

# 10411

Diag. Cht. No. 5502.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

## DESCRIPTIVE REPORT

Type of Survey Planimetric

Field No. Ph-159 Office No. T-10411

### LOCALITY

State California

General locality Sonoma & Marin Counties

Locality Bodega Bay

1955-57

### CHIEF OF PARTY

V.R.Sobieralski, Chief of Field Party  
A.L.Wardwell, Tampa Photo. Office

### LIBRARY & ARCHIVES

DATE August 22, 1960

USCOMM-DC 5087

# 10411

DESCRIPTIVE REPORT - DATA RECORD

T- 10411

Project No. (II): Ph-159      Quadrangle Name (IV):

Field Office (II): Portland, Oregon      Chief of Party: V. Ralph Sobieralski  
Sub Party: Point Reyes Station, Calif.  
Photogrammetric Office (III): Tampa, Florida      Officer-in-Charge: Arthur L. Wardwell

Instructions dated (II) (III): Project 6159, 3 July 1956 - (Field)      Copy filed in Division of  
Compilation - Project 25160, 13 August 1956      Photogrammetry (IV)  
Project 25160 - 22 Oct. 1956, Supplement I (Field)  
Office - Supplement I - Project Ph-159, 4 Oct. 1957

Method of Compilation (III): Kelsh Plotter

Manuscript Scale (III): 1:10,000      Stereoscopic Plotting Instrument Scale (III): 1:5,000

Scale Factor (III): Pantographed to 1:10,000

Date received in Washington Office (IV):      Date reported to Nautical Chart Branch (IV):

Applied to Chart No.      Date:      Date registered (IV): 2/17/59

Publication Scale (IV):      Publication date (IV):

Geographic Datum (III): N. A. 1927      Vertical Datum (III): MHW

~~Mean sea level~~ except as follows:  
Elevations shown as (25) refer to mean high water  
Elevations shown as (5) refer to sounding datum  
i.e., ~~mean low water~~ or mean lower low water

Reference Station (III): BODEGA HEAD 2, 1906

Lat.:      Long.:      Adjusted  
Unadjusted

Plane Coordinates (IV):      State: CALIF      Zone: 3

Y= 668,322.98 FT.      X= 1,264,830.87 FT.

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office,  
or (IV) Washington Office.

When entering names of personnel on this record give the surname and initials, not initials only.

FORM 181a  
(4-23-54)

# DESCRIPTIVE REPORT - DATA RECORD

U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY


PLANIMETRIC

Areas contoured by various personnel  
(Show name within area)  
(II) (III)

DESCRIPTIVE REPORT - DATA RECORD

Field Inspection by (II): C. H. Bishop  
J. S. Chamberlin  
C. D. Upham  
C.H. Bishop - V. J. Franz

Date: January  
thru  
April 1957 ✓  
July - Aug. 1956

Planetable contouring by (II): Inapplicable

Date:

Completion Surveys by (II): Inapplicable

Date:

Mean High Water Location (III) (State date and method of location): Jan. - Feb. 1957

Date of photography - Oct. 1955

Air Photo Compilation

Reference distances recorded on the photographs (Doran Beach to Pinnacle Rk.)  
1957

Projection and Grids ruled by (IV): A. R.

Date: 17 Aug. 1956 ✓

Projection and Grids checked by (IV): A. R.

Date: 17 Aug. 1956 ✓

Control plotted by (III): Washington Office and I. I. Saperstein

Date: Feb. 1958 ✓

Control checked by (III): I. I. Saperstein

Date: Feb. 1958 ✓

~~Radial Plot or~~ Stereoscopic Washington Office  
Control extension by (III):

Date:

Planimetry  
Stereoscopic Instrument compilation (III): I. I. Saperstein  
~~Contours~~

Date: Feb. 1958 ✓

Date:

