U. S. COAST AND GEODETIC SURVEY.

Henry S. Pitcheitt, Superintendent.

State: Cal.

DESCRIPTIVE REPORT.

Topographic Sheet No. 2365

Locality:
San Pedro Bay and Harbor

1899.

Chief of Party:
Ferdinand Westphahl
Descriptive Report to accompany topographic chart entitled:

Treasury Department
U. S. Coast and Geodetic Survey
Henry S. Petcher, Superintendent
Topographic Survey of Part of
San Pedro Bay and Harbor
California

Executed: March 1 to 14, 1877
by Ferdinand Reklaih, Assistant
Scale 5000

This is a summary of the shore lines falling within the area of a hydrographic projection on the same scale, part from the Office upon which certain portions of the shore line, taken from surveys by the U. S. Engineers, had been left in pencil. The topographic chart was prepared by superposing a blank chart under the hydrographic projection and picking through the triangulation points and intersections of meridians and parallels, afterwards testing the accuracy by diagonal measurements. The only triangulation stations immediately available were: Deadman's Island Δ, where a signal was in place, and Pt. Fermin Lt. House. Point Fermin Δ was
found, prudently and with the Plane-table the positions of "R.R. Co. Eng. Staff" and "Solitary." From these points a number of topographic signals were determined and used also in the hydrographic work simultaneously prosecuted. All of these signals were subsequently trigonometrically determined.

On the Terminal Island side of the Harbor all details are surveyed, except fences and small outbuildings. Dwelling houses, except the larger ones, are determined by our wondering only, occasionally two or three when the orientation is changing to assist in sketching the others. The street lines are distinctly governed by the direction of the railroad and the houses have been sketched in accordingly. While the scale admits the delineation of small irregularities of outline I did not feel justified in spending the time required for minute work as such details would necessarily disappear on the publication scale. One peculiarity of the smaller dwelling houses at the western end of Terminal Island is that they are built by squatters who hold no title, on stilts beyond high water mark and are generally surrounded with a narrow platform too small to be shown on the scale.

On the San Pedro side of the Harbor only the outlines of the wharves are surveyed and houses in front of the city limits proper not hitherto shown on the published
chart. Unless expressly stated on the chart, the figures marked on the chart are still in place; they were
never altered only by four times, and my instructions did not
come anything but the show-liner.

The extension of the Southern Pacific Railroad tracks
towards Point Fermin are surveyed from a point where
they are already shown on the chart, and continued to
the end.

The approximate determination and sketching of
the rocky ledges near Point Fermin is an attempt at
showing graphically the conditions existing there. These
ledges form an almost level bench exposed only at or
near low low water, spring tides, and constitute the
submerged continuation of the terrace formation fre-
quently found on the coast of California and particu-
larly marked at San Pedro Hill. The rocky strata,
although of unequal hardness and standing at a
gradually changing angle to the horizon, have been
planned off by storm action more powerful than wave
washings. The edges of the harder strata project a little
above the general level and form almost straight or
gradually rounding depressed in the directions indicated.
Some of the strata form to be composed of bituminous
rock and are tough rather than hard. The same con-
ditions obtain, though in a less marked degree, around
Deadman's Island, where, however, the strata lie nearly horizontal and are composed mainly of sandstone in thick layers. The rocks projecting above high-water line are shown by a full-drawn line. Standing on the bluff at Timmi Point and looking towards Deadman's Island, the remaining level surface on its summit is seen to coincide with the sea horizon, indicating that at some remote period they formed part of this same level surface.

