FE164
WIRE DRAG

Diagram No. 8201-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

(HYDROGRAPHIC)

Type of Survey ... Wire Drag

Field No. ... HO-25258WD, HO-25158WD

Office No. ... FE-164WD

LOCALITY

State ... S.E. Alaska

General Locality ... Wrangell Narows Channel
Vicinity of Channel Light 54

Locality ... Vicinity of Channel Light 31

1958

CHIEF OF PARTY
J.E. Waugh

LIBRARY & ARCHIVES

DATE ... September 3, 1958

☆ U.S. GOV. PRINTING OFFICE: 1976—669-441

NOTE: A new system for registering Field Examination (FE's) was established in 1980. All FE's are now consecutively numbered as shown hereon. The date shown in the new format is the actual date of survey. This material was previously registered as; FE No.4 1958

FE164
WIRE DRAG

F E No. 4
1958
WIRE DRAG

Diag. Cht. No. 8201-3.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Wire Drag Survey
H0-25158-WD
Field No. H0-25258-WD *Office No.* F.E.No. 4 (1958) W.D.

LOCALITY

State S. E. Alaska

General locality Wrangell Narrows Channel
Vicinity of Channel Light 54
Locality Vicinity of Channel Light 31

19 58

CHIEF OF PARTY

J. E. Waugh

LIBRARY & ARCHIVES

DATE SEP 3 1958

USCOMM-DC 5087

F E No. 4
1958
WIRE DRAG

DESCRIPTIVE REPORT

to accompany

SPECIAL SURVEY 5 - 58, FIELD NOS. HO-25158-WD
HO-25258-WD

1958

SHIP HODGSON

SCALE 1:2500 J. E. WAUGH, COMDG.

A. PROJECT

This survey was executed in accordance with the Director's letter 22/MEK S-2-HO, Instructions for Wire-Drag Surveys in Wrangell Narrows - Special Survey 5 - 58 of 16 June 1958.

B. SURVEY LIMITS AND DATES

This survey consists of two areas in the channel of Wrangell Narrows.

The northern area extends the entire width of the channel from Channel Light No. 54 on the north to a line extending approximately east from Channel Buoy No. 23. Field work on this area began 28 July and was completed 14 August 1958.

The southern area extends the entire width of the dredged channel from Buoy "7TC" south to Channel Buoy No. 28 . Field work on this portion began 14 August 1958 and was completed 21 August 1958.

C. VESSELS AND EQUIPMENT

Launch 95 was used as the sounding vessel and as guide launch. Motor whaleboat No. C-36654 was used as end launch and a metal skiff with outboard motor was the tender. Communication between units was with a megaphone and by means of the tender relaying messages the short distance between launches.

D. TIDE AND CURRENT STATIONS

A portable automatic tide gage was maintained at Petersburg for the duration of field operations. Time and range were applied without correctors for both areas.

No current stations were occupied.

E. SMOOTH SHEET

No smooth sheet was made. Due to congestion on the boat sheet, a series of tracing paper overlays was prepared showing individual drag strips for preparation of the area-depth diagram.

F. CONTROL STATIONS

All stations used were either Corps of Engineers triangulation stations or were signals located from those stations. Strong sextant locations were used as preliminary hydrographic signals and the signals later located by triangulation. All sextant locations are indexed in the front of the volume in which they appear.

G. SHORELINE AND TOPOGRAPHY

Not applicable.

H. SOUNDINGS

As the hydrography on the chart seemed to be old, reconnaissance soundings were made as a preliminary to dragging operations. All soundings were in accordance with standard procedure. The initial was set correct by means of a bar check at 12 feet for the southern area and was left at 11 feet (the bar set at 12 feet) and an initial correction of +1' applied to all soundings in the northern area. Fathometer speed was set correct and maintained correct during the sounding operations.

No correction for temperature and salinity was applied.

I. CONTROL OF HYDROGRAPHY

All hydrography was controlled by sextant fixes at regular intervals taken on both launches. Three anglemen were used on each launch, two for the position "fix" and one for the cut to the adjacent end buoy. All lines were run on adequate ranges, but due to inexperience of coxswains and misunderstanding, considerable duplication of strips and many splits occurred as dragging progressed.

