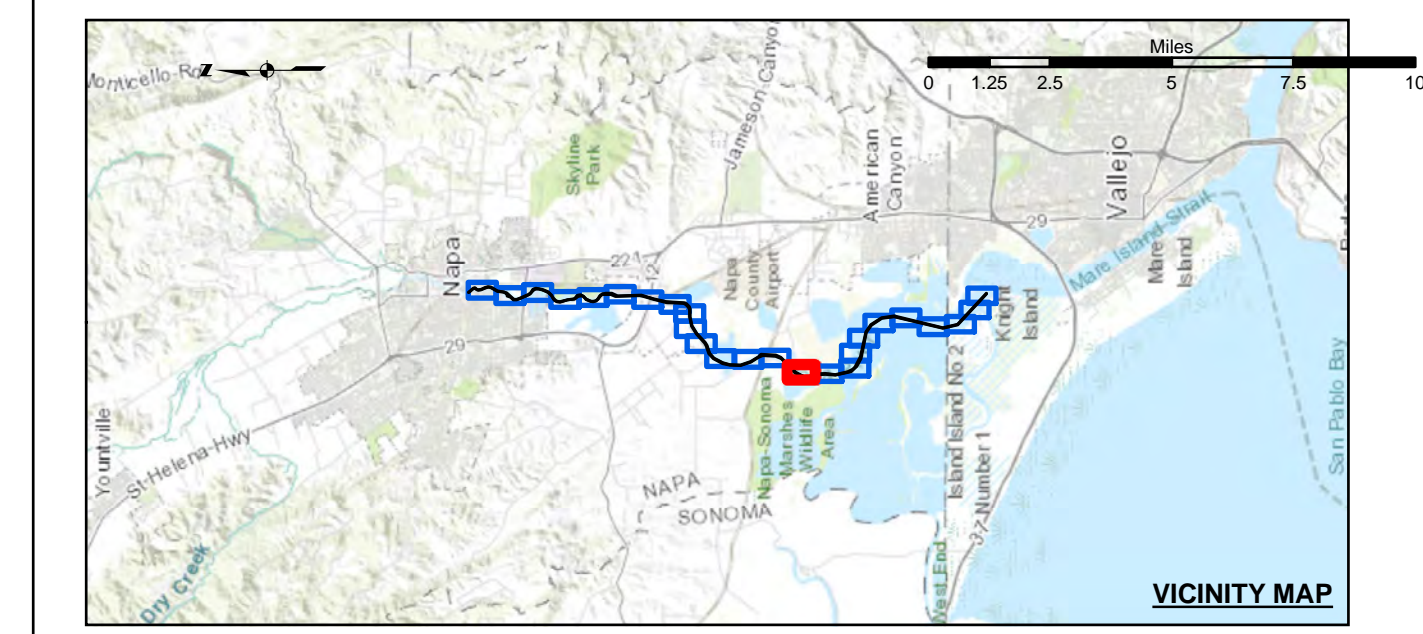
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|----------------------------|--------------------|-----------------|
| Federal Navigation Channel | Beacon, General    | <b>Contours</b> |
| Shoaling Area              | Obstruction Point  |                 |
| Placement Area             | Navigation Buoy    |                 |
| Anchorage Area             | Navigation Buoy    |                 |
| Wreck Area                 | Shoalest Sounding* |                 |
| Submerged Wreck            |                    | -15             |
| Angle Point                |                    | -14             |
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← FLOOD  
EBB →



	Federal Navigation Channel		Beacon, General	<b>Contours</b>	
	Shoaling Area		Obstruction Point		
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	Submerged Wreck				-13
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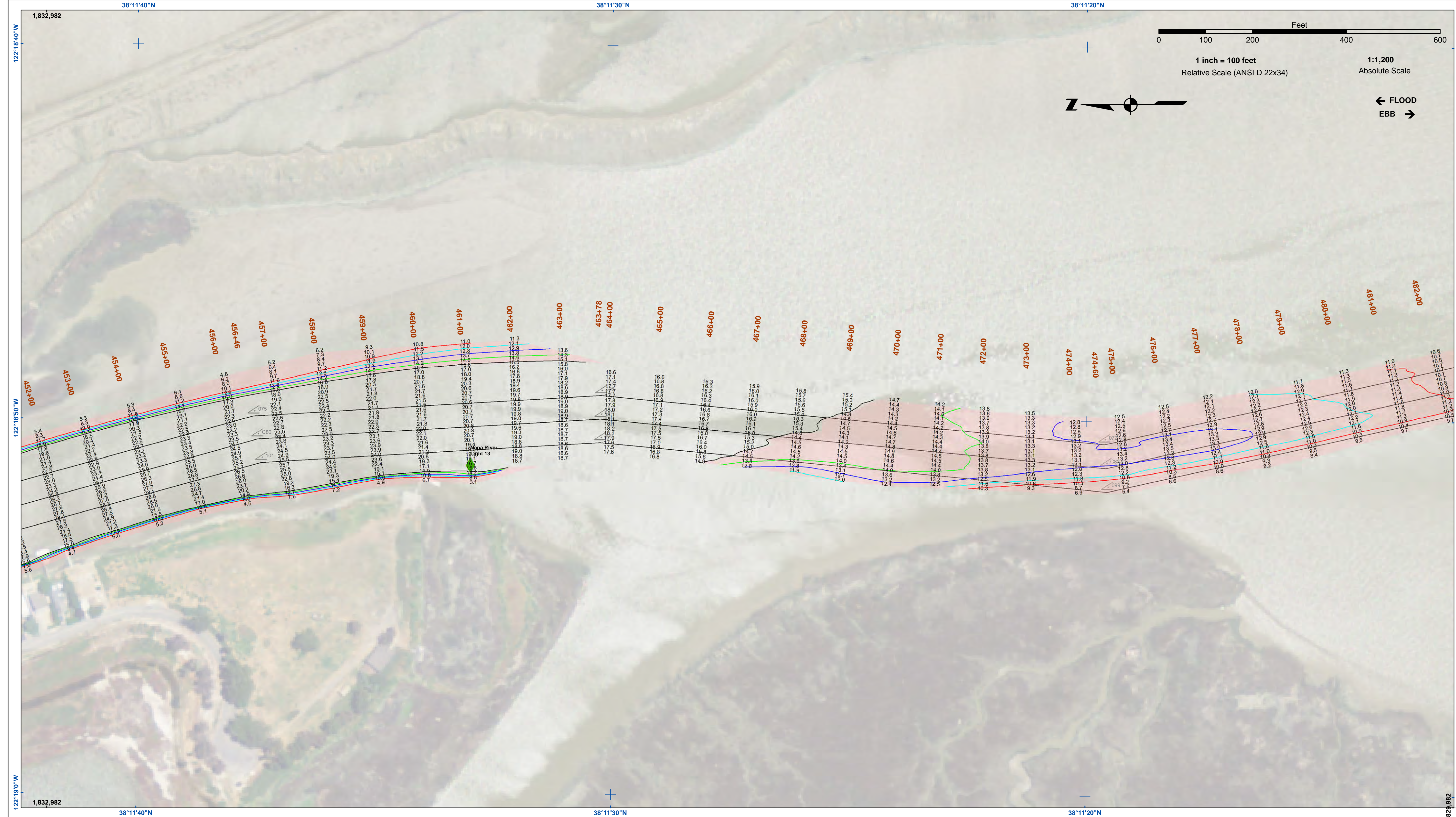
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Chart Date:	May 15, 2018
Designed by:	PDT
Plotted by:	PDT
Checked by:	PDT
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Approved:	Chief, Construction Branch

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER  
 LOWER CHANNEL  
 CONDITION SURVEY**  
 9-10 MAY 2018

