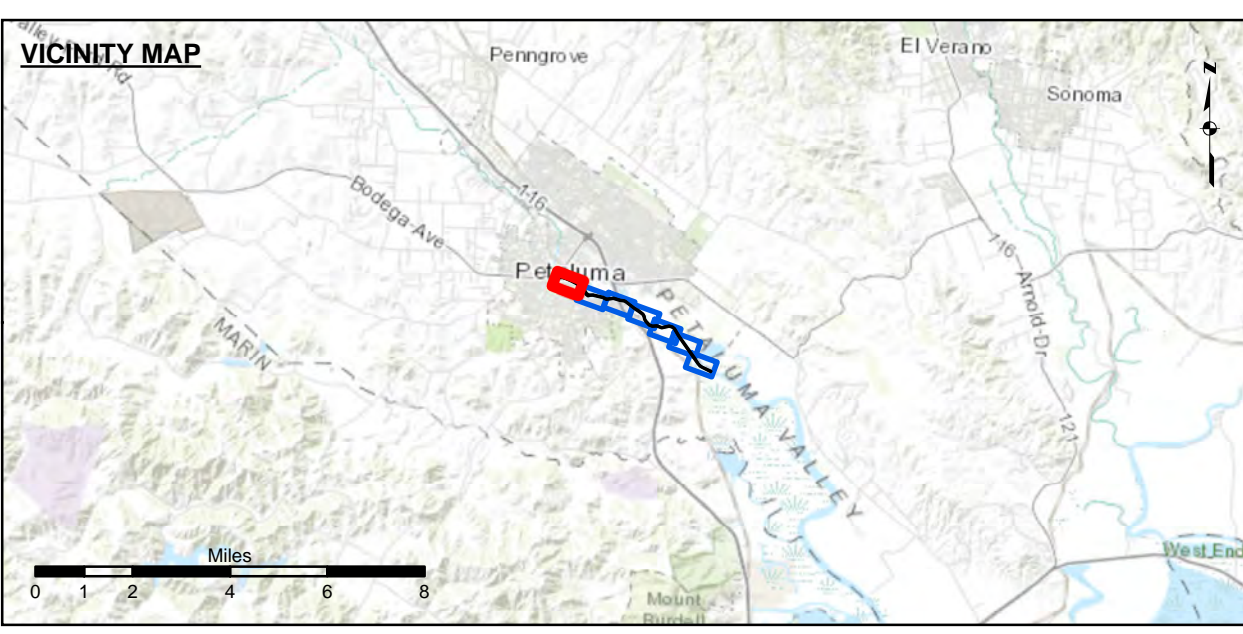




NAD 1983 CHANNEL ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947195.52	2279008.14	47	5964083.42	2268915.75
2	5947246.62	2279017.15	48	5964040.02	2268825.75
3	5947549.42	2279070.45	49	5963083.92	2269283.95
4	5947589.22	2279106.25	50	5962833.12	2269449.25
5	5947529.62	2279300.65	51	5962626.32	2269672.25
6	5947521.22	2279359.15	52	5962123.02	2270425.95
7	5947532.92	2279405.05	53	5960507.42	2272708.15
8	5947718.92	2279474.25	54	5960058.42	2273467.85
9	5947755.42	2279454.65	55	5959833.42	2273663.85
10	5947817.42	2279376.15	56	5959509.42	2273754.85
11	5947911.32	2279220.45	57	5958721.42	2273583.85
12	5948246.82	2279020.35	58	5958162.42	2273771.85
13	5948305.72	2279000.15	59	5957697.32	2273734.35
14	5948344.82	2279000.45	60	5957331.92	2273673.15
15	5949049.32	2278725.55	61	5956963.82	2274257.05
16	5949496.22	2278469.15	62	5956824.42	2274505.15
17	5950191.42	2277931.85	63	5956737.02	2274857.75
18	5950596.42	2277337.85	64	5956629.22	2275054.75
19	5950794.42	2277205.85	65	5956141.42	2275413.85
20	5951273.42	2277220.65	66	5955727.42	2275674.85
21	5952333.32	2276963.75	67	5954744.42	2276435.85
22	5952732.72	2276774.85	68	5954491.12	2276524.15
23	5953487.92	2276853.65	69	5954460.32	2276546.85
24	5953599.52	2276842.95	70	5954431.62	2276552.25
25	5954281.22	2276642.75	71	5954408.82	2276535.05
26	5954331.62	2276619.45	72	5954165.52	2276572.55
27	5954618.62	2276589.85	73	5953579.92	2276743.15
28	5954786.42	2276530.85	74	5953465.72	2276752.25
29	5955775.22	2275763.85	75	5952702.82	2276672.75
30	5956195.42	2275498.85	76	5952293.82	2276870.75
31	5956713.92	2275116.95	77	5951242.92	2277125.45
32	5956839.42	2274881.05	78	5950971.42	2277102.85
33	5956921.92	2274527.35	79	5950681.42	2277207.85
34	5957038.82	2274323.15	80	5950486.42	2277202.85
35	5957388.02	2273958.35	81	5950339.42	2277527.85
36	5957711.92	2273835.35	82	5950109.42	2277865.85
37	5958176.42	2273872.85	83	5949421.02	2278396.85
38	5958729.42	2273687.85	84	5948859.72	2278689.85
39	5959511.42	2273856.85	85	5948312.42	2278905.85
40	5959883.42	2273752.85	86	5948280.12	2278929.65
41	5960139.42	2273529.85	87	5948091.42	2278994.25
42	5960589.72	2272764.95	88	5947855.22	2279138.95
43	5962044.82	2270483.55	89	5947805.02	2279125.95
44	5962710.22	2269728.65	90	5947589.12	2278975.95
45	5962893.42	2269531.55	91	5947221.22	2278911.15
46	5963132.52	2269372.45	92	5947161.12	2278939.85

NAD 1983 CENTERLINE ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947178.32	2278973.85	2	5947208.32	2278958.85
3	5947569.22	2279022.85	4	5947619.52	2279060.85
5	5947819.72	2279218.85	6	5947882.22	2279178.85
7	5948117.42	2279308.85	8	5948234.82	2279883.85
9	5948292.92	2279863.85	10	5948328.82	2278952.85
11	5948678.42	2278736.85	12	5949021.42	2278671.85
13	5949446.12	2278438.85	14	5950150.42	2277898.85
15	5950382.92	2277558.85	16	5950941.42	2277260.85
17	5950737.92	2277118.85	18	5950989.82	2277158.85
19	5951248.92	2277172.85	20	5952313.52	2276915.85
21	5952717.72	2276722.85	22	5953495.12	2276803.85
23	5953589.72	2276792.85	24	5954179.62	2276618.85
25	5954274.62	2276598.85	26	5954326.22	2276582.85
27	5954413.22	2276577.85	28	5954434.22	2276578.85
29	5954483.22	2276575.85	30	5954495.02	2276562.85
31	5954601.52	2276539.85	32	5954765.42	2276462.85
33	5954765.42	2276462.85	34	5955713.32	2276188.85
35	5956713.92	2275084.85	36	5956788.22	2274868.85
37	5956788.22	2274868.85	38	5956873.12	2274515.85
39	5957001.32	2274289.85	40	5957359.02	2273914.85
41	5957704.62	2273783.85	42	5958189.42	2273821.85
43	5958098.92	2273805.85	44	5958258.42	2273805.85
45	5958098.92	2273805.85	46	5958258.42	2273805.85
47	5958258.42	2273805.85	48	5958258.42	2273805.85
49	5958258.42	2273805.85	50	5958258.42	2273805.85
51	5958258.42	2273805.85	52	5958258.42	2273805.85



Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	-8
Anchorage Area	Navigation Buoy	-7
Wreck Area	Shoalest Sounding*	-6
Submerged Wreck		-5
Angle Point		-4

NOTES:  
 DRAWING NOT TO BE USED FOR 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.  
 SOUNDINGS ARE TAKEN BY FATHOMETER AND ARE SHOWN TO THE NEAREST FOOT AND TENTHS OF A FOOT.  
 SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER AT THE LOCALITY.  
 PLANE GRID AND COORDINATES ARE BASED ON THE STATE OF CALIFORNIA COORDINATE SYSTEM, LAMBERT PROJECTION, ZONE III NAD 83, CALIFORNIA, AS DESCRIBED IN SPECIAL PUBLICATION NO. 235, PUBLISHED BY NATIONAL OCEAN SURVEY.  
 PROJECT DEPTH IS 8 FEET FROM THE MOUTH OF PETALUMA CREEK TO WESTERN AVE., THEN 4 FOOT DEPTH TO THE HEAD OF NAVIGATION.  
 ELEVATIONS ARE BASED ON TIDAL BENCH MARK 941 5584 BOLT C, NATIONAL OCEAN SERVICE BOLT, ELEV. 13.69, NAVD 88 DATUM, PUBLICATION DATE: AUGUST 9, 2004.

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

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Chart Date:	Dec 16, 2017
Designed by:	PDT
Drawn by:	PDT

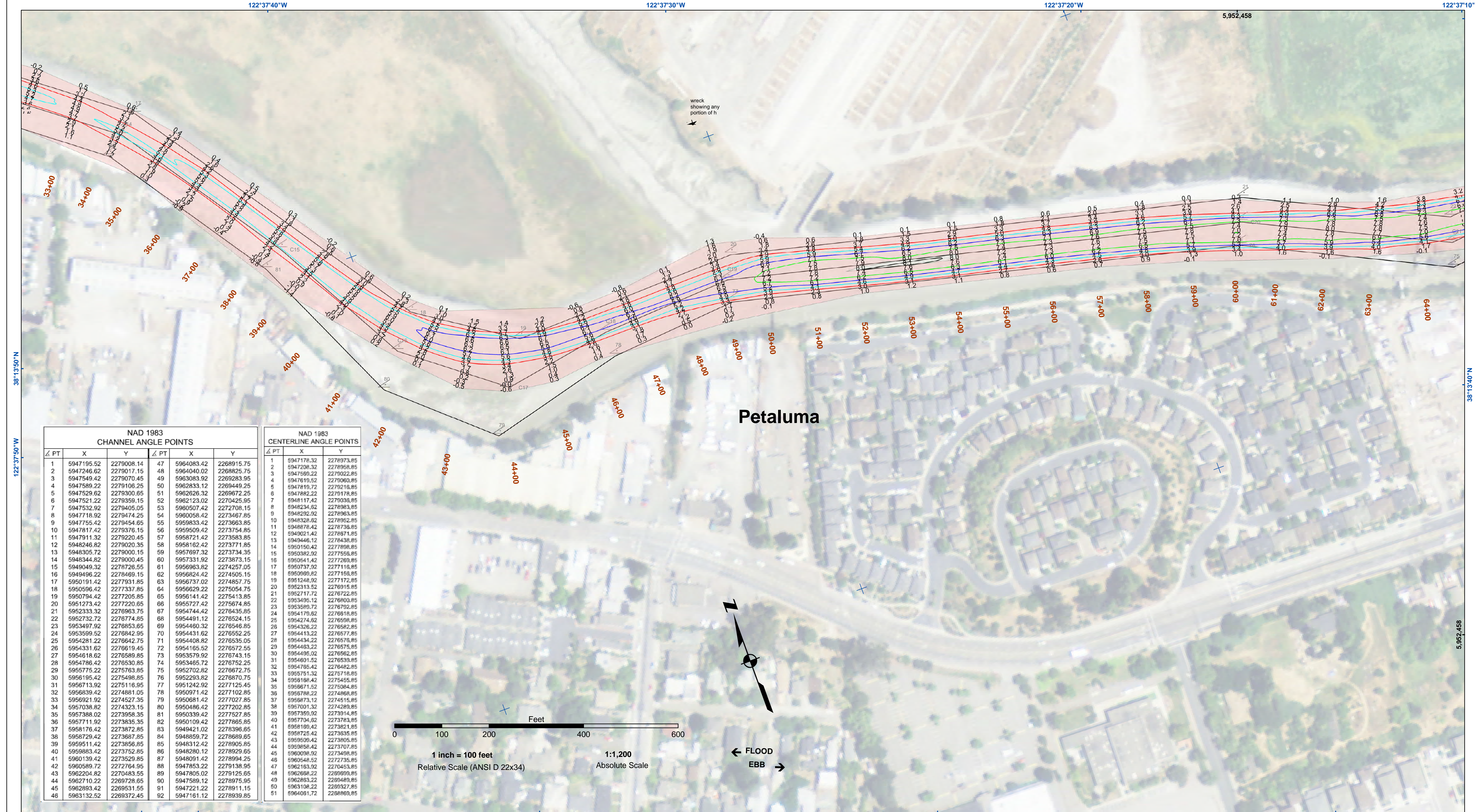
PREPARED UNDER THE DIRECTION OF  
**TRAVIS J. RAYFIELD**  
 LT COLONEL, C.E. DISTRICT ENGINEER

