

8334

WIRE DRAG

Diag. Cht. Nos. 8502-2 and 8554-2.

<small>Form 504</small>	
U. S. COAST AND GEODETIC SURVEY DEPARTMENT OF COMMERCE	
DESCRIPTIVE REPORT	
<i>Type of Survey</i> <u>Wire Drag</u>	
<i>Field No.</i> <u>PF-2156 W.D.</u> <i>Office No.</i> <u>H-8334 W.D.</u>	
LOCALITY	
<i>State</i> <u>Alaska - South Coast</u>	
<i>General locality</i> <u>Cook Inlet</u>	
<i>Locality</i> <u>Chinitna Bay</u>	
<u>19456</u>	
CHIEF OF PARTY	
<u>John Bowie</u>	
LIBRARY & ARCHIVES	
<i>DATE</i> <u>December 18, 1956</u>	

8334
WIRE DRAG

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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.

REGISTER No. H-8334 W.D.

Field No. PF-2156 W.D.

State Alaska - South Coast

General locality Cook Inlet

Locality Chinita Bay

Scale 1 : 20,000 Date of survey 18 May - 4 June, 1956

Instructions dated 30 Nov., 1955

Vessel PATHFINDER

Chief of party J. Bowie

Surveyed by F.X. Popper, W.E. Randall, J.O. Boyer, A.L. Wardwell,
G.W. Thompson, H.H. Druebert, J.C. Sainsbury, R.D. Frost,
K.W. Jeffers, and B.L. Gabrielson.

Soundings taken by ~~fathometer, graphic recorder~~ hand lead, ~~wire~~

Fathograms scaled by None

Fathograms checked by None

Protracted by F. X. Popper

Soundings penciled by

Soundings in ~~statute~~ feet at ~~MLLW~~ MLLW and are true depths...

REMARKS:

DESCRIPTIVE REPORT

TO ACCOMPANY

WIRE DRAG SURVEY H-8334 (Field No. PF-2156 WD)

CHINITNA BAY, COOK INLET

SCALE 1:20,000

1956

USC&GS SHIP PATHFINDER

John Bowie, Commanding

PROJECT:

This survey is Project CS-1384. Original Instruction were dated 30 November 1955.

SURVEY LIMITS AND DATES:

This sheet covers the entrance to Chinitna Bay (Lat. $59^{\circ} 48' 15''$ N. to $59^{\circ} 52' 15''$ N. and Long. $152^{\circ} 59'$ W to $153^{\circ} 04'$ W.). Dragging was commenced on the 18th of May and completed on the 4th. of June 1956.

EQUIPMENT:

Launch 1 was used as the guide launch; launch 2 was used as the end launch; launch 3 was used as the "testing tender", and two skiffs were used as "setting tenders" at the beginning of the operation. On several occasions however it was necessary to suspend operations because the bay was too rough for the skiffs, and as there was no motor whale-boat available it was necessary to use launch 4 as the setting tender. It is very inconvenient to set the uprights from a motor sailer especially when they have to be changed as often as was necessary in this operation where the party was dragging for bottom, and where the maximum observed tide during the time the party was there was 21-1/2 feet.

Because the PATHFINDER was anchored about 2 miles from the near end of the work and about 7 miles from the far end, the drag was anchored in Chinitna Bay at the close of the working day. Storms caused the uprights to fray through and two or three buoys were lost in this manner during the operation.

The standard wire drag was used. The ground wire was 3/16" and was equipped with patent fieges. The toggles were aluminum. Buoys were of standard design and all steel construction. Intermediate and end buoys were used.

Standard test equipment was used.

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TIDE AND CURRENT STATIONS:

Tide corrections were determined from tides recorded by a portable gage installed off the west side of Gull Island at the entrance to Chinitna Bay. See "Tide Note" attached to this report.

Tidal bench marks established in Chinitna Bay in 1911 were searched for and believed lost.

No current stations were observed.

SMOOTH SHEET:

The smooth sheet projection and plotting was done by Ship's Officers.