I have been furnished with a tracing showing the succession of ocean shorelines of the Western end of Terminal Island as surveyed by the Engineers connected with the Los Angeles Terminal Railway Co., which is transmitted with the chart and to which I have been requested to call attention. The building of the spur jetty projecting northeastward from the main jetty was intended to further protect the construction in this vicinity and it was doubtless expected that the accumulation of sand to the northward of it would eventually fill the entire harbor. The officials of the Terminal Railway Company claim that the very opposite has been its effect and date the beginning of the erosion of the shoreline from the beginning of construction of the spur jetty. This erosion was immensely accelerated by storm waves during January of this year when a
combination of very high tides and large southeast
snow washed out the sand so that the only barrier
between the ocean and the harbor was the hastily
constructed wooden bulkhead on the inside of the
base of the jetty strengthened by a narrow line of
rocks dumped against it on the outside. The abnormal
erosion caused by storm waves and high tides caused
when the fraughted down, and the back was at
present growing, but is liable to occur again under
similar conditions. Whether or not the slow erosion
action still remains is a problem which requires
a long series of observations to solve and properly
falls within the province of the office of the Corps
of Engineers U. S. A. charged with the care of the
government improvements. In conversation with
Captain J. J. Macfay of that corps, at present in charge
at San Pedro, I learned that current observations had
been made in this locality by placing weighted poles
projecting sufficiently above the surface to be seen and
observed upon from shore. There proved to be no cur-
rent and very few of the floats got out of the sight
at all: those that did moved very slowly to the
eastward, close toshore. There is known to be a current
stream to the westward past the ends of the jetty
which materially helps in keeping the channel to
the harbor open. The bays in the bay generally trails to the westward and southeasterly except when the wind is blowing strong from that quarter. If a current exists along shore to the eastward, it seems to me probable that it is caused by the jetty construction towards Deadman's Island which has changed the direction of the shoreline from the former sweeping curve caused by what is known as the seashore eddy current so that now a slight country eddy current moves to the eastward. It will be an interesting study to watch the effect of the construction of the proposed breakwater which will probably still further obstruct this current.

Respectfully submitted,

Ferdinand Westphal
Asst. C. & G. Survey
DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY

A.H. Tittman
Superintendent.

STATE: Cal

DESCRIPTIVE REPORT.

LOCALITY: San Pedro

1907

CHIEF OF PARTY:
Descriptive Report to accompany sheet showing changes at
San Pedro, Cal., and surveyed by Assistant Fremont Morse in accordance with Superintendent's Instructions of Nov. 11th, 1907.

DEC 23 12 1907

Since the date of Assistant Westahl's survey of the harbor of San Pedro, the greatest improvement is the building of the Government Breakwater, which is now nearing completion. Beginning at a point some 800 meters off the Point on which the C.& G.S. Station Old is located, it extends Southeasterly about 900 meters, then curves towards the North and extends in a Northwesterly direction in a straight line until its outer end as planned will be about two miles off shore. At present the trestle work over which trains carry the rock to form the structure is within 500 feet of the proposed end of the breakwater, and the wall is nearly completed to that point. It was intended in planning the breakwater to leave a space between it and the shore through which small craft could enter, and which would at the same time let the tide flow in and out, and thus tend to prevent sand deposits within the harbor.

Two lights are maintained on the breakwater, one at the point shown on the R.R. trestle leading out to the structure and the other at the end of the work as it advances.

Near Timms Point, and in the outer harbor, the Outer Dock and Wharf Co. has begun the reclamation of an area about 500 by 5000 meters in extent. Sheet piling has been driven to hold dredgings, and about half of the area is now above water. Work was not in progress at the time of my visit.

On the West side of the inner harbor, under the bluff at Timms
Point, the Southern Pacific R.R. Co. is now dredging a new slip and building wharves on each side. The dock on the East side of the slip is shown in its full extent; but that on the West side is not yet carried out as far as planned. Information has been requested of the Company concerning the proposed limit of the wharf on that side, and when furnished it will be transmitted to the office. It will be noted that in making this improvement the R.R. Co. has cut off and removed the angle of the West retaining wall of the inner harbor. The ends as left are shown. The rock removed is piled on the sands to the West, and will no doubt be used in building a wall to replace that destroyed. At present rock is being dumped inshore of the wharf on each side of the dredged slip.

The wharf line on both sides of the inner harbor has been greatly extended, as shown.

To the Eastward of the inner harbor long retaining walls have been built by private enterprise, and within the area thus enclosed land is being formed from the dredgings taken from the inner harbor.

San Pedro is a lumber port of considerable and growing importance, and the docks on each side of the harbor present a busy scene to the visitor. Most of the lumber is brought from up the coast, as far as Puget Sound, in schooners carrying from 500,000 to 1,000,000 feet. While I was there the steamer "Hyades" came in with a cargo which was said to measure 5,000,000 feet.

From San Pedro a small steamer makes regular trips daily to and from Catalina Island.

Respectfully submitted,

[Signature]

[Position]