

5406

Form 504  
Ed. June, 1923

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
R. S. Patton, Director



State: California

DESCRIPTIVE REPORT

~~Topographic~~  
Hydrographic

Sheet No. 5406

LOCALITY

Monterey Bay

Elkhorn Slough to Salinas River

1933  
Add'l Wk 1934

CHIEF OF PARTY

G. C. Jones

5406

DESCRIPTIVE REPORT  
to accompany  
HYDROGRAPHIC SHEET FIELD NO. 2  
Project No. HT 150

INSTRUCTIONS: To Commanding Officer, Ship GUIDE, April 4, 1932. ✓  
Director's letter to G. C. Jones, February 24, 1933,  
22-RS 1990.

SURVEY METHODS: All surveying was done in accordance with standard ✓  
practice as described in the Hydrographic Manual.

The power sounding machine used was very quiet and efficient and is recommended for similar installations on chartered launches or elsewhere. It consisted of a Coast Survey sounding machine mounted on a 3 inch by 12 inch plank with a 1 1/2 h.p. Fairbanks Morse engine. The quietness was secured by using a triple V-belt drive. It was found that the makers will furnish to order special V-drives in any ratio required and at nominal cost. The entire assembly including plank, sounding machine and engine was not too heavy for handling by two men. The total cost, including mounting, but excluding the sounding machine furnished by the office, was \$96.00. If depths over 150 fathoms are anticipated and sounding lead of 30 pounds or heavier is used, 1 1/2 h.p. will be found inadequate, unless care is taken to use as direct lead as possible and a large diameter sheave on the fairlead.

✓  
Jan  
June 1936  
F.E.B.  
H.L.

A small area with a least depth of 9 3/4 fathoms 350 ✓  
meters north northwest (true) from the end of Moss Landing dock is considered not sufficiently developed. When the development was done the unwieldiness of the large launch and the time required for getting handlead soundings on the spot and in surrounding greater depths made the placing of development lines very difficult. After a great deal of time had been used in attempting development, including unsuccessful attempts to drag over the spot, it was concluded that sufficient had been done. When the work was plotted it was found inadequate but further work was postponed in the hope of having a motorsailer for that and other close work later. The motorsailer was not secured. A tracing from the smooth sheet has been retained with the purpose of recommending further development during the season of 1934 together with some other details in the same locality.

DANGERS: No important dangers were found on the sheet. At the extreme south end of the sheet are two spots where slightly more

water (1 to 3 feet) was on the beach line than on the next line off. This is merely a slight bar caused by surf and would not merit mention, were it not thought probable that this is the danger referred to in a letter from the Monterey Chamber of Commerce, referred to this party by the Inspector, San Francisco Field Station. It is some 8 miles north of the location described in the letter and does not answer the description in the letter, but the launch coxswain (a Monterey resident) stated that a fishing vessel had been caught in the surf in that locality and the crew drowned. The small bar might make a surprise breaker possible and accomplish such a result.

**CHANNELS:** The deep which extends into Moss Landing, becoming a trench near the shore, is the only feature remarkable as such. Its sides are as precipitate as possible for hard mud and sand, in fact may be sandstone. No amount of arming would bring up a sample from the sides but the bottom did not have the feel of rock except in a few doubtful cases.

**ANCHORAGES:** There are no anchorages on this or adjoining sheets, although the beach is gently sloping and vessels can anchor in fair weather anywhere along the beach and in any desired depth except in the Moss Landing deep.

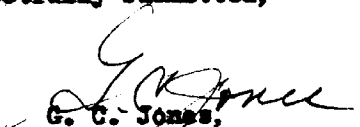
At Moss Landing vessels are moored off the landing and loaded by loading boom.

**COMPARISON WITH PREVIOUS SURVEYS:** No changes worthy of note were found by comparison with old sheets. In general the soundings on the old sheets were so widely spaced that no close comparison could be made.

