

6354

U. S. COAST & GEODETIC SURVEY
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Form 504
Rev. April 1935

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Topographic }
Hydrographic } Sheet No. 6354

State S. F. ALASKA

LOCALITY
APPROACHES TO SITKA HARBOR
NORTH OF WESTERN CHANNEL
SITKA SOUND

1938

CHIEF OF PARTY
C. Jones

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. 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. 4

REGISTER NO. 6354 **HG354**

State S.E. ALASKA

General locality APPROACHES TO SITKA HARBOR
~~SITKA SOUND~~

Locality NORTH OF WESTERN CHANNEL
~~APPROACHES TO SITKA~~

Scale 1:10,000 Date of survey JULY-AUGUST, 1938

Vessel U. S. C. & G. S. S. EXPLORER

Chief of Party G. C. JONES

Surveyed by H. C. APPELGUIST

Protracted by W. W. WEIDLICH

Soundings penciled by W. W. WEIDLICH

Soundings in fathoms 554

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by _____

Inked by _____

Verified by J.A.M^cCormick

Instructions dated March 7, 1938 and May 5, 1938, 19____

Remarks: Project HP 220

DESCRIPTIVE REPORT
TO ACCOMPANY HYDROGRAPHIC SHEET FIELD NO. 4
OFFICE REGISTER NO. 6354
APPROACHES TO SITKA HARBOR
SOUTHEAST ALASKA

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET FIELD NO. 4

OFFICE REGISTER NO. 6354

APPROACHES TO SITKA HARBOR

SOUTHEAST ALASKA

AUTHORITY:

Authority for this survey is contained in the Director's Instructions dated March 7, 1938, and supplemental instructions dated May 5, 1938, Project HT 220. ✓

SCALE:

The scale of this survey is 1:10,000. Soundings are in fathoms and fractions. ✓

LIMITS:

This survey covers a part of the West Channel, and includes the area north of the West Channel up to Lat. $57^{\circ}04.5'$, and from Long. $135^{\circ}23.'$ to Long. $135^{\circ}26.7'$. The northern and the western limits are well outside the limits of Chart #8244. ✓

SURVEY METHODS:

Standard Coast and Geodetic Survey methods were used. In general, soundings under 15 fathoms were taken with the hand lead and deeper soundings were made by wire. A 10 lb. hand lead and a 14 or 18 lb. lead on the wire were used. ✓

Tender No. 2 was used on all but one day. On the last day the catamaran was used to run some splits in the vicinity of the Apple Island group. The letter days of Tender No. 2 are shown in blue, of the Catamaran in green. Launch #76 was used by Mr. Weidlich on several mornings during minus tides in searching for rocks. The letter days are shown in red. The shoal soundings obtained by wire drag are also shown and the letter days shown in red with the notation "W.D. No. 1" or No. 2. ✓

Drag sags shown in green and day letters removed.

JAM.

The sounding lines were originally laid out 100 meters apart and running north and south. However, due to the irregular bottom, numerous splits were run and the spacing of the lines is about 50 meters over the greater portion of the sheet. ✓

Little time was spent in searching for the least depth on the shoals in the area covered by the wire drag. In the area not covered by the drag, considerable time was spent in developing and drifting over the shoals, numerous detached soundings were taken but only the shoaler ones recorded. ✓

Ranges, rather than compass courses, were used throughout the sheet. ✓

CONTROL:

Control for this survey was furnished by triangulation executed in 1938 by the EXPLORER, and by Topographic Sheets Nos. 6631 and 6635. ✓

KELP:

Very little kelp grows in this area. A few of the rocks are marked by kelp, and in all cases this was noted and has been shown on the sheet. ✓

TIDES:

Reducers for all the work was taken from the records of the Standard Automatic Tide Gage maintained at the Standard Oil Dock in Sitka. ✓

LOW WATER LINE:

The low water line was obtained by the topographer. The abrupt depths near the shores as well as swell, made it impracticable to attempt to locate the low water line with a launch. ✓

DEPTH CURVES:

Due to the irregular bottom, the depth curves are rather erratic, but in general they seem to resemble the shore line of the islands in the vicinity. All the depth curves specified in the manual were not shown as this would cause confusion in the crowded areas and as the steep slopes near the shoreline would not permit the drawing of the shoaler curves. ✓

DOUBTFUL SOUNDINGS:

The first sounding after Position 33, e day, was 26 fathoms, but was rejected as the sheave register returned to 10 fathoms instead of 0. This sounding was between a 17 and

a 12 and probably should have been 16, but it was not needed and therefore rejected.