Manuscript delineated by (III): I. I. Saperstein

Date: Feb. 1958 ✓

Photogrammetric Office Review by (III): M. M. Slavney

Date: Apr. 1958 ✓

Elevations on Manuscript Inapplicable  
checked by (II) (III):

Date:



## DESCRIPTIVE REPORT - DATA RECORD

Camera (kind or source) (III): C &amp; G S WILD

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## PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
55W 629	10 Oct. 1955	1027	1:25,000	+ 3.3
55W 630	"	1028	"	+ 3.3
55W 639	"	1038	"	+ 3.2
55W 640	"	1038	"	+ 3.2

## PREDICTED

Tide (III)

Diurnal

Reference Station: SAN FRANCISCO

Subordinate Station: BODEGA HARBOR ENTRANCE

Subordinate Station:

DIFFERENCES  
(TIDES & CURRENTS)  
TIMEHW -0h33m LW  
HEIGHT -0h09m  
HW -0.2 LW +0.1

Ratio of Ranges	Mean Range	Spring Range
-	3.9	5.7
H.W. -8.6	3.7	5.6
L.W.		

Washington Office Review by (IV): S.G. Blankenbaker

Date: Jan. 1959

Final Drafting by (IV): Field Office

Date:

Drafting verified for reproduction by (IV):

Date:

Proof Edit by (IV):

Date:

Land Area (Sq. Statute Miles) (III): 2

Shoreline (More than 200 meters to opposite shore) (III): 5

~~Shoreline (Less than 200 meters to opposite shore) (III):~~

Control Leveling - Miles (II): Inapplicable

Number of Triangulation Stations searched for (II): 4

Recovered: 4

Identified: 3

Number of BMs searched for (II): 3

Recovered: 3

Identified: 3

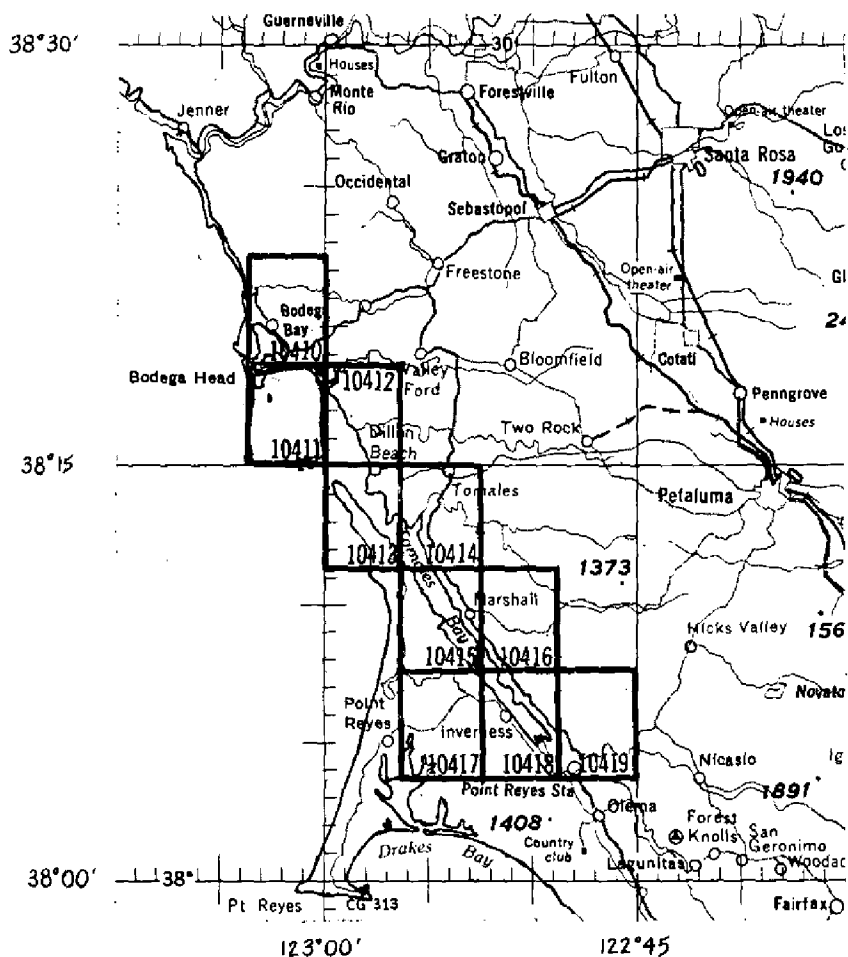
Number of Recoverable Photo Stations established (III): 0

