

6207

U. S. COAST & GEODETIC SURVEY
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6207

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

State: California

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 41-A
Hydrographic }

LOCALITY
Southern California Coast
Cortes and Tanner Banks

~~Bishop rock~~

1936

CHIEF OF PARTY

H. B. Campbell

JS

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
JUN 13 1937
REG. NO.
Acc. No. _____

HYDROGRAPHIC TITLE SHEET

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

Field No. 41-A

5102-5
526

REGISTER NO. H6207

State California

General locality Southern California Coast

Locality Cortez and Tanner Banks ~~and Bishop Rock~~

Scale: 20,000 Date of survey Aug 8 to Oct 21, 1936

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

Chief of Party H. B. Campbell

Surveyed by Ship's Officers (J. C. Sammons)

Protracted by G. R. Fish

Soundings penciled by G. R. Fish and W. R. Porter

Soundings in fathoms ~~feet~~

Plane of reference M L L W

Subdivision of wire dragged areas by _____

Inked by _____

Verified by _____

Instructions dated June 23, 1934 and July 16, 1935, 19____

Remarks: Development of shoal areas covered by sheet 41.

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 41-A.

Season of 1936

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

H. B. Campbell, Commanding.

LOCALITY

This survey covers the shoalest areas on Cortes and Tanner Banks, including Bishop Rock, and is about 40 miles southwest of San Clemente Island, Southern California.

AUTHORITY

This survey, Project No. HT-187, was made under the Director's instructions dated June 23, 1934, and supplemented by instructions dated July 16, 1935.

METHOD OF SURVEY

All work on this sheet is controlled by visual fixes on buoys, launch JOANNE and Str. PIONEER, except BB day on Tanner Bank which is controlled by bearings and bobm distances. It was intended to do this work with hand lead sounding from the ship, but the current was too strong to control the ship as slow speed, and it carried the ship off of the shoal.

Latitude 32° 26', Longitude 119° 07': The position of the signals were transferred from sheet No. 41. Signals A and B were held fixed and C, W, and S were adjusted to final positions by considering various three angle fixes found in the sounding volumes. For ease in plotting and because no better values could be found, only one position of W and S was used for all hydrographic work in this area.

Latitude 32° 42', Longitude 119° 08': The position of AN was scaled from sheet No. 41. the plotted positions of X, Y, and NEER, were obtained from data in the launch sounding volumes.

Latitude 32° 44', Longitude 119° 11': The position of the PIONEER when used as a signal for launch hydrography on October 21, 1936, is given in the sounding volumes. No allowance was made for the swing of the ship at anchor.

Latitude 32° 29', Longitude 119° 13': The position of JO was transferred from sheet No. 41. The positions of BUOY and PIONEER were obtained from data in the Bomb Record for sheet No. 41 on August 8, 1936. Due to the large scope of the anchor chain on the PIONEER as compared to that on JO and BUOY, the position of the anchor for the PIONEER was

plotted and the scope of the anchor chain and the heading of the ship (see front of sounding volume for headings of ship) was taken into consideration when plotting the fixes. The foremast on the PIONEER was the object sighted upon. The scope of the mooring for signal JO was not considered due to insufficient data.

All soundings are hand lead or wire except BB day on Tanner Bank, which are fathometer sounding by the STR. PIONEER.

COMPARISON WITH PREVIOUS SURVEYS

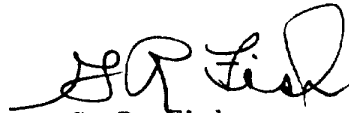
Latitude 32° 21.6', Longitude 119° 07.7'. Minimum depth of 12 fathoms by hand lead 200 meters south of 12 fathom minimum sounding on H-4551-b. 25 minutes spent in drift sounding. 10 and 11 fathom soundings (fathometer) on BB day are probably strays and are not shown.

Latitude 32° 28.8', Longitude 119° 12.8': Minimum depth of 9-1/4 fathoms. Compares with 10 fathoms shown 950 meters to WxN on H-4267.