NO BOTTOM SOUNDINGS:

There are several "no bottom" soundings recorded. They were practically all obtained at the ends of splits over shoals and it was felt unnecessary to return and secure good soundings at these places.

SHOALS, DANGERS, AND OBSTRUCTIONS:

(1) A shoal in Latitude $57^{\circ} 04.16$, Longitude $135^{\circ} 26.40'$ with a least depth of $2\frac{1}{2}$ fathoms. The area is rocky with a very irregular bottom. 100 meters to the northwest, a sounding of 2 fathoms, 4 feet was obtained. Both of these appeared to be on rocks. Chart No. 8281 shows a sounding of $2\frac{3}{4}$ fathoms in the vicinity of these rocks and indicates that the shoal extends from the shoreline but this is not the case as this survey shows a comparatively uniform depth of about 7 fathoms between these rocks and the island to the eastward. About 170 meters to the northwest of the second rock is a shoal with a least depth found of $8\frac{1}{2}$ fathoms. Splits were run to develop this area and a few minutes were spent in drifting over these shoals to find least water. Detached soundings were taken but not recorded as the soundings on the lines were the shoalest found.

(2) A shoal in Latitude $57^{\circ} 03.64'$, Longitude $135^{\circ} 26.70'$ with a least depth of $11\frac{5}{6}$ fathoms, rocky bottom. Position 64 L day.

(3) A shoal in Latitude $57^{\circ} 03.62'$, Longitude $135^{\circ} 26.32'$ with a least depth of $6\frac{1}{2}$ fathoms. Chart No. 8281 shows a sounding of $7\frac{1}{2}$ fathoms in this vicinity and indicated that the 10 fathom curve is outside of this area. This survey indicates that this is a separate shoal. Position 22 e day.

(4) A shoal in Latitude $57^{\circ} 03.50$, Long. $135^{\circ} 26.52'$ with a least depth of $9\frac{2}{6}$ fathoms. Chart No. 8281 shows a sounding of 8 fathoms in this vicinity. After running a system of development lines, forty minutes were spent in drifting over the shoal in search of least depth, but nothing less than $9\frac{2}{6}$ fathoms could be found. Position 85 L day.

See discussion old surveys par. 5, review.

Use $8\frac{3}{4}$ as carried forward on #6667 *emo*

(5)- A shoal in Latitude $57^{\circ} 03.45'$, Long. $135^{\circ} 26.30'$ with a least depth of $8 \frac{4}{6}$ fathoms. Chart No. 8281 shows a sounding of 8 fathoms in this vicinity. Twenty minutes were spent in drifting and searching but nothing shoaler could be found. Position 98 1 day. Par. 5, review.

(6) A shoal in Latitude $57^{\circ} 03.30'$, Long. $135^{\circ} 26.55'$ with a least depth of $9 \frac{2}{6}$ fathoms. Forty-five minutes were spent in drifting over shoal and searching for least water but nothing shoaler could be found. Position 58 1 day.

(7) A shoal in Lat. $57^{\circ} 02.60'$, Long. $135^{\circ} 26.20'$ with a least depth of $5 \frac{4}{6}$ fathoms. This area was covered by wire-drag which cleared this shoal at 32 feet. Position 60 b day. Chart 8255 shows 13 and 14 fathoms in this vicinity.

(8) A shoal in Lat. $57^{\circ} 02.26'$, Long. $135^{\circ} 26.50'$ with a least depth of 20 fathoms. The wire drag set at 93 feet cleared this area and it was felt unnecessary to make any further development. This shoal falls between soundings of 35 and 45 fathoms on Chart No. 8255. Position 42 a day.

(9) A sunken rock in Lat. $57^{\circ} 04.60'$, Long. $135^{\circ} 25.80'$ covered $1 \frac{1}{2}$ fathoms. There is a shoal extending to the southeast from this rock. The rock awash shown on Chart No. 8281 is just northwest of this rock. It is not shown on this sheet. Position 37, a day, green.