Dual control was employed throughout. Sounding clocks were incapable of being set so that time of positions remained synchronized. The drag was carefully kept perpendicular to direction of progress by slowing the leading vessel and positions of guide and end launch should correspond in position regardless of time recorded. At the beginning of the work ranges were run and the strips plotted at the end of the day. As the sheet became congested, it became obvious that this method was not efficient and an attempt was made to plot lines as the vessels progressed against the current. Better control resulted but sides of the drag strip tended to converge or diverge

depending on the range the coxswain picked. At the end of the project, the guide launch plotted and ran the lines laid out and the end launch simply maintained a uniformly shaped drag, taking a fix the same regular intervals, within the limits of clock error, as the guide launch. The end launch line was then plotted at the end of the line in order to determine coverage.

J. ADEQUACY OF SURVEY

The survey is deemed complete and accurate with no additional field work necessary.

K. CROSSLINES

Crosslines were run where possible to better define the channel edge.

L. COMPARISON WITH PRIOR SURVEYS

Not applicable.

M. COMPARISON WITH CHART

The northern area differed considerably from the chart and revision based on the reconnaissance soundings is recommended. The southern area showed no appreciable difference.

N. DANGERS AND SHOALS

No obstructions were found in the channel.

It is believed any obstruction struck by a vessel in the northern area had been removed prior to dragging and some of the obstructions struck in the southern area were small boulders or other hard objects on the bottom in shoal water. Buoy "7TC" was located to the westward of a seven-foot shoal during the reconnaissance survey. This fact was reported to the Coast Guard who then relocated it on the channel side of the shoal prior to dragging operations. Both positions are shown on the boat sheet and in the record books.

O. COAST PILOT INFORMATION

Coast pilot information has been noted on a section of Chart No. 8170 and submitted as a part of this report.

P. AIDS TO NAVIGATION

Fixed aids to navigation located on this survey are:

Channel Light 21
Channel Light 25
Channel Light 27
Channel Light 31
Channel Light 32
Channel Light 32A
Channel Light 34
Channel Light 54
Channel Light 56
Channel Light 58
Petersburg Creek Range Rear Light
Petersburg Creek Range Front Light
Petersburg Bar Range Rear Light
Petersburg Bar Range Front Light
Blind Point Range Front Light 24
Blind Point Range Rear Light

Q. LANDMARKS FOR CHARTS

Submitted on a section of Chart No. 8170.

R. GEOGRAPHIC NAMES

None submitted.

S. SILTED AREA

See channel change in northern area.

T - X:

Not applicable.

Y. MISCELLANEOUS

A drag patterned after the one described in "Season's Report 1943 No. 22 - Investigation of Reported Shoaling, Wrangell Narrows, Alaska" was used. Initially the HODGSON had 5 intermediate buoys and 4 sections of 3/4" galvanized pipe each 20 feet long were used in making a drag. Each section was flattened and a 1/2 inch hole drilled in each end to fit a shackle pin. The pipes and towlines were connected with a swivel between the shackles on each end. Buoy uprights were shackled to one side of the swivel and a 35 pound weight was shackled to the swivel below each end buoy. No weight was used at intermediate buoys. A hundred foot ground wire towline was shackled to the swivel at the pipe at each end of the drag.

After experiencing difficulty in controlling such a short drag between relatively long towlines, an additional buoy was made up by boxing four toggles in the same manner as the tester float is made up and hanging an upright wire from it. No buoy heads were available for cranking up the tester wire or upright on the made-up float buoy and the wires were led through a hole and clamped

between two strips of flat brass stock with bolts and wing nuts. With shackles and swivels between, the drag then totaled 105 feet in length. Towlines were shortened to 21 meters. Since the end was bridled 4 meters from the position of the anglemen, 25 meters was used in plotting the length of the towline. No toggles were used at towline midpoints. No excessive lifts of end sections due to relatively short towline were noticed until the final day. Since the overlap of drag strips was generous throughout, it is believed the outboard end of the end section is adequately covered and no reduction in effective depth of drag was made.