**STATISTICS FOR HYDROGRAPHIC SHEET FIELD NO. 2:**

Statute Miles sounding lines.	Number of soundings	Number of positions
218.9	3988	1555

Respectfully submitted,

  
G. C. Jones,  
H & G Engineer,  
Chief of Party, C. & G.S.

Sept. 15, 1909

Az = 107°00'  
Running in to [8]

			23 1/2	35	31.0			
9-24 1/2	60	55.5	Rky	36	30.0			
S	55	51.5		32 1/2	28.5			
	55	51.5	S	30	26.0			
	55	51.5		30	26.0			
	51	47.5	9 36 1/2	31	27.0			
27 1/2	50	46.5		29	25.0			
	48	44.5		27	23.0			
	47	43.5	S	25 1/2	21.5			
	45	41.5		24 1/2	20.5			
	45	41.5	S	13	9.0			
30 1/2	43	39.0	39 1/2	22 1/2	18.5			
S	42	38.0		20 1/2	16.5			
	40	36.0		18 1/2	14.5			
	39	34.0	S	18	14			
	38	34.0		15	11.0			
S	36	32.0		13 1/2	9.5			
			41 1/2	12	8			

Sept. 15, 1909

Az = 107°00'  
Running in to [10]

							20	25.0
25 1/2	50	45.0					18	18.0
S	50	45.0				13 3/4	S 17	12.0
	47 1/2	42.5						
	45 1/2	40.5						
	45	40.0					14 1/2	9.5
	44	39.0					12	7.0
	43	38.0					10	5.0
	40	35.0				16	10	5.0
	40	35.0					S 10	5.0
	37 1/2	32.5					10	5.0
	37 1/2	32.5					12	7.0
	35	31.5						
1-11	35	30.5						
	32 1/2	27.5				11 17 3/4	12 1/2	7.5
S	30 1/2	25.5						
S	21	16.0						

LIST OF SIGNALS  
to accompany  
HYDROGRAPHIC SHEET FIELD NO. 2

TRIANGULATION

Hydrographic Name	Location
Tank	Tank, 1932
Elk	Elkhorn, 1932
Barn	Barn, green roof, 1932
Salt	Monterey Salt Works, N. Gable, 1932
Black	Moss Beach Black Stack, 1932
Oil	Tank, Moss Beach Standard (1932) Oil Co.
Moss	Moss, 1932
Cast	Castroville, 1932
Mulligan	Mulligan, 1932
Lapis	Lapis, 1932

TOPOGRAPHIC

Name	Topographic Sheet B
Vat	"
Able	"
Wind	"
Mill	"
Boy	"
Cat	"
Dog	"
Bunk	"
Dak	"
Easy	"
Fox	"
Gag	"
Hop	"
Jan	"
Ko	"
Lee	"
Man	"
Nor	"
Pol	"
Rip	"
Sal	"
Tub	"
Hex	"

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 2

REGISTER NO.

State California

General locality California Coast

Locality Pointers Rough in Salinas River

Scale 1:10,000 Date of survey June to August 19 33

Vessel Chartered Launches ROMA and PT. REYES

Chief of Party G. C. Jones

Surveyed by G. C. Jones, W. J. Choyse and I. E. Eubottom

Protracted by T. A. Renton

Soundings penciled by G. C. Jones

Soundings in fathoms feet

Plane of reference M L L W

Subdivision of wire dragged areas by

Inked by W. H. Bamford and J. Levine

Verified by W. H. Bamford and J. Levine

Instructions dated April 4, 1932 and February 24, 19 33

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

*Appendix to Chart 5202 - Nov. 1935 - J. J. Bamford*

Lac

March 23, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in  
5 volumes of sounding records for

HYDROGRAPHIC SHEET 5406

Locality Elkhorn Slough to Salinas River, Monterey Bay, California Coast

Chief of Party: G. C. Jones in 1933  
Plane of reference is mean lower low water, reading  
2.7 ft. on tide staff at Monterey  
12.6 ft. below B. M. 3

Height of mean higher high water above plane of reference is 5.3 feet.

Condition of records satisfactory except as noted below:

*H. Hammer*  
Chief, Division of Tides and Currents

PARTIAL REPORT ON H. 5406

MARCH. 29-1934

1./ The protracting was found to have been well done - only three positions were found to have been erroneously plotted - these were changed.