(10) A shoal in Lat. $57^{\circ} 04.55'$, Long. $135^{\circ} 25.55'$ with a least depth of $4 \frac{2}{6}$ fathoms. Position 18, a day, green.
use $4 \frac{1}{2}$ from A666

(11) A shoal in Latitude $57^{\circ} 04.48'$, Long. $135^{\circ} 25.85'$ with a least depth of 5 fathoms. Chart 8281 shows 11 fathoms in this vicinity. Position 31, a day, green.

(12) Area north of Black Rock, Lat. $57^{\circ} 03.5'$, Long. $135^{\circ} 25.7'$ is comparatively foul. The spacing of the sounding lines was decreased but no attempt was made to develop all indications.

(13) A shoal in Lat. $57^{\circ} 03.15'$, Long. $135^{\circ} 25.05'$

with a least depth of $13 \frac{4}{6}$ fathoms. The chart and photostat of Sheet No. 2174 shows 8 fathoms about 100 meters west of this sounding. A great deal of time was spent searching in this area and a makeshift drag, using Launch No. 76 and a skiff, and lead lines and signal wire for the drag, was used in the attempt to locate the 8 fathom spot but it could not be found. It is the hydrographer's opinion that the sounding was erroneously recorded at the time of the original survey and that the sounding should have been 18 instead of 8 fathoms. Position 94, m day.

Disregard 8.
see par. 5.
review.

(14) A shoal in Lat. $57^{\circ} 03.0'$, Long. $135^{\circ} 25.95'$ with a least depth of $6 \frac{2}{6}$ fathoms. This shoal was cleared by the wire drag set at 29 feet. Thirty minutes were spent in searching for a shoaler depth. Position 43-44 n day.

(15) A shoal in Lat. $57^{\circ} 03.11'$, Long. $135^{\circ} 25.61'$ with a least depth of 8 fathoms. This shoal was found with the wire drag and was cleared with 39 feet so no attempt was made by the hydrographer to verify or develop it.

(16) A shoal in Latitude $57^{\circ} 02.82'$, Long. $135^{\circ} 25.87'$ with a least depth of $13 \frac{2}{6}$ fathoms. Twenty-five minutes were spent in searching for a shoaler depth. The wire drag cleared this area at 42 feet. Position 123 l day.

(17) A shoal in Latitude $57^{\circ} 02.89'$, Long. $135^{\circ} 25.05'$ with a least depth of $6 \frac{2}{6}$ fathoms. Twenty-five minutes were spent in drifting and searching for least water. This area was not dragged. Chart No. 8244 shows a sounding of 10 fathoms in this vicinity. Position 88 m day.

(18) A shoal in Latitude $57^{\circ} 02.71'$, Long. $135^{\circ} 25.55'$ with a least depth of $6 \frac{1}{6}$ fathoms, located by wire drag. The area was developed but only a few minutes were spent by the hydrographer in searching for least water. The drag cleared this area set at 29 feet. Position 1 n Wire Drag Sheet No. 1.

(19) A shoal in Lat. $57^{\circ} 02.55'$, Long. $135^{\circ} 25.32'$ with a least depth of $6 \frac{2}{6}$ fathoms. The wire drag party sounding was $6 \frac{1}{2}$ fathoms and the drag cleared, set at 32 feet. Thirty minutes were spent in searching for the least water. Position 47, m day.

(20) A foul area north of the Apple Islets Lat. $57^{\circ}04.3'$, Long. $135^{\circ}25.0'$. This area is foul with several high water rocks, rocks awash and sunken rocks. ✓ ✓

(21) A sunken rock in Lat. $57^{\circ}03.74'$, Long. $135^{\circ}24.10'$. Covered 1 fathom. The rock was found by the wire drag party and no time was spent by the hydrographer in securing a shoaler sounding. Position 7h W.D. No. 2. ✓ ✓

(22) A foul area from Lat. $57^{\circ}03.0'$ to Lat. $57^{\circ}03.5'$ and from Long. $135^{\circ}24.2'$ to Long. $135^{\circ}24.7'$. There are several rocks awash and shoals in this area. See discussion under paragraph : "COMPARISON WITH PREVIOUS SURVEYS". Where? ✓