Number of Temporary Photo Hydro Stations established (III): 0

Remarks: In addition to those triangulation stations recovered, 6 intersection stations were established.

# PLANIMETRIC PROJECT 25160 TOMALES AND BODEGA BAYS, CAL.

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## OFFICIAL MILEAGE FOR COST ACCOUNTS

SHEET NO.	AREA SQ. MI.	LEN. MI. SHORELINE
10410	12	5
10411	1	2
10412	11	4
10413	6	13
10414	12	3
10415	9	9
10416	13	1
10417	13	1
10418	10	7
10419	14	0

TOTALS 101 45

### Summary to Accompany Descriptive Report T-10411

Planimetric map T-10411 is one of ten similar maps in project 159. The project covers the Bodega Bay - Tomales Bay area of the California coast. T-10411 is in the north half of the project covering the Bodega Harbor entrance and the north end of Bodega Bay.

PH-159 is an instrument compilation project. Field work in advance of compilation was accomplished in 1956 and 1957. The 1956 field party recovered and identified horizontal control for use in stereoplanigraph bridging and compilation of the "Incomplete Manuscripts" used to provide shoreline for the contemporary hydrographic surveys. The 1957 field party completed the field inspection for use in compiling the complete planimetric manuscripts.

The bridging and compilation of the "Incomplete Manuscripts" was accomplished in the Washington Office. The compilations were completed with the Kelsh Plotter in the Tampa Office.

Items registered under T-10411 will include a Descriptive Report and a positive impression on "Cronar" of the scribed copy of the manuscript.



Included in the Project Completion Report :  
(1) Two (2) Field Inspection Reports 1956-1957  
(2) Three (3) Combined Bridging & Compilation Reports  
(3) Bridging Sketch

THE 1956 AND 1957 FIELD INSPECTION

REPORTS WERE SUBMITTED AS SEPARATE

REPORTS

Included in the Descriptive Report for T-10412  
(1) Copies of field inspection reports (1956-1957)  
(2) Bridging sketch  
(3) Two (2) Combined bridging & compilation reports

The combined bridging & compilation report for  
T-10415 ; T-10417 ; T-10418 is included in the  
Descriptive Report for T-10418 .



U.S. DEPARTMENT OF COMMERCE  
NATIONAL GEODETIC SURVEY  
DESCRIPTIVE REPORT  
TIDE RECORD

MAP T-104.11

PROJECT NO. 6159

SCALE OF MAP 1:10,000

SCALE FACTOR

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR $\psi$ -COORDINATE LONGITUDE OR $\chi$ -COORDINATE		DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS		DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS		FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS	
					FORWARD	(BACK)		FORWARD	(BACK)	FORWARD	(BACK)
Bodega Head 2 1906	446 136 19	NA 1927	668 1264	322.98 830.87							
SS Bodega Head 2		"	668 1264	412.01 873.72							
Bodega 1855	446 pg 6 19	"	667 1282	270.61 486.45							
S S Bodega		"	667 1282	076.45 639.13							
Pinnacle Rock 1930		"	667 1277	665.33 138.93							
Bodega Head 1955			No position available				Description lists station as 1.6495 meters from Bodega Head 2, 1906				
Bodega Harbor Channel Daybn 2 Comp.	Field NA 1927		38 123	18 03	22.429 16.614						
Bodega Harbor Entrance Range Front Lt. 3, 1957	"	"	38 123	18 03	19.437 20.535						
Bodega Harbor Entrance Range Rear Lt. 1957	"	"	38 123	18 03	19.367 26.147						
Bodega Harbor Lower Range Rear Lt. 1957	"	"	38 123	18 03	19.523 26.138						
Bodega Harbor Lower Range Front Lt. 5, 1957	"	"	38 123	18 03	24.329 22.680						
Bodega Harbor Upper Range Rear Lt. 1957	"	"	38 123	18 03	41.030 03.784						10

