

3900

G. & G. SURVEY
L. & A.
OCT 4 1916
Acc. No.

Diag. Ch. No. 5302-1

Form 504
 DEPARTMENT OF COMMERCE
 U. S. COAST AND GEODETIC SURVEY

State: *Cal.*

11-5613

DESCRIPTIVE REPORT.

Hyd. Sheet No. *3900*

LOCALITY:

Toro Cer. to Constantine. Pk.

Estero Bay

Cal

1916

CHIEF OF PARTY:
E. B. Saffern

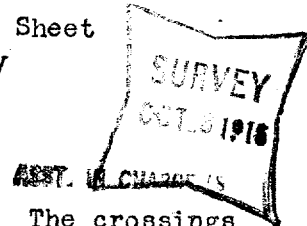
3900

Hyd. 3900.

Descriptive Report Hydrographic Sheet
Esteros Bay

Constantine Rock to Toro Creek

Scale 1 to 10,000



This sheet is supplemental to the survey of 1884. The crossings with the soundings of the previous sheet are poor, but the soundings with themselves cross well. This sheet was surveyed under difficult conditions. The available equipment was not suitable for outside work. The prevalence of fog and haze caused me to sound when there was a heavy swell, with a consequence of lack of accuracy. Most of the soundings were made with a three to six foot swell running. I would proceed to the working ground and wait for the fog to lift and sound as long as the launch could be handled.

The ten fathom curve is believed to be well developed, the indicated shoals are not completely developed but the work is deemed to be of sufficient accuracy. The work indicated that vessels should keep well outside the area investigated.

It is suggested that the Coast Pilot contain a warning to vessels to keep outside the ten fathom curve or better to keep one mile outside the line Constantine Rock buoy Bell buoy at Cayucas, and to approach and leave Cayucas so that the track followed is normal to the shore for at least one mile off the Bell Buoy at Cayucas.

The shore to the westward of Cayucas has many boulders and there are possibly many such boulders, that were not discovered with the hand lead, under the water.

The spots indicated by my soundings and a sounding in the work of 1884 or 1885 were investigated with an improvised drag. See revised plotting of the hydrographic sheet for least depth developed. See descriptive report of the combined topographic and hydrographic sheet of the vicinity of Morro Bay etc, which joins this sheet.

No points are on this sheet that are suggested to be placed on the chart. (see points suggested for the immediate vicinity of Cayucas) Traffic and supplies the same as appear in the descriptive report of hydrographic sheet Vicinity of Cayucas, California.

E. B. Atham

Chief of Party Coast and Geodetic Survey.

Note Tide gauge for the reduction of soundings Morro inside.

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

EXHIBIT OFFICE:

TELEGRAPH ADDRESS:

POST OFFICE ADDRESS:

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

**DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY**

Statistics Hydrographic Sheet 3900

Esteros Bay From Constantine Rock to Torro Creek.

Work supplemental to that of 1884

Date	Day	No of Miles of Sounding Line	No of Soundings	No Angles
August 1916				
15	A	1.75	62	22
16	B	9.75	345	148
17	C	15.50	417	146
21	D	12.75	530	230
22	E	2.00	72	30
23	F	4.50	187	74
25	G	7.00	342	154

53.25

1955

804

VEC
June 21, 1917

2. P. 2.
H.C.

HYDROGRAPHIC SHEET 3900.

Esteros Bay, California, by party of Assistant E. B.
Latham in 1916.

TIDES.

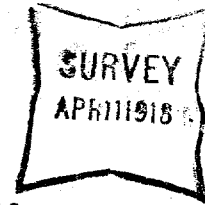
	Morro Bay Feet.
Mean lower low water, or plane of reference on staff	1.9
Mean range of tide	3.2

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

April 11, 1918.



H. & G. ENGINEERS IN CHARGE (S)

SUPPLEMENTAL NOTES and DESCRIPTIVE REPORT

Hydrographic Sheet No. 3900.

In the matter of the proposed cancellation of my supplemental hydrography at Cayucas, Cal., (hydrographic sheet No. 3900), and the acceptance of the results of the survey of 1884, the following is respectfully submitted.

The discrepancy of approximately 5 feet was noted while the work was in progress.

The soundings of 1884 were furnished to me and, from this data, a tracing was made and the results of 1884 and 1916 were compared. See my letter in which I say "I find difficulty in obtaining crossing with the old work."

Every precaution known to myself or suggested by Captain Westdahl, who was associated with me in the work, to insure accurate soundings on this work was taken.