Submittal:	PDT
Hydro Survey Team Leader:	
Recommended:	
Chief, Hydro Survey Section:	
Approved:	
Chief, Construction Branch:	

SONOMA COUNTY  
 CALIFORNIA  
**PETALUMA RIVER**  
 CONDITION SURVEY  
 12-13 December 2017

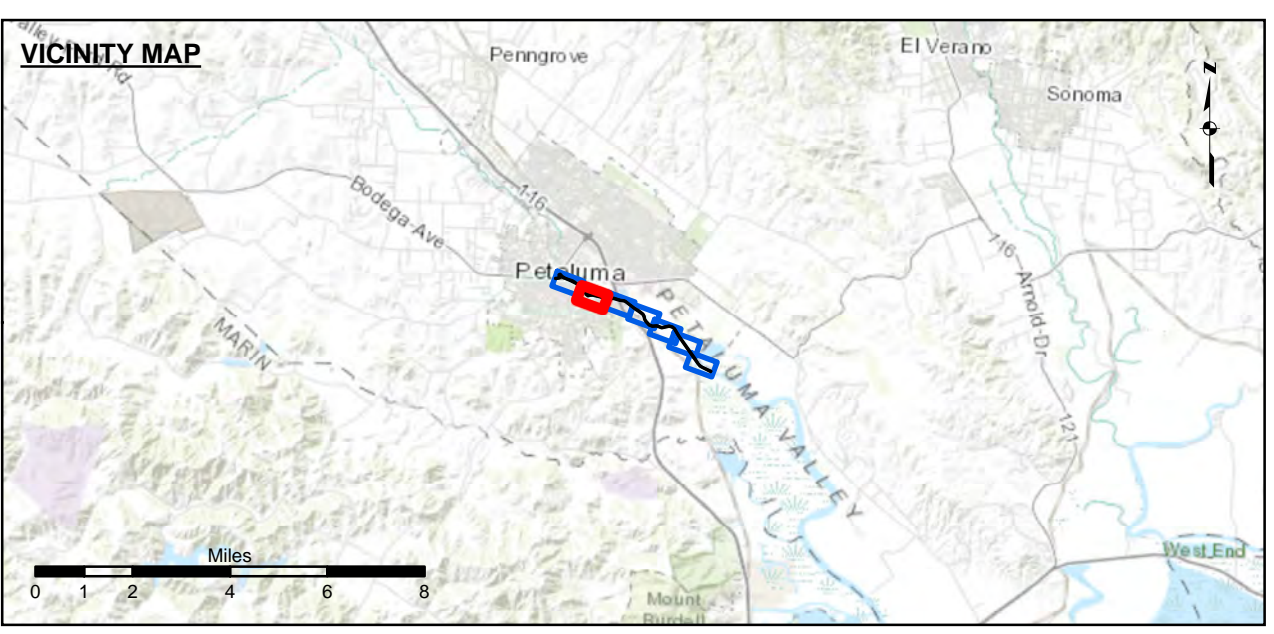
**Sheet Reference Number**  
 1 of 7





NAD 1983 CHANNEL ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947195.52	2279008.14	47	5964083.42	2268915.75
2	5947246.62	2279017.15	48	5964040.02	2268825.75
3	5947549.42	2279070.45	49	5963083.92	2269283.95
4	5947589.22	2279106.25	50	5962833.12	2269449.25
5	5947529.62	2279300.85	51	5962629.32	2269672.25
6	5947521.22	2279359.15	52	5962123.02	2270425.95
7	5947532.92	2279405.05	53	5960507.42	2272708.15
8	5947718.92	2279474.25	54	5960056.42	2273467.85
9	5947755.42	2279454.65	55	5959833.42	2273663.85
10	5947817.42	2279376.15	56	5959509.42	2273754.85
11	5947911.32	2279220.45	57	5958721.42	2273583.85
12	5948246.82	2279020.35	58	5958162.42	2273771.85
13	5948305.72	2279000.15	59	5957897.32	2273734.35
14	5948344.82	2279000.45	60	5957331.92	2273673.15
15	5949049.32	2278725.55	61	5956983.82	2274257.05
16	5949496.22	2278469.15	62	5956824.42	2274505.15
17	5950191.42	2277931.85	63	5956737.02	2274857.75
18	5950596.42	2277337.85	64	5956629.22	2275054.75
19	5950794.42	2277205.85	65	5956141.42	2275413.85
20	5951273.42	2277220.65	66	5955727.42	2275674.85
21	5952333.32	2276963.75	67	5954744.42	2276435.85
22	5952732.72	2276774.85	68	5954491.12	2276524.15
23	5953487.92	2276853.85	69	5954460.32	2276546.85
24	5953589.52	2276842.95	70	5954431.62	2276552.25
25	5954281.22	2276642.75	71	5954408.82	2276535.05
26	5954331.62	2276619.45	72	5954165.52	2276572.55
27	5954618.62	2276589.85	73	5953579.92	2276743.15
28	5954786.42	2276530.85	74	5953465.72	2276752.25
29	5955775.22	2275763.85	75	5952702.82	2276727.75
30	5956195.42	2275498.85	76	5952293.82	2276870.75
31	5956713.92	2275116.95	77	5951242.92	2277125.45
32	5956839.42	2274881.05	78	5950971.42	2277102.85
33	5956921.92	2274527.35	79	5950681.42	2277207.85
34	5957038.82	2274323.15	80	5950486.42	2277202.85
35	5957388.02	2273958.35	81	5950339.42	2277527.85
36	5957711.92	2273835.35	82	5950109.42	2277865.85
37	5958176.42	2273872.85	83	5949421.02	2278396.85
38	5958729.42	2273687.85	84	5948859.72	2278689.85
39	5959511.42	2273856.85	85	5948312.42	2278905.85
40	5959883.42	2273752.85	86	5948280.12	2278929.85
41	5960139.42	2273529.85	87	5948091.42	2278994.25
42	5960589.72	2272764.95	88	5947853.22	2279138.95
43	596204.85	2270483.55	89	5947805.02	2279125.95
44	5962710.22	2269728.65	90	5947589.12	2278975.95
45	5962893.42	2269531.55	91	5947221.22	2278911.15
46	5963132.52	2269372.45	92	5947161.12	2278939.85

NAD 1983 CENTERLINE ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947178.32	2278973.85	2	5947208.32	2278958.85
3	5947569.22	2279022.85	4	5947619.52	2279060.85
5	5947819.72	2279218.85	6	5947882.22	2279178.85
7	5948117.42	2279038.85	8	5948234.62	2278983.85
9	5948292.92	2278963.85	10	5948328.62	2278952.85
11	5948678.42	2278736.85	12	5949021.42	2278671.85
13	5949446.12	2278438.85	14	5950150.42	2277898.85
15	5950382.92	2277558.85	16	5950541.42	2277269.85
17	5950737.92	2277118.85	18	5950989.82	2277168.85
19	5951248.92	2277172.85	20	5952313.52	2276915.85
21	5952717.72	2276722.85	22	5953495.12	2276903.85
23	5953589.72	2276792.85	24	5954179.62	2276618.85
25	5954274.62	2276598.85	26	5954326.22	2276582.85
27	5954413.22	2276577.85	28	5954434.22	2276578.85
29	5954483.22	2276575.85	30	5954495.02	2276562.85
31	5954601.52	2276539.85	32	5954785.42	2276482.85
33	5954785.42	2276482.85	34	5954918.42	2276455.85
35	5954918.42	2276455.85	36	5954987.52	2276404.85
37	5954987.52	2276404.85	38	5955031.32	2276429.85
39	5955031.32	2276429.85	40	5955735.02	2273914.85
41	5955735.02	2273914.85	42	5956770.62	2273783.85
43	5956770.62	2273783.85	44	5956819.42	2273821.85
45	5956819.42	2273821.85	46	5956872.52	2273835.85
47	5956872.52	2273835.85	48	5956909.42	2273805.85
49	5956909.42	2273805.85	50	5956985.42	2273707.85
51	5956985.42	2273707.85	52	5957009.92	2273707.85
53	5957009.92	2273707.85	54	5957031.32	2273707.85
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61	5957031.32	2273707.85	62	5957031.32	2273707.85
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65	5957031.32	2273707.85	66	5957031.32	2273707.85
67	5957031.32	2273707.85	68	5957031.32	2273707.85
69	5957031.32	2273707.85	70	5957031.32	2273707.85
71	5957031.32	2273707.85	72	5957031.32	2273707.85
73	5957031.32	2273707.85	74	5957031.32	2273707.85
75	5957031.32	2273707.85	76	5957031.32	2273707.85
77	5957031.32	2273707.85	78	5957031.32	2273707.85
79	5957031.32	2273707.85	80	5957031.32	2273707.85
81	5957031.32	2273707.85	82	5957031.32	2273707.85
83	5957031.32	2273707.85	84	5957031.32	2273707.85
85	5957031.32	2273707.85	86	5957031.32	2273707.85
87	5957031.32	2273707.85	88	5957031.32	2273707.85
89	5957031.32	2273707.85	90	5957031.32	2273707.85
91	5957031.32	2273707.85	92	5957031.32	2273707.85



Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	-8
Anchorage Area	Navigation Buoy	-7
Wreck Area	Shoalest Sounding*	-6
Submerged Wreck		-5
Angle Point		-4

NOTES:  
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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.  
SOUNDINGS ARE TAKEN BY FATHOMETER AND ARE SHOWN TO THE NEAREST FOOT AND TENTHS OF A FOOT.  
SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER AT THE LOCALITY.

