4887

6222b

6224a

6224b

6225a

6225b

6226a

6226b

6227a

6227b

5412-5411

5313

5374

5410

5411

Form 504
Rev. Dec. 1933

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

Topographic } *Sheet No.* K,J,I,H,G,B
Hydrographic } C,D,E,&F

State CALIFORNIA

LOCALITY

SOUTHERN CALIFORNIA COAST

Point Loma

to

Santa Margarita River

1934

CHIEF OF PARTY

Robert W. Knox

U.S. GOVERNMENT PRINTING OFFICE: 1934

21 Jan 23, 1936
Leif

T 6224a, T 6222 b applied to chart 5107 J.M.G. Jan. 1936

Form 537a
Ed. Nov., 1929

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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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 No. K, 1934 page 15

REGISTER NO. 6222b

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality Point Loma to Ocean Beach

Scale 1:10,000 Date of survey April, 1934

Vessel Launch and shore party, California

Chief of party Robert W. Knox

Surveyed by G. W. Tatchell

Inked by D.L.Ackland

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour Approximate contour Form line interval feet~~

Instructions dated April 14, 1932 and supplemental 19

Remarks:

Form 537a
Ed. Nov., 1929

DEPARTMENT OF COMMERCE
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TOPOGRAPHIC TITLE SHEET

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Field No. J, 1934

REGISTER NO. 6224a

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality Ocean Beach to Pacific Beach

Scale 1:10,000 Date of survey April, 1934

Vessel Launch and shore party, California

Chief of party Robert W. Knox

Surveyed by G. W. Tatchell

Inked by D. L. Ackland

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour Approximate contour Form line Interval ### feet~~

Instructions dated April 14, 1932 & supplemental, 19

Remarks:

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Ed. Nov., 1929

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Field No. I, 1934.

REGISTER NO. 6224b

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality Pacific Beach to La Jolla

Scale 1:10,000 Date of survey April, 1934

Vessel Launch and shore party, California

Chief of party Robert W. Knox

Surveyed by G.W.Tatchell

Inked by D.L.Ackland

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour Approximate contour Form line Interval feet~~

Instructions dated April 14, 1932 and supplemental 19

Remarks:

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TOPOGRAPHIC TITLE SHEET

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Field No. H,1934

REGISTER NO. 6225a

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality La Jolla to ~~Torrey Pines~~ Soledad Valley

Scale 1:10,000 Date of survey March, 1934

Vessel Launch and shore party, California

Chief of party Robert W. Knox

Surveyed by G.W.Tatchell

Inked by D.L.Ackland

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour Approximate contour Form line interval feet~~

Instructions dated April 14, 1932, & supplemental 19

Remarks:

Form 537a
Ed. Nov., 1929

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TOPOGRAPHIC TITLE SHEET

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Field No. G. 1934

REGISTER NO. 6225b

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality ~~Torrey Pines~~ Soledad Valley to Del Mar

Scale 1:10,000 Date of survey March, 1934

Vessel Launch and field party, California

Chief of party Robert W. Knox

Surveyed by G.W.Tatchell

Inked by D.L.Ackland

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour Approximate contour Form line interval~~ feet

Instructions dated April 14, 1932 & supplemental 19

Remarks:

Form 537a
Ed. Nov., 1929

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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 No. B.1934

REGISTER NO. 4887

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality Del Mar to Leucadia

Scale 1:10,000 Date of survey February-March, 1934

Vessel Launch and shore party, California

Chief of party Robert W. Knox

Surveyed by G.W.Tatchell

Inked by D.L.Ackland

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour Approximate contour Form line interval feet~~

Instructions dated April 14, 1932 & supplemental, 19

Remarks:

Form 537a
Ed. Nov., 1929

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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 No. C,1934

REGISTER NO. 62268

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality Leucadia to Canyon de las Encinas

Scale 1:10,000 Date of survey March, 1934

Vessel Launch and shore party, California

Chief of party Robert W. Knox

Surveyed by G.W.Tatchell

Inked by D.L.Ackland

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour Approximate contour Form line interval feet~~

Instructions dated April 14, 1932 & supplemental, 19

Remarks:

Form 537a
Ed. Nov., 1929

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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 No. D. 1934

REGISTER NO. 6226b

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality Canyon de las Encinas to Carlsbad

Scale 1:10,000 Date of survey March, 1934

Vessel Launch and shore party, California

Chief of party Robert W. Knox

Surveyed by G.W.Tatchell

Inked by D.L.Ackland

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour: Approximate contour Form line interval feet~~

Instructions dated April 14, 1932 & supplemantal 19

Remarks:

Form 537a
Ed. Nov., 1929

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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 No. E, 1934

