

5034
5034a

Form 504
Ed. June, 1923

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
San Francisco Director

State: California

DESRIPTIVE REPORT

Topographic } Sheet No. 5034
Hydrographic } 5034a

LOCALITY

San Pedro

1923

CHIEF OF PARTY

U. S. COAST AND GEODETIC SURVEY
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DESCRIPTIVE REPORT

to accompany

Sheet T 5034 San Pedro, California.

Robert W. Knox, H. & G. E., Chief of Party.

Instructions.

This sheet has been compiled at the scale of 1:10,000, from aerial photographs, in accordance with Supplemental Instructions, Project HT-102, dated October 24, 1932.

General Description of the Area.

This sheet shows a large part of the cities of San Pedro and Wilmington, Los Angeles County, California, with the usual great density of cultural detail to be found in areas where shipping, transportation, fishing, and the oil industry are of such commercial importance.

Physiography and Culture.

The harbor area is of low relief except to the west where the Palos Verdes Hills descend to the water. On the slope of these hills the city of San Pedro is built, its westernmost limits being at a general elevation of 300 feet. The shoreline from Point Fermin northwestward consists of a rocky bluff rising to a height of about 100 feet above a gravelly beach. North of Point Fermin, in the harbor area, the bluff is lower, gradually diminishing to the north. Much of the area of Terminal Island and the lowlands north of Cerritos Channel are the result of filling operations in connection with harbor dredging. A small area of the sheet, north and west of the Wilmington-San Pedro Boulevard, is given over to truck gardens but otherwise the area is devoted entirely to commercial and residential purposes.

Control.

✓ The sheet is controlled by triangulation performed by Robert W. Knox in 1933 and some earlier triangulation of the Coast and Geodetic Survey. The accuracy of the Los Angeles Harbor Department triangulation was tested by re-determination of the positions of two stations and five intersection points, and found of sufficient accuracy from map use at the scale of 1:10,000. (Maximum difference in latitude 1.3 meters, maximum difference in longitude 1.3 meters.)

Inasmuch as the positions of the harbor department scheme are expressed in rectangular coordinates, it was decided to superimpose the rectangular grid on the polyconic projection and thus be able to plot points as desired either by dm's and dp's, or latitudes and departures. This could readily be done

in this case as the origin of the rectangular scheme is a Coast and Geodetic Survey station (now destroyed) whose position on the 1927 North American Datum is known. This procedure provided a ready check on the accuracy of plotting, as a point plotted by one method could usually be checked by plotting again on the other graticule. It also made it possible to use the rectangular coordinates without converting them to latitudes and longitudes.

Two theodolite three-point fixes were used in locating the new jetty east of Fish Harbor and one in locating the street system in upper San Pedro.

A planetable traverse of the shoreline from Fish Harbor northeast to the edge of the sheet, served to locate the high water line on Terminal Island where a recession of the shore had occurred since the aerial photographs were made. This traverse was adjusted to position on the map sheet by means of four or more radial lines drawn from the planetable stations to surrounding prominent objects for which the coordinates were available. This method is rapid and permitted such graphic fixes to be made at intervals of less than one mile without materially reducing the speed with which the traverse could progress. In only one case was the traverse position in error as much as 3 meters in these very short sections.

The positions, descriptions and computations relating to the 1933 triangulation in this area will be submitted with the report of this triangulation. However, a list of the points and their coordinates, used in the compilation follow as a matter of record of the actual values available in the field office at the time the work was done. The positions recorded in this list are those resulting from the field computations of the 1933 triangulation or final positions of older stations on the 1927 North American Datum.

