

4925

U. S. COAST & GEODETIC SURVEY
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Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. PATTON, Director

State: CALIFORNIA

DESCRIPTIVE REPORT

Topographic

~~Hydrographic~~

} Sheet No. Q

LOCALITY

Central California Coast

Morro Bay & Vicinity

1934

CHIEF OF PARTY

O. W. Swainson, H. & G. Engr.

U. S. GOVERNMENT PRINTING OFFICE: 1928

4925

applied to drawing of Chart 5302 - Mar 6, 1936 - JFW
" " " " 5387 Dec 15, 1936 J.G.L.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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REG. NO.

TOPOGRAPHIC TITLE SHEET

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

Field Letter Q

REGISTER NO. **4925**

State California

General locality Central California Coast

Locality Morro Bay & Vicinity

Scale 1:10,000 Date of survey Dec 1934 Jan 1935 19

Vessel U.S.C. & G.S.S. PIONEER

Chief of Party O. W. Swainson

Surveyed by E. M. Prudames

Inked by E. M. Prudames

Heights in feet above MHW to ground ~~top of ground~~

~~Contour or approximate contour~~ Form line interval 100 feet

Instructions dated November 18, 1932, 19

Remarks: _____

DESCRIPTIVE REPORT

TO ACCOMPANY TOPOGRAPHIC SHEET NO. Q.

Central California Coast,
Morro Bay,
Lat. $35^{\circ} 16.8'$ to Lat. $35^{\circ} 22.2'$.

AUTHORITY

The work on this sheet was performed pursuant to instructions dated November 18, 1932, to the Commanding Officer of the PIONEER, for Project No. 120, and those to the Commanding Officer of the GUIDE, dated April 4, 1932, for Project No. 101.

CONTROL

Traverse control between triangulation stations established and located by the party of Chas. Pierce in 1932, was used throughout the sheet. At times it was possible to run a resection traverse but more commonly a straight distance traverse was used without resection. Where resection was used it was attempted to resect on more than one triangulation station.

Traverse

Islay Creek Oil Derrick - Zard: 5 m. left. Adjusted as directed.

Zard - Up: 10 m. short, 6 m. distortion. Adjusted as directed.

San - Up (Seaside): Flat.

Hill - San (Seaside): 6 m. too far, 6 m. distortion. Adjusted.

Hill - San (Bayside): 4 m. to left. Adjusted.

Hill to end of sand spit (Mon): End closed by resection. Flat.

Up - San (Bayside): Flat.

Tub - Up: Flat.

Tub - Dance: By resection. Flat.

Dance - Rod: Resection. Flat.

Wil - White: Resection. 2 m. Adjusted.

White - On: 6 m. 3 m. distortion. Adjusted.

All offlying features and inshore features which were inaccessible were located by suitable cuts.

The road found in the southern section of the sheet was run from north to south by a compass traverse starting with a three point fix, at which time the grove of trees at its beginning was also located. This was particularly advantageous since there were innumerable sharp curves, and the road was lined with eucalyptus trees, making an ordinary traverse extremely slow. The method was found to be sufficiently accurate when checking out at the south end.

GENERAL DESCRIPTION

The high water line along the edge of the large marsh was taken from the 1919 survey since this could not be determined any more accurately at this time. It was checked by observation, however. It was also impossible for the topographic party to determine the low water line along the mud flats since a rodman could not walk there and a half foot of tide could change its location by a hundred meters. This line was taken from the hydrographic sheet.

There are two points of view to be described in this particular sheet. One from the sea and the other from inside of Morro Bay. The shoreline of this whole sheet is a long series of sand dunes covered with grass and low brush, decreasing in height from a hundred feet at the south to a few feet only at the north end, and ending entirely some one hundred meters from Morro Rock. In the southernmost $\frac{3}{4}$ mile a rock shelf underlies this long stretch of dunes and runs out into the sea from the foot of the dunes becoming first a reef, then rocks awash and then sunken rocks.