Launch No. 95 proved a good guide launch with adequate maneuverability, single-man control and fairly low noise level making for an easy operation. Motor whaleboat No. C-36654 was much more difficult to work in with a high noise level, poor maneuverability and two-man control, one on the engine and one on the tiller. A temporary "dog house" provided poor protection for the plotting sheet, record book, clock and sextants against the almost continuous rains encountered during the project. The elimination of plotting in the end launch toward the end of the project helped this situation somewhat.

The metal skiff and outboard was a fairly good tender, more stable as the two men tested the drag and set buoys than a dory which was available but not used.

All drag equipment was carried in the motor whaleboat. In setting out the drag, Launch 95 was anchored in deep enough water, using the fathometer, and the whaleboat came alongside. The double toggle at the end of the towline was heaved clear of the eddy at the stern of the anchored boat and allowed to drift down with the current. Buoys were set as close as possible to depth desired using tide predicted for the estimated time of beginning of the strip. The entire drag was shackled up and set out from the anchored boats, drifting down with the current, or pulled out down current with skiff and outboard when current was weak. The whaleboat would then cast off, pick up the double toggle and secure towline to begin the drag. The drag was picked up the same way.

The scale of the sheet was 1:2500. Three anglemen were used in each launch and the buoy angle was taken simultaneously with the position fix. Fixes were taken frequently enough to adequately control the drag, a one-minute or 1½ minute interval being used at first and a longer interval being used only after the coxswains became experienced and could be depended on to run straight courses.

Only one officer, LCDR G. L. Short, had previous wire drag experience. All other personnel had no experience whatever in wire drag and very little in boat handling and the various operations comprising drag work. The lack of experience in schoolboy summer employees becomes overwhelmingly evident in drag operations where teamwork is

required and so many possibilities exist for disaster. The short interval of slack water necessitated putting out and taking in the drag in moderate current and a grounding when running with the current was almost certain to swing one boat into the drag or towline of the other vessel. That only one such circumstance occurred with little damage to equipment and no injury to personnel was fortunate. Most drags were run against the current with engine speeds kept moderate to guard against excessive lift. Tests were taken as frequently as possible and indicated a sag of pipes and fittings below upright lengths for most situations. The pipes ~~were~~ suspended on deck from each end sagged approximately one foot and the fittings added a few more inches to drag depth.

The intermediate buoys all laid on their sides while being towed as did "N" and "F" buoys after the towlines were shortened.

This type of drag worked well, but the drag required inspection for bent pipes after each grounding, a time-consuming operation. As the pipes were usually bent, it was necessary to unshackle them and take them to the beach for straightening on convenient rocks, a laborious operation in the skiff. The alternative of picking up the entire drag and either straightening the pipes aboard the whaleboat or returning them to the ship for a better straightening job took much longer, of course. Since this project required dragging very close to the bottom, the tide changed a foot every fifteen minutes and grounding the drag entailed so much time consuming labor, clearing the bottom by three feet rather than the usual two feet was attempted.

Z. TABULATION OF APPLICABLE DATA

1. 1 each - Boat Sheet Nos. 25158-WD and 25258-WD, fwd. 8/22/58
2. Record Books: fwd. 8/22/58
   - Guide Launch Sheet 25158, Vols. 1 - 3
   - End Launch Sheet 25158, Vols. 1 - 5
   - Guide Launch Sheet 25258, Vol. 1
   - End Launch Sheet 25258, Vol. 1
3. Sketch Books (3) of tester records - fwd. 8/22/58
4. Overlays of drag strips by days, Sheet 25158, a thru k -fwd.8/22/58
   Sheet 25258, a thru d -fwd.8/22/58
5. Tide Data, Petersburg Gage - fwd. 4, 11, and 22 Aug. 1958
6. Fathograms - forwarded 22 Aug. 1958
7. Signal source information - attached
8. Tides - Hourly Heights and curves for hours worked - fwd. 8/22/58
9. Coast Pilot Information - to be submitted
10. Landmarks for Charts - to be submitted
11. Statistics - attached.