1 FT. = 3048005 METER

COMPUTED BY:

DATE

CHECKED BY:

DATE

CONW-DC-5784

COMPILATION REPORT T-10411

PHOTOGRAMMETRIC PLOT REPORT.

The stereoplanigraph bridge was run in the Washington Office.✓

31. DELINEATION.✓

The "INCOMPLETE MANUSCRIPT" was delineated by the instrument method in the Washington Office. However, certain shoreline changes were made by the graphic method after field inspection for use on the smooth boat sheets. A few roads and streams were added by this office using the Kelsh Plotter.✓

The field inspection was satisfactory. Areas shown as S (scrub) on the field prints were shown as open on the compilation.✓

32. CONTROL.✓

The density of primary and secondary control was adequate.✓

33. SUPPLEMENTAL DATA.✓

Plot showing "Lands to be Acquired for Park and Road Purposes in Bodega Rancho". This plot was used to show limits of Doran Park. (Also see T-10410).✓

34. CONTOURS AND DRAINAGE.✓

Contouring not applicable. Drainage was delineated from field inspection and office interpretation.✓

35. SHORELINE AND ALONGSHORE DETAILS.✓

The high-water line and rocks were delineated according to the field inspection notes.✓

The shoreline inspection was adequate.✓

The shallow areas ~~and areas enclosed by breakers~~ were delineated by office interpretation of the photographs. The low-water line could not be discerned.✓

36. OFFSHORE DETAILS.✓

Offshore details were delineated from office interpretation and field inspection notes.✓



### 37. LANDMARKS AND AIDS.

A total of eight (8) fixed aids to navigation are shown - six (6) located by triangulation and two (2) by the stereocompilation instrument.

### 38. CONTROL FOR FUTURE SURVEYS.

No recoverable topographic stations nor hydrographic stations were established. Points along the shoreline were dropped by the Washington Office to enable the hydrographer to locate photo-hydro stations.

### 39. JUNCTIONS.

Junctions have been made with the following:

T-10410 - to the north  
 T-10412 - to the east  
 BODEGA HEAD U.S.G.S. 1:25,000 - to the west  
 No contemporary survey to the south

### 40. HORIZONTAL AND VERTICAL ACCURACY.

No statement.

### 41. BOUNDARIES.

County line between Sonoma and Marina Counties has been shown according to the field inspection notes. Also see Item 33 for Doran Park boundary.

### 46. COMPARISON WITH EXISTING MAPS.

Comparison has been made with U.S.G.S. quadrangle BODEGA HEAD, CALIFORNIA, scale 1:25,000, 1944, reprinted by A.M.S. 1947. There are no substantial differences.

47. COMPARISON WITH NAUTICAL CHARTS.

Comparison has been made with Nautical Chart 5603, scale 1:30,000, edition of 1934, corrected 4 Feb. 1952. No appreciable differences were noted.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY.

None.

ITEMS TO BE CARRIED FORWARD.

None.

*Irving I. Saperstein*  
I. I. Saperstein  
Cartographer (Photo)

APPROVED AND FORWARDED

*Arthur L. Wardwell*  
Arthur L. Wardwell  
Chief of Party



50.