The speed of the sounding boat was always between $2\frac{1}{2}$ and 3 miles per hour.

The comparator for the lead line on Church's wharf was checked. The lead lines were compared both before and after each day's work. The casts of the lead were frequently noted and checked by the officers in the boat. It was decided that the casts were of an unusual degree of accuracy.

The Geological Survey has by a line of levels passing Morro and Cayucas checked the tidal differences to one-half of a foot, so that the noted discrepancy cannot be effected by tidal reducers to more than one foot.

Permit me to add that it is with the greatest surprise that I learned that there is any question as to the reliability of these results. An investigation of the data submitted will, I think, develop the fact that the results shown more than meet the

requirements indicated in the instructions, directing this work.

Respectfully submitted,

E. S. Saltham

Hydrographic and Geodetic Engineer,
Chief of Party.

DEPARTMENT OF COMMERCE

Mr. Flower has notified the draftsman working on this sheet to adopt Mr. Latham's survey, but where the previous survey shows less water in same locality to use the lesser depth.

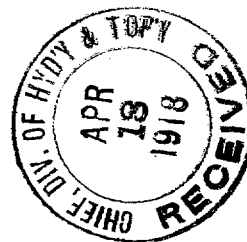
H.C.D.

file with desc. rpt.

ADDRESS
U. S. COAST AND GEODETIC SURVEY
WASHINGTON, D. C.

REFER TO NO. 5-VEC

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON



CHARTS (H)

FIELD RECORDS (H)

Chief, Division of Hydrography and Topography:
Chief, Division of Charts:

Referring to the memorandum request by the Chief of the Drafting Section, dated April 12, 1918, I have had examined the records for Hydrographic Sheet 1607b, by Lieut. E. D. Taussig in 1884 and Hydrographic Sheet 3900, by E. B. Latham in 1916, and have to report as follows:

The plane of reference used in 1884 was Mean Low Water, which was 0.8 foot higher than the plane of Lower Low Water used in 1916.

In examining the sounding records for 1884 it was noticed that lead line corrections, amounting in some cases to $\frac{1}{2}$ fathom, had apparently been neglected, and that there was no evidence of any lead line corrections having been applied to the recorded soundings. These corrections were in both positive and negative directions.

Certain discrepancies were noted between the soundings recorded in the book and those actually used in 1884. Some of these differences amounted to as much as a fathom. For instance, position 6, A day, Vol. 45-46, the reduced sounding is recorded as 10 fathoms but is plotted as 11 fathoms; position 8, A day, reduced sounding recorded is $13\frac{1}{2}$ fathoms but is plotted as 12 fathoms; position 11, L day, reduced sounding recorded is $10\frac{1}{2}$ fathoms but is plotted as $11\frac{1}{2}$ fathoms. Other discrepancies were noticed varying from a quarter fathom to a half fathom.

A comparison of corresponding soundings on the two sheets was made in several cases and it was not evident from this that the differences between the soundings on the two sheets were at all uniform in amount. It did appear, however, that the majority of the soundings on the 1884 sheet were smaller than the corresponding soundings on the 1916 sheet, although the effect of the difference of 0.8 foot in the datum would be to make the soundings less on the latter sheet. Several cases of exact agreement were noted, as well as several where the soundings of 1884 were greater than those of 1916.

At least a part of the work on each of the sheets was apparently done while there was considerable of a sea running. Several times in the record for 1884 a heavy sea was mentioned, and the statement is made that the work in 1916 was done largely with a three to six foot swell. It is entirely possible that this may account for much of the difference in the two sheets.

The examination indicates that the work of 1916 is probably more reliable than that of 1884, and it is recommended that the former be substituted for the latter.

E. P. Shidy

Acting Chief, Section of
Tides and Currents.

Hydrographic Sheet No. 3900.
Estero Bay, Cal.

FIELD WORK (H) ✓
H. & G. ENGINEER IN CHARGE (H)

The work on this sheet was protracted by the field party and the positions have, in general, been taken as correct being verified only when errors were considered possible.

The soundings were plotted in pencil by the field party and found generally accurate per records prior to corrections by Tides Div.

A large part of the work is on lines split with the work of Sheet No. 1607^c and is therefore generally very open but when considered by itself the work appears good. However when taken with Sheet No. 1607^c discrepancies of 5 feet more or less are general throughout. The work of this sheet and of Sheet No. 1607^c have been combined and is shown on the tracing filed with this sheet

John D. Torrey

7/5/8

LIBRARY

Place with descriptive report
of hydrographic sheet No. 3900

Drawing Section