REGISTER NO. 6227a

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality Carlsbad to Oceanside

Scale 1:10,000 Date of survey March, 1934

Vessel Launch and field party, California

Chief of party Robert W. Knox

Surveyed by G.W.Tatchell

Inked by D.L.Ackland

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour Approximate contour Form line interval feet~~

Instructions dated April 14, 1932 & supplemental 19

Remarks:

Form 537a
Ed. Nov., 1929

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REG. NO.
Acc. 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 No. F.1934

REGISTER NO. 6227b

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality Oceanside to ~~1 mile north~~ Santa Margarita River

Scale 1:10,000 Date of survey March, 1934

Vessel Launch and field party, California

Chief of party Robert W. Knox

Surveyed by G.W.Tatchell

Inked by G.W.Tatchell

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contour Approximate contour Form line interval feet~~

Instructions dated April 14, 1932 & supplemental, 19

Remarks:

DESCRIPTIVE REPORT

To Accompany

TOPO SHEETS K, J, I, H, G, B, C, D, E, & F, 1934

POINT LOMA TO SANTA MARGARITA RIVER

CALIFORNIA

FEBRUARY TO JULY, 1934

ROBERT W. KNOX, CHIEF OF PARTY

Scale 1:10,000

INSTRUCTIONS

This work was executed under instructions dated April 14, 1932, and supplemental.

INTRODUCTION

These sheets cover that portion of the coast of southern California between Point Loma on the south and the Santa Margarita River on the north. This area is shown on ten topographic sheets, K, J, I, H, G, B, C, D, E, and F, surveyed betweem February and July, 1934.

Sheet B is on Whatman's mounted paper. All other sheets are on aluminum sheets. The use of Whatman's mounted sheets in this locality was found to be unsatisfactory as periods of hot, dry sunshine alternate during the same day with periods of dampness caused by a wind from the ocean. This caused marked changes in the

Whatman's sheets within periods of less than an hour.

Due to a shortage of aluminum sheets, both sides were used. Sheet N -- on the reverse of Sheet K -- covers part of the area south of Point Loma. Descriptive report of Sheet N will be submitted at a later date in connection with that of the sheets covering the area between Point Loma and the Mexican boundary.

Compilation of aerial photographs of the area between Point Loma and the Santa Margarita River was going forward at the time of this survey. In many places the center of the pictures was so far back from the shore line that the top of the bluffs obscured the high water line. For this reason high and low water line and the toe of the bluffs were run in by plane table, and all topography back of the shore line left for the compilation party.

The general characteristics are the same throughout the entire area of this survey, so a single descriptive report is submitted to cover all ten sheets.

The limits of the various sheets are as follows:
Sheet K -- Point Loma from Ballast Point to Ocean Beach.
Sheet J -- Ocean Beach to Pacific Beach, including Mission Bay.

Sheet I -- (Reverse of Sheet J) Pacific Beach to La Jolla.

Sheet H -- La Jolla to Torrey Pines

Sheet G -- (Reverse of Sheet H) Torrey Pines to Del Mar.

Sheet B -- Del Mar to Leucadia.

Sheet C -- Leucadia to Canyon de las Encinas. See T-5411

Sheet D -- (Reverse of Sheet C) Canyon de las Encinas to Carlsbad.

Sheet E -- Carlsbad to Oceanside.

Sheet F -- (Reverse of Sheet E) Oceanside to 1 mile north of Santa Margarita River.

See Descriptive Report for T-5413

GENERAL DESCRIPTION

There is no natural timber in the area covered by this survey. The land is covered with chaparral except where it has been cleared. The usual forms of desert vegitation extend to the shore line.

Bluffs line the shore throughout the length of this survey except where they have been broken down by the drainage. These bluffs are usually bare of vegitation, light in color, and are prominent and distinctive from the sea. They vary in height, reaching a maximum of slightly over three hundred feet on Sheet H.

In many places the land rises steeply back of the top of the bluffs, often reaching a height of several

hundred feet within a distance of one mile back from the high water line.

The only level land is found where the drainage meets the sea. All drainage is normally dry, with a surface flow only at rare intervals, frequently separated by several years. It is not unusual for even the larger stream beds to remain dry for periods of several years.

During dry periods a sand spit usually builds up across the mouth of most of these stream beds, closing them completely. When a flow occurs, it is necessary for the stream to break through this sand barrier. For this reason the variation in the mouths of these streams and the nearby high water line is considerable, although the rugged nature of other parts of the shore line keeps it fairly constant.

The west side of Point Loma is a series of earth bluffs, varying in height from forty to sixty feet. These earth bluffs are on a stratamof rock, which outcrops in narrow ledges. Sunken rocks and rocks awash are thickly scattered along this stretch of coast.