PLANE GRID AND COORDINATES ARE BASED ON THE STATE OF CALIFORNIA COORDINATE SYSTEM, LAMBERT PROJECTION, ZONE III NAD 83, CALIFORNIA, AS DESCRIBED IN SPECIAL PUBLICATION NO. 235, PUBLISHED BY NATIONAL OCEAN SURVEY.  
PROJECT DEPTH IS 8 FEET FROM THE MOUTH OF PETALUMA CREEK TO WESTERN AVE., THEN 4 FOOT DEPTH TO THE HEAD OF NAVIGATION.  
ELEVATIONS ARE BASED ON TIDAL BENCH MARK 941 5584 BOLT C, NATIONAL OCEAN SERVICE BOLT, ELEV. 13.69, NAVD 88 DATUM, PUBLICATION DATE: AUGUST 9, 2004



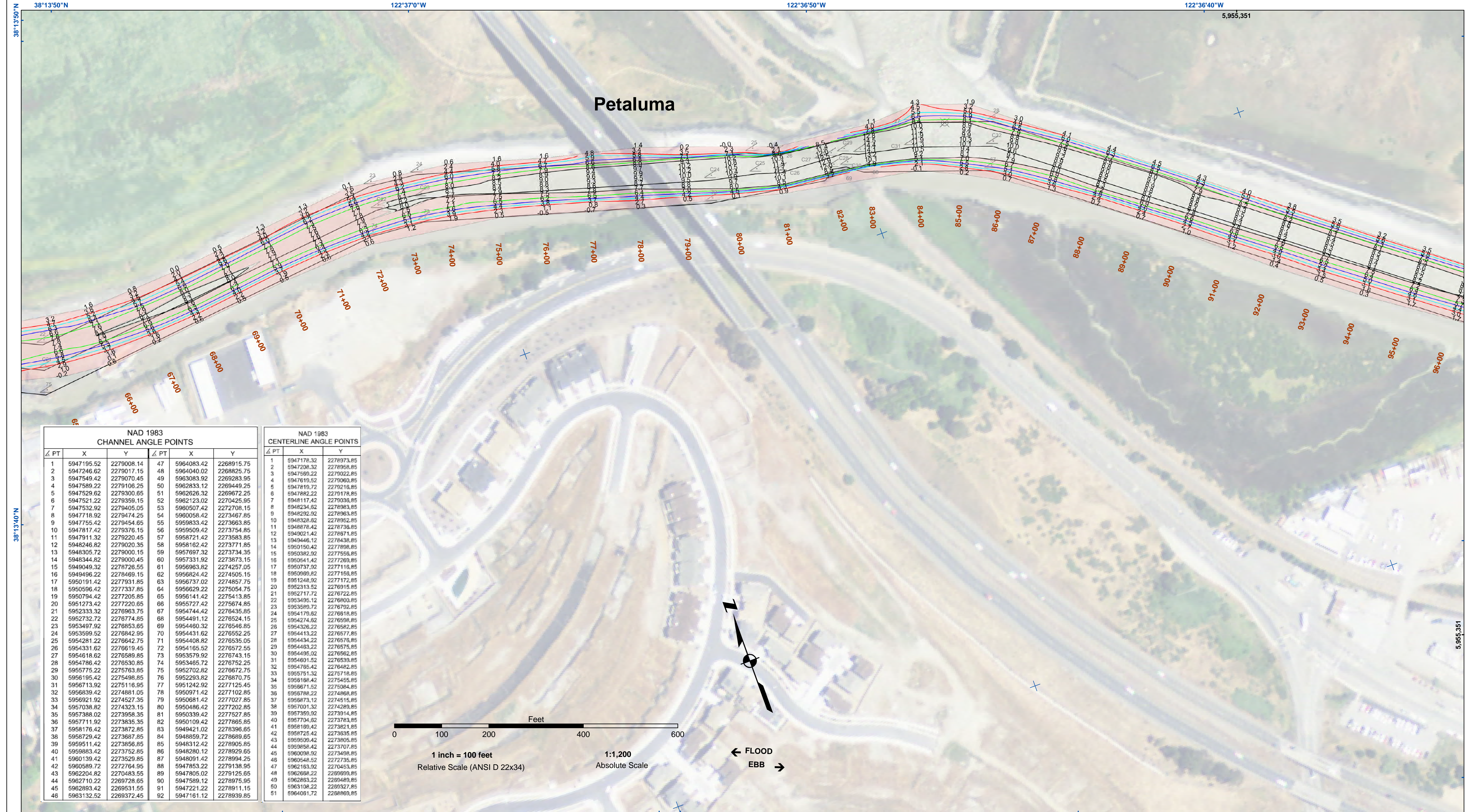
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Chart Date:	Dec 16, 2017
Designed by:	
Drawn by:	PDT
Surveyed By:	TRAVIS J. RAYFIELD
Plotted By:	PDT
Checked By:	PDT

CALIFORNIA  
SONOMA COUNTY  
PETALUMA RIVER  
CONDITION SURVEY  
12-13 December 2017

Sheet Reference Number  
2 of 7



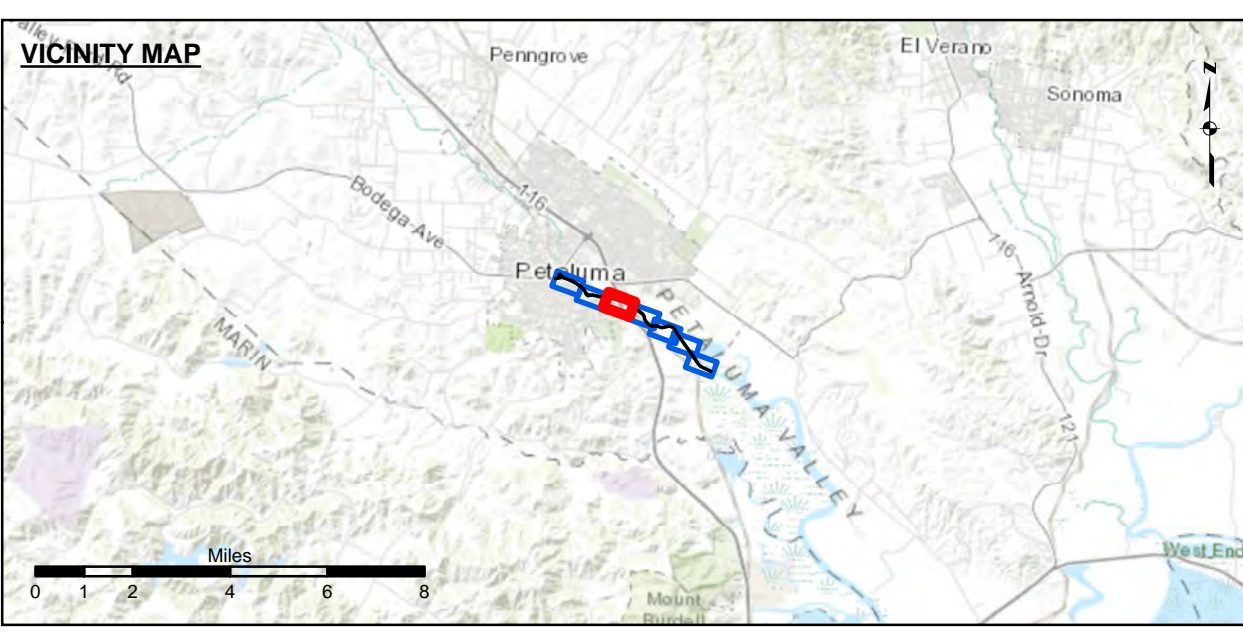


NAD 1983 CHANNEL ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947195.52	2279008.14	47	5964083.42	2268915.75
2	5947246.62	2279017.15	48	5964040.02	2268825.75
3	5947549.45	2279070.45	49	5963083.92	2269283.95
4	5947589.22	2279106.25	50	5962833.12	2269449.25
5	5947529.62	2279300.85	51	5962626.32	2269672.25
6	5947521.22	2279359.15	52	5962123.02	2270425.95
7	5947532.92	2279405.05	53	5960507.42	2272708.15
8	5947718.92	2279474.25	54	5960058.42	2273467.85
9	5947755.42	2279454.65	55	5959833.42	2273663.85
10	5947817.42	2279376.15	56	5959509.42	2273754.85
11	5947911.32	2279220.45	57	5958721.42	2273583.85
12	5948246.82	2279020.35	58	5958162.42	2273771.85
13	5948305.72	2279000.15	59	5957697.32	2273734.35
14	5948344.82	2279000.45	60	5957331.92	2273673.15
15	5949049.32	2278725.55	61	5956963.82	2274257.05
16	5949496.22	2278469.15	62	5956824.42	2274505.15
17	5950191.42	2277931.85	63	5956737.02	2274857.75
18	5950596.42	2277337.85	64	5956629.22	2275054.75
19	5950794.42	2277205.85	65	5956141.42	2275413.85
20	5951273.42	2277220.65	66	5955727.42	2275674.85
21	5952333.32	2276963.75	67	5954744.42	2276435.85
22	5952732.72	2276774.85	68	5954491.12	2276524.15
23	5953487.92	2276853.85	69	5954460.32	2276546.85
24	5953599.52	2276842.95	70	5954431.62	2276552.25
25	5954281.22	2276642.75	71	5954408.82	2276535.05
26	5954331.62	2276619.45	72	5954165.52	2276572.55
27	5954618.62	2276589.85	73	5953579.92	2276743.15
28	5954786.42	2276530.85	74	5953465.72	2276752.25
29	5955775.22	2276763.85	75	5952702.82	2276672.75
30	5956195.42	2276498.85	76	5952293.82	2276870.75
31	5956713.92	2276116.95	77	5951242.92	2277125.45
32	5956839.42	2274881.05	78	5950971.42	2277102.85
33	5956921.92	2274527.35	79	5950681.42	2277027.85
34	5957038.82	2274033.55	80	5950486.42	2277202.85
35	5957388.02	2273958.35	81	5950339.42	2277527.85
36	5957711.92	2273835.35	82	5950109.42	2277865.85
37	5958176.42	2273872.85	83	5949421.02	2278396.85
38	5958729.42	2273687.85	84	5948859.72	2278689.85
39	5959511.42	2273856.85	85	5948312.42	2278905.85
40	5959883.42	2273752.85	86	5948280.12	2278929.85
41	5960139.42	2273529.85	87	5948091.42	2278994.25
42	5960589.72	2272764.95	88	5947853.22	2279138.95
43	5962204.82	2270483.55	89	5947305.02	2279125.95
44	5962710.22	2269728.65	90	5947589.12	2278975.95
45	5962893.42	2269531.55	91	5947221.22	2278911.15
46	5963132.52	2269372.45	92	5947161.12	2278939.85