**Sheet  
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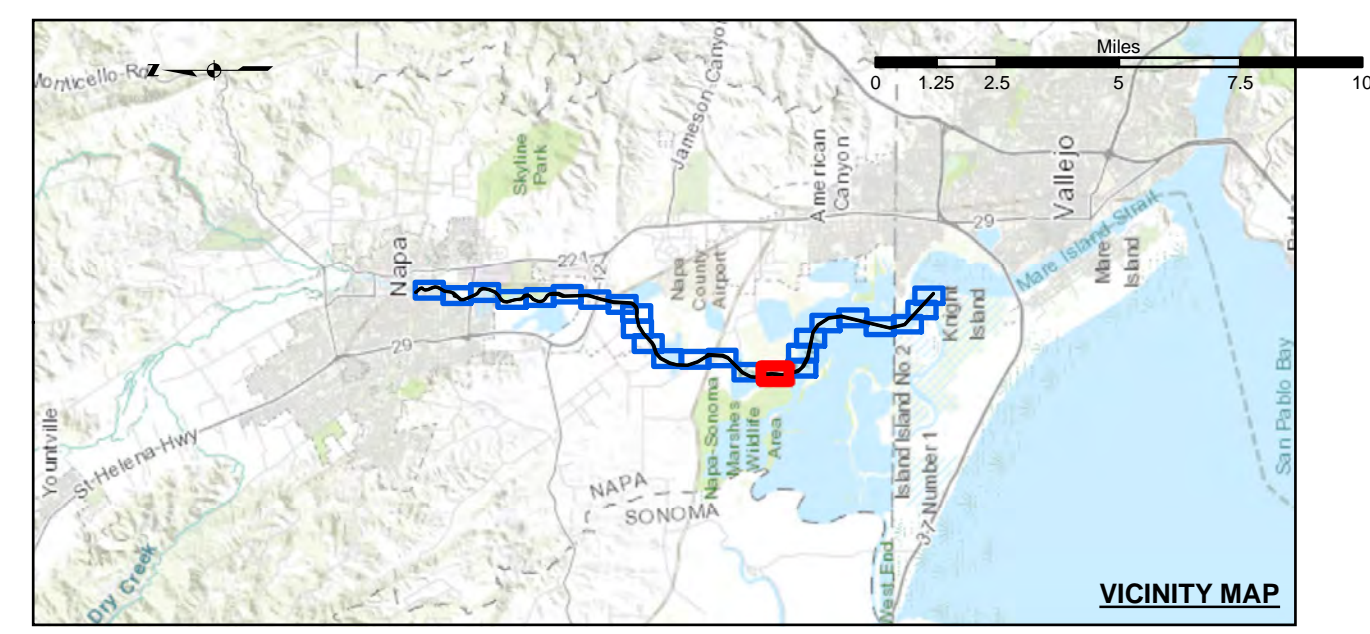
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Prepared Under the Direction of:	Chart Date:
LT COLONEL J. RAYFIELD	May 15, 2018
Submittal:	Plotted By:
Hydro Survey Team Leader	PDT
Recommended:	Checked By:
Chief, Hydro Survey Section	PDT
Approved:	Drawn by:
Chief, Construction Branch	PDT

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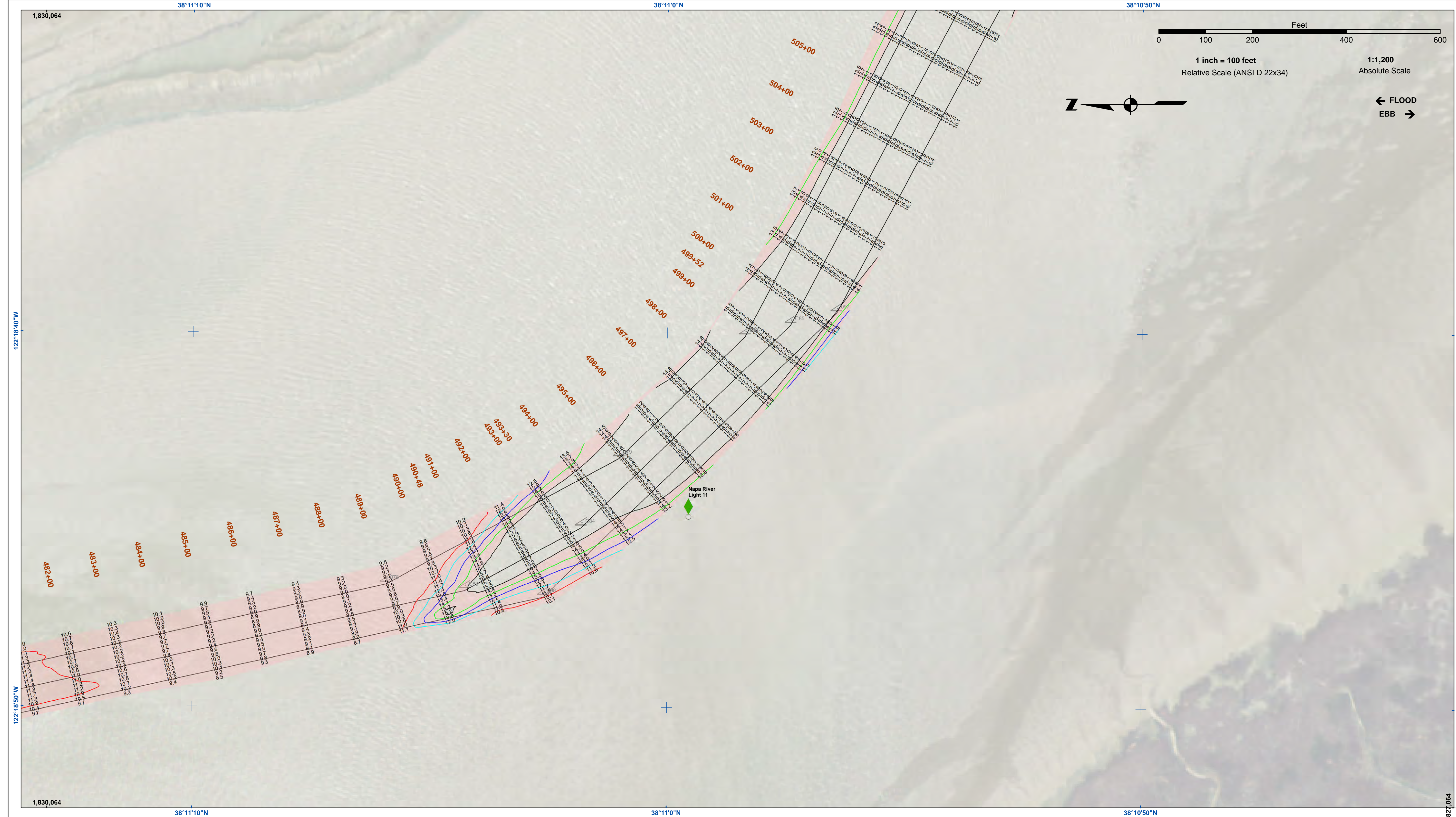
**Sheet  
 Reference  
 Number  
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- |                            |                    |                    |
|----------------------------|--------------------|--------------------|
| Federal Navigation Channel | Beacon, General    | <b>Contours</b>    |
| Shoaling Area              | Obstruction Point  |                    |
| Placement Area             | Navigation Buoy    |                    |
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| Angle Point                |                    | Obstruction Point  |
|                            |                    | Navigation Buoy    |
|                            |                    | Navigation Buoy    |
|                            |                    | Shoalest Sounding* |
|                            |                    | Beacon, General    |
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Prepared Under the Direction of	Chart Date
LT COLONEL J. RAYFIELD	May 15, 2018
Surveyed By	Designed by
PDT	PDT
Plotted By	Drawn by
PDT	PDT
Checked By	
PDT	

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER LOWER CHANNEL CONDITION SURVEY**  
 9-10 MAY 2018