Mission Bay is at the mouth of the San Diego River. This is normally a dry stream bed, but the tidal

flow in and out of the bay is sufficient to prevent the formation of a sand spit completely across the entrance.

The sand in this vicinity is in constant motion, causing material and rapid changes in the shore line. For a more detailed description of conditions in this vicinity see detailed report attached to descriptive report of Photo Topo Sheet Register No. 5374.

A low sand spit extends down from the north, terminating in Point Medanos on the north side of the entrance to Mission Bay. This sand spit separates Mission Bay from the ocean. It is occupied by the settlement of Mission Beach, consisting largely of beach cottages and an amusement park.

Earth bluffs near the high water line begin a short distance north of △ FOUR SQUARE DOME. These bluffs, varying in height between twenty and forty feet, extend along the high water line to ⊙ SUM, north of La Jolla.

An underlying strata of rock appears again at △ FALSE POINT, and continues through La Jolla to ⊙ SUM. Many long, narrow ledges extend into the

water from this strata of rock, and rocks are scattered thickly along this section of coast line. Ledges, rocks awash, and sunken rocks extend off shore a distance of two hundred meters or more in this place.

In the vicinity of Point La Jolla rock cliffs rise abruptly from high water line to a height of seventy or eighty feet. Wave action has resulted in many caves in these rock cliffs, known locally as "La Jolla Caves" and considered one of the local attractions.

From ⊙ SUM to the pier of the Scripps Institution of Oceanography the shore is low and sandy. This depression is the east end of a submarine valley which reaches considerable depth a very short distance from the shore line.

From this pier to the north limits of this survey the shore is a narrow sandy beach at the foot of bluffs of varying height, except where the bluffs are broken by drainage.

Immediately north of Scripps Institution of Oceanography the bluffs rise to a height of about three hundred feet and continue at about that height as far as Torrey Pines. From Torrey Pines north the bluffs vary in height between twenty and eighty feet.

In many places the high water line is at the toe of the bluff. Where this is not the case, the foot of the bluff has been shown by this survey in pencil.

CONTROL

Control was plotted on all sheets from the unadjusted field computations of Charles Pierce executed in 1933.

This triangulation was executed in two parts. From the Mexican boundary north to ENCINAS 2, 1933 the line between SOLEDAD, 1872 and POINT LOMA LIGHT, (OLD), 1887 was used as a base. That part between Newport and ENCINITAS 2, 1933 was executed from a base near Newport.

There was a discrepancy of several meters at ENCINITAS 2, 1933, where these two parts came together, which discrepancy applies to all stations common to both parts of the triangulation survey.

The positions given for the southern part of this triangulation were used to plot the control on Sheets K, J, I, H, G, and B. Those positions determined. by the northern part of the triangulation were used to

plot control on Sheets C, D, E, and F. Control common to both parts of the triangulation was plotted on each sheet in accordance with the part of the triangulation survey used to determine the positions of the other control on that sheet. For example, ENCINITAS 2, 1933 is a point common to Sheets B and C. It was plotted on Sheet B according to the position given for the southern part of the triangulation, and on Sheet C in accordance with the position given for the northern part of the triangulation.

Realignment of the highway between Oceanside and Encinitas by the State of California made it necessary to remove the station STEWARTS, 1933, and the reference marks. This work was done carefully by this party, and a new station, STEWARTS 2, 1934, established before the former station was destroyed.

Description of STEWARTS 2, 1934 has been prepared on Form 525 and forwarded to the office.

Traverses were run between STEWARTS 1933 and POST 1887, and between STEWARTS 1933 and MULL 2, 1933 before STEWARTS, 1933 was destroyed.

PHOTO POINTS

Certain points, prominent in the aerial photographs, were selected and located on the topo sheets for use as supplemental control in the photo compilation. These points are indicated on the topo sheets by small blue circles and marked in blue with the number of the photograph on which they appear.

SURVEY METHODS

Instruments were adjusted before field work was started. Telemeter rods were compared with a measured base and a reduction of 1% in rod readings found to be necessary. Rods longer than those furnished with the plane table had already been constructed and graduated to agree with the standard rods supplied. A uniform reduction of 1% was therefore made in all rod readings for distances greater than 50 meters.

In most cases traverses were run between triangulation stations; in a few cases between triangulation stations and plane table three-point fixes. Hydrographic signals were located from these traverses, except those about Mission Bay.

Hydrographic signals about Mission Bay, see Sheet J, were located by cuts from triangulation stations and from plane table three-point fixes.

Along the high bluffs north of the Scripps Institution of Oceanography, Sheets G and H, one set of traverses was run along the beach at the foot of the bluffs and another on top.