NAD 1983 CENTERLINE ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947178.32	2278973.85	2	5947208.32	2278958.85
2	5947569.22	2279022.85	3	5947619.52	2279060.85
4	5947819.72	2279218.85	5	5947882.22	2279178.85
6	5948117.42	2279308.85	7	5948234.62	2279893.85
8	5948292.92	2279893.85	9	5948328.62	2279952.85
10	5948678.42	2279736.85	11	5949021.42	2279871.85
12	5949446.12	2278438.85	13	5950150.42	2277898.85
14	5950382.92	2277558.85	15	5950941.42	2277260.85
16	5950737.92	2277118.85	17	5950989.82	2277168.85
18	5951248.92	2277172.85	19	5952313.52	2276915.85
20	5952717.72	2276722.85	21	5953495.12	2276903.85
22	5953589.72	2276792.85	23	5954179.62	2276618.85
24	5954274.62	2276598.85	25	5954326.22	2276582.85
26	5954413.22	2276577.85	27	5954434.22	2276578.85
28	5954483.22	2276575.85	29	5954495.02	2276562.85
30	5954601.52	2276539.85	31	5954765.42	2276482.85
32	5954901.52	2276462.85	33	5955713.42	2276118.85
34	5955198.42	2275455.85	35	5956671.52	2275084.85
36	5956788.22	2274868.85	37	5956873.12	2274515.85
38	5957001.32	2274289.85	39	5957359.02	2273914.85
40	5957704.62	2273783.85	41	5958189.42	2273281.85
42	5958725.42	2273035.85	43	5959595.42	2272305.85
44	5959858.42	2273707.85	45	5960098.92	2272735.85
46	5960548.52	2272735.85	47	5962163.92	2270453.85
48	5962698.42	2269899.85	49	5962883.22	2269489.85
50	5963108.22	2269327.85	51	5964081.72	2268869.85



← FLOOD  
EBB →



Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	-8
Anchorage Area	Navigation Buoy	-7
Wreck Area	Shoalest Sounding*	-6
Submerged Wreck		-5
Angle Point		-4

NOTES:  
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ELEVATIONS ARE BASED ON TIDAL BENCH MARK 941 5584 BOLT C, NATIONAL OCEAN SERVICE BOLT, ELEV. 13.69, NAVD 88 DATUM, PUBLICATION DATE: AUGUST 9, 2004

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

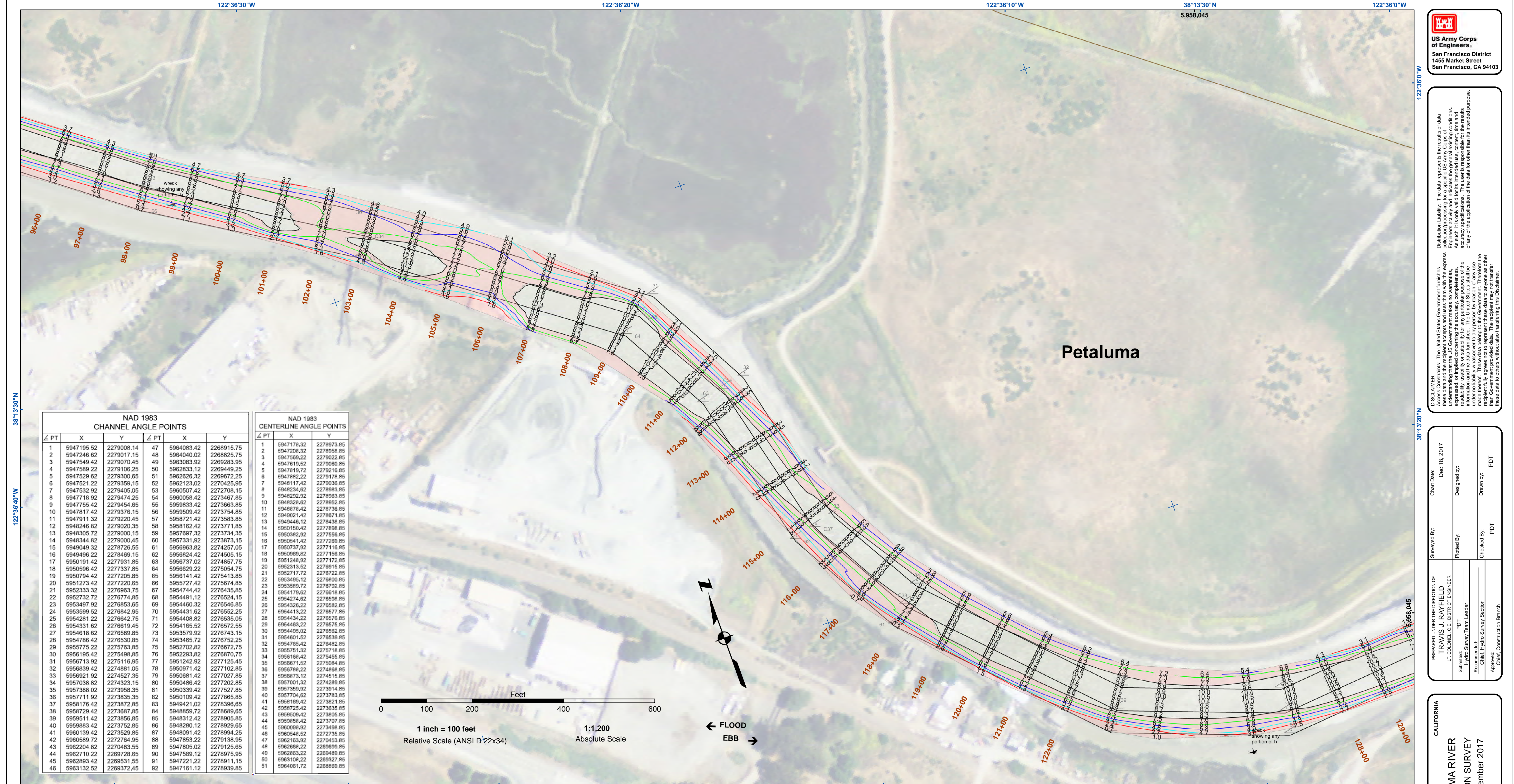
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Chart Date:	Dec 16, 2017
Designed by:	
Drawn by:	PDT
Surveyed By:	TRAVIS J. RAYFIELD
Plotted By:	PDT
Checked By:	PDT

CALIFORNIA  
SONOMA COUNTY  
PETALUMA RIVER  
CONDITION SURVEY  
12-13 December 2017

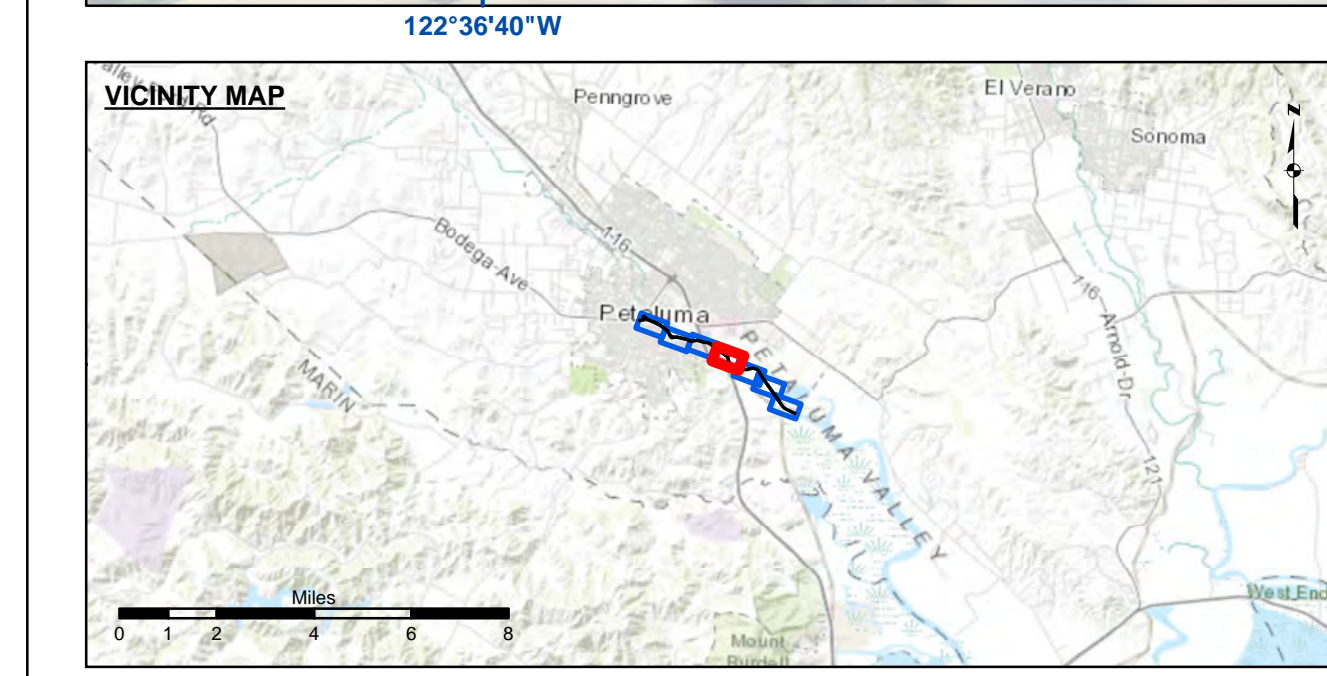
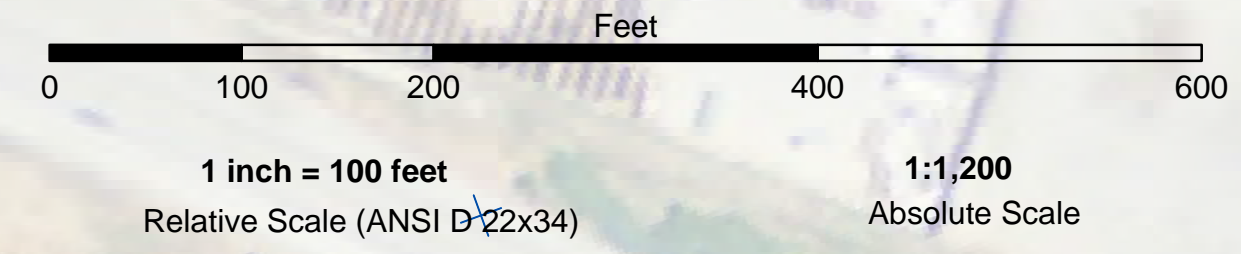
Sheet Reference Number  
3 of 7