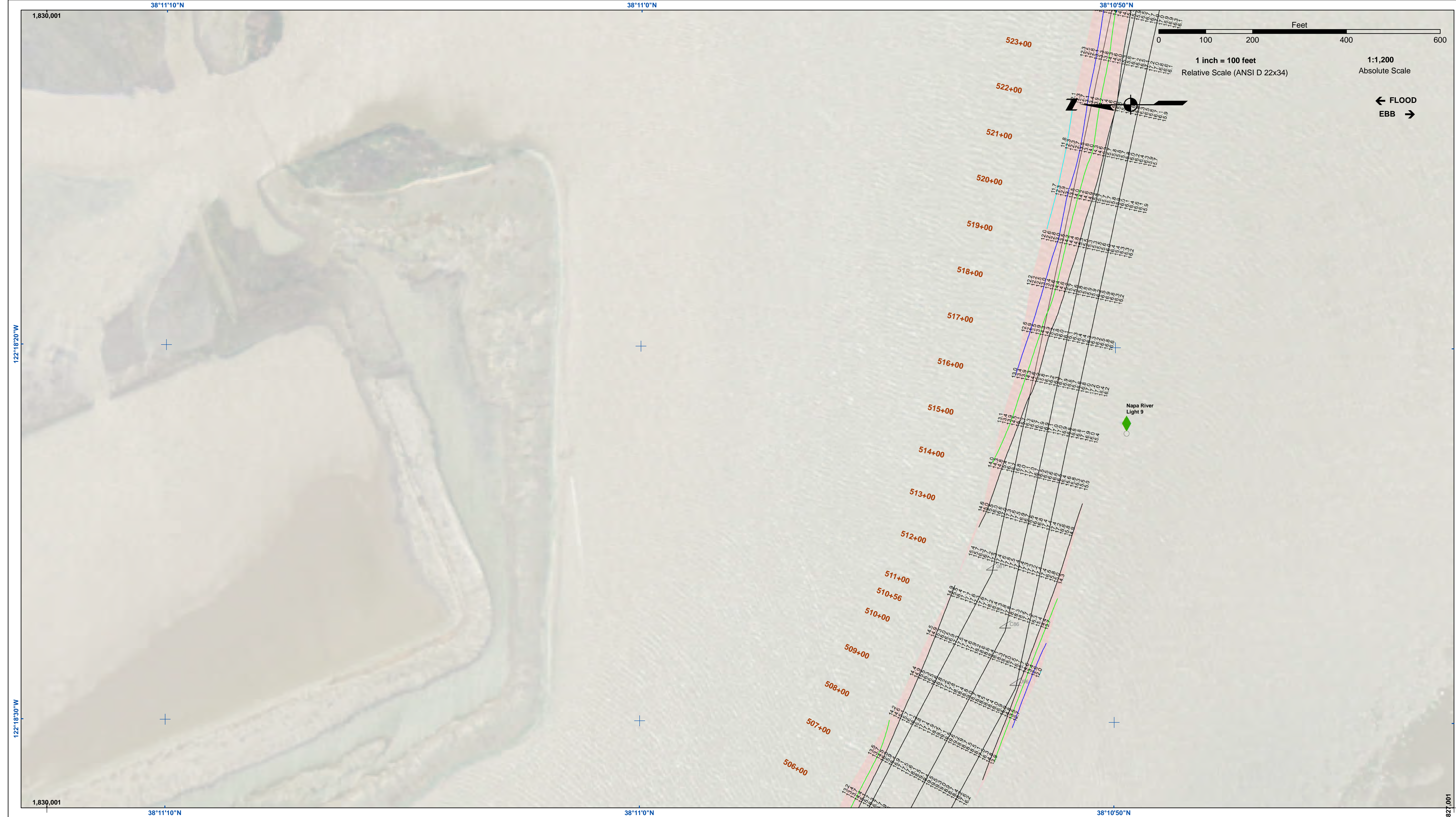
**Sheet Number**  
 17 of 25



Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	
Anchorage Area	Navigation Buoy	
Wreck Area	Shoalest Sounding*	
Submerged Wreck	Angle Point	-15
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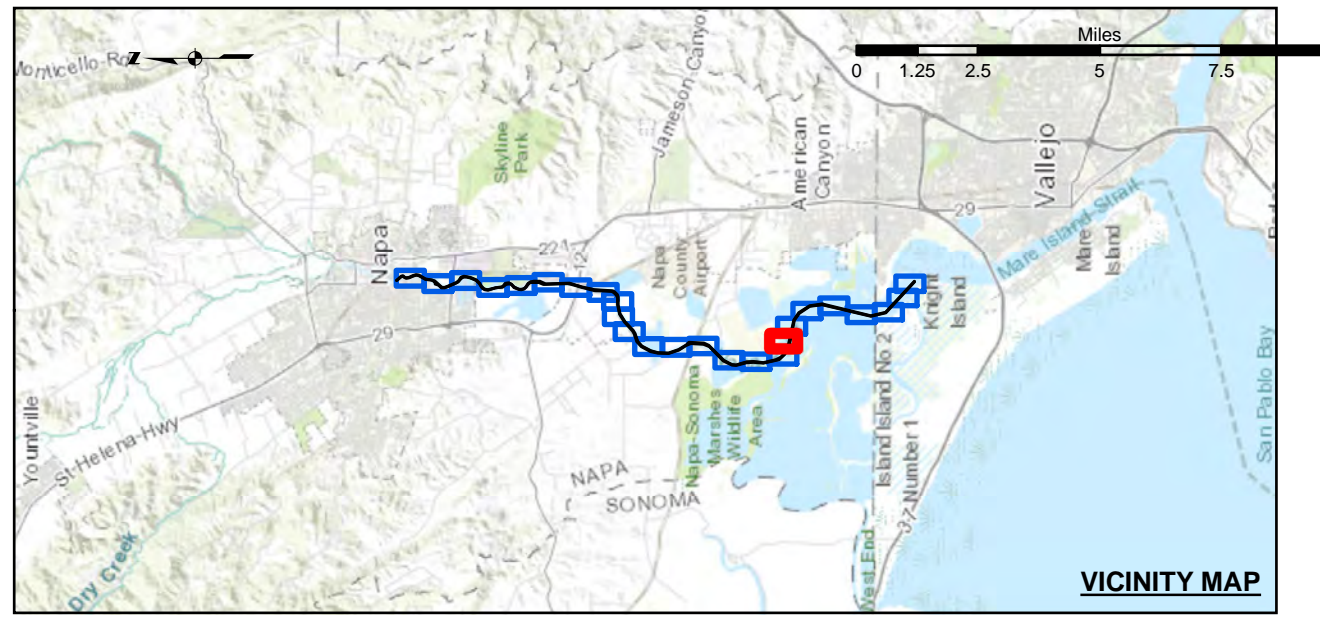


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Prepared Under the Direction of:	Chart Date:
LT COLONEL C.E. DISTRICT ENGINEER	May 15, 2018
Subproject:	Designed by:
Hydro Survey Team Leader	PDT
Recommended:	Checked By:
Chief, Hydro Survey Section	PDT
Approved:	Drawn by:
Chief, Construction Branch	PDT

CALIFORNIA  
**NAPA RIVER**  
**LOWER CHANNEL**  
**CONDITION SURVEY**  
 9-10 MAY 2018

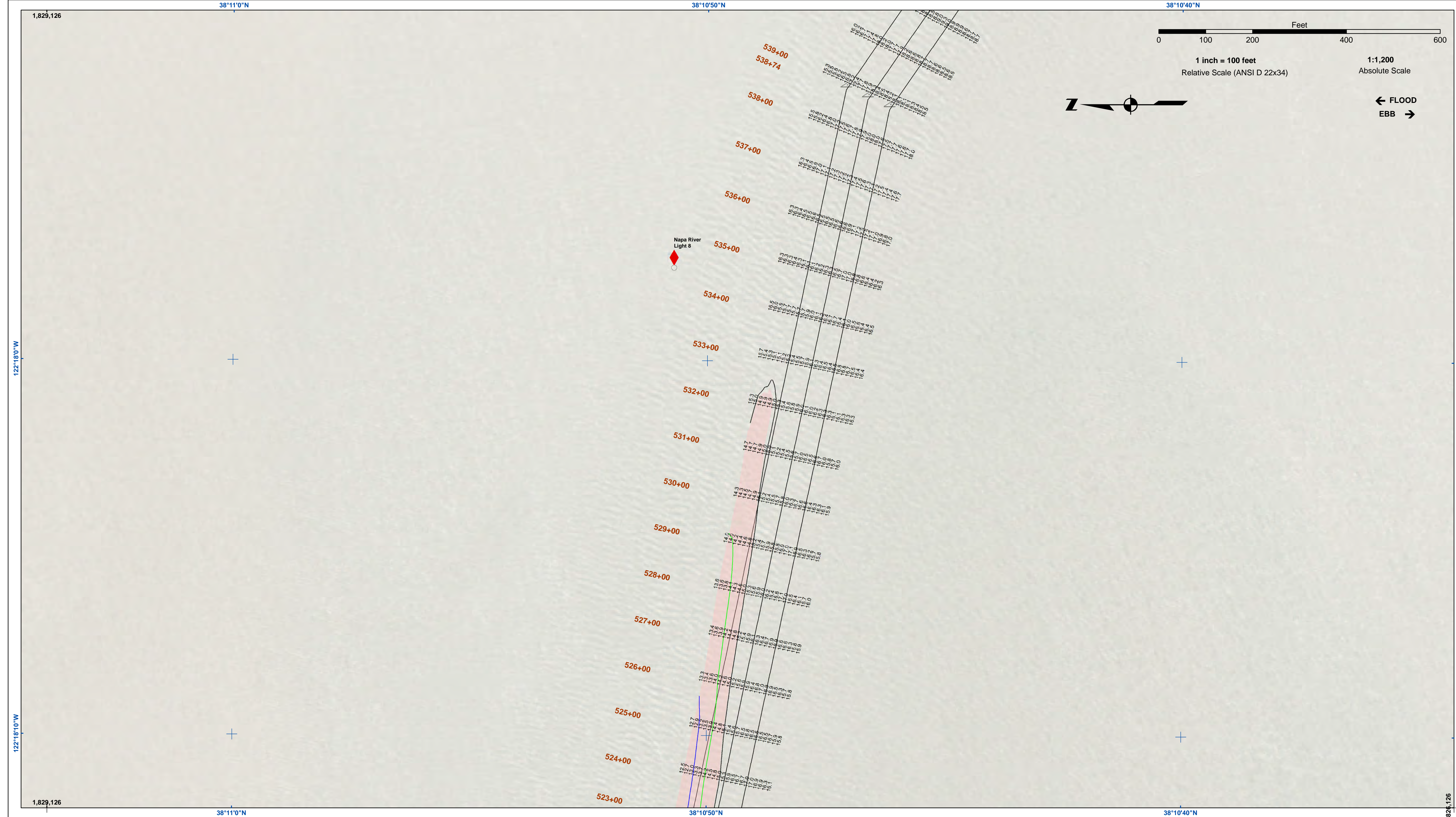


Federal Navigation Channel	Shoaling Area	Beacon, General	<b>Contours</b>
Placement Area	Obstruction Point	Navigation Buoy	-15
Anchorage Area	Navigation Buoy	-14	-13
Wreck Area	Shoalest Sounding*	-12	-11
Submerged Wreck			
Angle Point			