<u>Stations</u>	<u>Latitude</u>			<u>Longitude</u>		
✓ Deadman's Island 1859 (gone)	33	43	32.608	118	16	09.504
✓ Point Fermin 1855	33	42	32.978	118	17	34.721
✓ Point Fermin Lighthouse 1878	33	42	19.429	118	17	33.967
✓ S. P. Library Dome 1907	33	44	11.20	118	16	45.57
✓ S. P. Breakwater Light 1913	33	42	30.652	118	15	02.454
✓ Tank, SWSB Co. 1920	33	43	57.254	118	16	03.986
✓ Tank, LASB Co. 1920	33	45	04.177	118	16	41.834
+ Tank, round bottom 1920	33	45	31.261	118	16	10.266
✓ Tall concrete chimney 1920	33	43	06.342	118	17	08.829
* White Steel Tank 1920	33	43	16.720	118	16	17.028
✓ Thenerd 1933	33	47	45.600	118	14	26.446
✓ LAHD "30"	33	45	29.203	118	14	37.182
✓ Tank, Smart & Final 1933	33	46	23.69	118	15	45.55
✓ Stack, Blinn 1933	33	46	16.54	118	15	01.64
✓ Stack, Hammond 1933	33	44	54.46	118	15	59.54
✓ Tank, Ford	33	46	08.57	118	14	17.16
✓ Tank, Consolidated 1933	33	46	45.80	118	14	35.34

* Also Tank Munic. Pier 1933
 + also Tank Round Bottom Pier A 1933

<u>Station</u>	<u>Latitude</u>	<u>Longitude</u>
Tower, Catholic Church Wilmington 1933	33 46 58.02	118 16 00.09

A list of the rectangular coordinates of the same or other points resulting from surveys of the Los Angeles Harbor Department, and used in the photo-compilation, are recorded below:

Rectangular Coordinates.

Coordinates in feet referred to C. & G. S. Station.
Deadman's Island.

✓ S. P. Breakwater Lighthouse	6261.73 S	5663.97 E
✓ Point Fermin Lighthouse	7396.37 S	7134.29 W
✓ Stack, Trona Co.	2654.84 S	5011.77 W
✓ Tank, Municipal Warehouse	1605.59 S	635.54 W
✓ Tank, Cotton Compress	1344.75 N	2246.97 W
✓ Tank, SWSB Co.	2491.5 N	466.3 E
✓ Tank, Berth 232	5238.11 N	703.88 W
✓ Tank, LASB Co.	9253.38 N	2728.76 W
✓ Tank, Pier A	11991.23 N	64.03 W
✓ Stack, Borax	11527.99 N	1138.91 E
✓ Tower, Calif. Yacht Club	13770.83 N	3912.99 E
✓ Stack, Blinn	16569.72 N	5731.48 E
✓ Tank, Consolidated	19527.26 N	7950.83 E
✓ Tank, Ford	15764.79 N	9486.38 E

Errors.

It was found impossible to reconcile the position of the concrete chimney, 1920, listed on page 38 of the original abstract of "Geographic Positions, Los Angeles County, Calif.," on the 1927 North American Datum, with the position indicated by the photo-compilation. Investigation disclosed that the present chimney was built within the last few years, consequently a new determination of its position was made and shown above as the Hammond Stack, 1933.

While the Station, Deadman's Island, 1859, no longer exists, it is shown in the tabulation because of its importance as the origin of the system of rectangular coordinates of the Los Angeles and Long Beach Harbor Departments.

Names.

The names used on this map are shown on an accompanying oversheet which will serve as a record of the name and its proper position on the map. Inasmuch as the stick-up names are none too securely attached, it is expected that many will be lost before the sheet is photographed. Names secured after the name-list was sent to Washington for printing do not appear on the sheet, but can readily be added by means of the oversheet. Words which have been stuck in position on the map are

indicated by a line drawn through them; names which must be printed and cemented in place in the Washington office are not so marked.

The names have all, with a few exceptions, been taken from existing charts, maps of the Geological Survey and a preliminary and unofficial map prepared by the Corps of Engineers, U. S. Army. Various other maps were used as a source of street names.

The names "Nigger Slough", "Brighton Beach", and "Terminal Island Beach" do not appear on the chart but locally are in common use.

Changes.

When map sheet T 5034 is superimposed on Chart No. 5146, the major changes are readily apparent. The principal difference in the water features are the high water line between Fish Harbor and Brighton Beach and in the width of the dock between Slip 228 and Slip 230.

Inasmuch as the accuracy of the Terminal Island shore line traverse cannot be seriously questioned, it becomes apparent that the high water line in this section is receding rapidly. The aerial photographs, showing the beach as it was on January 24, 1932 agrees fairly well with Chart No. 5146 although there are indications that recessions had begun. It seems fairly certain therefore that a total movement of about 130 meters has occurred in the past 18 months. No shore line changes of importance seem to have occurred east of the Brighton Beach jetty.