Shoreline was determined by a topographic survey in 1911. Shoreline was not shown on the smooth sheet or A and D sheet.

CONTROL STATIONS:

Unmarked 1911 topographic stations were recovered. Most of these, used to control hydrography, were checked on aluminum sheet PF-A-56. Other hydrographic signals were located on PF-A-56. See "Topographic Descriptive Report for Sheet PF-A-56.

This control had been converted to NA 1927 datum.

COMMUNICATIONS:

Communications between launches were by radio on frequencies of 4160 and 3385 kilocycles and between launches and skiffs by "walkie-talkie".

CONTROL:

The "dual control" method was used. Three point fixes were observed on both towing launches.

LEAST DEPTHS ON GROUNDINGS:

Wherever the drag grounded, soundings were taken by fathometer or preferably by hand lead if possible. It was, however, seldom possible to get a good sounding on the spot causing the hang because the instructions called for the area to be dragged to a greater depth than actually existed (as determined by PF-2156) so practically the entire survey consisted of dragging for bottom and with as great a tide range as existed there it was difficult to gage the upright setting. The drag was either apt to be setting on the bottom or too far from it.

All data as to lift, drag setting, and soundings at groundings were

transferred from the tender record to the guide launch record.

GROUNDINGS AND NOTES:

LAT. & LONG.	POS. NO.	REMARKS
59° 50!00 ✓ 152° 59!30 ✓ <i>grounded at 30ft</i>	16A ✓	This hang was on the point of a reef extending out from Gull Island. No sounding was obtained and it was <u>never cleared</u> as it was too close inshore. ✓ <i>See H-8296 (1956)</i>
59° 50!62 ✓ 152° 59!90 ✓ <i>grounded at 17ft pos. 23A</i>	1A ✓	The line of the grounded drag is shown. The shoalest sounding as determined by the tender was about 130 meters northeast of the grounding. This hang was also close inshore to Gull Island and was <u>never cleared</u> . ✓
59° 51!02 ✓ 153° 00!20 ✓ <i>Depth of 17ft on H-8296 where F buoy grounded momentarily.</i>	26A ✓	Drag was grounded only momentarily ^{at F buoy} as shown by the travel of the buoy and then went on over it. Effective depth was 17.5 feet. This area was cleared on C day with an effective depth of 16 feet. ✓
59° 51!5 ✓ 153° 00!7 ✓ <i>No drag plotted 1. pos. 39.6-41, between buoys K-4 2. pos 41-42, entire drag</i>	39A-41A ✓	From 1348 on the F buoy was either aground or bumping. (The tide was dropping very rapidly at this time.) The effective depth was 16 feet. The area covered by the F buoy was cleared on G day with an effective depth of 15 feet. On position 41A the launches stopped towing for about 7 minutes to give the tenders a chance to raise the uprights. Practically the entire drag was bumping bottom on position 41 and tests proved that the drag was sagging, so a small area of about 20 or 30 meters by about 300 meters has been claimed which according to a strict interpretation of the manual should have been rejected. ✓
59° 50!5 ✓ 153° 01!7 ✓	46A ✓	Drag hung momentarily then broke loose. Considered clear to 15 feet. <i>Accepted. Drag 5999 1-1/2ft.</i> ✓
59° 51!10 ✓ 152° 59!95 ✓	31B ✓	The line of grounded drag is shown. No sounding was obtained. It is noted that section 1 had a <u>2.4 foot sag</u> about 9 minutes previously and while this hang occurred at an effective depth of 16 feet this area was cleared on A day with an effective depth of 17 feet and the discrepancy is attributed to sag on B day. ✓ <i>grounding N.P.</i>

LAT. & LONG. POS. NO. REMARKS

59° 50:18 ✓ 10C-11C ✓ (7) Drag parted on shoal between Pos. 10C and 11C extending north of Gull Island. Area claimed to position 10C. ✓

59° 51:10 ✓ 15C ✓ (8) Drag ended at 14C. The line of grounded drag is shown. Drag was aground at almost the entire length. Effective depth was 16 feet. Area where drag grounded on G day was cleared at 14 ft. ✓

59° 51:11 ✓ 19C ✓ (9) Drag sagged 0.4 to 1.7 ft. Line of grounded drag is shown. Effective depth was 14.5 feet. This was cleared on G day with an effective depth of 14 feet. ✓

59° 50:05 ✓ 2D ✓ (10) F buoy bumping bottom. Kept moving. ✓ Drag strip 4-F not plotted.