Latitude 32° 26.5', Longitude 119° 06.4': Compares with sheet H-4267. Minimum of 4-5/6 fathoms compares with minimum of 5 fathoms shown on H-4267 approximately 450 to WxN. See par. 8a. review.

Latitude 32° 26.7', Longitude 119° 07.7': Compares with H-4267. Breakers outlined on H-4267 fall approximately 650 meters NE of least depth of 3-4/6 fathoms on new sheet. See par. 7F review

Latitude 32° 44.1', Longitude 119° 11.5': Development to discredit 14.9 fathom sounding between 11 and 12C and sheet 41. Sounding discredited. H-6206



G. R. Fish,
Jr. H. & G. Engr.,
U.S.C. & G.S.S. PIONEER.

STATISTICS

Sheet Field No. 41-A.

| Place | Day | Date | Stat Mi. | Sndgs | | Positions |
|-------------|-----|-------|----------|-------|------|-----------|
| | | | | VC | HL | |
| Bishop Rock | a | 8/24 | 18.0 | 112 | 328 | 102 |
| | b | 25 | 22.0 | 89 | 409 | 125 |
| | c | 26 | 16.2 | 50 | 401 | 111 |
| Cortez Bank | a | 8/8 | 3.0 | 54 | - | 25 |
| | b | 9m | 7.5 | 193 | 139 | 134 |
| Tanner Bank | a | 10/14 | 5.0 | 90 | 27 | 35 |
| | b | 21 | 9.8 | 290 | 0 | 134 |
| TOTALS | | | 81.5 | 878 | 1304 | 666 |

Chief of Party's Report of Inspection
of Sounding Records and Sheet.

This sheet and the accompanying records for this survey have been
examined and are approved by me.

The sheet was protracted by Lt. (j.g.) G. R. Fish. Soundings
were penciled by Lt. (j.g.) G. R. Fish and Lt. (j.g.) W. R. Porter.
The descriptive report was written by Lt. Fish.

No additional work on this area is recommended.



H. B. Campbell,
H. & G. Engineer,
Chief of Party,
Commanding Ship PIONEER.

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 22, 1937.

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. E. P. Ellis.

Plane of reference
~~Tide Reductions~~ approved in
3 volumes of sounding records for

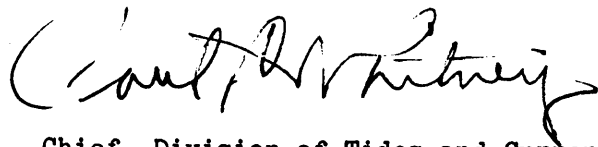
HYDROGRAPHIC SHEET 6207

Locality Cortes and Tanner Banks, South California Coast.

Chief of Party: H. B. Campbell in 1936.
Plane of reference is mean lower low water, reading
3.6 ft. on tide staff at Wilson Cove
16.2 ft. below B.M. 2

Height of mean high water above plane of reference is 4.4 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES
 Survey No. **H6207**

| Name on Survey | On Chart No. 5702 | | On previous survey | | On U. S. quadrangle Maps | | From local information | | On local Maps | | P. O. Guide or Map | | Rand McNally Atlas | | U. S. Light List | |
|----------------------------------|-------------------|----|--------------------|----|--------------------------|----|------------------------|----|---------------|--|--------------------|--|--------------------|--|------------------|----|
| | A. | B. | C. | D. | E. | F. | G. | H. | K. | | | | | | | |
| <u>California</u> | | | | | | | | | | | | | | | | 1 |
| <u>Tanner Bank</u> | | | | | | | | | | | | | | | | 2 |
| <u>Cortez Bank</u> | | | | | | | | | | | | | | | | 3 |
| <u>Bishop Rock</u> | | | | | | | | | | | | | | | | 4 |
| | | | | | | | | | | | | | | | | 5 |
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| | | | | | | | | | | | | | | | | 24 |
| | | | | | | | | | | | | | | | | 25 |
| Names underlined in red approved | | | | | | | | | | | | | | | | |
| by <u>ATE</u> on 6/17/37 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | 27 |

Remarks

Decisions

| | Remarks | Decisions |
|----|---------|----------------------|
| 1 | | <i>USGB decision</i> |
| 2 | | <i>see H-6206</i> |
| 3 | | <i>" "</i> |
| 4 | | <i>" "</i> |
| 5 | | |
| 6 | | |
| 7 | | |
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| 25 | | |
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| 27 | | |

Field Records Section (Charts)

H6207

HYDROGRAPHIC SHEET NO.