No reason can be assigned for the difference in width of the dock between Slips No. 228 and No. 230 as shown on the two maps.

Many other minor differences between Chart No. 5146 and Sheet T 5034 are apparent, but they are due either to the difference in compilation methods or to the normal changes underway at all times in a city the size of San Pedro.

Marshes.

The large area of marsh land which formerly existed in this area has been reclaimed, with the exception of an area west of the Ford Motor Company plant, adjacent to East Basin.

Landmarks.

Many of the landmarks on this sheet are either tanks, or chimneys, and are so designated on the photo-compiled sheet. While many of these objects would be conspicuous if standing alone, the fact so many are identical in appearance makes it impossible to identify them positively from a distance. Certain objects, however, are so distinctive in color, size, and shape, or so isolated in position, that they have a particular importance to the navigator. The most conspicuous

of these objects falling within the limits of the sheet are probably, 1) the black, cylindrical tank on the Ford Motor Company plant, 2)*a large gray tank of the East San Pedro water works, 3) a tall concrete stack (Trona) south of Fort McArthur, Lower Reservation, and 4) a large stack of the Hammond Lumber Company.

* this is a Gray Tank Terminal 1. water wks. 1933
Pg 8

Personnel.

The drafting of this sheet was performed in a temporary field office in Long Beach, California, under the direction of Robert W. Knox, Chief of Party, in conjunction with a second order triangulation from Newport Bay to San Pedro, California.

The identification of control stations, construction of projections, compilation of the map from the aerial photographs and much of the triangulation computation was performed by T. P. Pendleton.

The inking of the sheet was the work of K. B. Walker, except for hachures and the sand symbols which were done by D. L. Ackland, who also fixed the lettering in position.

Equipment.

The field office was well equipped with the drafting instruments needed in map compilation, including a Keuffel and Esser Company stereoscope for examination of the photographs.

Specifications of the Aerial Photographs.

The photographs used in compiling this sheet were obtained on the same flight as others for adjacent sheets in the same project, and the type of camera used, date and hour of flight, and other pertinent information, is given below in an extract from the Director's letter to Lieutenant Robert W. Knox, dated December 7, 1932:

<u>Date of flight:</u>	January 24, 1932.
<u>Pilot:</u>	Lieutenant Northrup.
<u>Observer:</u>	S. S. Bush.
<u>Time:</u>	12:00 to 12:30 P.M.
<u>Location:</u>	San Pedro, Calif., along coast to Newport.
<u>Camera:</u>	Type T-3A No. 28-30-1, lens E.F. 6.0", R.A. 6.8, filter, B shutter speed 1/50.
<u>Emulsion:</u>	Special S. S.
<u>Altitude:</u>	5,000 feet.

Light Conditions: Excellent; no haze, very heavy smoke, no clouds.

Remarks: Very bumpy. Seemed almost too smoky for pictures, but since the job was en route to Rockwell Field for engine change, we took pictures, intending to re-fly on return trip, if necessary. Lieutenant Phillips assisted as navigator on this flight, and as instructor for personnel of the 15th. Photo Section in use of T 3A camera.

Negatives: O. K. for using.

Conclusions: Even though smoke haze is very heavy, with super-sensitive film satisfactory negatives can be obtained when light is strong.

Tidal Data: The height of the tide at the San Diego Standard Station was 0.8 feet below mean high water at noon January 24, 1932, and 2.5 feet below mean high water at 1:00 P.M.

Quality of Photographs.

No great difficulty was encountered in using the aerial photographs covering this sheet, although the overlap of photographs SP 1 to SP 4, was less than 50 per cent. Fortunately the large amount of control available on this sheet made it possible to carry the work through without depending on the radial intersections for control purposes.

The scale at which the photographs were compiled as determined from the B prints, was very satisfactory, but the combination of tilt and relief in some parts of the area introduced some difficulty in using the wing photographs.

The detail shown on the photographs was probably as good as could be expected considering the haze at the time the pictures were made. This effected the definition on the extreme end of the wing photographs necessitating the omission of some detail near the outer edge of the A prints.