NAD 1983 CHANNEL ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947195.52	2279008.14	47	5964083.42	2268915.75
2	5947246.62	2279017.15	48	5964040.02	2268825.75
3	5947549.42	2279070.45	49	5963083.92	2269283.95
4	5947589.22	2279106.25	50	5962833.12	2269449.25
5	5947529.62	2279300.85	51	5962529.32	2269672.25
6	5947521.22	2279359.15	52	5962123.02	2270425.95
7	5947532.92	2279405.05	53	5960507.42	2272708.15
8	5947718.92	2279474.25	54	5960058.42	2273467.85
9	5947755.42	2279454.65	55	5959833.42	2273663.85
10	5947817.42	2279376.15	56	5959509.42	2273754.85
11	5947911.32	2279220.45	57	5958721.42	2273583.85
12	5948246.82	2279020.35	58	5958162.42	2273771.85
13	5948305.72	2279000.15	59	5957697.32	2273734.35
14	5948344.82	2279000.45	60	5957331.92	2273673.15
15	5949049.32	2278725.55	61	5956983.82	2274257.05
16	5949496.22	2278469.15	62	5956824.42	2274505.15
17	5950191.42	2277931.85	63	5956737.02	2274857.75
18	5950596.42	2277337.85	64	5956629.22	2275054.75
19	5950794.42	2277205.85	65	5956141.42	2275413.85
20	5951273.42	2277220.65	66	5955727.42	2275674.85
21	5952333.32	2276963.75	67	5954744.42	2276435.85
22	5952732.72	2276774.85	68	5954491.12	2276524.15
23	5953487.92	2276853.85	69	5954460.32	2276546.85
24	5953599.52	2276842.95	70	5954431.62	2276552.25
25	5954281.22	2276642.75	71	5954408.82	2276535.05
26	5954331.62	2276619.45	72	5954165.52	2276572.55
27	5954618.62	2276589.85	73	5953579.92	2276743.15
28	5954786.42	2276530.85	74	5953465.72	2276752.25
29	5955775.22	2275763.85	75	5952702.82	2276672.75
30	5956195.42	2275498.85	76	5952293.82	2276870.75
31	5956713.92	2275116.95	77	5951242.92	2277125.45
32	5956839.42	2274881.05	78	5950971.42	2277102.85
33	5956921.92	2274527.35	79	5950681.42	2277027.85
34	5957038.82	2274323.15	80	5950486.42	2277202.85
35	5957388.02	2273958.35	81	5950339.42	2277527.85
36	5957711.92	2273835.35	82	5950109.42	2277865.85
37	5958176.42	2273872.85	83	5949421.02	2278396.85
38	5958729.42	2273687.85	84	5948859.72	2278689.85
39	5959511.42	2273856.85	85	5948312.42	2278905.85
40	5959883.42	2273752.85	86	5948280.12	2278929.65
41	5960139.42	2273529.85	87	5948091.42	2278994.25
42	5960589.72	2272764.95	88	5947853.22	2279138.95
43	5962204.82	2270483.55	89	5947305.02	2279125.95
44	5962710.22	2269728.65	90	5947589.12	2278975.95
45	5962893.42	2269531.55	91	5947221.22	2278911.15
46	5963132.52	2269372.45	92	5947161.12	2278939.85

NAD 1983 CENTERLINE ANGLE POINTS		
PT	X	Y
1	5947178.32	2278973.85
2	5947208.32	2278958.85
3	5947569.22	2279022.85
4	5947619.52	2279060.85
5	5947819.72	2279218.85
6	5947882.22	2279178.85
7	5948117.42	2279038.85
8	5948234.82	2278983.85
9	5948292.92	2278963.85
10	5948328.82	2278952.85
11	5948678.42	2278736.85
12	5949021.42	2278671.85
13	5949446.12	2278438.85
14	5950150.42	2277898.85
15	5950382.92	2277558.85
16	5950541.42	2277269.85
17	5950737.92	2277118.85
18	5950989.82	2277168.85
19	5951248.92	2277172.85
20	5952313.52	2276915.85
21	5952717.72	2276722.85
22	5953495.12	2276803.85
23	5953589.72	2276792.85
24	5954179.82	2276618.85
25	5954274.82	2276598.85
26	5954326.22	2276582.85
27	5954413.22	2276577.85
28	5954434.22	2276578.85
29	5954483.22	2276575.85
30	5954495.02	2276562.85
31	5954601.52	2276539.85
32	5954765.42	2276482.85
33	5955713.32	2276118.85
34	5956188.42	2275455.85
35	5956671.52	2275084.85
36	5956788.22	2274868.85
37	5956873.12	2274515.85
38	5957001.32	2274289.85
39	5957359.02	2273914.85
40	5957704.82	2273783.85
41	5958189.42	2273821.85
42	5958725.42	2273635.85
43	5959050.42	2273805.85
44	5959586.42	2273707.85
45	5960098.92	2273498.85
46	5960548.52	2272735.85
47	5962163.92	2270453.85
48	5962698.22	2269698.85
49	5962883.22	2269489.85
50	5963108.22	2269327.85
51	5964081.72	2268869.85



Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	-8
Anchorage Area	Navigation Buoy	-7
Wreck Area	Shoalest Sounding*	-6
Submerged Wreck		-5
Angle Point		-4

NOTES:  
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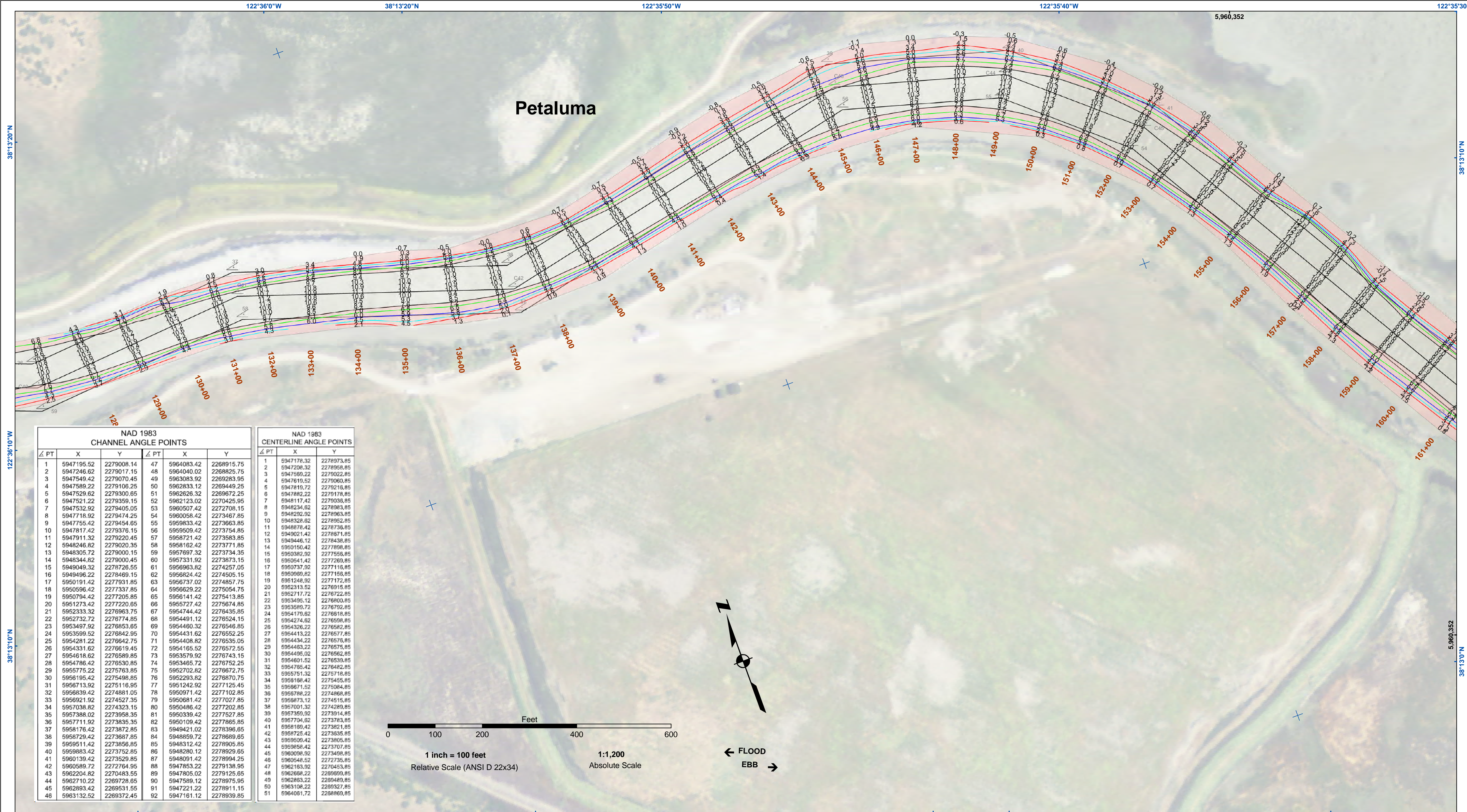
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Chart Date:	Dec 16, 2017
Designed by:	PDT
Drawn by:	PDT
Checked by:	PDT
Approved:	Chief, Construction Branch
Submitted:	Hydro Survey Team Leader
Recommended:	Chief, Hydro Survey Section
Reviewed:	LT Colonel, C.E. District Engineer
Surveyed By:	TRAVIS J. RAYFIELD
Prepared Under the Direction of:	LT Colonel, C.E. District Engineer

CALIFORNIA  
SONOMA COUNTY  
PETALUMA RIVER  
CONDITION SURVEY  
12-13 December 2017

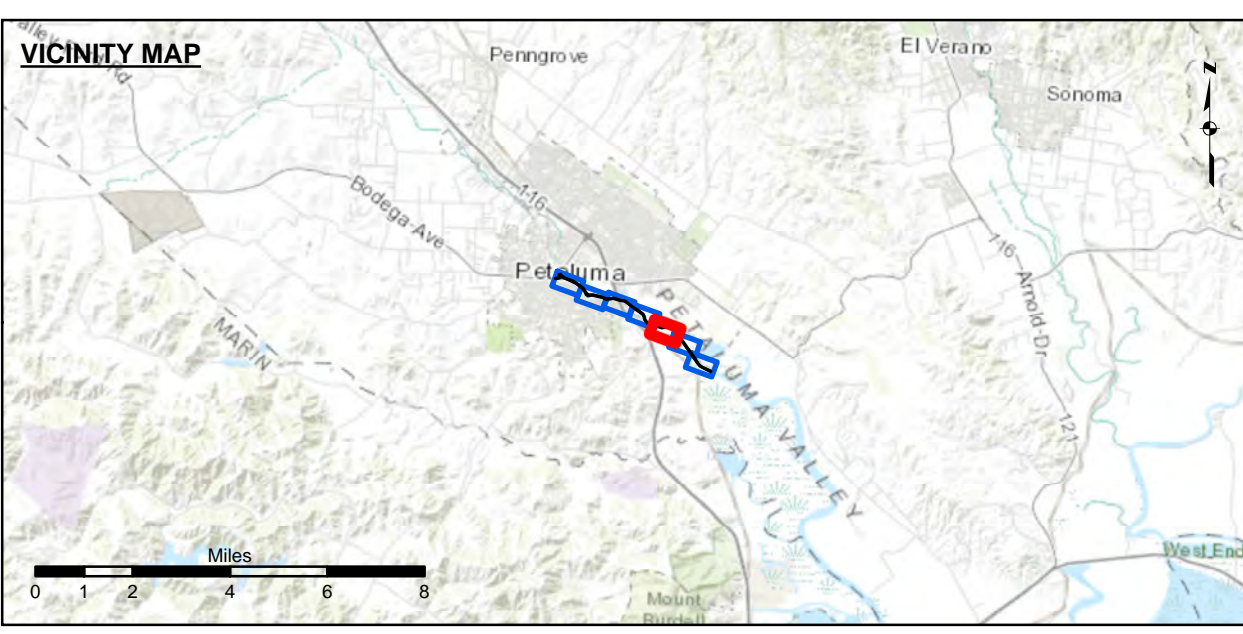
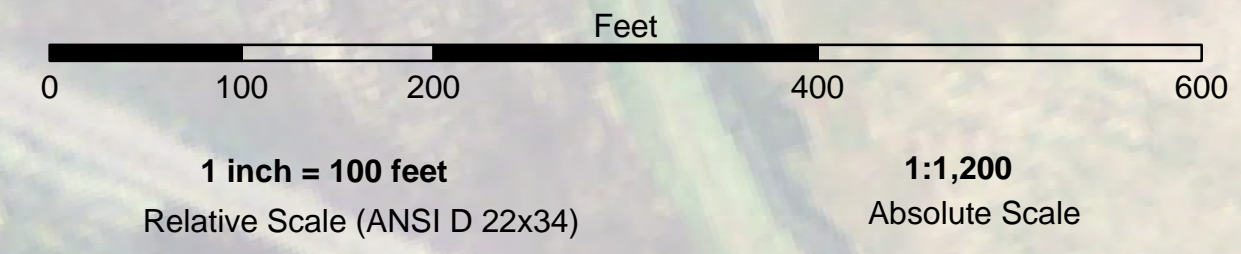
Sheet Reference Number  
4 of 7