The following statistics will be submitted with the cartographer's report on the sheet:

| | |
|--|---------|
| Number of positions on sheet | .666 |
| Number of positions checked | ...87. |
| Number of positions revised | ...4... |
| Number of soundings recorded | ...2182 |
| Number of soundings revised | ...21 |
| Number of signals erroneously plotted or transferred | ...0... |

Date: 16 Nov., 1937

Verification by *L. C. McElroy*

Time: 7 days 2 hours

Review by *J. A. Mc Cormick, Nov. 4, 1937.*

Time: 39 hrs.

HYDROGRAPHIC SURVEY NO. H-6207

Smooth Sheet Yes

Boat Sheet 5

Sounding Records 3 Vols. _____

Descriptive Report Yes

Title Sheet Yes

List of Signals -----

Landmarks for Charts (Form 567) None

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service None
(Circular Nov. 30, 1933)

Remarks HYDROGRAPHY

Total Days7.....

Last Date Oct. 21, 1936

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT
~~PHOTOSTAT OF~~

} No. H-6207
 } ~~No. 6207~~

{ received June 13, 1937
 { registered June 15, 1937
 { verified
 { reviewed
 { approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

| ROUTE | | Initial | Attention called to |
|-------|--|---------|---------------------|
| 20 | | | |
| 22 | | | |
| 24 | | | |
| 25 | | | |
| 26 | | | |
| 30 | | | |
| 40 | | | |
| 62 | | | |
| 63 | | | |
| 82 | | | |
| 83 | | | |
| 88 | | | |
| 90 | | | |
| | | | |
| | | | |

RETURN TO

| | |
|----|-------------|
| 82 | C. K. Green |
|----|-------------|



16 November, 1937.

Report on H 6207
Verifying and Dubbing

1. The records, as a whole, conform to the requirements of the General Instructions.
2. The usual depth curves can be completely drawn within the limits of the survey.
3. The field plotting was completed to the extent prescribed in the Hydrographic Manual. The major portion of this survey was development consequently it was necessary to protect more than the prescribed amount of positions in order to plot the soundings.
4. The office draftsman did not have to do over any part of drafting done by field

party except as noted on the
statistic sheet.

5. The junctions with # 6206
(1936) are satisfactory.
6. There is no shoreline on
this sheet and the signals
were located by the hydrographic
party.
7. The aids to navigation
were located by the hydrographic
party.
8. In lat. $32^{\circ} 28.7'$, long. $119^{\circ} 12.8'$.
There is a $9\frac{1}{4}$ fathom sounding
between positions 90 and 91 b.
This sounding is the least
depth found in this area.
The hydrographic party took
~~many~~ numerous detached
positions but did not cover
this particular spot.

Respectfully submitted,
G.C. McGlosson

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6207 (1936) FIELD NO. 41a

Cortes and Tanner Banks, Southern California Coast, California.

Surveyed in August - October 1936, Scale 1:20,000

Instructions dated June 23, 1934 and July 16, 1935 (PIONEER)

Hand Lead and Machine Soundings.
Fathometer Soundings.

3 Point fixes on buoys
RAR control.
Vertical angles and bearings.

Chief of Party - H. B. Campbell.

Surveyed by - J. C. Sammons.

Protracted by - G. R. Fish.

Soundings plotted by - G. R. Fish and W. R. Porter.