59° 50:06 ✓ 3 D ✓ (11) F buoy aground. Depth 5 feet. Strip ended. ✓ This hang was too close in-shore and was never cleared.

59° 50:18 ✓ 5D & 6D ✓ (12) 45.R. bumping due to sag in wire drag. Buoy was bouncing along. It was not solidly aground as can be seen by its travel. Effective depth was 11 feet. Position 5D was not dragged over again but 6D was cleared on G day with an effective depth of 7 feet. ✓

59° 50:12 ✓ 8D ✓ (13) Buoy was set at an effective depth of 10 feet and it bumped and moved on. Was cleared on G day with an effective depth of 7 feet but the overlap was not enough. ✓ Drag re-lected between pos 7-11. Drag bumping

59° 50:45 ✓ 9D & 11D ✓ (14) Effective depth of the buoy was 10 feet. Bumped off position 9D and hung shortly thereafter on 11D. No sounding taken. Hang cleared with an effective depth of 8 feet on G day. ✓ See above

59° 50:19 ✓ 11D ✓ (15) Corrected fathometer sounding at buoy 1 was 29 ft. Buoy moved along and eventually hung at position 11D. Hang was cleared at F day with an effective depth of 15 feet. ✓ 29 ft sag. plotted pos 11D.

59° 50:19 ✓ 17D ✓ (16) N buoy touched then cleared. Effective depth of buoy was 23 feet. No sounding. Cleared F day with an effective depth of 15 feet. ✓ 1st section not plotted between pos 17-18D, grounding retained

LAT. & LONG.	POS. NO.	REMARKS
59° 50:9 ✓ 153° 00:8 ✓	20d	Buoy #1 hung. Corrected fathometer depth at buoy was 26 feet. Uprights were shortened between 19 and 20D. Drag had normal bight and was moving freely at 21D. Position 20d cleared to an effective depth of 15 feet on F day. (17)
59° 50:85 ✓ 153° 00:6 ✓	22D ✓	Two minutes after position 22, buoy #1 hung and two minutes after that it was free. Effective depth of buoy #1 was 25 feet. Cleared with an effective depth of 14 feet on G. day. (18) <i>N.P. Falls on steep gradient on H-8296 depths 32-85'</i>
59° 50:6 ✓ 153° 00:7 ✓	23D ✓	1-1/2 minutes after the fix, F buoy went aground and remained aground until 1319 when the effective depth was decreased from 23 feet to 20 feet. This area was cleared with an effective depth of 6 feet on D day. (19) <i>N.P. Falls on H-8296 steep gradient 56-75 ft.</i>
59° 50:8 ✓ 153° 00:6 ✓	25D ✓	Buoy #1 touched and then moved on. Cleared with an effective depth of 14 ft. on G day. (20) <i>N.P. steep gradient on H-8296</i>
59° 50:12 ✓ 152° 59:45 ✓	34D ✓	N buoy aground and the towline between the guide launch and the N buoy was hung. Effective depth of N buoy decreased from 27-1/2 feet to 25-1/2 feet at position 35D at 1415. Drag came partially loose at 1425 and altogether free at 1440 on position 40D. (21) <i>Drag ends at pos 34D. Pos. 35-44 Rejected</i>
59° 49:95 ✓ 152° 59:8 ✓	40D ✓	Buoy 4 grounded for a short time between positions 40 and 41. Was cleared later on D. day with an effective depth of 31 feet. (22) <i>this grounding in deep water and obviously faulty</i>
59° 50:1 ✓ 152° 59:35 ✓	41D ✓	N buoy aground. Did not clear but dragged along until strip ended at position 44D. (23) <i>This grounding was on the edge of a shoal and was never cleared.</i>
59° 50:44 ✓ 153° 00:96 ✓	30d ✓	Line of drag shown. Depth 7 feet. Cleared with an effective depth of 4 feet on same day. (24) <i>(sdg)</i>
59° 50:3 ✓ 153° 00:9 ✓	65D ✓	Drag grounded in shoal water well outside of the area to be dragged. 4 ft hang (4d) (25)
59° 49:7 ✓ 152° 58:44 ✓	14e ✓	Line of drag shown. Depth 33 feet. Hang was on edge of area and was never cleared. (26) <i>(sdg)</i>
59° 50:94 ✓ 153° 03:34 ✓	6 - 84F ✓	Line of drag shown. Drag reversed and hang cleared with a 1 foot less effective depth of 10 feet. 11 ft. hang corrected to 13 ft. because of + 2 ft. sag (27)