The traverses along the beach were used to locate the high and low water lines, the toe of the bluffs, and all offlying rocks. Those on top were used to locate the hydrographic signals and points prominent on the photographs for use as supplemental control in the photo compilation. Two traverse systems were necessary in this place because of the extreme height of the bluffs and the fact that hydrographic signals located on top were not visible from a large part of the beach.

For a description of the area back of the high water line along this portion of the coast see descriptive reports of Photo Topo Sheets Register Nos. 5375, 5410, 5411, 5412 and 5413.

CLOSING ERRORS OF TRAVERSES

SHEET K	Traverse Dist. meters	Closure meters
△ ROAD 2, U.S.E. to △ BALLAST POINT LIGHT	950	0
△ ROAD 2, U.S.E. to △ BLUFF	890	2
△ BLUFF to △ PT.LOMA LT.(NEW)	1060	2
△ RESERVE to △ PT.LOMA LT.(NEW)	3240	3
△ RESERVE to plane table fix at ⊙ LED	1230	3
Fix at ⊙ LED to △ SILVER SPRAY STACK	4980	6
SHEET J		
Plane table fix near south abutment Mission Bay Bridge to △ SILVER SPRAY STACK	1100	7
Traverse rerun from new fix nearer △ SILVER SPRAY STACK	880	2
△ COASTER to plane table fix near △ FOUR SQUARE DOME	3120	4
△ COASTER to plane table fix near south abutment Mission Bay Bridge	2215	0
SHEET I		
△ FALSE POINT to plane table fix near △ FOUR SQUARE DOME	1770	0
△ FALSE POINT to △ BENKLY	2240	0
△ BENKLY to △ ROOF	2780	2

SHEET H	Traverse Dist. meters	Closure meters
△ ROOF to △ VIEW	4770	6
△ VIEW to △ BALL	1620	2
△ BALL to △ SHELLMOUND	2290	0
△ VIEW to ⊙ SAN	3670	21
△ VIEW to ⊙ SAN (rerun)	3670	5

SHEET G		
△ SHELLMOUND to △ TORREY	1750	2
△ TORREY to △ SLOUGH	5880	6
⊙ SAN to plane table fix south side of Soledad Valley	2480	6

SHEET B		
△ SLOUGH to △ COAST	1675	3
△ COAST to △ CARDIFF	4040	8
△ CARDIFF to △ ENCINITAS 2	2700	27
△ CARDIFF to △ ENCINITAS 2 (rerun)	2700	9

Note: Lengthwise distorsion of this sheet at this time, measured in office, was less than 1 part in 1000, but field conditions caused extremely rapid and variable changes. The distorsion allowance was considered sufficient to bring the closing error of traverse above within the allowable limits. Traverse was not rerun the third time.

△ ENCINITAS 2 to △ LEUCADIA	2210	10
△ ENCINITAS 2 to △ LEUCADIA (rerun)	2210	5

SHEET C	Traverse Dist. meters	Closure meters
△ Air Beacon No.2 to △ LEUCADIA	870	2
△ Air Beacon No. 2 to △ HART	1100	2
△ HART to △ VAILETTA POINT 2	2000	3
△ VAILETTA POINT 2 to △ POST	2150	5
SHEET D		
△ POST to △ STEWARTS	2750	4
△ STEWARTS to △ MULL 2	2170	2
SHEET E		
△ MULL 2 to △ SALTO	2900	14
△ MULL 2 to △ SALTO (rerun)	2900	3
△ SALTO to △ MYER	1220	0
△ MYER to △ PIER	2000	4
SHEET F		
△ PIER to △ SIDE	1800	1
△ SIDE to △ SANTA MARGARITA RIVER	4000	6
△ JUNCTION to ⊙ EG	820	0

Note: This last traverse was run to connect this sheet with Sheet U to the north, executed by another topographic party.

All traverses which showed a closing error were adjusted by proportion. All signals and other points located from traverses were adjusted by proportion at the time traverses were adjusted.

The positions of the hydrographic signals were verified at the time the high water line was located.

NOTES ON INDIVIDUAL SHEETS

The following notes supplement the general description of the area of this survey at the beginning of this report. They include also a comparison of this survey with previous surveys of the same area.

SHEET K

This sheet joins with Sheet J on the north and with Sheet M on the east. Junctions have been checked and found to be satisfactory.

This sheet was compared with Charts Nos. 5105 and 5107. No photostat of previous topographis sheet was available for the purpose.

Accurate comparison was possible for the southern part of the sheet only, as only this part is shown on Chart No. 5105. Chart No. 5107 is at a different scale.

The high water line developed by this survey agreed very well with that shown on Chart No. 5105.

A rock ledge, bare at low water, extends one hundred to two hundred meters south from the tip of Point Loma. Rocks and shoal water extend even farther south. This ledge does not appear on the present charts but has been accurately delineated by this survey.