PHOTOGRAMMETRIC OFFICE REVIEW

T. 10411

1. Projection and grids MMS 2. Title MMS 3. Manuscript numbers MMS 4. Manuscript size MMS

1a. Classification label Unclassified

CONTROL STATIONS

5. Horizontal control stations of third-order or higher accuracy MMS 6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) XX 7. Photo hydro stations XX 8. Bench marks MMS 9. Plotting of sextant fixes XX 10. Photogrammetric plot report XX 11. Detail points MMS

ALONGSHORE AREAS

(Nautical Chart Data)

12. Shoreline MMS 13. Low-water line XX 14. Rocks, shoals, etc. MMS 15. Bridges MMS 16. Aids to navigation MMS 17. Landmarks MMS 18. Other alongshore physical features MMS 19. Other along-shore cultural features MMS

PHYSICAL FEATURES

20. Water features MMS 21. Natural ground cover MMS 22. Planetable contours XX 23. Stereoscopic Instrument contours XX 24. Contours in general XX 25. Spot elevations XX 26. Other physical features MMS

CULTURAL FEATURES

27. Roads MMS 28. Buildings MMS 29. Railroads MMS 30. Other cultural features MMS

BOUNDARIES

31. Boundary lines MMS 32. Public land lines XX

MISCELLANEOUS

33. Geographic names MMS 34. Junctions MMS 35. Legibility of the manuscript MMS 36. Discrepancy overlay MMS 37. Descriptive Report MMS 38. Field inspection photographs MMS 39. Forms MMS

40. M. M. Slavney Reviewer William A. Rasure Supervisor, Review Section or Unit  
William A. Rasure

41. Remarks (see attached sheet)

FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT

42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.

Compiler

Supervisor

43. Remarks:

- 13 -

Review Report  
Planimetric Survey T-10411  
Jan. 1959

62. Comparison with Registered Topographic Surveys

883	1:10,000	1862
4596	1:10,000	1930 * (See page 14)
4597	1:10,000	1930

This coastline is foul with rocks and as to be expected there are many differences in details of inshore rocks (inside the foul line) between this photogrammetric survey and prior planimetric surveys. The combined details of the new photogrammetric survey and the contemporary hydrographic survey provide adequate information for charting and supersede the prior topographic surveys for charting purposes.

63. Comparison with Maps of Other Agencies

Bodega Head, Calif. 1:24,000 1942 (USGS)

Extensive shoreline changes have occurred on the Doran Beach sand spit since the time of publication of the USGS quadrangle. Changes have been made in the jetties at the entrance to Bodega Harbor. Other differences exist in the interpretation of shoreline and rocks.

64. Comparison with Contemporary Hydrographic Surveys

H-8353	1:10,000	1957
H-8354	1:10,000	1957

The alongshore and offshore details were transferred from the "Incomplete" manuscript (compiled without field inspection) to the boat sheet prior to sounding. The photogrammetric work was subject to field edit by the hydrographic survey and to changes, additions and deletions by the 1957 photogrammetric field inspection party.

The hydrographic survey reported a few differences with photogrammetric work involving positions of rocks and these were disposed of (in conference with the Hydrographic Section) during the final photogrammetric review. The hydrographic party did not make a detailed edit of rocks and accepted the photogrammetric (office inspected) rocks in the congested <sup>foul</sup> field areas. There is no conflict with soundings.

The photogrammetric field party (1957) field edited the "Incomplete" manuscript and field inspected the entire area. There were differences between the photogrammetric field work and the hydrographic survey in the locations and elevations of some rocks. These differences were disposed of during the final review. Photogrammetric field edit was not complete for all the rocks in the inshore foul areas.



Positions of offshore rocks and rocks defining the outside limits of foul areas were located or verified by photogrammetric field inspection and/or the hydrographic survey. Final review changes in the MHW line and elevations of rocks, were brought to the attention of the Hydrographic Section and by agreement the corrections will be applied to the smooth sheet.

65. Comparison with Nautical Charts

5603 1:30,000 1934 revised 9/28/58

Differences exist in the interpretation of the foul area details and in the MHW line.

