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U. S. COAST AND GEODETIC SURVEY.

Henry S. Pritchett, Superintendent.

State: Cal.

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 2408

LOCALITY:

San Pedro Bay and Harbor

1899.

CHIEF OF PARTY:

Ferdinand Westdahl, Ass't

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Descriptive Report to accompany Hydrographic Sheet entitled:

U.S. C. AND G. SURVEY,
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No 51112

Treasury Department
U. S. Coast and Geodetic Survey
Henry S. Pritchett, Superintendent

Hydrography in San Pedro Bay and Harbor California

By the party in charge of Ferdinand Westdahl, Ast. C. & G. Survey
Steamer "Gedney"

Begun March 1st, 1899
Ended April 3rd "
Scale $\frac{1}{5000}$

This is a resurvey or special examination originally intended to cover only the mouth of the channel leading to the inner harbor and incidentally to verify or disprove the existence of a shoal spot, with but 13½ feet upon it at low water, shown on the published chart of this harbor near the entrance to the channel. When the survey was nearly completed within the original limits it was extended so as to cover the area to be occupied by the projected breakwater in San Pedro Bay at the request of Captain J. J. Meyler, Corps of Engineers U. S. A., in charge of the improvements, in accordance with telegraphic

directions from the Superintendent. This will explain the two differing systems of lines run in this survey.

The plane of reference used in the reduction of the soundings had already been established. Tidal observations were, therefore, made only while sounding on a gauge set up at the R. R. wharf alongside the vessel. A special search was made for the shoal spot mentioned above and numerous soundings made in the search are not recorded. The boat was moved very slowly over the locality with lead touching the bottom but no depths differing from the ones plotted were discovered. The weather was boisterous during the time of the survey and there was generally a swell, almost breaking, running over the shoal forming the bar to the channel. The boat had therefore to go at a good rate of speed across it so that the leadsman had small opportunity to correct his soundings for crest or trough of swell.

The extent of the kelp-fields existing within the surveyed area is shown on the sheet but it is to be observed that these limits vary from 100 to 150 meters with the change in the wind or current. The kelp generally trails to the southwest-ward except when the wind blows strong from that direction. Sounding in the kelp is a difficult matter. It is impracticable with the steam-launch on account of fouling

the propeller, and in a row-boat when the wind blows. The lead must be hauled up quickly or the line will part if the boat goes fast with the wind, and against the wind no headway can be made. No rocky bottom was found in the kelp except near the northernmost point of the field.

The median line of the proposed breakwater is shown in red on the sheet and is plotted from data given in Senate Executive Document No. 18, 55th Congress 1st Session, page 202 and plates 2 & 3, obtained from Captain Weyler and returned to him. As the exact determination of the plane of reference at the breakwater is needed to carry out the directions laid down by the Deep Water Harbor Board I recommended to Captain Weyler the establishment of a box tide-gauge near it as soon as the construction begins. It will then be possible to ascertain the exact difference in time of high and low water between it and the gauge at the R. R. wharf inside the harbor. As stated on the sheet an allowance of 20 minutes is made in the reduction of the soundings for the march of the tide from the bay to the tide-gauge in accordance with the best information obtained from the master of the tug employed to pilot deep-laden vessels in at high tide, but this may not be exactly right.

I respectfully call attention to the Description Report

of the Topographic Sheet of this locality, already submitted, for information regarding the determination of signals used in this survey and other matters of interest, and for the other items called for in Par. 209, Instructions for Hydrographic parties, to the full Coast Pilot Notes collected in 1897-98 by a Naval Officer specially detailed to obtain such information, a fair copy of which I found on board this ship (McArthur). No important change has taken place since that time and the information there given is true to-day so far as I know.

The width of the mouth of the channel leading to the harbor seems to admit of the Black Buoy being moved about sixty yards further out in a direction from Dredmans Island. The turn after passing that buoy in its present position is too short for a long vessel and gives considerable trouble to the pilot, who must pass to the Northward of the buoy or forfeit insurance if an accident should occur. The recommendation to move the buoy has been communicated to the Inspector of the 12th Lt. Ho. District and he has been furnished with a blue-print of this survey. A further valuable aid to mark the channel would be the placing of a red spar buoy at the submerged extremity of the East jetty.

Respectfully submitted

Ferdinand Westdahl

Asst. C. & G. Survey

Chief of Party