The following rocks not indicated on the published chart were developed and located by this survey:

Lat. 32 - 40, 1688 meters, Long. 117 - 14, 1478 meters.

Lat. 32 - 40, 855 meters, Long. 117 - 14, 1196 meters.

The following rock, shown on the chart, was not found by this survey and a careful field inspection failed to develop it:

Lat. 32 - 41, 1145 meters, Long. 117 - 15, 312 meters.

It is believed that this rock does not exist at this time and should be removed from the chart.

The chart shows a rock at Lat. 32 - 41, 947 meters, Long. 117 - 15, 228 meters. This rock falls within an area designated as ledge by this survey, and it is believed that it should be so shown on the chart.

All the above positions are on the 1927 N.A. datum.

There are several minor differences in the location of the shore line at various places along this strip of coast. A careful field inspection indicates that this survey is an accurate delineation of the coast at this time, and that published charts of the area should be amended accordingly.

For a description of the terrain back of the high water line see descriptive report of Photo-Topographic Sheets, Register Nos. 5373 and 5374.

Three rocks were originally shown on this sheet at Lat.32-40,1390m.,Long.117-14,280m. as transferred from Air-photo Compilation Sheet T5373. These could not be found on a field inspection made subsequently, so they have been deleted. Positions of other rocks in this vicinity were verified on this inspection by sextant cuts. See Descriptive Report accompanying Hydrographic Sheet (field) No. 18, submitted by this party.

SHEET J.

This sheet joins Sheet I on the north and Sheet K on the south. Junctions have been checked and found to be satisfactory.

That portion of the shore line north of the entrance to Mission Bay was compared with photostat of Register No. 2013, dated 1889. No records for comparison south of this point were available to this party.

The shore line developed by this survey in the vicinity of Point Medanos differs materially from that shown on Register No. 2013. This was to be expected, as the sand on both sides of the entrance to Mission Bay are changing constantly and rapidly. For a complete discussion of conditions at this place see special report attached to the descriptive report of Photo-Topographic Sheet Register No. 5374.

No attempt was made to show the shore line of Mission Bay on this sheet. It was believed that the shore line in this place could be developed with greater accuracy by the compilation of aerial photogrpahs, which was being done at the time of this survey.

A wide, sandy beach extends from Point Medanos

to the north edge of this sheet. Throughout this entire distance the differences between this survey and the one of 1889 are no larger than are to be expected.

No offlying rocks or other dangers were developed by this survey or the earlier one.

For a description of the terrain back of high water line, see descriptive report of Photo-Topographic Sheet, Register No. 5374.

SHEET I

This sheet joins Sheet H on the north and Sheet J on the south. Sheet junctions have been checked and found satisfactory.

Comparison of the shore line developed by this survey with that on Register No. 2013, dated 1889, shows very close agreement. Comparison with a photostat of a small section south of La Jolla, bearing no register number but apparently supplied from the office and probably executed in 1922, developed larger and more important discrepancies.

The survey of 1889 shows two rocks southeast of △ FALSE POINT, distant about 320 and 440 meters respectively, also a rock about 520 meters west and 205 meters north is △ ISLAND POINT. None of these three rocks was found by the present survey and it is believed that they do not exist at this time.

The survey of 1889 shows a group of three rocks about 700 meters north and west of △ ISLAND POINT. Two of these rocks were located by the present survey but at a greater distance offshore. The position as given on this sheet is believed to be correct. The third rock of the group is included in the area shown as ledge by this survey. As many narrow rock ledges extend into the water at about low water along this section of the coast, this

See Review T-5375

descrepancy could easily be explained by a difference in the stage of the tide at the time of the surveys.

Two rocks shown on Register No. 2013 about 350 meters southwest of △ ISLAND POINT were found by this survey but located nearer the shore. Field inspection indicates that the position given on this sheet is correct at this time.

This survey charts a rock awash about 210 meters northwest of △ BENKLY and another rock awash about 255 meters southwest of △ ISLAND POINT. Both of these rocks are evidently high points of ledges slightly submerged at low water. For this reason the designation on this sheet is believed to be correct.

North of △ FALSE POINT a foul area varying in width from 200 to 300 meters exists along the shore to the north limits of this sheet. Narrow ledges and scattered rocks extend for a considerable distance offshore. This survey is believed to be an accurate delineation at low water, although the tops of the ledges are almost level and a slight change in tide causes them to extend offshore materially.

North of △ FOUR SQUARE DOME to the limits of the sheet earth bluffs are near the high water line.

These bluffs vary from 20 to 40 feet in height.

A rock strata appears at △ FALSE POINT, where it is at about the elevation of low water. This rock strata underlies the earth Bluffs and increases gradually in elevation to △ ROOF at the north limits of this sheet.