Back of the shore in the southern two miles of the sheet is a range of hills covered by brush and many groves of eucalyptus trees. The most outstanding object in this area being a small grove of eucalyptus trees about one hundred meters square on a hillside rising to a point on the south side. This may be seen from a great distance and is very outstanding. The hills end at about that point and from there a broad low valley may be seen extending inshore many miles.

About 500 meters north of Rod a hill begins to rise, it is surmounted by Δ Rocky Butte. This northern section is characterized by the occurrence of individual hills here and there rising from the surrounding country and in no way connected with one another. Black Hill is one of these and there are others, as one continues eastward beyond the limits of this sheet. In the middle of the slope of Black Hill is a large white water tank which may be seen from a great distance. In the background off the area of this sheet are other ranges. Between Black Hill and the town of Morro Bay the hills are spotted with houses and trees.

The sheet is dominated by the most outstanding object of the whole coast in this vicinity, Morro Rock. It is composed of a reddish brown igneous rock, having a somewhat rounded top, and standing as it does at the end of the long low sandspit, can not fail to be the center of attention.

Navigation in Morro Bay should not be made without local knowledge for except at high tide, it is impossible to proceed far without grounding on a mud bank or sand bar. What few channels are indicated are found to be very narrow. Practically the whole bay is a vast mud flat at low water.

From the inside of Morro Bay, there will be seen the same general surroundings as outside but attention will be directed more particularly to the immediate shoreline. Jutting out eastward from Morro Rock is a breakwater half finished which will close the north entrance to the bay leaving only a narrow channel between the south side of the rock and the sand spit. Low bluffs line the eastern shore. Δ House South of On-2; Chimney, is a red and white stone chimney on a white house, and is an important landmark. Little of the town itself may be seen, although a few houses near the shore are visible; trees hide the others. A large brown building formerly a combination dance hall and plunge, now abandoned, built on pilings is the largest building in this area. A house built in the shape of a boat on the next pier south of the Dance Hall, is very noticeable.

Some seven hundred meters south and two hundred meters inshore is a large rock similar to Morro Rock rising one hundred fifty feet above the surrounding area. It looks like a pile of boulders and is surmounted by many eucalyptus trees. The top of the bluffs is lined with trees as far as White's Point, which is the most outstanding point to be seen. It, too, is a large rock outcropping, the brush covered. In the center of its rounded top is White. It is the lowest of the three immense rock outcroppings, being only 80 feet high.

East of Δ White lies a large area of marsh, and inshore from that cultivated fields rise up the slopes of the low hills.

The area along the shore between Δ White and Δ Wil and including White's Point has recently been acquired by the state. A C.C.C. camp is located 400 meters east

of Δ White and within the State Park. The large marsh has been set aside as a bird refuge.

Between Rod and Dance is a large area covered with brush making travel through it very difficult.

Southeast of Δ Dance is a subdivision, known as Baywood Park Estates, covered by low brush for the most part. The streets are lined with ornamental pine, but there are few houses.

Between that point and the end of the bay is a very low shoreline, which is an occasional marsh. Back from the shore are large groves of eucalyptus trees. The bay side appearance of the sand spit differs from that on the ocean since there is no beach here; the dunes come right down into the water. Some are brush covered while others are bare with only a bush here and there. Directly east of White's Point is a small group of old cypress trees, the only trees on the sand spit. This spot is known as the Hog Ranch. A little north of this point and in the center of the bay is a low grassy island. *Wast*

The name of the town is "Morro Bay" as determined from the Post Office cancellation stamp and not "Morro" as is shown on an earlier survey. Also, in deference to an earlier survey, wherever the word is used it is spelled Morro.

COMPARISON WITH PREVIOUS SURVEYS

In the area of reefs at the extreme south section of this sheet some of the rocks of the earlier survey were found to be only points in a reef which deserved no special designation as rocks since one point in the reef was scarcely more prominent than any other, and in the present work a different symbol was used.