G. L. Short

G. L. Short
LCDR, C&GS

LIST OF SIGNALS

SHEET 25158-WD

NAME	SOURCE
12	U.S.E. 12
10	U.S.E. 10
56	Wrangell Narrows Channel Light 56 (triangulation station)
Cat	Piling with white wrapping (triangulation location)
Dog	U.S.E. 11
Nova	NOVA 1929

SHEET 25258-WD

Ade	U.S.E. 41 1902-29
Bob	U.S.E. 38 1902-29
Car	U.S.E. 43 1902-29
Dan	Hydro Location
Hat	Wrangell Narrows Channel Light 25 (triangulation location)
Lin	Blind Point Range Rear Light (triangulation location)

STATISTICS

Sheet HO-25158-WD

Date	Day Letter	Vol.	Pos.	Nau.Mi. Sounding	Nau.Mi. Dragged	To & From	Nau.Mi. Misc.	Nau.Mi. Total
July 30	a	1	59	1.5		1.6	0.2	3.3
31	b	1	22	0.7		1.6	0.1	2.4
Aug 7	c	2	27	0.9			0.1	1.0
	Total hydro		108	3.1		3.2	0.4	6.7
Jul 31	a	1	(entire day drag rejected)					
Aug 4	b	1	64		1.1	1.6	0.80	3.5
5	c	1	56		1.3	1.6	0.8	3.7
6	d	1	45		0.9	1.6	0.7	3.2
7	~~e~~	1	40		0.8	1.6	0.6	3.0
8	f	1&2	87		1.8	1.6	1.1	4.5
11	g	2	98		1.9	1.6	1.2	4.7
12	h	2	55		1.1	1.6	0.8	3.5
13	j	2	51		0.7	1.6	0.7	3.0
14	k	2&3	17		0.3	1.6	0.4	2.3
	Total wire drag		513		~~xxxx~~ 9.9	14.4	7.1	31.4
	Sheet totals		621	3.1	9.9	17.6	7.5	38.1

Sheet HO-25258-WD

Aug 14	a		74	3.2		2.0	1.9	7.1
Aug 18	b	1	46		1.0	2.0	0.5	3.5
19	c	1	54		1.0	2.0	0.5	3.5
21	d	1	~~143~~		0.7	2.0	0.5	3.2
	Total wire drag		143		2.7	6.0	1.5	10.2
	Sheet totals		217	3.2	2.7	8.0	3.4	17.3
	Project totals		838	6.3	12.6	25.6	10.9	55.4

APPROVAL SHEET

WIRE DRAG INVESTIGATION

WRANGELL NARROWS

No smooth sheet was plotted and it is believed none is needed.

The boat sheet and records for this survey have been examined and are approved.

This is a field examination with a pipe drag of reported groundings in Wrangell Narrows Channel. The descriptive report by LCDR Short points out some of the difficulties encountered on field work of this type. All pertinent points are adequately covered in the Descriptive Report and no additional information is believed necessary. Copies of correspondence with the 17th Coast Guard District reporting our findings are adequate for charting, except it is recommended the chart be corrected in the northern area as recommended in the Descriptive Report, Paragraph M.

J. E. Waugh
CDR, C&GS
Chief of Party

Form 712
(11-30-55)

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

10 September 1958

Plane of reference approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET HO-25158-WD
HO-25258-WD

Locality Wrangell Narrows, Alaska

Chief of Party: J. E. Waugh in 1958

Plane of reference is mean lower low water, reading

2.5 ft. on tide staff at Petersburg

24.4 ft. below B.M. 6 (1917)

Height of mean high water above plane of reference is 13.8 feet.

Condition of records satisfactory except as noted below:

William Shofner
Signature

Chief, Tides Branch

Comm-DC 34330

Form 946

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. F.E.No.4-1958 WD.

Records accompanying survey: Smooth sheets .....;

boat sheets ..2..; sounding vols. ..5..; wire drag vols. .5...;

Descriptive Reports ..1..; graphic recorder envelopes 1-Envelope

special reports, etc. 3-Sketch books and 1-A&D diagram for each sheet. Overlays of drag strips HO-25158 W.D. "a" through "k" days + HO-25258 W.D. "a" through "d" days.