For a description of the terrain back of the high water line see descriptive reports of Photo-Topographic Sheets, Register Nos. 5374 qnd 5375.

SHEET H

This sheet joins Sheet G on the north and Sheet I on the south. Junctions have been checked and found to be satisfactory.

The shore line developed by this survey has been compared with photostats of Register Nos. 2013 and 2014, dated 1889.

The shore line of this sheet agrees very well with Register No. 2013, or from △ ROOF to a point about two hundred meters north of the pier of the Scripps Institution of Oceanography where Register No. 2013 ends.

The shore line developed by this survey agrees very well with that shown on Register No. 2014 from Lat. 32 - 52 north to ⊙ BEE. From ⊙ BEE north to SAN the high water line of the old survey follows very closely the foot of bluff line developed by this survey, which falls 25 to 50 meters inshore from the high water line. Both high water line and foot of bluff line are shown by the present survey.

The only marked divergence occurs just south of ⊙ WIM, at which place the high water line developed by this survey, and the foot of bluff line, both fall about 50 meters west of the position shown by the earlier survey. There is evidence of a recent extensive slide

from the high bluff at this place, and numerous large rocks scattered along the beach and not shown by the survey of 1889 tend to confirm the belief that this change was caused by the slide.

This survey found and charted numerous offshore rocks along the coast south of △ VIEW which were not shown by the previous survey. At this time the rocks are in the positions indicated.

At the extreme north edge of this sheet the high water line agrees very closely with that shown by the earlier survey.

Earth bluffs, bare of vegitation and reaching a height of three hundred feet, begin just north of the Scripps Institution of Oceanography and extend to the north limits of the sheet.

A sandy beach forms the shore of this sheet except where rocks are indicated.

For a further discussion of the terrain back of the high water line see descriptive report of Photo-Topographic Sheet, Register No. 5375.

SHEET G

This sheet joins Sheet B on the north and Sheet H on the south. Junctions have been checked and found to be satisfactory.

The shore line developed by this survey was compared with that on photostat of Register No. 2014, dated 1889.

From the south limits of this sheet to ⊙ JEM and from ⊙ DOG to △ STACK IN DEL MAR the shore is a narrow sand beach at the foot of earth bluffs. The shore line of the former survey falls very close to the line at the foot of the bluffs developed by this survey, or somewhat east of the present shore line.

The mouth of Soledad Valley is between ⊙ JEM and ⊙ DOG. This is normally a dry stream bed. During dry periods a sand spit forms across its mouth, closing it off completely. This was the condition when this survey was made, and the shore line along here was found to be about 60 meters west of the position given on Register No. 2014. On account of the conditions, this change is not surprising.

A similar condition exists at the mouth of the San Dieguito River, north of △ STACK IN DEL MAR. This accounts for the shore line at △ SLOUGH being 45 meters

west of the position shown on Register No. 2014.

The point at ⊙ MIN has eroded since the date of the earlier survey, leaving the tip a detached rock as shown by this survey.

The rocks charted offshore north and south of the point at ⊙ MIN were not shown on earlier survey. They have been charted carefully and are in the positions shown at this time.

The pier at Del Mar has been built since the date of the earlier survey.

Register No. 2014 shows a swimming area at PUT. Piles from this old pool were located by this survey. The pool no longer exists.

For a description of the terrain back of high water line see descriptive reports of Photo-Topographic Sheets, Register Nos. 5375 and 5410.

SHEET B

This sheet joins Sheet C on the north and Sheet G on the south. Junctions have been checked and found to be satisfactory.

The shore line developed by this survey has been checked with photostat of Register No. 1898, dated 1887-1888, and photostat of Register No. 2014, dated 1889.

Again the shore line of the earlier surveys follows very closely the foot of bluffs as located by this survey. This difference, averaging about 10 meters, may be caused by accretion, or it may that the earlier surveys assumed the foot of the bluff to be high water line.

The shore line from the south edge of this sheet to a point about 700 meters north of △ SLOUGH is a low sand spit across the mouth of San Dieguito River, closing it completely. There are no bluffs along the shore line in this place.

Hodges Dam and Hodges Reservoir have been constructed on the upper waters of the San Dieguito River since the date of the earlier survey. This tends to control the flow of the stream, causing the closing of the mouth to be more permanent than formerly.

The shore line between ⊙ TAN and △ CARDIFF is another low sand spit completely closing the mouth of San Elijo Lagoon. The mouth of this lagoon was completely blocked at the time of the survey, but was open in January, 1934, when the aerial photographs of this area were secured. In spite of this change, the highwater line developed by this survey in this place varies only about 10 meters from that shown by Register No. 1898.

Ledges not shown on Register No. 1898 were found and charted by this survey at ⊙ MIS, also offlying rocks at ⊙ TAN and additional ledges and rocks near △ ENCINITAS 2. These ledges and rocks are exposed only at low water.