NAD 1983 CHANNEL ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947195.52	2279008.14	47	5964083.42	2268915.75
2	5947246.62	2279017.15	48	5964040.02	2268825.75
3	5947549.45	2279070.45	49	5963083.92	2269283.95
4	5947589.22	2279106.25	50	5962833.12	2269449.25
5	5947529.62	2279300.85	51	5962626.32	2269672.25
6	5947521.22	2279359.15	52	5962123.02	2270425.95
7	5947532.92	2279405.05	53	5960507.42	2272708.15
8	5947718.92	2279474.25	54	5960058.42	2273467.85
9	5947755.42	2279454.65	55	5959833.42	2273663.85
10	5947817.42	2279376.15	56	5959509.42	2273754.85
11	5947911.32	2279220.45	57	5958721.42	2273583.85
12	5948246.82	2279020.35	58	5958162.42	2273771.85
13	5948305.72	2279000.15	59	5957697.32	2273734.35
14	5948344.82	2279000.45	60	5957331.92	2273673.15
15	5949049.32	2278725.55	61	5956983.82	2274257.05
16	5949496.22	2278469.15	62	5956824.42	2274505.15
17	5950191.42	2277931.85	63	5956737.02	2274857.75
18	5950596.42	2277337.85	64	5956629.22	2275054.75
19	5950794.42	2277205.85	65	5956141.42	2275413.85
20	5951273.42	2277220.65	66	5955727.42	2275674.85
21	5952333.32	2276963.75	67	5954744.42	2276435.85
22	5952732.72	2276774.85	68	5954491.12	2276524.15
23	5953487.92	2276853.85	69	5954460.32	2276546.85
24	5953599.52	2276842.95	70	5954311.62	2276552.25
25	5954281.22	2276642.75	71	5954008.82	2276535.05
26	5954331.62	2276619.45	72	5954165.52	2276572.55
27	5954618.62	2276589.85	73	5953579.92	2276743.15
28	5954786.42	2276530.85	74	5953465.72	2276752.25
29	5955775.22	2275763.85	75	5952702.82	2276672.75
30	5956195.42	2275498.85	76	5952293.82	2276870.75
31	5956713.92	2275116.95	77	5951242.92	2277125.45
32	5956839.42	2274881.05	78	5950971.42	2277102.85
33	5956921.92	2274527.35	79	5950681.42	2277027.85
34	5957038.82	2274323.15	80	5950486.42	2277202.85
35	5957388.02	2273958.35	81	5950339.42	2277527.85
36	5957711.92	2273835.35	82	5950109.42	2277865.85
37	5958176.42	2273872.85	83	5949421.02	2278396.85
38	5958729.42	2273687.85	84	5948859.72	2278689.85
39	5959511.42	2273856.85	85	5948312.42	2278905.85
40	5959883.42	2273752.85	86	5948280.12	2278929.85
41	5960139.42	2273529.85	87	5948091.42	2278994.25
42	5960589.72	2272764.95	88	5947853.22	2279138.95
43	5962204.82	2270483.55	89	5947305.02	2279125.95
44	5962710.22	2269728.65	90	5947589.12	2278975.95
45	5962893.42	2269531.55	91	5947221.22	2278911.15
46	5963132.52	2269372.45	92	5947161.12	2278939.85

NAD 1983 CENTERLINE ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947178.32	2278973.85	2	5947208.32	2278958.85
3	5947569.22	2279022.85	4	5947619.52	2279060.85
5	5947819.72	2279218.85	6	5947882.22	2279117.85
7	5948117.42	2279038.85	8	5948234.62	2278963.85
9	5948292.92	2278963.85	10	5948328.62	2278952.85
11	5948678.42	2278736.85	12	5949021.42	2278671.85
13	5949446.12	2278438.85	14	5950150.42	2277898.85
15	5950382.92	2277558.85	16	5950941.42	2277269.85
17	5950737.92	2277118.85	18	5950989.82	2277168.85
19	5951248.92	2277172.85	20	5952313.52	2276915.85
21	5952717.72	2276722.85	22	5953495.12	2276803.85
23	5953589.72	2276792.85	24	5954179.62	2276618.85
25	5954274.62	2276598.85	26	5954326.22	2276582.85
27	5954413.22	2276577.85	28	5954434.22	2276578.85
29	5954483.22	2276575.85	30	5954495.02	2276562.85
31	5954601.52	2276539.85	32	5954765.42	2276482.85
33	5954765.42	2276482.85	34	5954988.42	2275455.85
35	5954988.42	2275455.85	36	5955671.52	2275084.85
37	5955671.52	2275084.85	38	5955788.22	2274868.85
39	5955987.12	2274515.85	40	5956701.32	2274289.85
41	5956701.32	2274289.85	42	5957359.02	2273914.85
43	5957359.02	2273914.85	44	5957704.62	2273783.85
45	5958189.42	2273821.85	46	5958189.42	2273821.85
47	5958725.42	2273635.85	48	5958725.42	2273635.85
49	5959695.42	2273805.85	50	5959695.42	2273805.85
51	5960098.92	2273707.85	52	5960098.92	2273707.85
53	5960548.52	2272735.85	54	5960548.52	2272735.85
55	5961653.92	2270453.85	56	5961653.92	2270453.85
57	5962689.22	2268989.85	58	5962689.22	2268989.85
59	5962883.22	2268489.85	60	5962883.22	2268489.85
61	5963108.22	2268327.85	62	5963108.22	2268327.85
63	5964081.72	2268869.85	64	5964081.72	2268869.85



Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	-8
Anchorage Area	Navigation Buoy	-7
Wreck Area	Shoalest Sounding*	-6
Submerged Wreck		-5
Angle Point		-4

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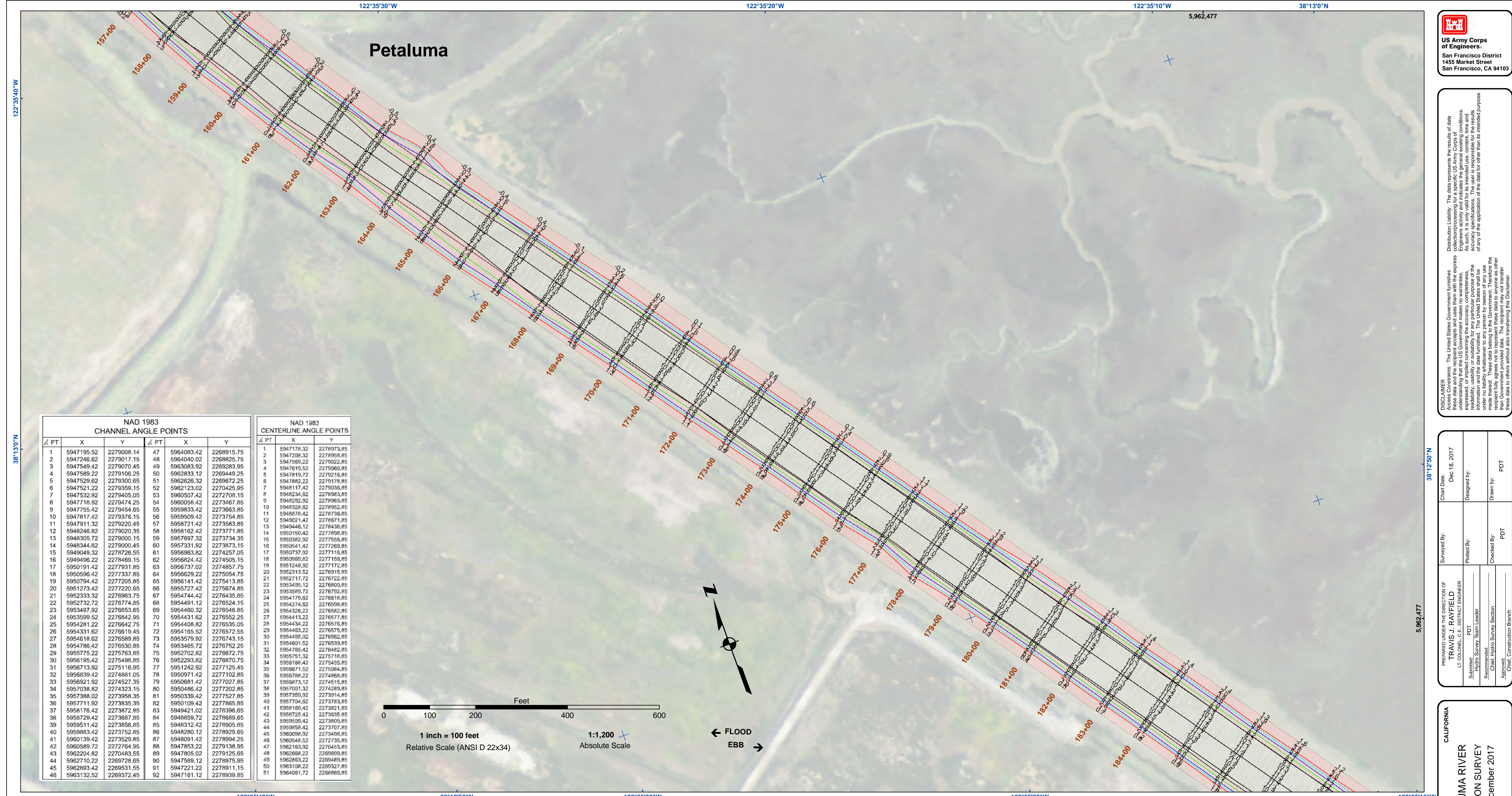
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Chart Date:	Dec 16, 2017
Designed by:	PDT
Drawn by:	PDT
Checked by:	PDT
Surveyed By:	TRAVIS J. RAYFIELD
Plotted By:	PDT
Hydro Survey Team Leader:	PDT
Chief, Hydro Survey Section:	PDT
Chief, Construction Branch:	PDT