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**Sheet**  
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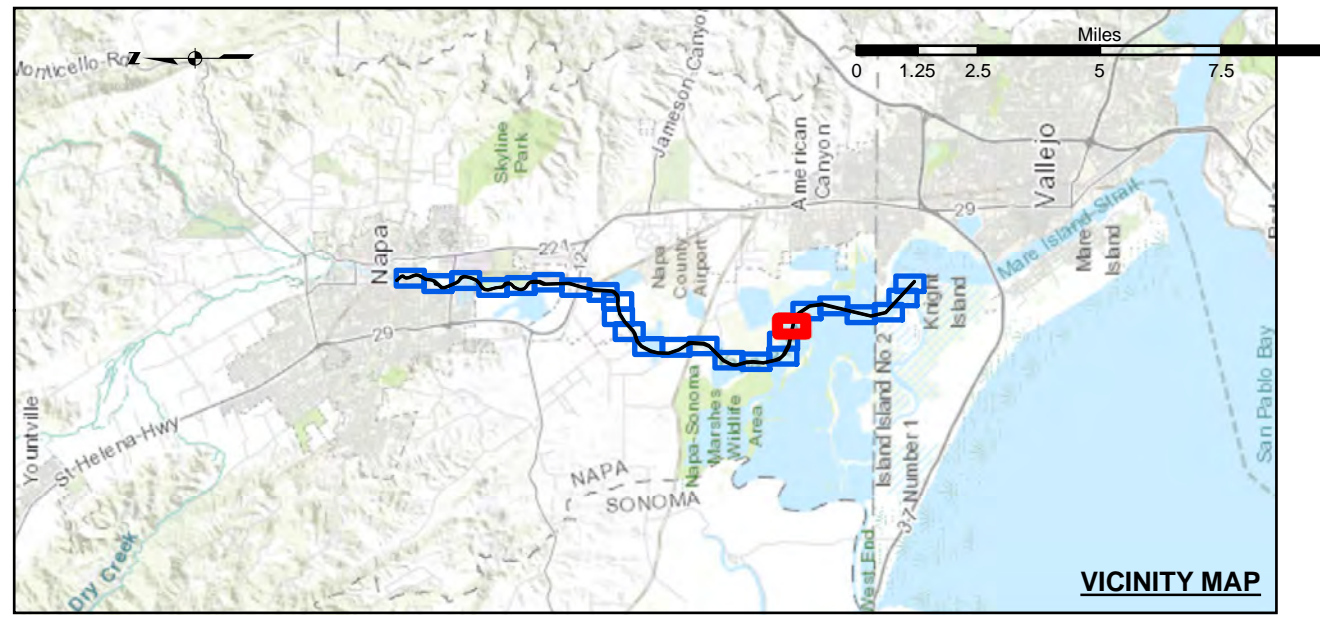


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LT COLONEL C.E. DISTRICT ENGINEER	May 15, 2018
Submitted by	Designed by:
Hydro Survey Team Leader	PDT
Recommended by	Checked by:
Chief, Hydro Survey Section	PDT
Approved by	Drawn by:
Chief, Construction Branch	PDT

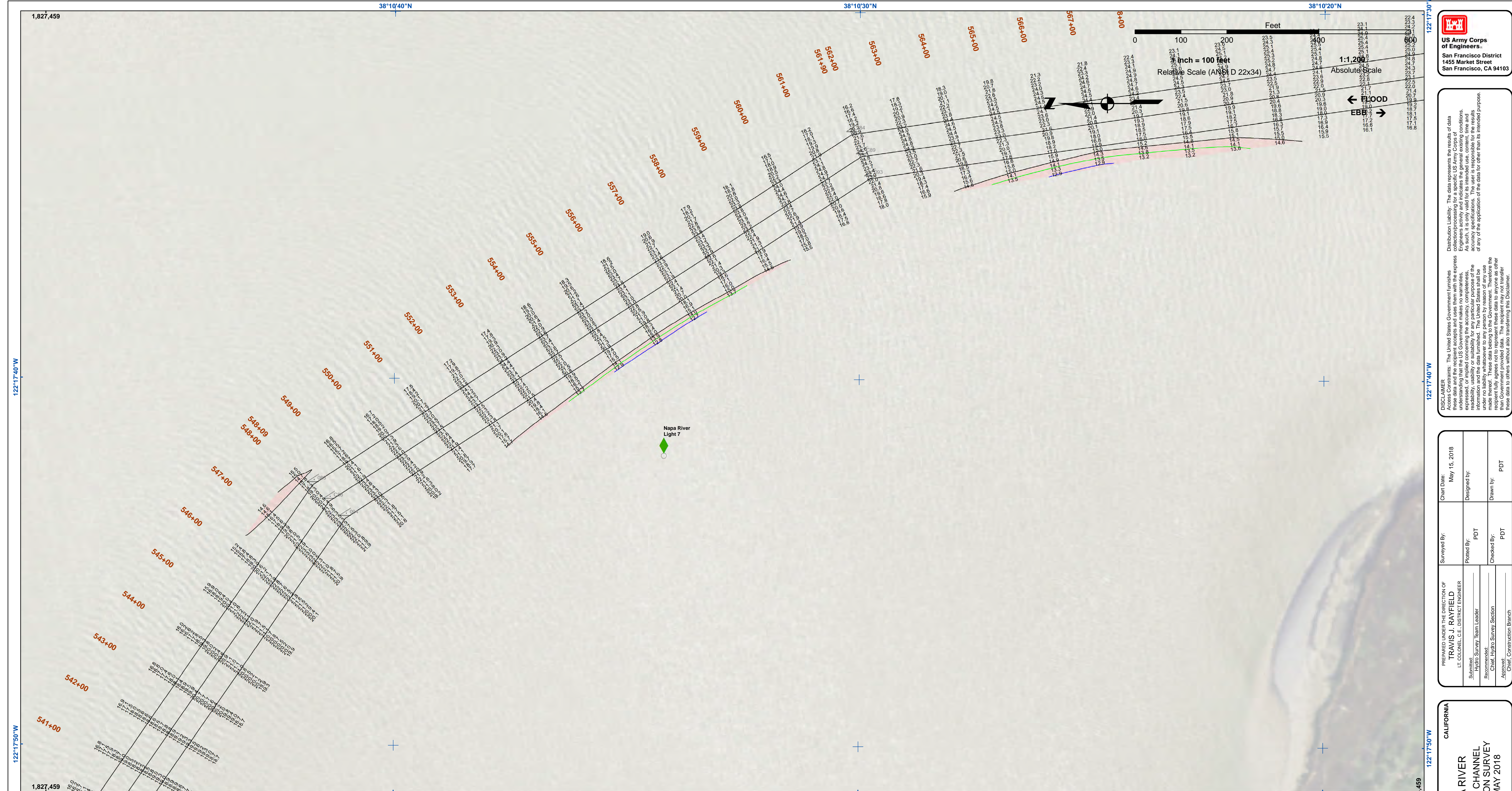
CALIFORNIA  
**NAPA RIVER**  
**LOWER CHANNEL**  
**CONDITION SURVEY**  
 9-10 MAY 2018



- |                            |                    |                 |
|----------------------------|--------------------|-----------------|
| Federal Navigation Channel | Beacon, General    | <b>Contours</b> |
| Shoaling Area              | Obstruction Point  | -15             |
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| Angle Point                |                    |                 |