Statistics.

The area of this sheet is approximately 17.8 square statute miles and the shoreline, including the waterfront in the harbor, is approximately 29.8 statute miles.

The photographs used in this sheet are numbered SP 1 to SP 23 inclusive.

The information available in the field as to the time the photographs were exposed and the stage of the tide, is embodied in the Director's letter quoted under "Specifications of Aerial Photographs". It was understood from this that the time of photography was 12:05 P.M. with the tide 0.8 feet

below mean high water.

Compilation.

This sheet was compiled from 5-lens photographs by use of the radial line method, guided by the Director's letter of Supplemental Instructions, Project HT 102, dated October 24, 1932, and the mimeographed "Notes on the Compilation of 5-lens Photographs."

The average scale of the photographs was determined by averaging the scale of the B prints on the flight line, securing the required true distance from conveniently located triangulation stations. Inasmuch as the detail along the shoreline is of greatest importance on these sheets and as the shoreline generally is shown on the B prints, this method of determining the scale seemed more satisfactory than others which also take into consideration the scale of the wing photographs. In this particular group of photographs, the tilts are large and the scale consequently undergoes such great changes on the wings, from print to print, that it is not possible in any case to do much tracing of detail from them.

The triangulation was of such density, with the addition of one theodolite three-point fix in upper San Pedro, it was possible to orient every photograph on control, thus eliminating the need to depend on positions established by the graphical intersections.

The detail in upper San Pedro, shown on the outer edge of the A-prints, Photographs SP 1 to SP 15, is so indefinite and indistinct, that it is not possible to identify positively the entire street system. The same is true of the creeks and small canyons which descend the slopes of the Palos Verdes Hills. This accounts for the omissions of some features in this area.

In several instances, the photographs do not show important features as they exist at present, namely, 1) the new jetty east of Fish Harbor; 2) the street improvements in connection with the new park at Cabrillo Beach; 3) the new shoreline of Terminal Island Beach; 4) the second class road south of Cerritos Channel, west of the Henry Ford Avenue drawbridge; 5) the new transit shed and water tank on the east side of West Basin; and 6) the new track of the Union Pacific Railroad under the Anaheim Street viaduct, a small part only of which appears on this sheet. This detail has been secured by field examinations and surveys.

It was considered of greater importance to avoid congestion of close detail in railroad tracks, so the trackage system as shown on the map, is by no means complete. The attempt has been made, however, to show as many tracks as possible without transgressing on other detail.

A yellow stain (presumably from the celluloid ink used on the sheet) appeared near the north edge shortly before its com-

pletion. Great care has been taken to avoid this difficulty and no reason can be given for its appearance.

~~No attempt has been made to indicate navigational aids other than the harbor lights for which positions were available.~~

Comparison with other Surveys.

The major differences between this sheet and Chart No. 5146 have been mentioned previously. Insofar as the junction of the sheet with its companion sheet T 5033 is concerned, no discrepancy should be noticed, as the edges of the two have been carefully joined on a common match line. Experience with the non-shrink celluloid sheets, over a period of 6 months, has been extremely satisfactory in the matter of their constancy of dimensions and it is believed that failure of the edges to join is good reason to test the sheets for changes in the celluloid.

Recommendations.

No attempt has been made to judge the accuracy of the contours shown on Chart No. 5146, but some opinion about them can be secured by enlarging a portion of the U. S. Geological Survey map "Wilmington, California", which has a scale of 1:24,000, and a contour interval of 5 feet. Although the scale of the sheet is smaller than the scale of Sheet T 5034, the contouring was carefully done and need only have the contours re-touched slightly to get rid of the crude appearance resulting from the enlargement. A comparison of the contouring on the two sheets should cast some light on the quality of the representation.

It is believed that the detail in the harbor is shown within 2 or 3 meters of its true position. Details in the wing photographs, especially the outer edges, may be in error by twice this amount.

Respectfully submitted,

T. P. Pendleton
T. P. Pendleton.

Respectfully forwarded,

Robert W. Knox
Robert W. Knox,
H. & G. E., Chief of Party.

change title to Los Angeles Harbor
on title sheet.