LAT. & LONG.	POS. NO.	REMARKS
59° 51!2 ✓ 153° 00!6 ✓	20F ✓	<p>28 Buoy N and 1 bumping bottom. Effective depth 14 feet. N cleared with an effective depth of 15 feet and 1 with an effective depth of 14 feet on G day. Effective depth of drag on F day was actually 14.5 feet and tide had just changed or it would have been 15 feet. On G day the tide changed while the drag was traveling the distance between buoys N and 1 on F day.</p>
59° 51!0 ✓ 153° 00!5 ✓	21-23F ✓	<p>29 Two minutes after the fix buoys 3, 4 and F Hang 15 ft were bumping. At 22F there was a hang between buoys 3 and 4. Line of drag is shown. Strip ends on 23F. This entire area was cleared with an effective depth of 14 feet on G day.</p>
59° 50!4 ✓ 153° 01!0 ✓	17-18G ✓	<p>30 N buoy started bumping on position 17 and hung on 18. This hang at an effective depth of 12 feet was cleared on D day with an effective depth of 4 feet. This hang was outside of the required area.</p>
59° 50!75 ✓ 153° 02!75 ✓	28G ✓	<p>31 Buoy #1 was bouncing for a short time. Actual effective depth of drag was 12.5 ft. This spot was cleared with an effective depth of 10 feet later on in G day.</p>
59° 51!15 ✓ 153° 00!65 ✓	53G ✓	<p>32 Buoys N and #1 bumping bottom for about 1 minute. Buoy N was cleared with a 15 foot effective depth and #1 with a 14 feet effective depth by a strip on F day.</p>
59° 50!9 ✓ 153° 00!7 ✓	55-58G ✓	<p>33 About half way between positions 55 and 56 N buoy disappeared and did not reappear on the surface until about halfway between positions 57 and 58. This has not been construed to be a hang because that area had been previously cleared to a considerably greater depth. It is assumed that a submerged tree trunk, or other piece of movable debris became temporarily entangled with the upright.</p>

Bumpings
N.P. Prob-
able 599
in N.D.

F Hang 15 ft
pos. 22-23F
plotted

9 ft
On shoal
on H-8296.
Hang not
plotted. Por-
tion of af-
fected drag
deleted.

18 ft depths
on H-8296.
Probably
apparent
bumping due
to current

H-8296
shows 15 ft
depths here

H-8296
shows
15-85 ft
depths
here.

MISCELLANEOUS

Prior to wire drag operations, a hydrographic survey^{H-8296(1956)} was made to determine the maximum dragging depths.

Oil explorations are in progress in the Chinitna Bay area. Request for the wire drag survey was made to the Washington Office by the Standard Oil Company.

The overlay sheet and separate tracing of each drag strip are enclosed with the smooth sheet to facilitate the work of the verifier.