Verified and inked by - G. C. McGlasson.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual except as follows:

- a. No reference station was indicated on the smooth sheet. This was accomplished in the office.
- b. The whistle buoy in lat. $32^{\circ} 26.6'$, long. $119^{\circ} 07.3'$ and the spar buoy 0.3 mile to the east were shown on the smooth sheet as hydrographic signals with nothing to indicate that they were also navigational buoys. The information was found in the sounding volumes for H-6206 (1936), not properly indexed, however, and the proper symbols added to the smooth sheet in the office.
- c. Different colors were not used where day letters were duplicated. This resulted in three separate groups of sounding days, all beginning with the letter "a", red. This was not corrected in the office as it would have entailed considerable work.
- d. Position numbers and day letters were not entered on the cover label and title page in the same color used in the records. (Par. 138). This was not corrected in the office because of the confusion already caused by the duplication of day letters and colors. (See par. 1c, this review).
- e. A list of signals used was not included on the title page of the first volume of records. (Par. 139).

The Descriptive Report satisfactorily covers all items of importance except as follows:

- f. No recommendations are made concerning the disposal of the charted 2-1/2 fathom sounding on Bishop Rock in lat. 32° 27', long. 119° 08' and the charted 4-1/4 fathom sounding one mile east southeast. These depths were not verified on the present survey. (See par. 7f and 8a, this review).
- g. Sufficient information is not given on the scope of the anchor chain on the station buoys nor the distance from the buoys of the masts of vessels tied up to them and used for visual fixes. Nothing was said about the method of attaching hydrophones to buoys or the swing of the hydrophones with the tide.
- h. Only brief mention is made of the 9-1/4 fathom least depth obtained in lat. 32° 28.75', long. 119° 12.88' (page 2). The 9-1/4 and the two 9-3/4 fathom depths 0.1 mile to the westward were obtained on regular sounding lines. There is evidence in the sounding volumes that drift soundings were obtained in the vicinity of the 9-3/4 but there is nothing said about drift soundings around the 9-1/4 which was obtained subsequent to both the drift soundings and the 9-3/4. Fathometer soundings of 9, 6 and 5-1/2 fathoms obtained in this area between pos. 15 and 16C on H-6206 (1936), although inconclusive in themselves, do indicate the possibility of shoaler depths than the 9-1/4.

2. Compliance with Instructions for the Project.

The survey satisfies the instructions for the project except as follows:

- a. The shoal area with a least depth of 9-1/4 fathoms in lat. 32° 28.75', long. 119° 12.88' should have been further developed. (See par. 1h, this review). In addition to the possibility of shoaler depths on the 9-1/4 fathom spot there is an 11 fathom fathometer sounding transferred from H-6206 (1936) in lat. 32° 28.37', long. 119° 12.88', which is undeveloped on the present survey, having no soundings nearer than 250 meters on the northeast.
- b. The 3-4/6 fathom soundings on Bishop Rock in lat. 32° 26.8' long. 119° 07.6' should have been further developed particularly in view of the 2-1/2 fathom depth now charted. (See par. 1f and 7c, this review).
- c. For discussion of failure to comply with par. 24 of instructions to the GUIDE of April 4, 1932 (basic for this area) relative to fathometer soundings under 15 fathoms and of subsequent treatment of these soundings in the office, see par. 1h and 2a, review of H-6206 (1936).

3. Shoreline and Signals.

This is an offshore survey and contains no shoreline within its limits.

Locations of survey buoys and hydrophone stations originate with the following sources:

- a. The position of the PIONEER on Oct. 21, 1936, when it was anchored and its foremast used for vertical angles taken from the launch, was obtained from bomb intersections recorded in volume 3, page 15, of the records for the present survey. The position was plotted on H-6206 (1936) because the necessary time arcs are not shown on the present survey. It was then transferred to the present survey. The position was arbitrarily shifted in the office in order to obtain better agreement between the soundings in this vicinity on the present survey and those on H-6206 (1936). (See par. 6, this review).
- b. Signals "Jo" and "An" are the same as hydrophone stations "Cortes 2" and "Tan" respectively, shown on H-6206 (1936). For source of locations, see paragraphs 3b and 3c, review of H-6206 (1936).
- c. Positions of the PIONEER for Aug. 8-9, 1936 and signal "Buoy" were obtained from data recorded at positions 67-69F in volume 10 of the records for H-6206 (1936).
- d. Positions of signals "X", "Y" and "Neer" were obtained from data recorded in volume 3, page 5, of the records for the present survey.
- e. For source of locations of signals "A", "B", "C", "W" and "S", see paragraphs 3d and 3e of the review of H-6206 (1936).