Three hundred ten meters south of Latitude $35^{\circ} 17'$ is a point running out from the bluff. It will be seen in the present work that there is quite a little bay on the north side of this point while the earlier survey does not show this. Since it could be seen only by walking along the top of the bluffs at this point, it is believed that it must have been unobserved previously. In this same section the high water line is found to be farther out on the rock shelf than earlier indicated. This is a case where the rock slopes offshore to a point at which there is a distinct break, a drop to another reef, but apart from the shelf. The high water line is part way up the shelf, but not at the base of the cliffs. There is virtually no change in the bluffs.

It will be seen that the road through Hazard Canyon is now on the west side whereas formerly it followed the creek bed in the canyon bottom.

On the ocean side of the sand spit the high water line is indicated, also the edge of the low grassy dunes. In previous surveys the high water line follows the present dune line. The dune line is storm high water now, but mean high water is at the point indicated in this survey.

In regard to the inside of the sand spit a change is noted at several points where the progress of the dunes eastward has moved the shore line in that direction. In the northernmost half mile there has been a decided change. Since the construction of the jetty more and more water is passing through the narrow opening between the rock and the sand spit, and it has already carried away 150 meters of the bay side, depositing some of it on the offshore side as may be seen from the sheet. A noticeable change took place while this party was in that vicinity and much greater changes may be expected in the near future.

Southwest of Δ On the high water line has moved some two hundred meters offshore. The area is now partially covered with grass. Only a few piling remain of the dock where it is indicated the tide gage was installed in 1919, and no remnant at all of the dock farther north is to be found. The three docks at the foot of the main street have all been replaced and of the one farther south only a few piling remain.

The house shown in 1883 to be 615 meters below Latitude $35^{\circ} 22'$ is still present, as is the house near the present tide gage installation. The present survey shows that the shore line immediately north of \odot Sto agrees with that of 1883, tho not with that of 1919. A house 300 meters north east of White is still present. A dock was shown in 1883 one third of the distance from Gab to Cat, it is not there now, nor is the one shown 400 meters south of that point, tho it has been replaced some 15 meters north. The dock and houses 75 meters south of $35^{\circ} 19'$ are no longer present. The shore line changes in this area are very minor, being quite close to the 1919 survey, the marshes in particular.

The buildings shown on the sand spit just south of $35^{\circ} 21'$ are no longer present.

The contours were checked from a form line standpoint.

STATISTICS

Shore line	23 statute miles
Road	11.5 statute miles
Marsh	1.3 square statute miles.

E. M. Prudames

E. M. Prudames,
Topographer.

Forwarded:

O. W. Swainson

O. W. Swainson,
H. & G. Engineer,
Commanding PIONEER.

RECOVERABLE PLANE TABLE
POSITIONS

Sheet Q.

Pole (Pole)	35° 19' 549	Cabin Window (Win)	35° 21' 861
	120 50 1458		120 50 1399
Cottage Gable	35 19 1174	Dock End (Gag)	35 21 425
(Cot)	120 50 684		120 50 1046
Boat House Gable	35 19 973	Boathouse Gable	35 21 1069
(Gab)	120 50 522	(Bot)	120 50 1512

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

U.S.C. & G.S.S. PIONEER, Long Beach, California.

March 20, 1935., 19

SUPERINTENDENT, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted:

O. W. Swainson,

Chief of Party.