At ⊙ ALT sunken rocks and rocks awash extend offshore a distance of 100 to 200 meters. At times breakers are visible for a quarter of a mile in a southwesterly direction from this point.

All ledges and rocks were carefully charted by this survey and the positions shown on this sheet are believed to be correct at this time.

The point a short distance southwest of ⊙ ALT appears to have eroded about 20 meters since the date

of the earlier survey.

For a description of the terrain back of the shore line see descriptive report of Photo-Topographic Sheets, Register Nos. 5410 and 5411.

SHEET C

This sheet joins Sheet D on the north and Sheet B on the south. Sheet junctions have been checked and found to be satisfactory.

The shore line on this sheet was compared with that on photostats of Register Nos. 1898 and 1899, dated 1887-1888.

The high water line developed by this survey is from 5 to 35 meters west of the position shown on Register No. 1899 from △ POST to ⊙ ANT. South of ⊙ ANT the present shore line agrees very well with that on Register No. 1898.

The difference in shore line north of ⊙ ANT may be due to accretion, or it may be due to the assumption of the base of bluff as high water line by the earlier survey. At the present time a narrow strip of sandy beach separates the high water line from the base of the bluff. The present survey is believed to show accurately the position of both base of bluffs and high water line at this time.

The drainage designated San Marcos Creek is known as Batiquitos Lagoon. It is so named on quadrangles published by the U.S.Geological Survey

and on local,maps, so that designation was adopted in perparing this sheet.

The mouth of Batiquitos Lagoon, from 100 meters north of ⊙ ANT to 250 meters south of △ VAILETTA 2, was completely closed by a sand spit at the time of this survey. The same condition existed at the time of the earlier survey, but a flow in the tributary drainage will cause a channel to be broken through this barrier.

Register No. 1898 shows a structure extending beyond high water line at a point about 80 meters northwest of △ AIR BEACON NO. 2. No evidence of this structure was found by this survey.

A sandy beach extends the entire length of this sheet. No ledges or offlying rocks were developed by this survey, or by that of 1887-1888.

For a description of the terrain back from the high water line see descriptive report of Photo-Topographic Sheets, Register Nos. 5411 and 5412.

SHEET D

This sheet joins Sheet E on the north and Sheet C on the south. Sheet junctions have been checked and found to be satisfactory.

The shore line on this sheet was compared with that on photostat of Register No. 1899, dated 1887-1888.

The shore line developed by this survey agreed very well with that on Register No. 1899.

The mouth of Aguq Hedionda Creek, shown open by this survey, was completely blocked by a sand spit at the time of the earlier survey. As such changes are common at the mouths of all streams throughout the area of this survey, this is to be expected.

The beach is sandy throughout the entire length of this sheet except where rocks between high and low water are indicated by the usual symbol.

No ledges or offlying rocks were found by this or by the earlier survey.

For a description of the terrain back of the high water line see descriptive report of Photo-Topographic Sheet, Register No. 5412.

Circular to in A.D T-543

SHEET E

This sheet joins Sheet F on the north and Sheet D on the south. Sheet junctions have been checked and found to be satisfactory.

The shore line on this sheet has been compared with that on photostats of Register Nos. 1899 and 1900, dated 1887-1888.

The high water line developed by this survey is about 85 meters west of the position given on Register No. 1900 at △ PIER. This difference decreases gradually to the south until the shore lines agree very closely at a point about 400 meters southeast of △ MYER. From this point to the south edge of the sheet the agreement is very close.

The position of the high water line as shown by this survey is believed to be correct. This belief is confirmed by the short distance between the shore line and △ PIER, and information from inhabitants of Oceanside that the beach at this place is building out.

The beach for the entire length of this sheet is sandy, with the exception of that portion from the south edge to a point about 750 meters north

from △ HULL 2, where it is sand and gravel.

The earlier survey shows a pier at a point about 65 meters southeast of ⊙ RED. No piles or other evidence of this pier were found by this survey.

A group of old iron piles, covering an area of 30 feet by 40 feet, was found by this survey about 20 meters offshore from the present high water line and about 215 meters southeast of ⊙ TAN. The earlier survey gives no indication of a structure of any kind in this place.

No ledges or offshore rocks of any kind were found by this survey or by the survey of 1887-1888.

For a description of the terrain back of the high water line, see descriptive reports of Photo-Topographic Sheets, Register Nos. 5412 and 5413.

SHEET F

This sheet joins Sheet U on the north and Sheet E on the south. Junction with Sheet E has been checked and found to be satisfactory. Sheet U was executed by another topographic party. The junction with that sheet has been checked and found satisfactory.