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

Number of positions on sheet		WD = 421 / Hydro = 181
Number of positions checked		WD = 75 / Hydro = 6
Number of positions revised		WD = 6 / Hydro = 0
Number of soundings revised (refers to depth only)		16
Number of soundings erroneously spaced		0
Number of signals erroneously plotted or transferred		0
Topographic details	Time	0
Junctions	Time	0
Verification of soundings from graphic record	Time	3
Special adjustments	Time	

Verification by Lu Zeskind ..... Total time 10.7.. Date 9-16-58

Reviewed by Lu Zeskind ..... Time ..8... Date 9-17-58

REVIEW OF FIELD EXAMINATION NO. 4, 1958

Pipe Drag Survey, Wrangell Narrows

Ship HODGSON - 1958

1. The field examination was made in compliance with Instructions for Special Survey 5-58, dated 16 June 1958.

2. This is a hydrographic and pipe-drag field examination of 2 areas covering the entire width of portions of dredged channels in Wrangell Narrows, chart 8170. The northern portion covers an area in the vicinity of Channel Light No. 54 in lat. 56°48.22', long. 133°59.05'. The southern portion covers an area in the vicinity of lat. 56°39.15', long. 132°55.20' between Channel Buoys Nos. 7 TC and 28.

3. The purpose of the field examination was to verify or disprove the existence of a reported obstruction falling in each of the 2 areas mentioned in the above paragraph.

4. The obstructions were not found and they should be deleted from the chart.

   a. The obstruction charted in lat. 56°48.17', long. 132° 59.03' falls in depths of 19-25 ft. and was cleared by pipe-drags set to effective depths of 20-21 ft. The discrepancies between the soundings of 18-20 ft. and the effective pipe-drag depth of 21 ft. which cleared the area in the vicinity of the obstruction could not be resolved in the Washington Office. These soundings fall outside the eastern limits of the channel. The channel for 150 ft. on either side of Petersburg Creek Range was cleared by pipe-drags set to effective depths of 20-24 ft.

   b. The obstruction charted in lat. 56°39.18', long. 132° 55.23' falls in depths of 25 ft. and was cleared by pipe-drags set to effective depths of 20 and 22 ft. Soundings of 20-22 ft. were found in the mid-width of the channel north of lat. 56°39.2' where the chart shows depths of 23½-24 ft. The shoaler soundings should be charted.

5. A comparison of the Field Examination with Chart No. 8170, dated 19 May 1958, shows the effective pipe-drag depths and hydrography to be in harmony with the charted depths except as follows:

   a. Northern Portion

   The 1-3/4 fm. sounding charted in lat. 56°48.2', long. 132°58.99' originates with an unsupported 11-ft. sounding on H-4995 (1929). The charted sounding falls in

↳? Should be H-4955

K.W.W.

present depths of 14 ft., which were cleared by a pipe-drag set to an effective depth of 14 ft. The 11-ft. sounding is believed to be 6 ft. too shoal and should, therefore, be deleted from the chart.

The soundings in this area are boat sheet values and have not been verified or inked except for several in disagreement with effective depths. Illegible boat sheet position numbers and incomplete plotting of the sounding lines precluded complete verification of this information.

b. Southern Area

The 20-22 ft. depths obtained during the field examination in mid-channel north of lat. 56°39.2' should be charted (See paragraph 46). The chart shows mid-channel depths of 23½-24 ft.

The field examination has not been charted.

6. The results of the field examination are shown on the accompanying 2 paper and 2 cloth tracings.

7. The Descriptive Report covers all matters pertaining to this examination. No further discussion is considered necessary.

Reviewed by: I. M. Zeskind
17 Sept. 1958

Inspected by: R. H. Carstens

55'00"

39'30"

56°39'10"

132°55'20"

FIG "29"

FIR "28"