The position numbers were very poorly and irregularly shaped - a number of them were considerably too large. ✓

2./ The note regarding the datum to which the projection is referred - was omitted from the sheet by the field party.

3./ Attention is called to the 53 fathom sounding - pg. 65 - Vol II. This sounding was rejected on the strength of the development on "U" day - pg. 17-20 - Vol I. The shallowest depth found on "U" day ✓ was 60 fathoms.

4./ No mention of the mooring buoys located by Topographic Survey T-4788 - near Moss Landing - was made in ✓ the sounding volumes.

Respectfully Submitted  
Walter H. Bawford



## SECTION OF FIELD RECORDS

Report on: H-5406.....  
 Chief of Party: G.C. Jones.....  
 Protracted by: T.A. Renton.....  
 Verified & Inked by: J. Levine.....  
W.H. Bamford

Surveyed in: June to Aug. 1933.....  
 Surveyed by: G.C. Jones, W.J. Chovan, J.R. Rubottom.....  
 Soundings plotted by: G.C. Jones.....  
 Topography inked by: T.A. Renton, J. Levine.....

1. The records conform to the requirements of the General Instructions. ✓

2. Information is sufficient to completely draw the usual depth curves with the exception of the 1-fathom curve. ✓

3. The field plotting was completed to the extent prescribed in the General Instructions. ✓

4. No revision to the drafting done by the field party had to be made in the office with the exception of a few positions which were erroneously protracted - the error being slight and unimportant in each case. ✓

5. Junctions with sheets H-5405\*, 5247, 5278 and 5412\* are satisfactory. However, the junction with sheet H-5279 is unsatisfactory because of the great difference in the scales of the two sheets: - H-5406 being 1:19,000 and H-5279 is 1:80,000. Also, on sheet H-5406 soundings are by vertical cast while soundings on sheet H-5279 are by fathometer. <sup>overlapping</sup> The soundings <sup>do not</sup> agree very <sup>well</sup> ~~poorly~~ as <sup>to be out of position</sup> ~~to~~ <sup>since</sup> ~~to~~ <sup>They appear</sup> ~~to~~ compare favorably with depths in immediate and adjacent areas. In view of the above disagreement it was recommended by Mr. A.L. Shalowitz to omit such soundings of sheet H-5279 which overlap on sheet H-5406. (See note on sheet H-5279 by A.L.S. - dated 5-16-34)

(\* - Overlaps made on these sheets from H-5406)

6. The field drafting in general is good. ✓

Respectfully submitted,

*Julius Levine*  
Jr. Carto. Engr.

May 16, 1934.

ADDRESS REPLY TO  
THE DISTRICT ENGINEER

WAR DEPARTMENT  
UNITED STATES ENGINEER OFFICE  
401 CUSTOMHOUSE  
SAN FRANCISCO, CALIFORNIA

80  
KTA

*24pp*  
REFER TO FILE  
No.  
1934 JUN 7 - AM 11:47

July 3, 1934.

The Director,  
U. S. Coast and Geodetic Survey,  
Washington, D. C.

Dear Sir:

With reference to your letter of June 26 on the subject: Engineer Survey of Moss Landing, California, there is inclosed a copy of the field notes of the soundings taken on the three lines which you consider questionable. It will be noted that on the most northerly and southerly of these lines the intermediate shoal sounding seems to be confirmed by other soundings shown in the notes, but not plotted on the map. In the middle line the sounding marked "13" was originally written "23" in the notes and then erased and corrected rather heavily to "13".

Other notes indicated that sounding lines were run on ranges and that soundings were located by transit angles taken wherever time is shown in the sounding notes.

Very truly yours,

*A. H. Finch*  
A. H. Finch,  
Lt. Col., C. E.,  
District Engineer.

2 Inclosures:

Field notes.  
Photostat.

KTA  
R

80-1E

June 26, 1934.

To: U. S. Engineer Office,  
War Department,  
401 Customhouse,  
San Francisco, California.

From: The Director,  
U. S. Coast and Geodetic Survey.

Subject: Engineer Survey of Moss Landing, California.

There is enclosed a photostat reduction of an Engineers' survey of Moss Landing, California, made in 1909.