STATISTICS FOR HYDROGRAPHIC SURVEY H-

(PF-2156WD)

Ship PATHFINDER

Project CS-1384

Vessels: Launches 1, 2, 3, 4, & 2 skiffs

VOL. NO.	DAY LETTER	DATE	POSITIONS	STAT. MI. DRAG STRIP
1	A	5/18/56	57	5.7
1	B	5/19/56	27	3.4
1	C	5/22/56	22	1.5
1	D	6/1/56	66	4.1
1 & 2	E	6/2/56	43	3.3
2	F	6/3/56	23	2.2
2	G	6/4/56	71	6.6
2 Vols.	7 Days		309	26.8

Area - Square Statute Miles _____ 6.5

Respectfully submitted,

Francis X. Popper
Francis X. Popper
LCDR, C&GS

Approved and forwarded:

John Bowie
John Bowie
CAPT, C&GS
Comdg. Ship PATHFINDER

SIGNAL LIST

HYDROGRAPHIC SURVEY H-8296 (PF-2156WD)

Veal, 1911	(Topo 1911)
Mare,	(PF-A-56)
Bluff, 1911	(Topo 1911)
Pork, 1911	(Topo 1911)
Sot, 1911	(Topo 1911)
Snow	(PF-A-56)
Yell	(PF-A-56)
Tune	(PF-A-56)
Tig	(PF-A-56)
Nob, 1911	(Topo 1911)
Nan	(PF-2156)
Bix, 1911	(Topo 1911)

TIDE NOTE

During this survey a portable automatic tide gage was in operation off the west shore of Gull Island, at the entrance to Chinitna Bay (latitude $59^{\circ} 50.5'$, longitude $152^{\circ} 59.5'$)

Hourly heights for less than a months observations from this gage were sent to the Washington Office. The Office supplied the datum for this gage. Corrections were applied to all soundings to reduce them to this MLLW datum.

No location for easy installation of a tide gage was found in this area. A wooden tripod structure was jettied down to hold the gage. Because of the big range in tide, the structure had to be quite large.

Tidal bench marks established in Chinitna Bay in 1911 were searched for and believed lost.

GEOGRAPHIC NAMES

Survey No. H-8334W.D.

Name on Survey	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
Alaska									1
Cook Inlet									2
Chinitna Bay									3
Gull Island									4
									5
									6
									7
									8
									9
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25
									26
									27

} for title

Bay

(tide station)

Names approved
1-10-57. L. Heck.

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

14 January 1957

Division of Charts: R. H. Carstens

Plane of reference approved in
4 volumes of ~~SOUNDING~~ records for
wire drag


HYDROGRAPHIC SHEET 8334

Locality Cook Inlet, Alaska

Chief of Party: J. Bowie in 1956
Plane of reference is mean lower low water, reading
6.0 ft. on tide staff at Gull Island
22.2 ft. below B. M. 3 (1956)

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

Condition of records satisfactory except as noted below:



Branch
Chief, ~~Division of Tides and Currents~~

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. .:8334WD

Records accompanying survey:

Boat sheets .2...; sounding vols.; wire drag vols. ..4...;
 bomb vols.; graphic recorder rolls;
 special reports, etc. 1-Descriptive report, 1-Smooth sheet,....
 1-A.&.D. Diagram sheet overlay, and drag strip tracings.....
 (Drag strip tracings filed with the Boat Sheet.)

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

Number of positions on sheet		...309.	
Number of positions checked		...56	
Number of positions revised	0	
Number of soundings revised (refers to depth only)	0	
Number of soundings erroneously spaced	0	
Number of signals erroneously plotted or transferred	0	
Topographic details	Time0	
Junctions	Time0	
Verification of soundings from graphic record	Time0	
Verification by <i>J. J. ...</i>	Total time	43	6-27-58
		48.1/2	6-19-58
Reviewed by <i>J. J. ...</i>	Time	8	6-30-58
	Date		

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8334 WD

FIELD NO. PF-2156 WD

Alaska - South Coast, Cook Inlet, Chinitna Bay

Surveyed: May-June 1956

Scale 1:20,000

Project No. CS-1384

Soundings:

Control:

Leadline

Sextant fixes on shore
signals

Chief of Party - John Bowie

Surveyed by - F. X. Popper, W. E. Randall, J. O. Boyer,
A. L. Wardwell, G. W. Thompson, H. H. Druebert,
J. C. Sainsbury, R. D. Frost, K. W. Jeffers, and
B. L. Gabrielsen

Protracted by - F. X. Popper

Soundings plotted by - F. X. Popper

Verified and inked by - I. M. Zeskind and S. Rose

Reviewed by - I. M. Zeskind

Date 30 June 1958

Inspected by - R. H. Carstens

1. Shoreline and Control

There is no contemporary topographic survey covering the area of the present survey. The shoreline which is delineated on topographic survey T-3237 (1911), the most recent survey of this area by this Bureau, has not been transferred to H-8334 WD.

The source of the control is given in the Descriptive Report.

2. Junctions with Wire Drag Surveys

There are no contemporary wire-drag surveys within the area of the present survey.

3. Comparison with Hydrographic Surveys

H-8296 (1956), 1:20,000

H-3354 (1911), 1:40,000

The effective depths of the present wire-drag survey do not conflict with the depths on the above listed hydrographic surveys.

4. Comparison with Chart 8554 (latest print date 9/20/54)

A. Hydrography

The charted hydrography originates with H-3354 (1911). There are no conflicts between the charted hydrography and the effective depths of the present wire-drag survey.

B. Aids to Navigation

There are no charted aids to navigation within the limits of the present survey.

5. Condition of Survey

- a. The Descriptive Report and sounding records are complete and comprehensive.
- b. The survey was neatly plotted; however, attention is directed to the following:

In some instances recorded results of lift tests while underway showed the bottom wire of some sections of the drag to sag as much as 2.5 feet. This condition caused bumpings in areas of contemporary survey H-8296 (1956) where depths were 1-3 feet deeper than the effective wire-drag depths, as for example in lat. $59^{\circ} 51.08'$, long. $152^{\circ} 59.95'$, where the wire drag set to an effective depth of 16 feet bumped in depths 18-19 feet on survey H-8296. These bumpings are not shown on the present wire-drag survey.

Several bumpings plotted by the field party in the deep channel developed on survey H-8296 obviously occur on adjacent shoals and have not been retained.

A grounding of 32 feet originally plotted in the deep channel in lat. $59^{\circ} 49.93'$, long. $152^{\circ} 59.8'$ where depths were about 50 feet was considered to be erroneous and a portion of the line was rejected.

A number of sections of the drag strips were rejected where bumpings voided the effective depths that were claimed.

Deep sections between adjacent shoaler sections were claimed by the field party contrary to wire drag practices. However, since the deep sections occurred in a developed channel having considerably greater depths, the deep sections were accepted.

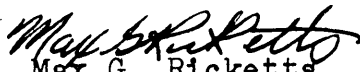
6. Project Instructions

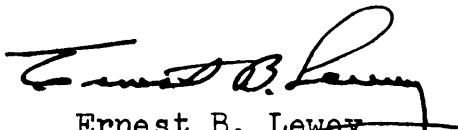
The survey covers the area specified in the Project Instructions.

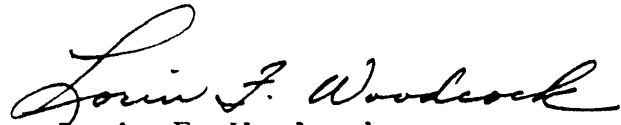
7. Additional Field Work Recommended


No additional field work is recommended.