(23) A rock awash in Lat. $57^{\circ}02.76'$, Long. $135^{\circ}24.48'$. Located by topographer and verified by hydrographer. Rock is awash at M.L.L.W. Position 20 j. ✓ ✓

(24) A rock awash in Lat. $57^{\circ}02.73'$, Long. $135^{\circ}24.76'$. Located by topographer. Bares 2 feet at M.L.L.W. ✓ ✓

(25) A rock awash in Lat. $57^{\circ}02.57'$, Long. $135^{\circ}24.74'$. Located by topographer. Bares 1 foot at M.L.L.W. ✓ ✓

(26) A shoal in Lat. $57^{\circ}04.35'$, Long. $135^{\circ}23.45'$. There is considerable overlap with Sheet No. 6352 in this area and the shoal was fully covered on that sheet. Rock awash in this area ✓

(27) A shoal in Lat. $57^{\circ}04.14'$, Long. $135^{\circ}23.87'$. Least depth found was $2\frac{1}{2}$ fathoms. The old survey shows a rock covered 1 fathom in this vicinity. Thirty-five minutes were spent in drifting and searching for least depth on g day. It was rather choppy on this day and it is possible that the shoalest part was missed. Position 49-50 f day. } 2 fms from wire drag

(28) A shoal in Lat. $57^{\circ}03.2'$, Long. $135^{\circ}23.8'$. This shoal was developed on Sheet No. 6355, as was the rock in Lat. $57^{\circ}03.03'$, Long. $135^{\circ}23.40'$. ✓ ✓

GEOGRAPHIC NAMES:

The geographic names in this area are covered in the descriptive report accompanying Topographic Sheet Office Register No. 6635. No new names are submitted. The names

"Western Channel" is the only one pencilled on this sheet. The names of all features in this area are pencilled on Topographic Sheet Office Register No. 6335. ✓

LANDMARKS FOR CHARTS:

There are no landmarks in the area covered by this sheet. ✓

COMPARISON WITH TOPOGRAPHIC SHEET:

This sheet was compared with the topographic sheet covering this area and no discrepancies were found. ✓

Respectfully submitted,

H. C. Applequist
H. C. Applequist
Aid, C. & G. Survey

APPROVED AND FORWARDED:

G. C. Jones
G. C. Jones,
Chief of Party

STATISTICS

TO ACCOMPANY HYDROGRAPHIC SHEET NO. 4

OFFICE REGISTER NO. 6354

DATE	LETTER DAY	NO. OF POSITIONS	SOUNDINGS HAND * MACH	STATUTE MILES
July 22, 1938	a blue	130	110 266	18.1
" 23	b	63	55 101	7.0
" 25	c	131	271 110	15.7
" 26	d	149	86 275	14.9
" 27	e	130	232 113	11.9
August 2	f	122	181 185	16.1
" 3	g	121	157 202	14.3
" 4	h	156	99 356	18.5
" 5	j	146	382 82	14.7
" 6	k	65	238	5.5
" 8	l	123	144 180	7.7
" 9	m	127	168 146	7.4
" 12	n	114	157 155	9.1
" 13	p	69	244	6.1
" 16	q	85	231 18	7.1
" 15	a green	87	269	4.1
TOTAL		1818	3024 2189	178.2

Area in Square Statute Miles -- 5.3

TIDAL NOTE

STANDARD OIL DOCK, MILLS WHARF, SITKA, ALASKA

M.L.L.W. on staff	--	5.0
Highest tide observed on Staff - May 28, 1938	--	16.5 ft.
Lowest tide observed on Staff - June 29, 1938	--	1.6 ft.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. ~~M-6354~~..

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

Number of positions on sheet	..1818.
Number of positions checked	...26
Number of positions revised7.
Number of soundings recorded	..5213
Number of soundings revised63
Number of soundings erroneously spaced12
Number of signals erroneously plotted or transferred0

Date: 7/14/39

Verification by J.A. M^c Cormick

Time: 65 hr.

Review by J.A. M^c Cormick ~~8/11/39~~
9/6/39

Time: 19 hr.