Recent hydrographic surveys in this vicinity failed to confirm the soundings indicated on the photostat. These surveys have not been in sufficient detail to disprove the existence of any of these soundings which are now being carried on our charts. However, our recent surveys in this immediate vicinity show no evidence of anything except a gradual slope. \*

You are requested to investigate the soundings encircled on the photostat by comparison with the original record, in order to determine if by any possible chance these soundings have been shown on the map 10 feet less than the actual depth. This office will appreciate a report on the result of your investigation. \*

(Signed) R. J. BARNUM.

Director.

Enclosure.

\* See Review of additional work in 1934  
attached herewith.  
A. L. S. -

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5406

Salinas River to Elkhorn Slough, Monterey Bay, California.

Surveyed June - August 1933

Instructions dated Apr. 4, 1932 (GUIDE)

Feb. 24, 1933 (G.C.Jones)

Visual fixes with hand lead and Machine Soundings

Chief of Party - G. C. Jones.

Surveyed by - G. C. Jones, W. J. Chovan, I. R. Rubottom.

Protracted and soundings plotted by - T. A. Renton and G. C. Jones.

Verified and inked by - W. H. Bamford and J. Levine.

1. Condition of Records.

The records conform to the requirements of the Hydrographic Manual.

2. Compliance with Instructions for the Project.

The plan and extent of development conform to the regulations and satisfy the instructions for the project except that additional lines should have been run between the 3 and 5 fathom curves about 1/2 mile northward of Moss Landing. The Descriptive Report notes that additional development of the small 9 3/4 fathom spot 1/4 mile northwest of Moss Landing was planned.

3. Sounding Line Crossings.

Soundings are consistent and depths at crossings of lines are in good agreement.

4. Depth Curves.

Depth curves can be drawn satisfactorily. Breaking seas prevented closer inshore development.

5. Junction with Contemporary Surveys.

Junctions with H. 5405, H. 5412, H. 5278, and H. 5247 are adequate and in good depth agreement. A fathometer reading of 53 in lat.  $36^{\circ}47'.8$ , long.  $121^{\circ}49'.6$  may be too deep or may indicate a break in the north rim of the submarine valley. A line of fathometer soundings in this valley from H. 5279, scale 1-80,000, is not shown on H. 5406. There is a disagreement in depth, but due to the great difference in scale between the two sheets, H. 5406 should be used for charting the area. An appropriate note to that effect has been added to H. 5279. When the compiler applies this sheet (H. 5406) to the charts, he should expunge those soundings included in the note on H. 5279 which may have been placed on the chart.

6. Comparison with Prior Surveys.

a. Hydrographic sheets H. 558, H. 559, and H. 560 (1856).

The sounding lines on these sheets are widely spaced and the depths in this area appear to be 1 to 2 fathoms deeper but the general details remain the same. The older surveys do not show a sufficient number of soundings in the submarine valley to determine any possible changes in that area. The 1933 survey (H. 5406) should supersede the above sheets for charting the areas represented by it.

b. B P 13144 (Army Eng. Survey of 1909) is a large scale inshore development on which the soundings generally are in good agreement with the present survey, except

1. A 16.3 foot sounding in lat. 36°47'.65, long. 121°47'85 falls near a 5 1/6 fathom on the new survey.

2. A 9 foot sounding in lat. 36°47'.3, long. 121°47'.85 falls near a 3 1/2 fathom on the new survey.

3. Two five foot soundings in lat. 36°46'.9, long. 121°47'.9 fall in depths of between 2 and 3 fathoms.

Item 1 ( 2 4/6 fath.) and item 3 (5/6 fath.) have been placed on the sheet in red as these depths are supported by the original field records, there being some doubt regarding item 2 (see letter from U. S. Eng. Office, San Francisco, attached to the Descriptive Report)

The entrance to Elkhorn Slough has moved southward about 400 meters. It is not advisable to use soundings shown on the B P in this vicinity when the present chart is corrected.