Topo Sheet No.	POSITION.					Method of determination.	Charts affected.
	Latitude.		Longitude.		Datum.		
	° ' "	D. M. meters.	° ' "	D. P. meters.			
Highest Point	35 18	26.0	120 51	954.0	NA 1937	Topo.	5302 ✓ 5307 ✓
GROVE OF TREES TANK, (on hillside)	35 21	858.5	120 49	1399.1	do	Triang.	5302 ✓ ✓ ✓
(Water tank on slope Black Hill). (Morro-2, 1919, MORRO ROCK 1932).	35 22	309.1	120 51	1502.7	do	do	5302 ✓ ✓ ✓
House S. of On-2; Chimney	35 22	414.8	120 51	295.5	do	do	NA + C. ✓ ✓ ✓
CHIMNEY, (House)	35 21	1798.7	120 51	183.0	do	do	" " ✓ ✓ ✓
(Signboard on S end dancehall).	35 20	1520.0	120 50	858.3	do	do	" " ✓ ✓ ✓
SIGNBOARD (on Roof)	35 19	1697.5	120 50	719.9	do	do	" " ✓ ✓ ✓
(White, WHITE'S POINT (- 1883).	35 19	1174	120 50	684	do	Topo.	" " ✓ ✓ ✓
(Dancehall, Δ Dance Flag)	35 20	1459	120 51	685	do	Topo.	" " ✓ ✓ ✓
FLAGSTAFF (Dance Hall)							
(6 Cot)							
COTTAGE, Wly of Four.							
TREES, on sandspit							

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaves and like objects are not sufficiently permanent to chart.

LANDMARKS

Sheet Q

Chart 5502

Grove of Trees

This is a small grove of eucalyptus trees about one hundred meters square on a hillside. They have grown uniformly so that their tops conform to the natural slope of the hill, but stand out from it due to their own height.

Tank

This is a large low tank halfway up the slope of Black Hill which stand about two miles back from the shoreline of the sand-spit. It is the most southerly of any tanks in this area and distinctly separate from the many Standard Oil tanks some two miles north. Δ Water Tank on slope of Black Hill.

Morro Rock

Morro Rock is an immense rock rising to 500 feet directly out of the water at the end of the sandspit. Δ Morro -2 101001932

Landmarks Inside Morro Bay

Chimney, Morro

Directly east of Morro Rock on top of the bluffs stands a white house with the center of the offshore side is a red and white stone chimney. Δ House S. of On-2; Chimney.

Signboard

Below the bluffs at the foot of the main street of Morro Bay is a long brown building, formerly a dance hall and plunge, now abandoned. At the south end of its roof is the signboard Δ Signboard on S. end dancehall.

White's Point

This is a prominent point half way down Morro Bay which is a large rock outcropping the brush covered. It is 60 feet high with a rounded top. Δ White 1885.

Dancehall, Morro Bay

This dancehall is a large white building with a green roof. Rectangular in shape except for one end which is a semicircle. From the

center of this circular reef rises a flagstaff. A bannock, near
Dance, Flag.

Cottage, Westernly of four

At Raymond Park there are four small cottages in a row only
a few meters from the shore. The most westernly of these was
detected as a landmark and the south gable located.

Trees on sandspit

Since trees (cypress) are near the shore in the center of the
sandspit, are the only trees in its entire length.

Date. May 7, 1935.

Chart No. 5302

Under investigation. Q

APPROVED NAMES
UNDERLINED IN RED

6.7 M. album

REVIEW OF TOPOGRAPHIC SURVEY No. 4925

Title (Par. 56) *Morro Bay and Vicinity, California*Chief of Party *C. W. Swainson* Surveyed by *E. M. Prudames* Inked by *E. M. Prudames*Ship *Pioneer* Instructions dated *Nov. 18, 1932* Surveyed in *Dec. 1934 - Jan. 1935*