Page 1

Air Photo

7
REVIEW OF TOPOGRAPHIC SURVEY No. 5034

Title (Par. 56)

Chief of Party R.W. Knok Surveyed by ^{Air Photos.} ~~Compilation~~ by T.P. Pendleton Inked by K.B. Walker
~~Ship~~ Airplane Instructions dated Oct. 24, 1932 Surveyed in ^{photos taken Jan. 1932} compilation, 1933

- ✓ 1. The survey and preparation for it conform to the requirements of the Topographic Manual. (Par. 7, 8, 9, 13, 16.) - Information required in Par. 7. shown on title sheet form 537a. ~~then and clearance of drawings Par. 16c was not given~~
- ✓ 2. The character and scope of the survey satisfy the instructions.

~~the compilation~~

- ✓ 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.)~~
5. ~~The delineation of contours-formlines is satisfactory. (Par. 49, 50.)~~

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.)~~

- ✓ 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 Par. of the base report headed "changes" for discussion of comparison with other surveys and the chart~~

10. The span, draw and clearance of bridges are shown. (Par. 16c.)
~~Bridges were shown but the span and clearance were not given.~~

11. ~~Locations and elevations of summits are given. (Par. 19, 31.)~~

12. ~~The tree line was shown on mountains. (Par. 16g.)~~

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.

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.)
No list of prominent objects located by triangulation as required Par. 67. Most of the prominent objects located by triangulation.
- ✓ 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 IMs and DPs, 68.) *No descriptions on form 524 were submitted. Practically all prominent objects were located by triangulation.*
16. A list of landmarks for charts was furnished on Form 567 and plotting checked. (Par. 16d, e, 60.) *No list of landmarks was submitted on form 567. A list of objects recommended for landmarks is given in the work sheet.*
17. The magnetic meridian was shown and declination was checked. (Par. 17, 52.) *None shown.*
- ✓ 18. The geographic datum of the sheet is **NA 1927** and the reference station is correctly noted. (Par. 34.)
- ✓ 19. Junctions with contemporary surveys are adequate.
- ✓ 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.) *Triangulation intersection stations were accurately shown, marked in circles. Triangles have been put around these points in the office while reviewing the sheet.*
- ✓ 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: *This sheet was compiled in Long Beach, Calif. where it was readily possible to settle questions arising as to interpretation of the photos. and was on by an inspection on the ground. The review of the sheet and the report indicates this to be a very thorough and accurate survey.*
Reviewed in office by *B.G. Jones*

Examined and approved:

E. K. Green
Chief, Section of Field Records

J. B. Borden
Chief, Section of Field Work

K. T. Adams
Asst Chief, Division of Charts

G. T. Wade
Chief, Division of Hyd. and Top.

T 5034-A

This sheet shows in red, corrections to Sheet T 5034 from field surveys and office compilation of photographs to April 1, 1934. The field work for these corrections included a complete field inspection of sheet T 5034 by the party of Lieutenant R. W. Knox during March, 1934. Additions and corrections were located by planetable and theodolite three-point fix positions and traverse.

~~The copy of T 5034, which served as a planetable sheet for location of most of the corrections, has been used as this correction sheet (T 5034-A).~~

Notes have also been added as submitted by Lieutenant Knox on printed copies of T 5034, and as shown on photo control sheet T 6044.

In addition to the field locations, the flagstaff at Fort McArthur has been located, and the position of the quadrangle of buildings immediately around it corrected by plotting from the original photographs. The field inspection notes of Lieutenant Knox show the flagstaff to be standing. It is not ~~known~~^{shown} on the original sheet.

A copy of the letter from Lieutenant R. W. Knox, concerning the corrections to sheets T 5033 and T 5034, is attached to this report.

The relocation of the Fish Harbor Jetty was made on planetable sheet T 6044 mentioned previously in this report. This jetty does not show on the photographs which were taken prior to its construction, and it was plotted on the original sheet from sextant and theodolite three-point fix positions.

The negatives for sheet T 5034 will be corrected from this sheet and corrected copies of ~~the sheet~~^{T 5034} supplied the Sales Section.

The names of contributors

Respectfully submitted

B. G. Jones
B. G. Jones

Assistant Cartographic Engineer.