HYDROGRAPHIC SURVEY NO. H-6354

Smooth Sheet Yes

Boat Sheet Yes

Records; Sounding 6 Vols., Wire Drag Vols., Bomb Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Vol.#1

Landmarks for Charts (Form 567) None

Statistics Yes

Approved by Chief of Party D. R. only

Recoverable Station Cards (Form 524) ---

Special Chart for Lighthouse Service Yes
(Circular Nov.30, 1933)

Hydrography: Total Days 16 ; Last Date August 15, 1938

Remarks _____

H-6354

Remarks

Decisions

	Remarks	Decisions
1		570353
2		"
3		"
4		"
5	✓	" U S G B
6		"
7		"
8		"
9		"
10		"
11		"
12	✓	" U S G B
13		"
14		"
15		"
16	For title	"
17		"
18		
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22		
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26		
27		
M 234		

GEOGRAPHIC NAMES

Survey No. M-6354

Name on Survey	Source										
	A. On Chart No.	B. On previous survey No.	C. On U. S. Quadrangle Maps	D. From local information	E. On local Maps	F. P. O. Guide or Map	G. Rand McNally Atlas	H. U. S. Light List	K.		
<u>Western Channel</u> Title											1
<u>Sentinel Rock</u>	✓										2
<u>Signal Island</u>	✓										3
<u>Sasedni Island</u>											4
<u>Makhnati Island</u>											5
<u>Nicholson Rocks</u>											6
<u>Mogilnoi Island</u>											7
<u>Virublennoi Island</u>											8
<u>Gold Island</u>											9
<u>Usher Rock</u>											10
<u>Neva Island</u>											11
<u>Apple Islands</u>											12
<u>Parker Group</u>											13
<u>Bare Rock</u>											14
<u>Black Rock</u>											15
<u>Sitka Harbor</u> Title											16
<u>Kirushipakin Island</u>											17
	Names underlined in red approved										18
	by L. Tech on 5/27/59										19
											20
											21
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											26
											27

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY }
 DESCRIPTIVE REPORT } No. H-6354
~~PHOTOSTAT OF~~ } ~~NO. 1~~

{ received May 1, 1939
 { registered May 12, 1939
 { 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	T. B. Reed
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✓ *TBR*

TIDE NOTE FOR HYDROGRAPHIC SHEET

May 27, 1939.

Division of Hydrography and Topography:

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

Plane of reference

~~Tide Reducers~~ are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 6354

Locality North of Western Channel, Approaches to Sitka Harbor.

Chief of Party: G. C. Jones in 1938.

Plane of reference is mean lower low water reading
5.0 ft. on tide staff at Sitka, Standard Oil Dock
13.1 ft. below B.M. 1

Height of mean high water above plane of reference is 9.1 feet.

Condition of records satisfactory except as noted below:

Ally *Ham*
Chief, Division of Tides and Currents.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6354 (1938) FIELD NO. 4.

North of Western Channel, Approaches to Sitka Harbor,
S. E. Alaska.

Surveyed in July - August 1938, Scale 1:10,000
Instructions dated March 7 and May 5, 1938 (EXPLORER)

Hand Lead and Machine
Soundings.

3 Point fixes on shore signals.

Chief of Party - G. C. Jones.
Surveyed by - H. C. Applequist.
Protracted by - W. W. Weidlich.
Soundings plotted by - W. W. Weidlich.
Verified and inked by - J. A. McCormick.

1. Shoreline and Signals.

Shoreline and topographic signals are from T-6631
and T-6635 of 1938.

2. Depth Curves.

Satisfactory.

3. Sounding Line Crossings.

Satisfactory.

4. Junctions with Contemporary Surveys.

Junctions with H-6352 (1938) on the east and H-6355
(1938) on the south are satisfactory. There are no
new surveys on the north and west nor are any called
for in the instructions for the present project.

5. Comparison with Prior Surveys.

a. H-1439 (1879) Scale 1:15,000.

This is a fairly comprehensive reconnaissance
survey covering most of the area common to the
present survey. Its principal features bear a
general resemblance to those on the present survey
but it is of no practical value to the modern
cartographer and should be disregarded in chart-
ing the common area.

- b. H-2174 (1893) 1:10,000; H-2175 (1893) 1:40,000
H-2176 (1893) 1:20,000.