1. The survey and preparation for it conform to the requirements of the Topographic Manual. (Par. 7, 8, 9, 13, 16.) ✓
2. The character and scope of the survey satisfy the instructions.
No junction was made at Morro Rock and only a small portion of Morro Rock was surveyed. This survey is incomplete (see reverse side)
3. The control and closures of traverses were adequate. (Par. 12, 29.) ✓
4. The amount of vertical control that the Manual specifies for -contours-formlines- was accomplished. (Par. 18, 19, 20, 21, 22, 23.)
Very few contours on this sheet. No revision of former contours deemed necessary
5. The delineation of -contours-formlines- is satisfactory. (Par. 49, 50.)
See preceding paragraph.
6. There is sufficient control on maps from other sources that were transmitted by the field party to enable their application to the charts. (Par. 28.) *None submitted*
7. High water line on marshy ~~and mangrove coast~~ is clear and adequate for chart compilation. (Par. 16a, 43, 44.) ✓
8. The representation of low water lines, reefs, ~~coral reefs~~ and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41.) ✓
9. Rocks and other important details shown on previous surveys and on the chart were verified. (Par. 25, 26, 27.)
See reverse side
10. ~~The span, draw and clearance of bridges are shown. (Par. 16c.)~~
11. Locations and elevations of summits are given. (Par. 19, 51.)
No elevations given - No revision of old contours
12. The tree line was shown on mountains. (Par. 16g.)
Not shown

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Use reverse side for extending remarks.

Paragraph 2

A proper junction between the work of the Guide (T4916) and the Pioneer (T4925) was not made at Morro Rock. Only the southern side of the island was surveyed. Authority for the topography of this island is T1662 (1883-4). The H.W. line of Morro Bay mud flats was in most part taken from T3755 (1919) and is substantially the same as on this previous survey.

The L.W. line in Morro Bay is taken in most part from the hydrographic survey H5751. This low water line has been somewhat changed in the office and so should not be accepted as shown on T4925.

Paragraph 9

T1662 (1883-4)

The present survey does not show the topography of Morro Rock ^{which} ~~and~~ should be taken from T1662. For a thorough discussion of the two surveys see Descriptive Report of T4925.

T3755

A discussion of this survey is well taken care of in the Descriptive Report and review (Par. 2 above) of T4925. The long sand spit on the west side of Morro Bay is continually changing and will continue to do so even more with the construction of the breakwater to Morro Rock.

T1500b (1881)

The shore line on the southern end of this sheet agrees fairly well other than the fact that on the present survey a ledge symbol was used whereas on T1500b, the individual rocks were used. This is discussed in the descriptive report of T4925.

Chart 5302

Due to the scale of this chart very little of the detail of this sheet could be shown. With the exception of the changeable area in and around Morro Bay the survey is in good agreement.

13. The descriptive report covers all details listed in the Manual, in so far as they apply to this survey. (Par. 64, 65, 66, 67.) ✓
14. ~~The descriptive report also contains additional information required in aero-topography relative to type of photographs, method of compilation and type of ground control.~~
15. The descriptions of recoverable stations and references to shore line were accomplished on Form 524. (Par. 29, 30, 57, 67 except scaling of DMs and DPs, 68.) *6 cards submitted*
16. A list of landmarks for charts was furnished on Form 567 and plotting checked. (Par. 16d, e, 60.) ✓
17. The magnetic meridian was shown and declination was checked. ✓ (Par. 17, 52.) *No note of having checked declinoire*
18. The geographic datum of the sheet is *N. A. 1927 (Adjusted)* and the reference station is correctly noted. (Par. 34.) ✓
19. Junctions with contemporary surveys are adequate.
Junction with T 4916 (1934) not adequate (See Par. 2)
Junction with T 6288 is adequate. There is an overlap which should be taken from T 6288
20. Geographic names are shown on the sheet and are covered by the Descriptive report. (Par. 64, 66k.) ✓
21. The quality of the drafting is good. (Par. 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46, 47, 48, 49, 50.) ✓
22. No additional surveying is recommended. ✓
23. The Chief of Party inspected and approved the sheet and the descriptive report ~~after review by~~ ✓

24. Remarks:

Reviewed in office by *Chas. P. Bush Jr. May 26, 1936.*

Examined and approved:

C. H. Green
Chief, Section of Field Records

L. O. Polbat
Chief, Division of Charts

Fred. L. Peacock
Chief, Section of Field Work

Glenn
Chief, Division of Hyd. and Top.