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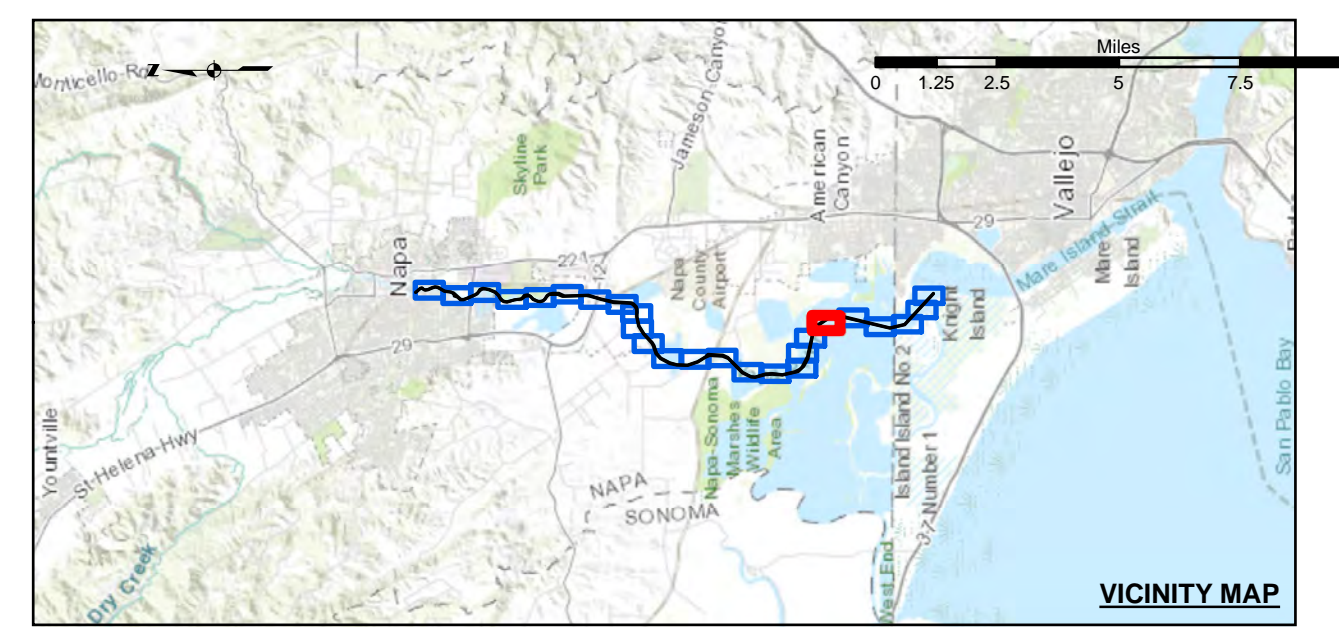
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LT COLONEL J. RAYFIELD	May 15, 2018
Submittal:	Designed by:
Hydro Survey Team Leader	PDT
Recommended:	Checked by:
Chief, Hydro Survey Section	PDT
Approved:	Drawn by:
Chief, Construction Branch	PDT

CALIFORNIA  
**NAPA RIVER LOWER CHANNEL CONDITION SURVEY**  
 9-10 MAY 2018  
 NAPA COUNTY

**Sheet Reference Number**  
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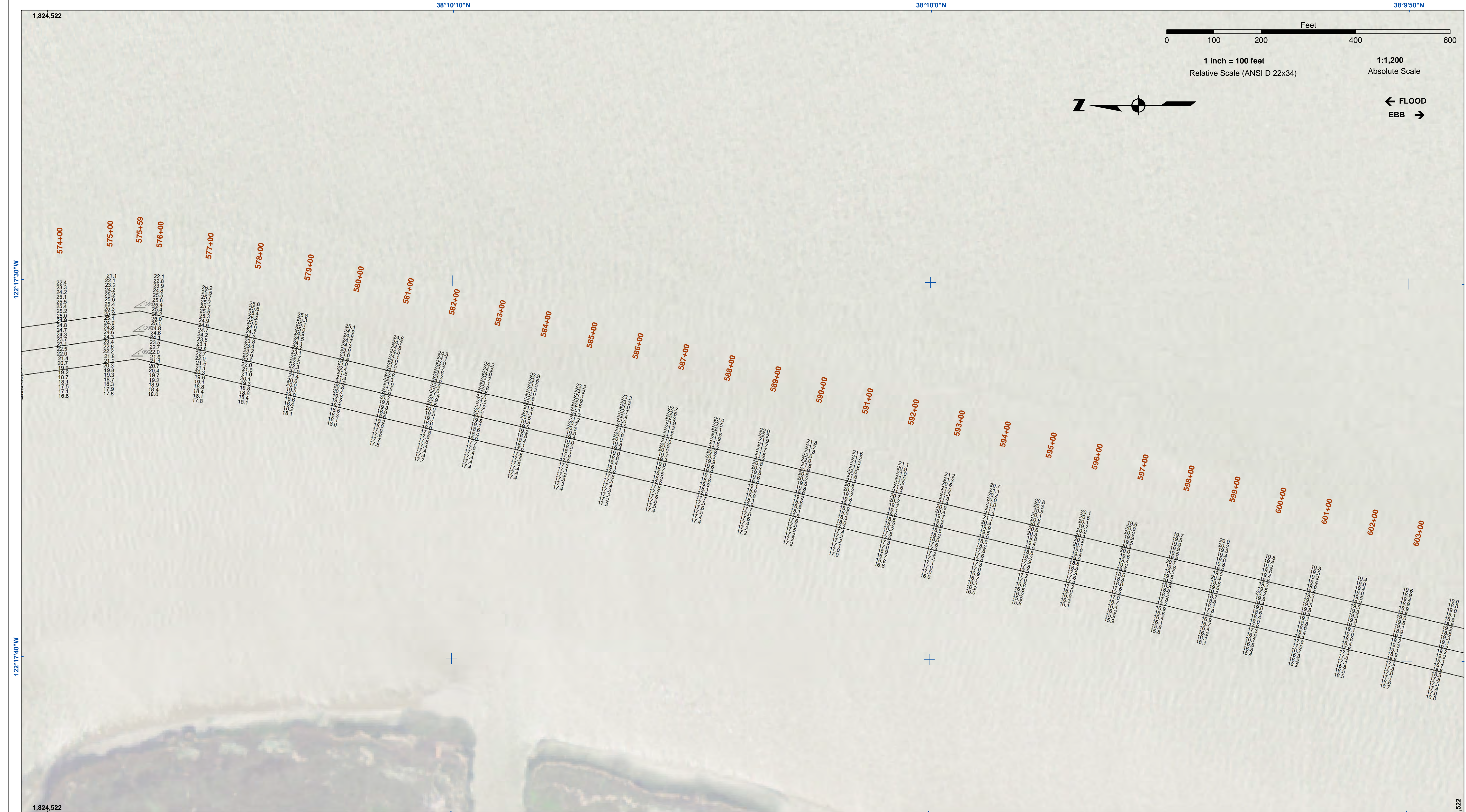


Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	
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Angle Point		-14
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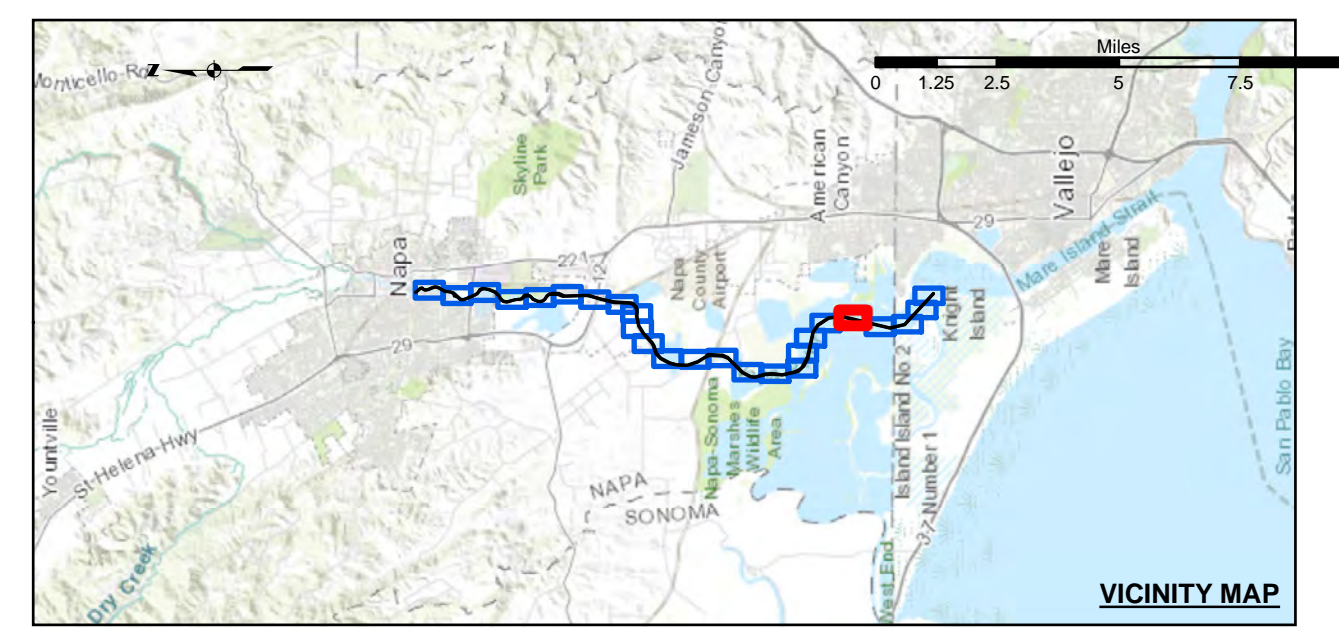
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CALIFORNIA  
**NAPA RIVER  
 LOWER CHANNEL  
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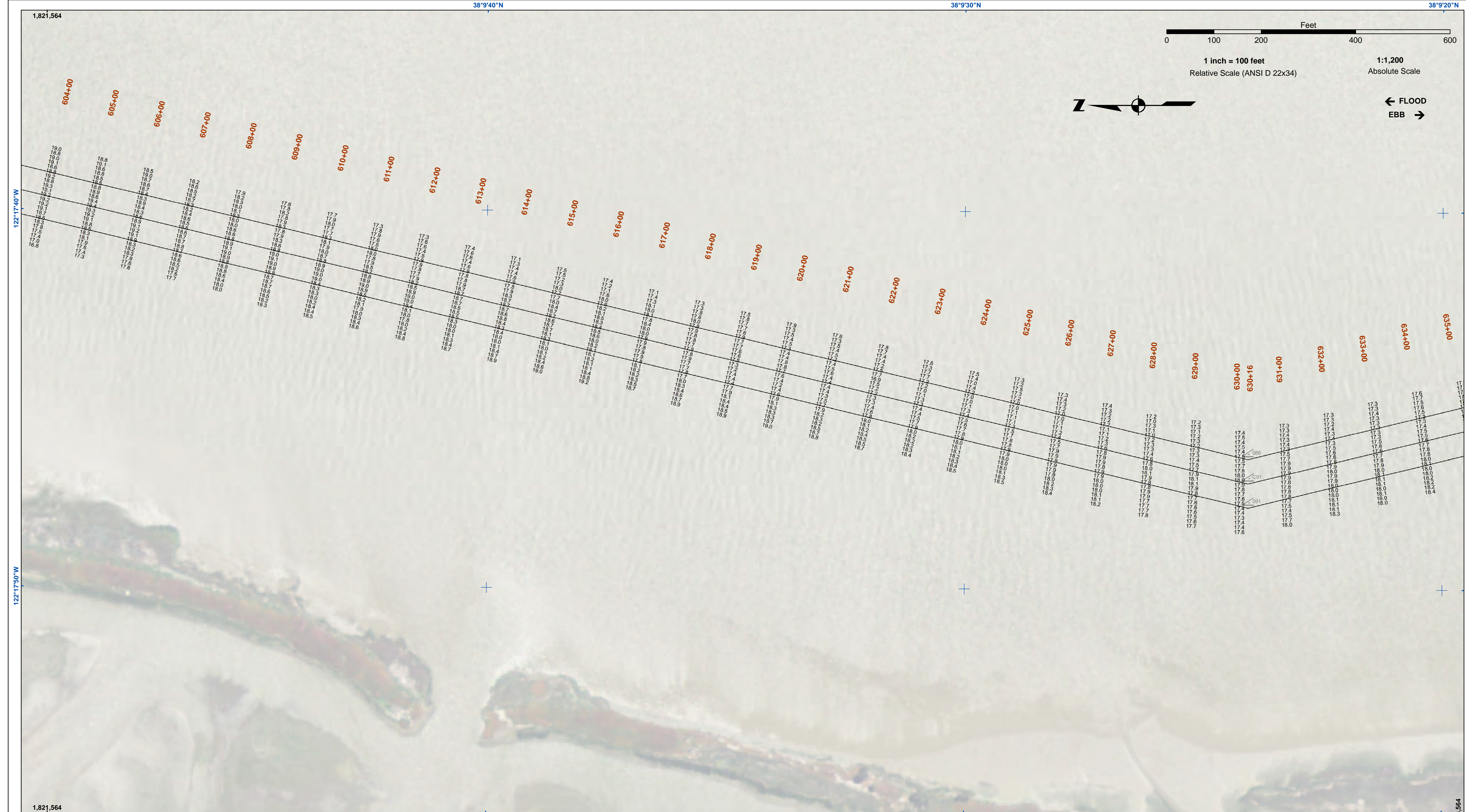
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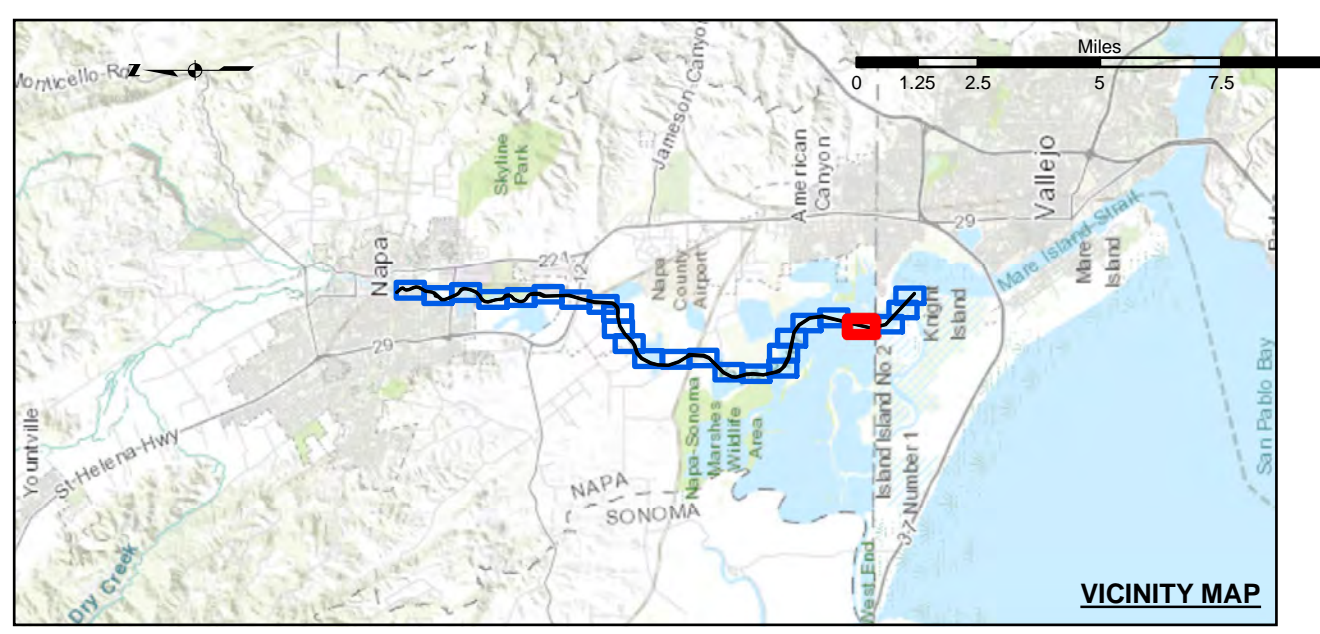
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Chart Date:	May 15, 2018
Designed by:	PDT
Drawn by:	PDT
Surveyed By:	TRAVIS J. RAYFIELD LT COLONEL, C.E., DISTRICT ENGINEER
Plotted By:	PDT
Checked By:	PDT
Approved:	Chief, Construction Branch

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER  
 LOWER CHANNEL  
 CONDITION SURVEY  
 9-10 MAY 2018**