CALIFORNIA  
SONOMA COUNTY  
PETALUMA RIVER  
CONDITION SURVEY  
12-13 December 2017

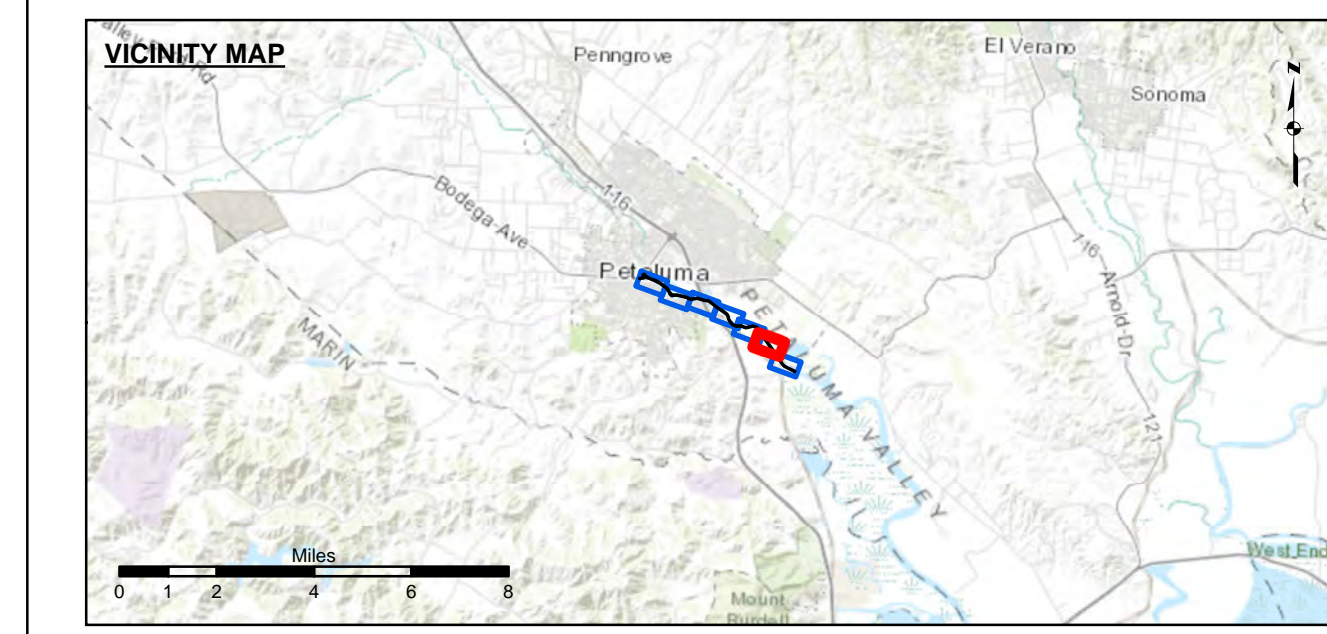
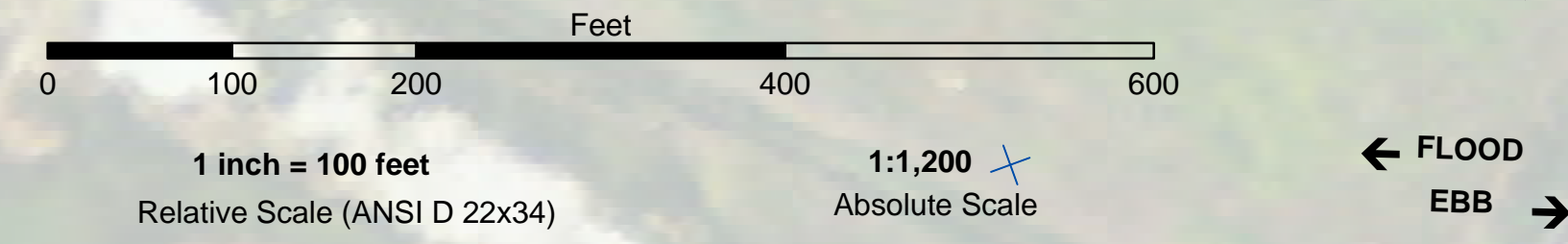
Sheet Reference Number  
5 of 7





NAD 1983 CHANNEL ANGLE POINTS					
Δ PT	X	Y	Δ PT	X	Y
1	5947195.52	2279008.14	47	5964083.42	2268915.75
2	5947246.62	2279017.15	48	5964040.02	2268825.75
3	5947549.42	2279070.45	49	5963083.92	2269283.95
4	5947589.22	2279106.25	50	5962833.12	2269449.25
5	5947529.62	2279300.85	51	5962629.32	2269672.25
6	5947521.22	2279359.15	52	5962123.02	2270425.95
7	5947532.92	2279405.05	53	5960507.42	2272708.15
8	5947718.92	2279474.25	54	5960058.42	2273467.85
9	5947755.42	2279454.65	55	5959833.42	2273663.85
10	5947817.42	2279376.15	56	5959509.42	2273754.85
11	5947911.32	2279220.45	57	5958721.42	2273583.85
12	5948246.82	2279020.35	58	5958162.42	2273771.85
13	5948305.72	2279000.15	59	5957697.32	2273734.35
14	5948344.82	2279000.45	60	5957331.92	2273673.15
15	5949049.32	2278725.55	61	5956983.82	2274257.05
16	5949496.22	2278469.15	62	5956824.42	2274505.15
17	5950191.42	2277931.85	63	5956737.02	2274857.75
18	5950596.42	2277337.85	64	5956629.22	2275054.75
19	5950794.42	2277205.85	65	5956141.42	2275413.85
20	5951273.42	2277220.65	66	5955727.42	2275674.85
21	5952333.32	2276963.75	67	5954744.42	2276435.85
22	5952732.72	2276774.85	68	5954491.12	2276524.15
23	5953487.92	2276853.85	69	5954460.32	2276546.85
24	5953599.52	2276842.95	70	5954431.62	2276552.25
25	5954281.22	2276642.75	71	5954408.82	2276535.05
26	5954331.62	2276619.45	72	5954165.52	2276572.55
27	5954618.62	2276589.85	73	5953579.92	2276743.15
28	5954786.42	2276530.85	74	5953465.72	2276752.25
29	5955775.22	2275763.85	75	5952702.82	2276672.75
30	5956195.42	2275498.85	76	5952293.82	2276870.75
31	5956713.92	2275116.95	77	5951242.92	2277125.45
32	5956839.42	2274881.05	78	5950971.42	2277102.85
33	5956921.92	2274527.35	79	5950681.42	2277027.85
34	5957038.82	2274323.15	80	5950486.42	2277202.85
35	5957388.02	2273958.35	81	5950339.42	2277527.85
36	5957711.92	2273835.35	82	5950109.42	2277865.85
37	5958176.42	2273872.85	83	5949421.02	2278396.85
38	5958729.42	2273687.85	84	5948859.72	2278689.85
39	5959511.42	2273856.85	85	5948312.42	2278905.85
40	5959883.42	2273752.85	86	5948280.12	2278929.85
41	5960139.42	2273529.85	87	5948091.42	2278994.25
42	5960589.72	2272764.95	88	5947853.22	2279138.95
43	5962204.82	2270483.95	89	5947805.02	2279125.95
44	5962710.22	2269728.65	90	5947589.12	2278975.95
45	5962893.42	2269531.55	91	5947221.22	2278911.15
46	5963132.52	2269372.45	92	5947161.12	2278939.85

NAD 1983 CENTERLINE ANGLE POINTS					
Δ PT	X	Y	Δ PT	X	Y
1	5947178.32	2278973.85	2	5947208.32	2278958.85
3	5947569.22	2279022.85	4	5947619.52	2279060.85
5	5947819.72	2279218.85	6	5947882.22	2279178.85
7	5948117.42	2279308.85	8	5948234.62	2279893.85
9	5948292.92	2279863.85	10	5948328.62	2279952.85
11	5948678.42	2279736.85	12	5949021.42	2279871.85
13	5949446.12	2278438.85	14	5950150.42	2277898.85
15	5950382.92	2277558.85	16	5950941.42	2277269.85
17	5950737.92	2277118.85	18	5950989.82	2277168.85
19	5951248.92	2277172.85	20	5952313.52	2276915.85
21	5952717.72	2276722.85	22	5953495.12	2276903.85
23	5953589.72	2276792.85	24	5954179.62	2276618.85
25	5954274.62	2276598.85	26	5954326.22	2276582.85
27	5954413.22	2276577.85	28	5954434.22	2276578.85
29	5954483.22	2276575.85	30	5954495.02	2276562.85
31	5954601.52	2276539.85	32	5954765.42	2276482.85
33	5954765.42	2276482.85	34	5954918.42	2276455.85
35	5954918.42	2276455.85	36	5954967.12	2276404.85
37	5954967.12	2276404.85	38	5954967.12	2276404.85
39	5954967.12	2276404.85	40	5954967.12	2276404.85
41	5954967.12	2276404.85	42	5954967.12	2276404.85
43	5954967.12	2276404.85	44	5954967.12	2276404.85
45	5954967.12	2276404.85	46	5954967.12	2276404.85
47	5954967.12	2276404.85	48	5954967.12	2276404.85
49	5954967.12	2276404.85	50	5954967.12	2276404.85
51	5954967.12	2276404.85			



Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	-8
Anchorage Area	Navigation Buoy	-7
Wreck Area	Shoalest Sounding*	-6
Submerged Wreck		-5
Angle Point		-4

NOTES:  
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 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.  
 SOUNDINGS ARE TAKEN BY FATHOMETER AND ARE SHOWN TO THE NEAREST FOOT AND TENTHS OF A FOOT.  
 SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER AT THE LOCALITY.  
 PLANE GRID AND COORDINATES ARE BASED ON THE STATE OF CALIFORNIA COORDINATE SYSTEM, LAMBERT PROJECTION, ZONE III NAD 83, CALIFORNIA, AS DESCRIBED IN SPECIAL PUBLICATION NO. 235, PUBLISHED BY NATIONAL OCEAN SURVEY.  
 PROJECT DEPTH IS 8 FEET FROM THE MOUTH OF PETALUMA CREEK TO WESTERN AVE., THEN 4 FOOT DEPTH TO THE HEAD OF NAVIGATION.  
 ELEVATIONS ARE BASED ON TIDAL BENCH MARK 941 5584 BOLT C, NATIONAL OCEAN SERVICE BOLT, ELEV. 13.69, NAVD 88 DATUM, PUBLICATION DATE: AUGUST 9, 2004.