7. Comparison with Chart No. 5403.

The chart shows a detached 1 fathom shoal about 1/2 mile southwest of Moss Landing. B P 13144 shows a depth of 16.3 feet on this shoal. On account of the way the 18 foot curve was drawn it may have been mistaken for a depth of 6 feet and so charted. An 8.3 foot depth about 300 meters inshore from the detached shoal was charted as 1/2 fathom. Both these soundings should be corrected on the chart. (See par. 6 b).

8. Field Plotting.

Field protracting and penciling of soundings were good. Some of the position numbers and day letters were too large and were carelessly drawn.

The Datum Note was added to the sheet in the office.

*The existence of these three shoals has been disproved. See Review H-5406 (1934 Add.) par. 3. R.S.L.*

*See Review H-5406 (1934 Add.)*

9. Additional Field Work Recommended.

a. Immediately necessary.

None.

b. For future consideration.

1. The Descriptive Report notes that additional development was planned for the  $9\frac{3}{4}$  fathom spot northwest of Moss Landing.

2. Additional work along the  $8\frac{1}{2}$  -  $9\frac{3}{4}$  fathom ridge immediately northward of Moss Landing Wharf is desirable.

3. Additional lines to be run in the area between the 3 and 5 fathom curves northward of the  $9\frac{3}{4}$  fathom spot listed under item 1 above.

4. Split lines to be run between the 2 and 3 fathom curves southward of Moss Landing where necessary.

5. An examination should be made of the shoals listed under par. 6b above.

6. If Elkhorn Slough is of sufficient importance the survey should be carried into the entrance to a satisfactory junction with U. S. Engineers survey of 1909 (BP 13144).

7. On account of the geological interest in Monterey Bay and especially in the Submarine Valley, additional soundings would be desirable in the vicinity of the 41 in lat.  $36^{\circ}48'.2$ , long.  $121^{\circ}48'$  and the 20 fathom indentation (24 - 28 fathom soundings) in approximate lat.  $36^{\circ}46'.6$ , long.  $121^{\circ}49'.5$ .

Accomplished during  
June, 1934. R.T.C.

Accomplished during Aug. 1934  
R.C.

10. Note to Compiler.

a. Soundings covered by note on H. 5279 should not appear on future editions of the charts. (See par. 5).

b. Detached shoal of 1 fathom and  $\frac{1}{2}$  fathom sounding on Chart 5403 (par. 7) should be corrected to  $2\frac{3}{4}$  and  $1\frac{1}{4}$ , respectively. All soundings from B P 13144 now charted should be retained on the chart until definitely discredited.

Existence of these  
shoals disproved  
See Review H.5406 (1934A de)

11. Superseding Old Surveys.

Within the area covered the present survey supersedes the following surveys for charting purposes:

H. 558 ( in part )  
H. 559 ( in part )  
H. 560 ( in part )

12. Reviewed by - R. J. Christman - June 1934.

Inspected by A. L. Shalowitz.

Examined and approved:

*K.T. Adams*  
K. T. Adams,  
Chief, Section of Field Records.

*J.S. Bowen*  
Chief, Section of Field Work.

*L.O. Polburt*  
Chief, Division of Charts.

*G. H. ...*  
Chief, Division of H. & T.



5406

Additional work

5406

Form 504  
Rev. Dec. 1933  
DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Hydrographic~~ } Sheet No. 5406  
Hydrographic }

Additional work

State California

LOCALITY

Elkhorn Slough to Salinas River  
( Moss Landing )  
Monterey Bay

1934

CHIEF OF PARTY

F.H. Hardy

U. S. GOVERNMENT PRINTING OFFICE: 1934

Additional work

U. S. COAST & GEODETIC SURVEY  
LIBRARY AND ARCHIVES

OCT 8 1934

Acc. No. \_\_\_\_\_

DESCRIPTIVE REPORT  
to accompany  
ADDITIONAL WORK ON  
HYDROGRAPHIC SHEET FIELD NO. 2  
Project No. HT 130

Register Sheet No. H-5406

REFERENCES: The Director's letter 22-MG-1995-GU-4, dated July 18, 1934.

Review of Hydrographic Survey No. 5406 Section of Field Records.

Blue Print No. 13144 of a survey of the U. S. Engineers in the vicinity of Moss Landing, California.