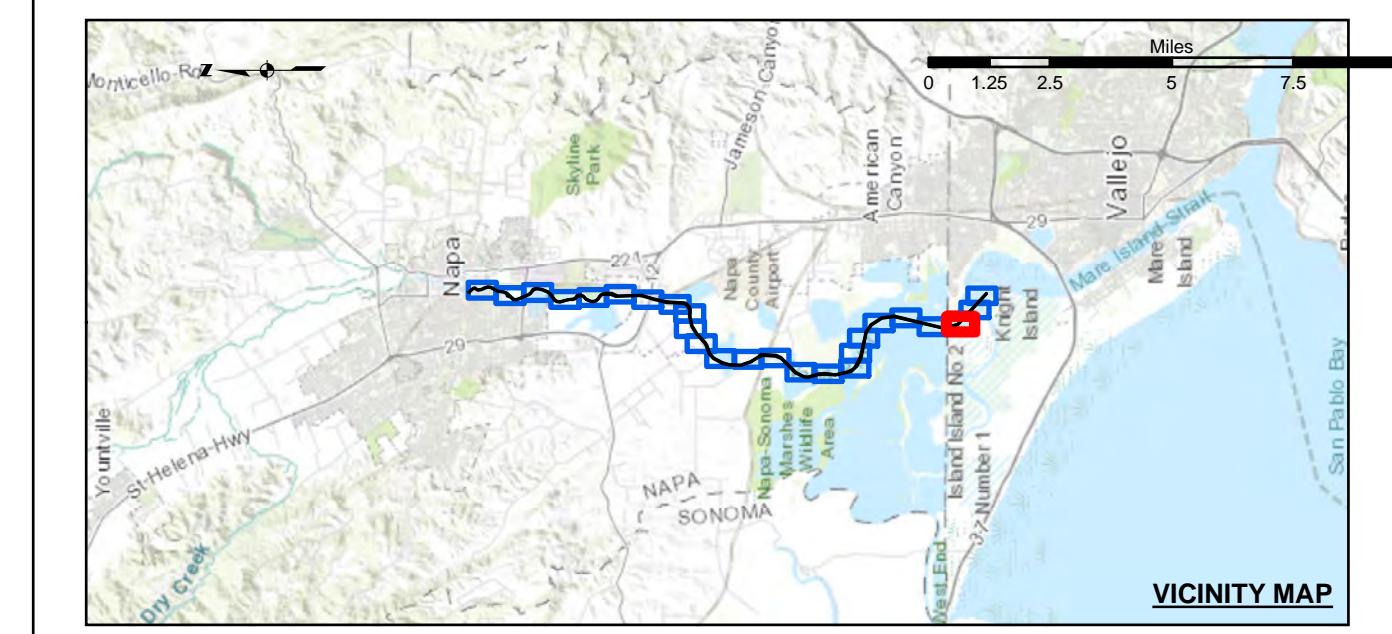
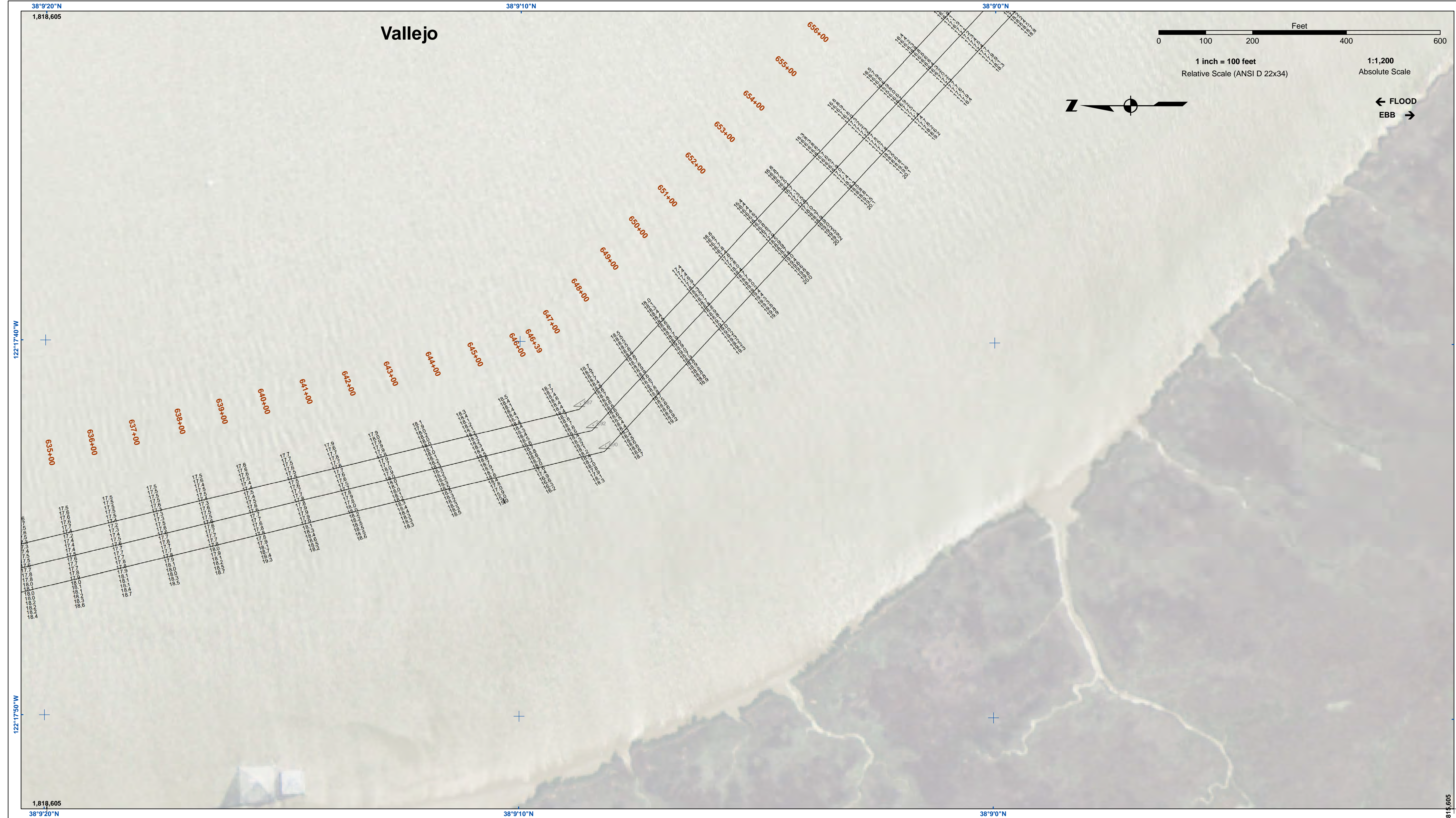
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 Number  
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Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	
Anchorage Area	Navigation Buoy	
Wreck Area	Shoalest Sounding*	
Submerged Wreck		-13
Angle Point		-12
		-14
		-15

**NOTES:**  
 HORIZONTAL COORDINATE SYSTEM:  
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 VERTICAL CONTROLS:  
 0+00 TO 175+00 - NRRFP4 - 30.54ft NAVD88 - USACE - RTK BASE STATION TRANSECT 11 - 6.593m MLLW - USACE - MLLW LEVELED FROM 20 AND TIDAL 5 FROM TIDE STATION 941 5623 ON 3/29/2012.  
 176+00 TO 224+00 - NAPAR01 - 2.652m MLLW, -29.11m WGS-84 - USACE - RTK BASE STATION WGS-84 ELEVATION FROM OPUS SOLUTION MLLW ELEV. CALCULATED FROM TRANSECT 11 AND NRRFP4 USING RTK OBSERVATIONS PID PENDING.  
 225+00 TO 640+00 - NAPAR02 - 3.653m MLLW -28.241m WGS-84 - USACE - RTK BASE STATION WGS-84 ELEVATION FROM OPUS SOLUTION MLLW ELEV. CALCULATED BY INTERPOLATING ELEVATIONS BETWEEN NOAA TIDE STATIONS 941 5623 AND 941 5218 PID PENDING.  
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Federal Navigation Channel	Beacon, General	<b>Contours</b>
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Placement Area	Navigation Buoy	
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Angle Point		-14
		-13
		-12
		-11

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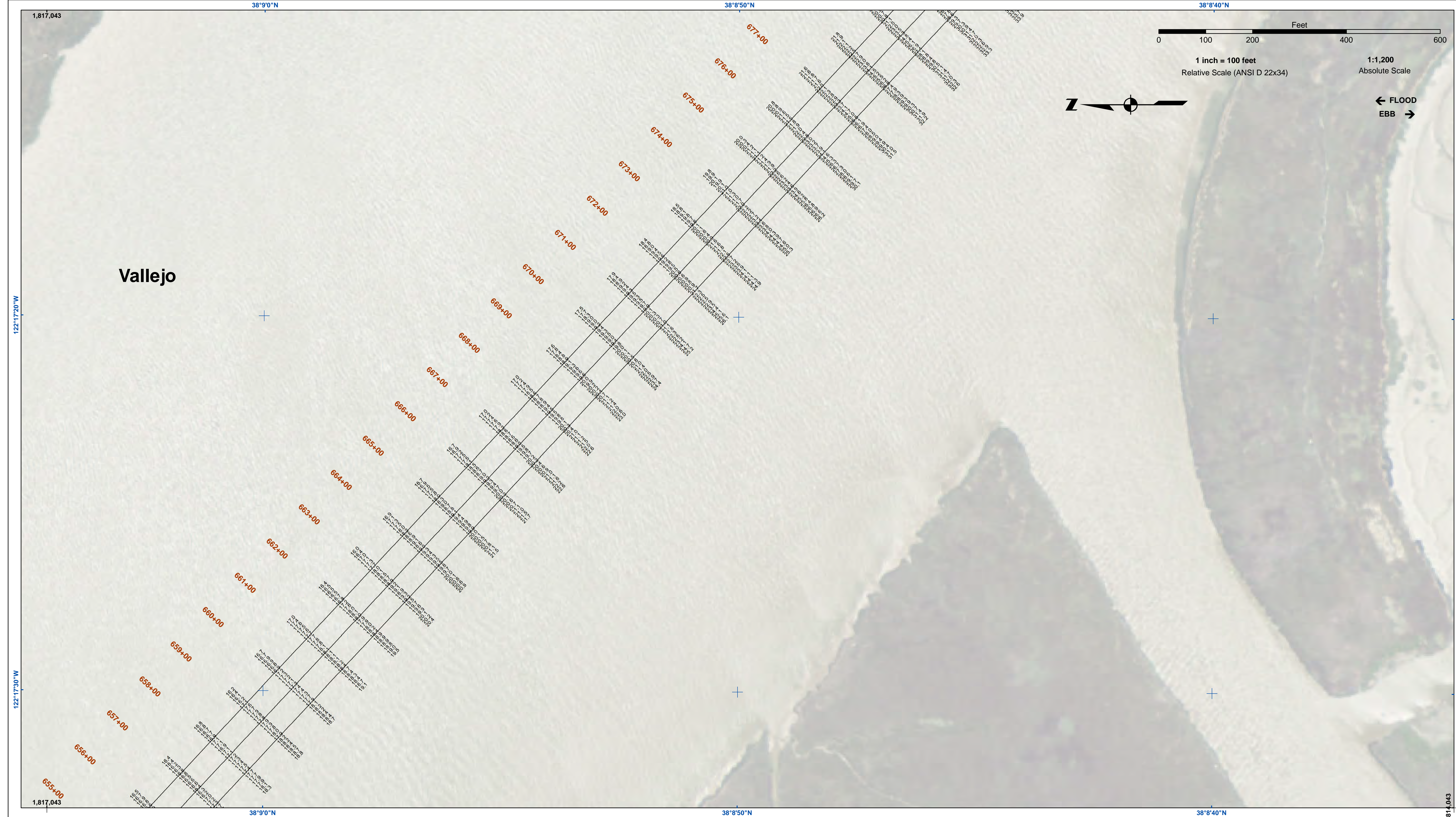
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 San Francisco District  
 1455 Market Street  
 San Francisco, CA 94103