The shore line on this sheet was compared with that on photostat of Register No. 1900, dated 1887-1888.

At ⊙ EG the shore line developed by this survey is about 20 meters west of that on Register No. 1900. This difference increases to the south, reaching 80 meters opposite △ SANTA MARGARITA RIVER. South of the Santa Margarita River the shore line of the present survey is 80 to 85 meters west of that on Register No. 1900.

The shore line of the present survey is believed to be correct at the present time. Evidence obtained from an old resident of Oceanside that the beach has been filling in along this section tends to confirm this.

The present survey shows the mouth of the Santa Margarita River about 300 meters south of the position given on Register No. 1900. There is a wide flat area at the mouth of this drainage, and such changes are to be expected. The mouth as shown on this

survey is correct at this time.

The mouth of the San Luis Rey River is shown completely closed by a sand spit both on this and on the survey of 1887-1888.

The pier at Oceanside, on which △ PIER and △ FLAG POLE ON PIER are located, has been built since the date of the earlier survey.

A sand beach extends the full length of this sheet.

No ledges or offlying rocks of any kind were found either by this survey or the survey of 1887-1888.

For a description of the terrain back of high water line see descriptive report of Photo-Topographic Sheet, Register No. 5413.

LANDMARKS

List of landmarks on Form 567 was submitted with Photo-Topographic Sheet Register No. 5371 covering that part of the coast shown on Sheets K, J, I, and part of H.

List of landmarks on Form 567 will be submitted in connection with Photo-Topographic Sheet, Register No. 5410, to cover the area of the remaining sheets of this survey.

GEOGRAPHIC NAMES

All disputed geographic names within the area of this survey are covered in the descriptive reports of the corresponding Photo-Topographic Sheets.

INKING

Sheets K, J, I, H, G, B, C, D, and E were inked by D.L.Ackland, a civilian draftsman. Sheet F was inked by the topographer, G.W.Tatchell.

All inking was done under the supervision of the undersigned.

Respectfully submitted

John C. Mathisson

John C. Mathisson
Jr. H.& G. Engr.
U.S. C.& G. Survey

Forwarded approved:

Robert W. Knox

Robert W. Knox
H.& G. Engr.
Chief of Party

VERIFICATION REPORT

I have reviewed the sheets covered by this report and have supervised the field and office work in so far as it was possible without interference with the field work.

These sheets are hereby approved.

Robert W. Knox

ROBERT W. KNOX
H.& G. Engineer
Chief of Party

STATISTICS

Note: No topography back of shore line shown on these sheets.

SHEET K	Point Loma from Ballast Point to Ocean Beach	
	Statute miles of shore line	8.9
SHEET J	Ocean Beach to Pacific Beach	
	Statute miles of shore line	4.0
SHEET I	Pacific Beach to La Jolla	
	Statute miles of shore line	4.6
SHEET H	La Jolla to Torrey Pines	
	Statute miles of shore line	5.4
SHEET G	Torrey Pines to Del Mar	
	Statute miles of shore line	4.4
SHEET B	Del Mar to Leucadia	
	Statute miles of shore line	6.6
SHEET C	Leucadia to Canyon de las Encinas	
	Statute miles of shore line	4.0

STATISTICS (continued)

SHEET D	Canyon de las Encinas to Carlsbad	
	Statute miles of shore line	3.0
SHEET E	Carlsbad to Oceanside	
	Statute miles of shore line	3.8
SHEET F	Oceanside to 1 mile north Santa Margarita River	
	Statute miles of shore line	4.6

M-189

REVIEW OF GRAPHIC CONTROL SURVEYS ~~XXXXXXXXX~~ as listed on front cover SCALE 1:10000, 1934

Date of Review
3/3/34

1. These ~~This~~ surveys have been reviewed in connection with Air Photo Compilation Nos. T- (see below) , with particular attention to the following details:

(a) Projection has been checked in the Field.

(b) Accuracy of location of plane table control points.

(c) Discrepancies between detail on this survey and the air photo compilations listed above.

(d) Discrepancies found in descriptions submitted on Form 524 when compared with the air photo compilations listed above.

2. Refer to the reviews and descriptive reports of air photo compilations Nos. T-5373, , , for a more complete discussion of any errors or discrepancies found.

Any material errors found on this survey are noted in subsequent paragraphs of this review, and these have been reported to the Field Records Section and the Cartographic Section.

Notes and corrections resulting from the review are shown on this survey in green.

Reviewed in connection with Air-photo Compilations as follows:

T-5373	T-5410
T-5374	T-5411
T-5375	T-5412
	T-5413

Changes have been made on T-5373 in accordance with T-6222b, T-6223b, and T-6231b. Refer to note added to review of T-5373 for discussion of these changes.

Ralph M. Berry
B.J. Jones