INSTRUCTIONS:

Original instructions for the work on this sheet were dated April 4, 1932, to the Ship GUIDE and February 24, 1933, to Lieutenant-Commander G. C. Jones. Instructions for the additional work were contained in the above referred to letter from the Director, 22-MG-1995-GU-4, dated July 18, 1934.

METHOD OF SURVEY:

The survey was made by ordinary hand lead and machine soundings controlled by visual sextant fixes on objects previously located by triangulation or topography.

PURPOSE OF SURVEY:

The purpose of this survey was to accomplish additional work recommended in the review of hydrographic Sheet H-5406. This work is listed under paragraphs 9 (b) sub-paragraphs 4 to 7, inclusive, of the review.

DATE OF SURVEY:

The survey was made on August 25, 1934, when the weather was particularly suitable for this work and on a date when it did not seriously conflict with the present project of the Ship GUIDE.

CONTROL:

For economical reasons, no effort was made to rebuild and locate signals and accordingly, the hydrographic party used such control as existed. This resulted in some poor "fixes" on the sounding lines between Moss Landing and Elkhorn Slough.

RESULTS OF SURVEY:

Paragraph 9 (b) Sub-paragraph 4 of Review.

The split lines were run as indicated on the boat sheet and depths were obtained which were to be expected in an even sloped bottom.

Paragraph 9 (b) Sub-paragraph 5 of Review.

This paragraph referred to three shoals listed under paragraph 6 (b) Sub-paragraphs 1 to 3, of the review. These were three shoal spots shown on Blue Print 13144, Army Engineers' Survey of 1909, which disagreed with soundings on Hydrographic Sheet H-5406. All three areas were thoroughly developed and no indications were obtained of the Army Engineers' shoal soundings. It is deemed that the latter have been adequately disproved.

Paragraph 9 (b) Sub-paragraph 6 of Review.

The work requested in this paragraph was not thoroughly understood as the photostat of Blue Print 13144 did not extend to the encircled area on the boat sheet. A sand bar exists off the present entrance to Elkhorn Slough and in spite of exceptionally smooth weather, it was impossible to obtain soundings closer to the entrance than the line of soundings originally obtained on Sheet H-5406. The launch was anchored south east of the line of breakers and a position taken and out obtained to the outer line of breakers off the entrance to Elkhorn Slough. Additional soundings were taken to the innermost limit possible between Moss Landing and Elkhorn Slough under the assumption that this was the work desired.

Paragraph 9 (b) Sub-paragraph 7 of Review.

Additional soundings were obtained in the areas mentioned in this paragraph. An effort was made to obtain as many bottom characteristics as possible. It is believed, however, that a silt exists on the bottom in these areas and a true characteristic can not be obtained by simply arming the lead, which was the only feasible means of securing bottom characteristics when this work was done.

Attention is invited to the fact that some fathometer soundings were obtained in the area encircled on the boat sheet in approximate Latitude  $36^{\circ} 46'.6$ , Longitude  $121^{\circ} 49'.5$  in the overlap of the ship work on the launch work.

LAND MARKS FOR CHART:

The stack in the vicinity of Moss Landing, as charted on Chart 5402 is no longer existant, and accordingly Form 567 is submitted with this report in order that this land mark may be deleted from the chart.

It is noted that the oil tank charted in this vicinity is shown on Chart 5402 but not Chart 5403.

PLOTTING:

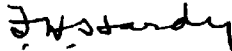
The smooth sheet was retained in the Washington Office and accordingly the hydrography was not smooth plotted by the field party. ✓

Respectfully submitted,



R. F. A. Studds,  
H & G Engineer,  
C. & G. Survey.

Respectfully forwarded:



F. H. Hardy,  
Chief of Party,  
Commanding Ship GUIDE.

Section of Field Records.

Report on H-5406 (Additional Work).  
Chief of Party - F. H. Hardy.  
Protracted by: - P. H. Scherr.  
Surveyed in - June-August, 1934.  
Surveyed by - W. J. Chovan, R. F. A. Studds.  
Soundings plotted and inked by - P. H. Scherr.