66. Adequacy of Results and Future Surveys

This map complies with the National Standards of Map Accuracy and Bureau requirements.

Reviewed by:

S. G. Blankenbaker  
S. G. Blankenbaker

Approved by:

L. C. Landy  
Chief, Review and Drafting Section  
Photogrammetry Division

J. E. Waught 11/8/60  
Chief, Nautical Charts Branch  
Charts Division

L. W. Swanson  
Chief, Photogrammetry Division

J. Bowie  
Chief, Coastal Surveys Div.

30 Sept 59

\* There are differences in elevation of pinnacle rocks between this photogrammetric survey and prior survey T-4596 (1930). The Kelsh plotter was used in determining pinnacle rock elevations on the photogrammetric survey.

*This area should be photographed with Kelsh hydrographic*

T-10411.

Geographic Names.

Bodega Bay  
Bodega Head  
Bodega Rock

California  
Campbell Cove

Doran Beach  
Doran Park

(presumably a ~~local~~ park, not a state park)  
 COUNTY PARK

Estero Americano  
Estero Lane

Marin County

Pacific Ocean  
Pinnacle Rock

Shorttail Gulch  
Sonoma County

Names approved 9-17-58.  
 L. Heck.  
 L.H.

TO BE CHARTED  
~~TO BE DELETED~~

STRIKE OUT ONE

## NONFLOATING AIDS OFF SHORE MARKERS FOR CHARTS

Tampa Florida

7 August 1951

I recommend that the following objects which have ~~(been charted)~~ been inspected from seaward to determine their value as landmarks be charted on ~~(charts)~~ the charts indicated.

The positions given have been checked after listing by I. I. Saperstein

Arthur L. Wardwell

Chief of Port

STATE		CALIFORNIA		POSITION										METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHART AFFECT
CHARTING NAME	DESCRIPTION	SIGNAL NAME	LATITUDE *		LONGITUDE *				DATUM										
			°	'	°	'	D.P. METERS	"											
BODIEA BAY																			
	Bodega Harbor																		
LIGHT 3	ENTRANCE RANGE FRONT (Triangular day-mark, vertex up, on pile structure)		38 18	19.437	123 03	20.535	N.A. 1927	Triang. T-10411	1957	X								5603	
LIGHT	ENTRANCE RANGE REAR (Triangular day-mark, vertex down, on timber structure)		38 18	599.3	123 03	26.147	"	"	"	X								"	
				19.367	123 03	635.3	"	"	"	X								"	
				597.2	123 03	16.614	"	"	"	X								"	
DAY 2	CHANNEL (Red square on pile)		38 18	22.429	123 03	403.7	"	"	"	X								"	
				691.5	123 03	18.56	"	"	"	X								"	
				28.21	123 03	45	"	"	"	X								"	
DAY 4	CHANNEL (Red square on pile)		38 18	873	123 03	22.680	"	"	"	X								"	
LIGHT 5	LOWER RANGE FRONT (Triangular day-mark, vertex up, on pile structure)		38 18	24.379	123 03	531.1	"	"	"	X								"	
				750.1	123 03	26.138	"	"	"	X								"	
LIGHT	LOWER RANGE REAR (Triangular day-mark, vertex down, on pile structure)		38 18	19.523	123 03	635.1	"	"	"	X								"	
				602.0	123 03	11.65	"	"	"	X								"	
				37.01	123 03	283	"	"	"	X								"	
DAY 6	CHANNEL (Red square on pile)		38 18	1141	123 03	03.784	"	"	"	X								"	
LIGHT	UPPER RANGE REAR (Triangular day-mark, vertex down, on pile structure)		38 18	41.030	123 03	91.9	"	"	"	X								"	
				1265.1	123 03		"	"	"	X								"	
																		16	
																		17	

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating aids* to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not b

## NAUTICAL CHARTS BRANCH

SURVEY NO. T-10411

### Record of Application to Charts

[illegible]

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.