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Prepared Under the Direction of <b>TRAVIS J. RAYFIELD</b> LT Colonel, C.E., District Engineer	Chart Date: May 15, 2018
Subproject: Hydro Survey Team Leader	Designed by: PDT
Recommendation: Chief, Hydro Survey Section	Plotted by: PDT
Approved: Chief, Construction Branch	Checked by: PDT
	Drawn by: PDT

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER LOWER CHANNEL CONDITION SURVEY**  
 9-10 MAY 2018

**Sheet Number**  
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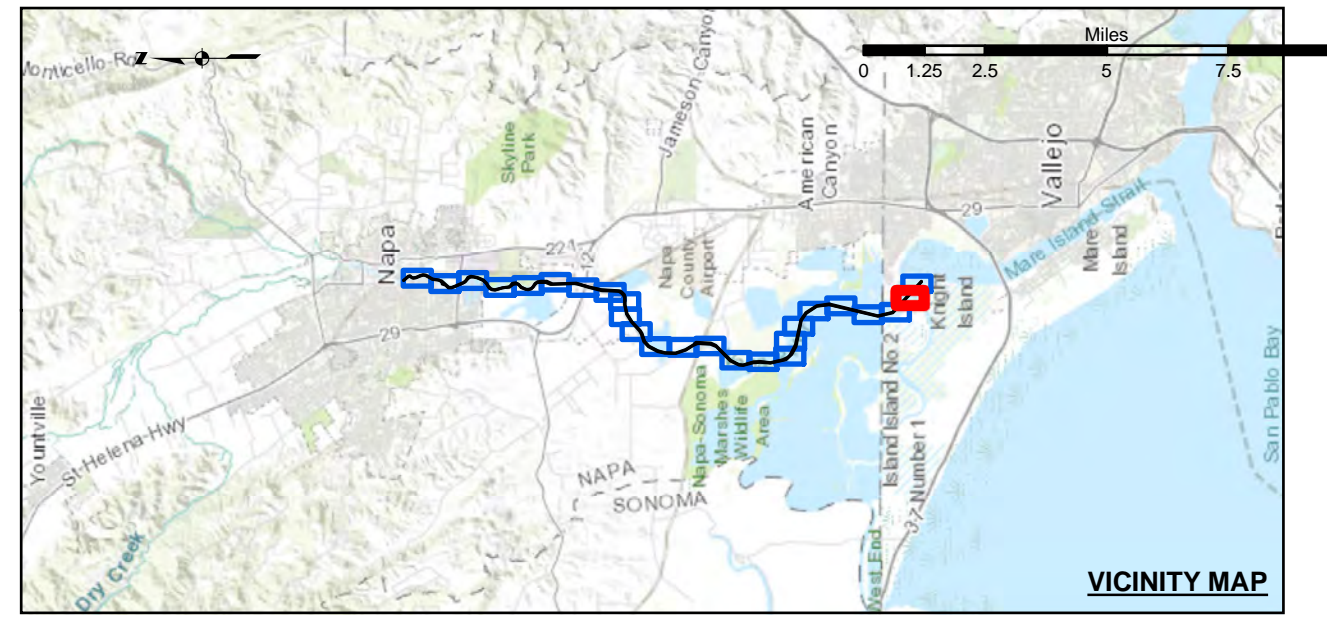


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Prepared Under the Direction of	LT COLONEL C.E. DISTRICT ENGINEER	Chart Date	May 15, 2018
Surveyed By	TRAVIS J. RAYFIELD	Designed by	PDT
Plotted By	PDT	Drawn by	PDT
Checked By	PDT	Approved	Chief, Construction Branch

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER  
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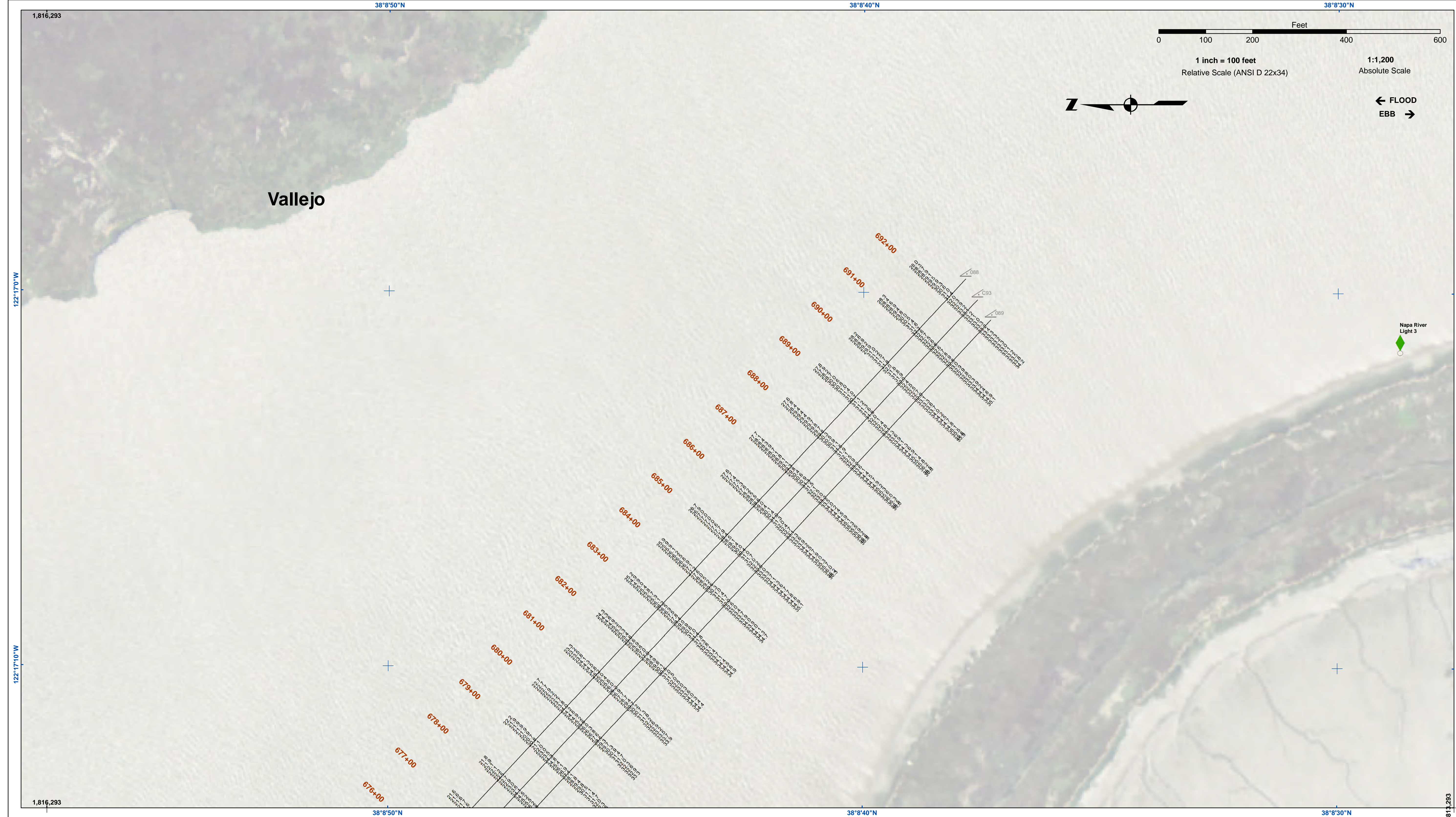


Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
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Prepared Under the Direction of	Chart Date
TRAVIS J. RAYFIELD	May 15, 2018
LT Colonel, C.E., District Engineer	Designed by:
Subject: Hydro Survey Team Leader	PDT
Recommended by:	Checked by:
Chief, Hydro Survey Section	PDT
Approved:	Drawn by:
Chief, Construction Branch	PDT

CALIFORNIA  
 NAPA COUNTY  
**NAPA RIVER LOWER CHANNEL CONDITION SURVEY**  
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