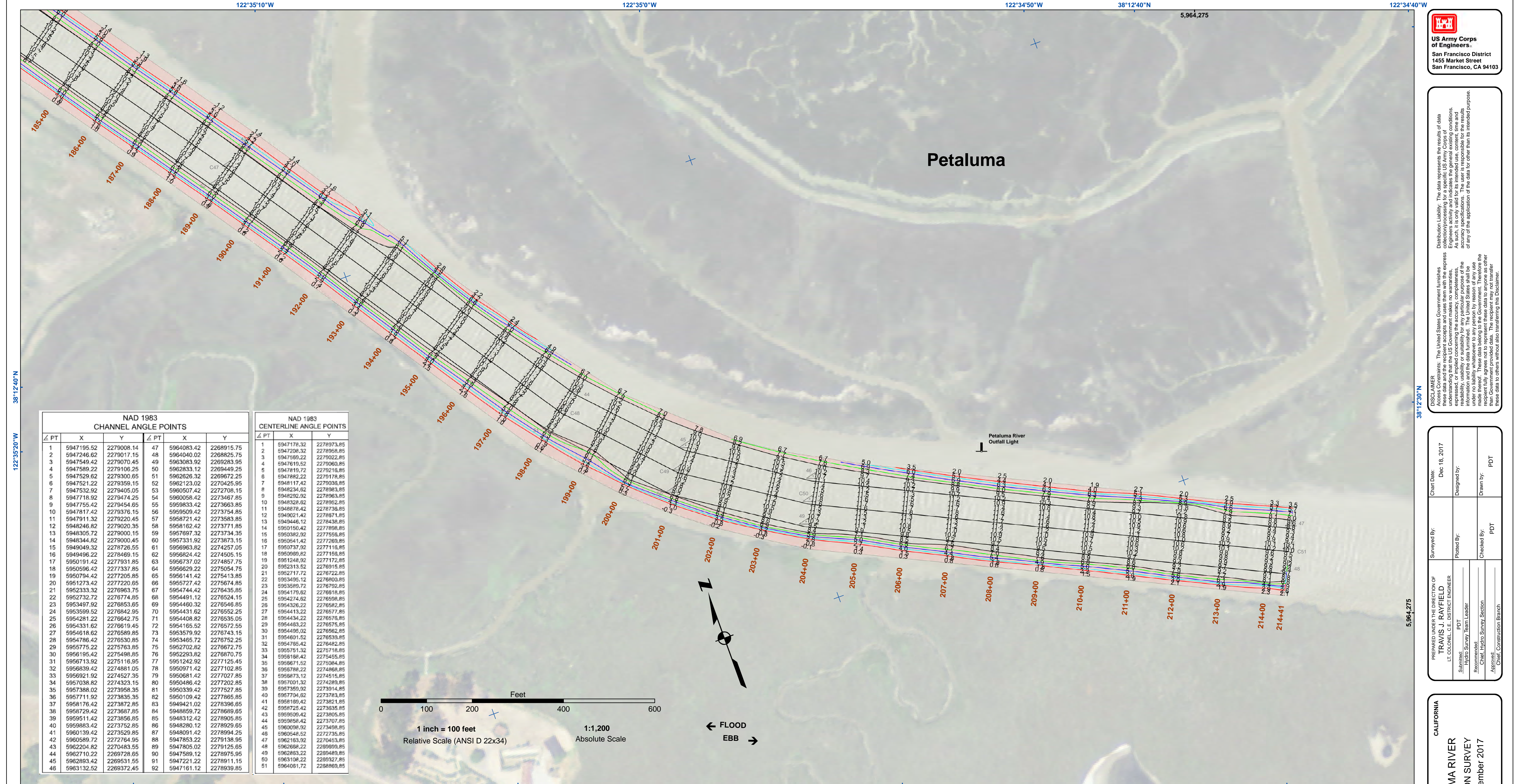
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Chart Date:	Dec 16, 2017
Designed by:	
Drawn by:	PDT
Surveyed By:	
Plotted By:	
Checked By:	PDT
Prepared Under the Direction of:	TRAVIS J. RAYFIELD LT COLONEL, C.E., DISTRICT ENGINEER
Submitted:	PDT Hydro Survey Team Leader
Recommended:	
Approved:	Chief, Hydro Survey Section
	Chief, Construction Branch

CALIFORNIA  
 SONOMA COUNTY  
 PETALUMA RIVER  
 CONDITION SURVEY  
 12-13 December 2017

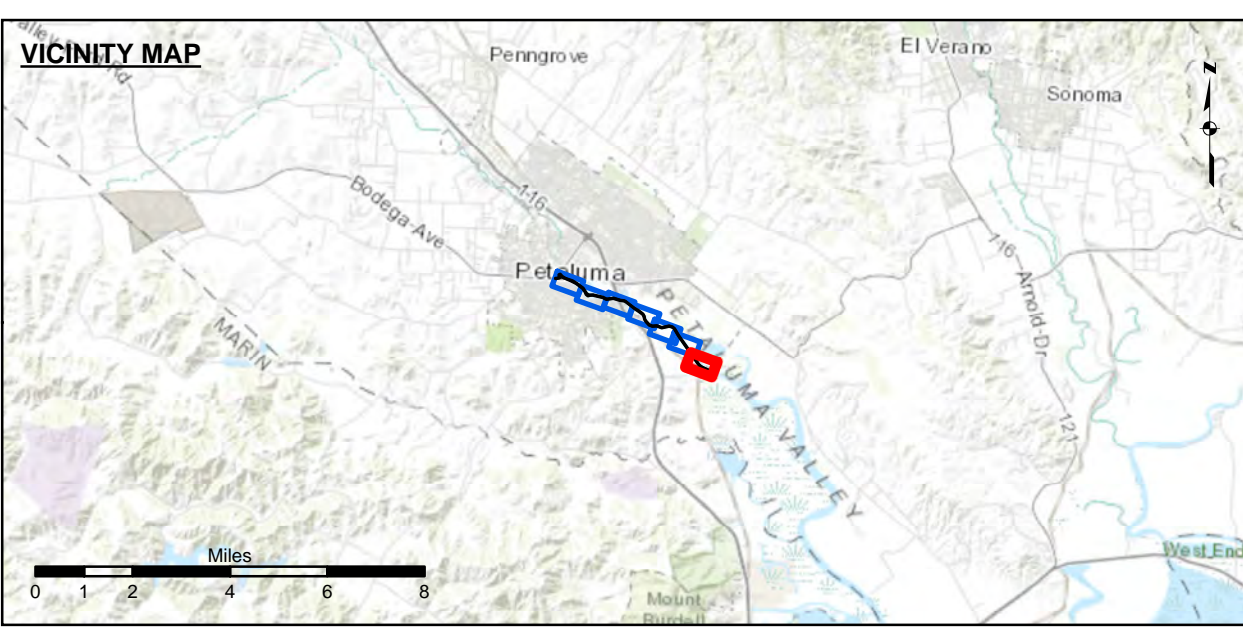
Sheet Reference Number  
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NAD 1983 CHANNEL ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947195.52	2279008.14	47	5964083.42	2268915.75
2	5947246.62	2279017.15	48	5964040.02	2268825.75
3	5947549.42	2279070.45	49	5963083.92	2269283.95
4	5947589.22	2279106.25	50	5962833.12	2269449.25
5	5947529.62	2279300.85	51	5962526.32	2269672.25
6	5947521.22	2279359.15	52	5962123.02	2270425.95
7	5947532.92	2279405.05	53	5960507.42	2272708.15
8	5947718.92	2279474.25	54	5960056.42	2273467.85
9	5947755.42	2279454.65	55	5959833.42	2273663.85
10	5947811.42	2279376.15	56	5959509.42	2273754.85
11	5947911.32	2279220.45	57	5958721.42	2273583.85
12	5948246.82	2279020.35	58	5958162.42	2273771.85
13	5948305.72	2279000.15	59	5957697.32	2273734.35
14	5948344.82	2279000.45	60	5957331.92	2273673.15
15	5949049.32	2278725.55	61	5956983.82	2274257.05
16	5949496.22	2278469.15	62	5956824.42	2274505.15
17	5950191.42	2277931.85	63	5956737.02	2274857.75
18	5950596.42	2277337.85	64	5956629.22	2275054.75
19	5950794.42	2277205.85	65	5956141.42	2275413.85
20	5951273.42	2277220.65	66	5955727.42	2275674.85
21	5952333.32	2276963.75	67	5954744.42	2276435.85
22	5952732.72	2276774.85	68	5954491.12	2276524.15
23	5953487.92	2276853.85	69	5954460.32	2276546.85
24	5953589.52	2276842.95	70	5954431.62	2276552.25
25	5954281.22	2276642.75	71	5954408.82	2276535.05
26	5954331.62	2276619.45	72	5954165.52	2276572.55
27	5954618.62	2276589.85	73	5953579.92	2276743.15
28	5954786.42	2276530.85	74	5953465.72	2276752.25
29	5955775.22	2276763.85	75	5952702.82	2276672.75
30	5956195.42	2276498.85	76	5952293.82	2276870.75
31	5956713.92	2275116.95	77	5951242.92	2277125.45
32	5956839.42	2274881.05	78	5950971.42	2277102.85
33	5956921.92	2274527.35	79	5950681.42	2277027.85
34	5957038.82	2274323.15	80	5950486.42	2277202.85
35	5957388.02	2273958.35	81	5950339.42	2277527.85
36	5957711.92	2273835.35	82	5950109.42	2277865.85
37	5958176.42	2273872.85	83	5949421.02	2278396.85
38	5958729.42	2273687.85	84	5948859.72	2278689.85
39	5959511.42	2273856.85	85	5948312.42	2278905.85
40	5959883.42	2273752.85	86	5948280.12	2278929.85
41	5960139.42	2273529.85	87	5948091.42	2278994.25
42	5960589.72	2272764.95	88	5947853.22	2279138.95
43	5962204.82	2270483.55	89	5947805.02	2279125.95
44	5962710.22	2269728.65	90	5947589.12	2278975.95
45	5962893.42	2269531.55	91	5947221.22	2278911.15
46	5963132.52	2269372.45	92	5947161.12	2278939.85

NAD 1983 CENTERLINE ANGLE POINTS					
PT	X	Y	PT	X	Y
1	5947178.32	2278973.85	22	5953495.12	2276903.85
2	5947208.32	2278958.85	23	5953589.72	2276792.85
3	5947589.22	2279022.85	24	5954179.62	2276618.85
4	5947619.52	2279060.85	25	5954274.62	2276598.85
5	5947819.72	2279218.85	26	5954326.22	2276582.85
6	5947882.22	2279178.85	27	5954413.22	2276577.85
7	5948117.42	2279038.85	28	5954434.22	2276578.85
8	5948234.62	2278983.85	29	5954483.22	2276575.85
9	5948292.92	2278963.85	30	5954495.02	2276562.85
10	5948328.62	2278952.85	31	5954601.52	2276539.85
11	5948678.42	2278736.85	32	5954765.42	2276482.85
12	5949021.42	2278671.85	33	5954785.42	2276462.85
13	5949446.12	2278438.85	34	5954918.42	2276455.85
14	5950150.42	2277898.85	35	5954967.52	2276084.85
15	5950382.92	2277558.85	36	5954988.22	2274868.85
16	5950541.42	2277269.85	37	5954987.12	2274515.85
17	5950737.92	2277118.85	38	5955001.32	2274289.85
18	5950989.82	2277158.85	39	5955359.02	2273914.85
19	5951248.92	2277172.85	40	5955704.62	2273783.85
20	5952313.52	2276915.85	41	5958189.42	2273821.85
21	5952717.72	2276722.85	42	5958725.42	2273835.85



Federal Navigation Channel	Beacon, General	<b>Contours</b>
Shoaling Area	Obstruction Point	
Placement Area	Navigation Buoy	-8
Anchorage Area	Navigation Buoy	-7
Wreck Area	Shoalest Sounding*	-6
Submerged Wreck		-5
Angle Point		-4

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

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Chart Date:	Dec 16, 2017
Designed by:	PDT
Drawn by:	PDT
Checked by:	PDT
Approved:	PDT
Prepared Under the Direction of:	TRAVIS J. RAYFIELD LT COLONEL, C.E., DISTRICT ENGINEER
Surveyed By:	PDT
Plotted By:	PDT
Submittal:	Hydro Survey Team Leader
Recommendation:	Chief, Hydro Survey Section
Approval:	Chief, Construction Branch

CALIFORNIA  
 SONOMA COUNTY  
**PETALUMA RIVER**  
 CONDITION SURVEY  
 12-13 December 2017

**Sheet Reference Number**  
**7 of 7**