These surveys combine to cover the area common to the present survey. The latter, although one of the smallest of the current group, best illustrates the nature and extent of the differences between the surveys of 1893 and those of 1938. Control on the old surveys compares favorably with that of today but apparently the hydrographers of 1893 were not very much concerned with the accuracy of their soundings. The old sounding records describe the sounding equipment as "wire reel and 5 pound lead (sometimes 7 pound)", and this apparently for all depths. Most of the soundings were read only to the nearest fathom, even in depths of 1 and 2 fathoms. Notes in the old records are so ambiguous that in several cases two or more positions differing by as much as 200 meters have been plotted for a single rock. Within the small area of the present survey, 6 rocks awash and 2 sunken rocks shown on the old surveys, all charted, were discredited. A 6-1/2 fathom depth (charted 6-1/4) in lat. 57° 03.8', long. 135° 25.3', on H-2174 is believed to result from illegible recording of a 17 fathom sounding and is disregarded. Two soundings, one of 4 fathoms in lat. 57° 03.3', long. 135° 24.6', the other of 3-1/2 fathoms in lat. 57° 03.2', long. 135° 24.1', on H-2174 are considered highly dubious but have been brought forward in order to be on the side of safety. The present survey with indicated additions supersedes the old surveys in the common area.

6. Comparison with Chart 8244 (New Print of June 11, 1937)
Chart 8255 (New Print of May 24, 1939).
Chart 8281 (New Print of June 2, 1939).

a. Hydrography.

Within the area of the present survey the charts are based on surveys discussed in the foregoing paragraphs. The 7 fathom depth in lat. 57° 04.0', long. 135° 25.3', on Charts 8244 and 8281, is an error in charting a 17 on H-2174. Most of the charted depths in the shoaler areas are 1/4 fathom less than the soundings with which they originate on the old surveys because different reference planes were used on different editions of the charts. The matter is discussed in more detail in par. 6a, review of H-6351 (1938) and

it is sufficient to state here that, where such differences occur, the charts are erroneous.

b. Aids to Navigation.

The can buoy in lat. $57^{\circ} 03.1'$, long. $135^{\circ} 23.7'$ falls in the overlapping area of the present survey and H-6355 (1938) and was located on the latter.

7. Condition of Survey.

Sounding records and field drafting were satisfactory. The descriptive report should have stated that supplemental instructions called for plotting of soundings in fathoms and sixths to 15 fathoms, a departure from standard practice. It was otherwise satisfactory.

8. Compliance with Instructions for the Project.

Additional development of the following shoal indications would have been desirable.

- a. $4\text{-}1/6$ fathoms in lat. $57^{\circ} 04.0'$, long. $135^{\circ} 26.3'$, on the present survey.
- b. $4\text{-}4/6$ fathoms in lat. $57^{\circ} 03.8'$, long. $135^{\circ} 24.3'$ on the present survey.
- c. 4 fathoms in lat. $57^{\circ} 03.3'$, long. $135^{\circ} 24.6'$ on H-2174 (1893) and brought forward (see par. 5b).
- d. $3\text{-}1/2$ fathoms in lat. $57^{\circ} 03.2'$, long. $135^{\circ} 24.1'$ on H-2174 (1893) and brought forward (par. 5b).

9. Additional Field Work Recommended.

See preceding paragraph.

10. Superseded Surveys.

H-1439 (1879) in part. H-2175 (1893) in part.
H-2174 (1893) in part. H-2176 (1893) in part.

11. Reviewed by - J. A. McCormick, Sept. 6, 1939.

12. Inspected by - H. R. Edmonston, Sept. 19, 1939.

Examined and approved:



T. B. Reed,
Chief, Section of Field Records.



Chief, Division of Charts.



Chief, Section of Field Work.



Chief, Division of H. & T.

Applied to reconstruction drawing of Chart 8244-10/2/39 - J.F.W.

Applied to Chart 8255 11/9/39 Chas R Bush J

" " " 8281 Feb. 26, 1940 K.R.

" " " " Recon. Nov 12 1959 ~~O. R. Williams~~ 3MA
" " " 8252 8-18-60 EMB (from 8281 Recon.)