Approved

K. T. Adams

Asst. Ch. Chart Division

Applied to Chart 5101 - May 1936 - R. M. J.

P. O. Box 463, Long Beach, California.

DEPARTMENT OF COMMERCE

U. S. Coast and Geodetic Survey

To: The Director,
Coast and Geodetic Survey.

From: Lieutenant R. W. Knox,
Coast and Geodetic Survey.

Subject: Changes in Sheets Nos. T-5033 and T-5034.

The metal mounted sheet returned to Long Beach for use in revising the Los Angeles Harbor area arrived when the work was nearly completed and was therefore used only in locating a slight change in the shoreline of West Basin. All corrections and changes have been shown in red on sections of lithographic copies of photo-compiled sheets of Los Angeles and Long Beach Harbors. Notes have been made on the copies sent from the office in reply to questions raised in Washington and these copies have therefore been returned.

The rectangular coordinates of the three pierhead corners in Long Beach Harbor have been secured from the harbor department of that city and are recorded on the sheet. The coordinate system used in this harbor is identical with that of the Los Angeles Harbor Department. The grid system has been shown in Long Beach Harbor but should be replotted on the original sheets for use.

Yacht moorings, or floats, are shown in correct position but generalized so far as individual berths are concerned. These floats cannot be classed as permanent features and greater detail seems unnecessary.

Bridge piers and fender piling have been shown on the three bascule bridges on these sheets. The bridge across the entrance to Long Beach Harbor will be removed at an early date, possible in the next few months.

Attention is drawn to isolated piles and dolphins by appropriate notes.

Pipe and cable crossings have been shown where their presence is indicated by signboards.

New construction of wharves and buildings account for some additions to the sheet. Several changes in the high water line in Long Beach are due to dumping of debris from the March 1933 earthquake. Contracts have been let for the construction of eight or nine piers and a new jetty at the

entrance to Fish Harbor.

A considerable change in the configuration of the high water line at the mouth of the Los Angeles River occurred after the severe storm of December 31, 1933. It is too early to say that the high water and low water lines will remain in their present positions which are approximately as shown in red.

The position of the radio mast on the San Pedro breakwater was determined in 1926 and will be found recorded on page 36 of Geographical Positions of Triangulation Stations, Vol. III, Los Angeles County, California. The distance between the mast and the lighthouse was measured as 82.4 meters.

The azimuth of the Fish Harbor entrance channel was determined as 327° from hydrographic sheet No. 10 of this party, not yet submitted to the office.

Attention is drawn to the changes in dates and markings of three old triangulation stations not connected with the 1933 work, namely, Tank, LASB Co., 1920; S. P. Library Dome, 1907; and Tank, SWSB Co., 1920.

(Sgd.) Robert W. Knox
Robert W. Knox
Chief of Party.
by John C. Mathisson.
(Sgd.)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5034

AIR PHOTO 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

REGISTER NO. T 5034

State CaliforniaGeneral locality Southern ~~San Francisco~~ CoastLocality San Pedro Harbor and WilmingtonDate of photographs January 24, 1932Scale 1:10,000 Date of compilation June 30, 19 33

Lient. Northrup, Pilot

Vessel Army Air Corps F1A airplane S.S. Bush, Photographer

Reviewed and recommended for approval

Chief of Party Lieut. R. W. Knox *R. W. Knox* June 30, 1933

Photographs plotted by

Surveyed by T. P. Pendleton *T. P. Pendleton* June 30, 1933Inked by K. B. Walker *K. B. Walker* June 30, 1933D. L. Ackland *D. L. Ackland*

Heights in feet above to ground to tops of trees

Contour Approximate contour Form line interval feet

Instructions dated October 24, 19 32Remarks: Compilation of aerial photographs Nos. S.P.1-S.P.23Reduced to scale and printed by photo lithographic processPolyconic projection by T. P. Pendleton *T. P. P.* March 27, 1933Projection verified by K. B. Walker *K. B. W.* March 27, 1933Control plotted by T. P. Pendleton *T. P. P.* March 27, 1933Control verified by K. B. Walker *K. B. W.* March 27, 1933Note

Corrections to Sheet T 5034 from field surveys and office compilation of photographs to April 1 1934. are shown on 5404a and T 6044.