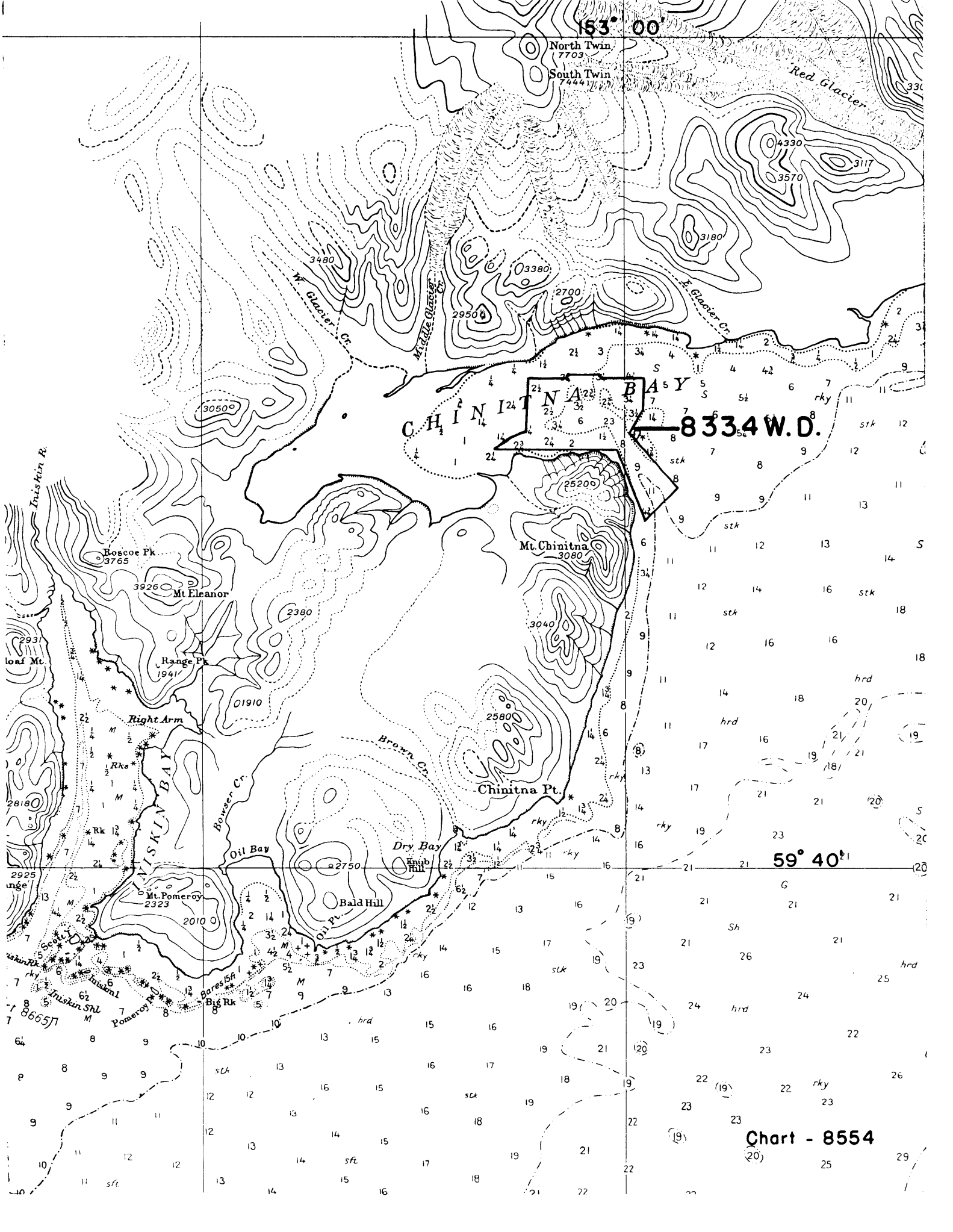
Examined and approved:


Max G. Ricketts
Chief, Nautical Chart Branch


Ernest B. Lewey
Chief, Division of Charts


Lorin F. Woodcock
Chief, Hydrography Branch


Samuel B. Grenell
Chief, Division of Coastal Surveys



North Twin
7703

South Twin
7441

Red Glacier

W. Glacier

Middle Glacier

E. Glacier

CHINITNA BAY

8334 W.D.

Mt. Chinitna
3080

Boscoe Pk
3765

Mt. Eleanor
3926

Range Pk
1941

Right Arm

Chinitna Pt.

Mt. Pomeroy
2323

Bald Hill

Inisikin R.
Truskar Shl
Pomeroy

59° 40'

Chart - 8554