4. Sounding Line Crossings.

Sounding line crossings are satisfactory.

5. Depth Curves.

The usual depth curves may be satisfactorily drawn.

6. Junctions with Contemporary Surveys.

The junctions with H-6206 (1936) on each of the four shoal developments which comprise the present survey are in general satisfactory. The following discrepancies were noted however:

- a. The entire development in approximate lat. $32^{\circ} 44'$, long. $119^{\circ} 12'$ was out of position about 400 meters in a southwesterly direction with relation to H-6206 (1936).

The control on H-6206 (1936) is considered the more accurate as it consisted of fairly good bomb intersections while the present survey in this area was controlled by vertical angles and bearings taken on the mast of the PIONEER while at anchor. The entire development on the present survey was accordingly shifted in the office (projection changed) to bring it into agreement with H-6206 (1936).

- b. An 11 fathom fathometer sounding in lat. $32^{\circ} 28.37'$, long. $119^{\circ} 12.88'$ on H-6206 (1936) falls in 19 fathoms on the present survey. The discrepancy is probably due to the method of control used in this area on the present survey. (Horizontal angles on the mast of the PIONEER with the scope of the anchor chain corrected for and on floating signals "Jo" and "Buoy" not corrected for scope. See pages 1 and 2, descriptive report). The 11 could not be shifted as the nearest position (28M) on the line on which it occurs was used in the location of signal "Jo".

7. Comparison with Prior Surveys.

- a. H-289 (1851), 1:380,000.

This is a reconnaissance survey which contains very few soundings within the general area of the present survey. It is of no current value and should be superseded in future charting.

- b. H-355 (1853), 1:5,000.

This survey is a development of a portion of Cortes Bank. Depths are in substantial agreement with those on the present survey but are approximately two miles out of position in a northeasterly direction. As the present survey is as well developed and much more accurately controlled, it should supersede the above survey in future charting.

- c. H-542 (1856), 1:40,000.

This survey is a development of the entire area of Cortes Bank. Depths are in fair agreement with those on the present survey but are approximately three miles out of position in a southeasterly direction. The 2-1/2 fathom sounding (charted) on Bishop Rock in lat. $32^{\circ} 26.8'$, long. $119^{\circ} 07.6'$ on H-542 (1856) was not verified on the present survey nor is it mentioned in the descriptive report. It could not be found in the sounding volumes for H-542 (1856) but a note on the smooth sheet authenticates it. The present survey shows a minimum depth of 3-4/6 fathoms in the vicinity and is closely developed. There is nothing in the records, however, to indicate that drift soundings were obtained. The 2-1/2 has not been carried forward to the present survey because of the indefiniteness of its position but the evidence on the present survey is not

This 2 1/2 depth is plotted on chart with sunken rock symbol (NH 17, 18)

considered sufficient to disprove its existence and, until the area is further investigated by drift soundings or wire drag, it should be retained on the chart. H-542 (1856) contains no other information which needs to be retained and should be superseded by the present survey in future charting.

d. H-4265b (Add'l. Work - 1928), 1:120,000.

This survey contains a very few soundings south of Cortes Bank Whistle Buoy which fall within the limits of the present survey. The control is based on dead reckoning and the soundings were obtained by fathometer. Depths are in fair agreement with those on the present survey. It contains no information which needs to be retained and should be superseded by the present survey for charting purposes.

e. H-4267 (1923), 1:40,000; H-4549a (1925), 1:140,000; H-4549b (1925), 1:20,000; H-4551a (1926), 1:100,000.