1. The records conform to the requirements of the General Instructions with the following exceptions: ✓
  - a. Bottom characteristics are not always noted at the top of each record page. ✓
  - b. Approximate positions were not noted at the beginning and end of each line. ✓
  - c. "B1" is used for a bottom characteristic which was taken to mean "black". ✓
2. The depth curves were not changed in all cases where the additional work changed them pending the review of the sheet. ✓

Remarks:

- a. The positions 164 and 165, Xaday Page 37, latitude  $36^{\circ}48'.3$ , longitude  $121^{\circ}48'.0$  were plotted according to the records - but disagree with those on the boat sheet. The soundings on these positions change the curve. *Pos. 164 plotted back on time, course and Le.* ✓
- b. The breaker symbol was inked where specified in the records. ✓

Respectfully submitted,

*Paul H. Scherr.*

Paul H. Scherr.  
November 10, 1934.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5406

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	.....
Number of positions checked	.....
Number of positions revised	.....
Number of soundings recorded	.....
Number of soundings revised	.....
Number of signals erroneously plotted or transferred	.....

Date:..... *November 10, 1934.*  
Cartographer:..... *Paul H. Scherr*

*Protracting, verification, and inking of additional work - 63<sup>2</sup> hrs*

<b>Verification of protracting</b>	<b>Time:</b>
<b>Verification &amp; inking of notes and signals</b>	<b>Time:</b>
<b>Verification of inking by</b>	<b>Time:</b>
<b>Review by</b> <i>R. J. Christman</i>	<b>Time:</b> <i>6 1/2 hrs</i>

October 26, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in  
2 volumes of sounding records for

HYDROGRAPHIC SHEET 5406 (Additional Work)

Locality Moss Landing and Elkhorn Slough to Salinas River,  
Monterey Bay, California Coast.

Chief of Party: F. H. Hardy in 1934  
Plane of reference is mean lower low water, reading  
2.5 ft. on tide staff at Monterey  
12.5 ft. below B.M. 3

Height of mean higher high water above plane of reference is 5.3 ft.

Condition of records satisfactory except as noted below:



Acting Chief, Division of Tides and Currents.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5406 (ADDITIONAL WORK, 1934).

Elkhorn Slough to Salinas River, Monterey Bay, California.  
Instructions - Letter dated July 18, 1934 (GUIDE).  
Surveyed June - August, 1934.

Hand Lead and Machine Soundings - 3-Point Fixes on Shore Objects.

Chief of Party: F. H. Hardy.

Surveyed by: W. J. Chovan; R. F. A. Studds.

Protracted and soundings penciled by: R. F. A. Studds.

Verified and inked by: ~~W. H. Sanford; J. Levine.~~ Paul Scherr.

1. Purpose of Survey.

The purpose of this additional work was to examine certain areas noted in paragraphs 6b and 9b of the review of the 1933 work (H-5406).

2. Results of Survey.

a. Paragraphs 6b and 9b, 5 of 1933 Review.

The areas in the vicinity of the three shoal spots shown on B.P. 13144, Army Engineers' Survey of 1909, have been sufficiently developed to disprove the existence of shoals in those places and the soundings have been expunged from H-5406 (1933). None of the soundings from B.P. 13144 should be retained on the charts.

b. Paragraphs 9b, 1, 2, 3, 4 and 6 of 1933 Review.

The additional developments made in accordance with the recommendations with these paragraphs are satisfactory. The existence of breakers in "exceptionally smooth weather" is sufficient evidence that the entrance to Elkhorn Slough is of little or no importance.

c. Paragraph 9-b7 of 1933 Review.

The additional soundings verify the original 1933 work and add more details to these interesting features of the submarine valley. They also show the irregularity that might be expected in the vicinity of such valleys.

3. Reviewed by R. J. Christman, November 1934.

Inspected by A. L. Shalowitz.

Examined and approved:

C. K. Green, *C. K. Green*  
Acting Chief, Section of Field Records.

*J. S. Borden*  
Chief, Section of Field Work.

*L. O. Platt*  
Chief, Division of Charts.

*G. Thude*  
Chief, Division of H. & T.



Applied to Drawing of Chart 5403, July 10, 1935, H.B.

20 Jan 24, 1936  
E.H.G.