These surveys cover various portions of the present survey. Depths are in fair agreement with the present survey, being but little displaced because of the difference in control. The present survey, however, is more accurately controlled and better developed and should supersede the above surveys in future charting.

f. H-4551b (1926), 1:20,000.

This survey covers the present survey on Tanner Bank. It is controlled by R.A.R. and the soundings are mostly sonic and tube. Depths are in fair agreement with those on the present survey. The 19 fathom tube sounding (charted) in lat. $32^{\circ} 41.7'$, long. $119^{\circ} 07.0'$ on H-4551b (1926) originates with positions 95 - 96 C and falls in depths of 30 fathoms on the present survey. The surrounding depths on the two surveys are in good agreement but the retention of the tube sounding on the chart is not warranted in view of the lack of shoal indications in the fairly close development on the present survey. The present survey because of its closer development and better control should supersede the above survey in future charting.

8. Comparison with Chart 5101 (New Print dated August 23, 1937).

a. Hydrography.

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and on the following additional information:

- (1) The $4\text{-}1/4$ fathom sounding in lat. $32^{\circ} 26.7'$, long. $119^{\circ} 06.8'$ originates with Chart Letter 140 of 1926. A $31\text{-}1/2$

foot sounding was obtained by a Lighthouse Tender. When a tide correction of 5-1/2 feet (furnished by the Division of Tides and Currents) was applied, the sounding reduced to 26 feet. The minimum depth obtained on the present survey in this area was 4-5/6 fathoms. There is no information available concerning the type of lead line used on the tender and it is possible that it may have been slightly in error. The 5-1/2 foot tide correction is one foot greater than the range of tide used on the present survey. In view of these considerations and because of the close development on the present survey, the 4-1/4 fathom sounding should be disregarded in future charting.

b. Aids to Navigation.

The position of Whistle Buoy "2 CB" shown on the present survey in lat. 32° 26.6', long. 119° 07.3' is 0.5 mile east of the charted position. The spar buoy located 0.3 mile to the east of the whistle buoy has been replaced by a nun buoy subsequent to the date of the present survey (Lighthouse Notice to Mariners 53 of 1936) and is so shown on the latest print. A copy of the present survey showing the positions of these aids has been furnished the Lighthouse Bureau.

9. Field Plotting.

The field plotting was in general satisfactory. Sufficient consideration, however, was not given by the field plotter to the junctions with H-6206 (1936). (See par. 6, this review).

10. Additional Field Work Recommended.

The survey is in general satisfactory. The following additional work is, however, desirable and should be considered when further surveys are planned in this area:

- a. Further development of the shoal areas in the vicinity of the 9-1/4 fathom spot in lat. 32° 28.75', long. 119° 12.88', (see par. 1h and 2a, this review) and the 3-4/6 soundings on Bishop Rock in lat. 32° 26.8', long. 119° 07.6' (see par. 2b and 7c, this review). If feasible, wire drag investigations should be made.

11. Superseding Old Surveys.

Within the area covered the present survey supersedes the following surveys for charting purposes:

| | | | | | |
|---------|--------|---------|---------|--------|---------|
| H-289 | (1851) | in part | H-4549a | (1925) | in part |
| H-355 | (1853) | " " | H-4549b | (1925) | " " |
| H-542 | (1856) | " " | H-4551a | (1926) | " " |
| H-4265b | (1928) | " " | H-4551b | (1926) | " " |
| H-4267 | (1923) | " " | | | |

12. Reviewed by - J. A. McCormick, Nov. 5, 1937.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green, *C. K. Green*
Chief, Section of Field Records.

L. O. Tolbert
Chief, Division of Charts.

Fred. L. Pearson
Chief, Section of Field Work.

G. Hude
Chief, Division of H. & T.

Applied to drawing of Chart 5101
" " Compilation " " 5020

S. B. M. July 1938
Aug 1938 S.B.M.