FIELD EXAMINATION NO. 4 1958

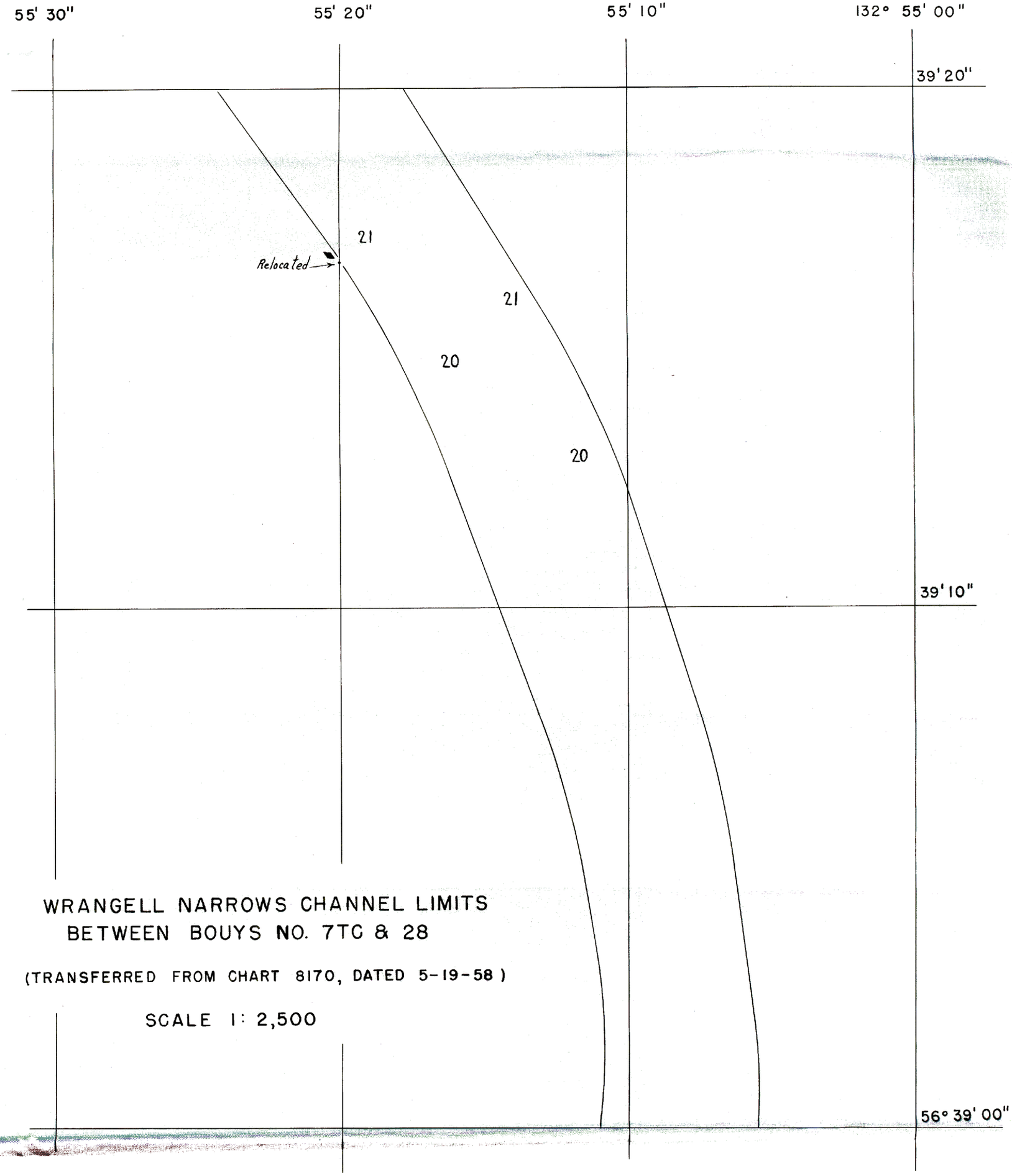
HYDROGRAPHY

WRANGELL NARROWS CHANNEL
BETWEEN BOUYS 7TC & 28

SCALE 1: 2,500

SOUNDINGS IN FEET AT MLLW

SURVEYED AUGUST 14, 1958



WRANGELL NARROWS CHANNEL LIMITS
BETWEEN BOUYS NO. 7TC & 28

(TRANSFERRED FROM CHART 8170, DATED 5-19-58)

SCALE 1: 2,500

55' 30"

55' 20"

55' 10"

132° 55' 00"

54' 50"

39' 20"

39' 10"

56° 39' 00"

⊙ Lt "31"

"7TC" (Relocated)

"29"

cleared by 19 ft

cleared by 20 ft.

reported obstr not found

17 19 21 20 18 20 17 20 18 22 18 17 21 20 23 17 22 20 22 21 20

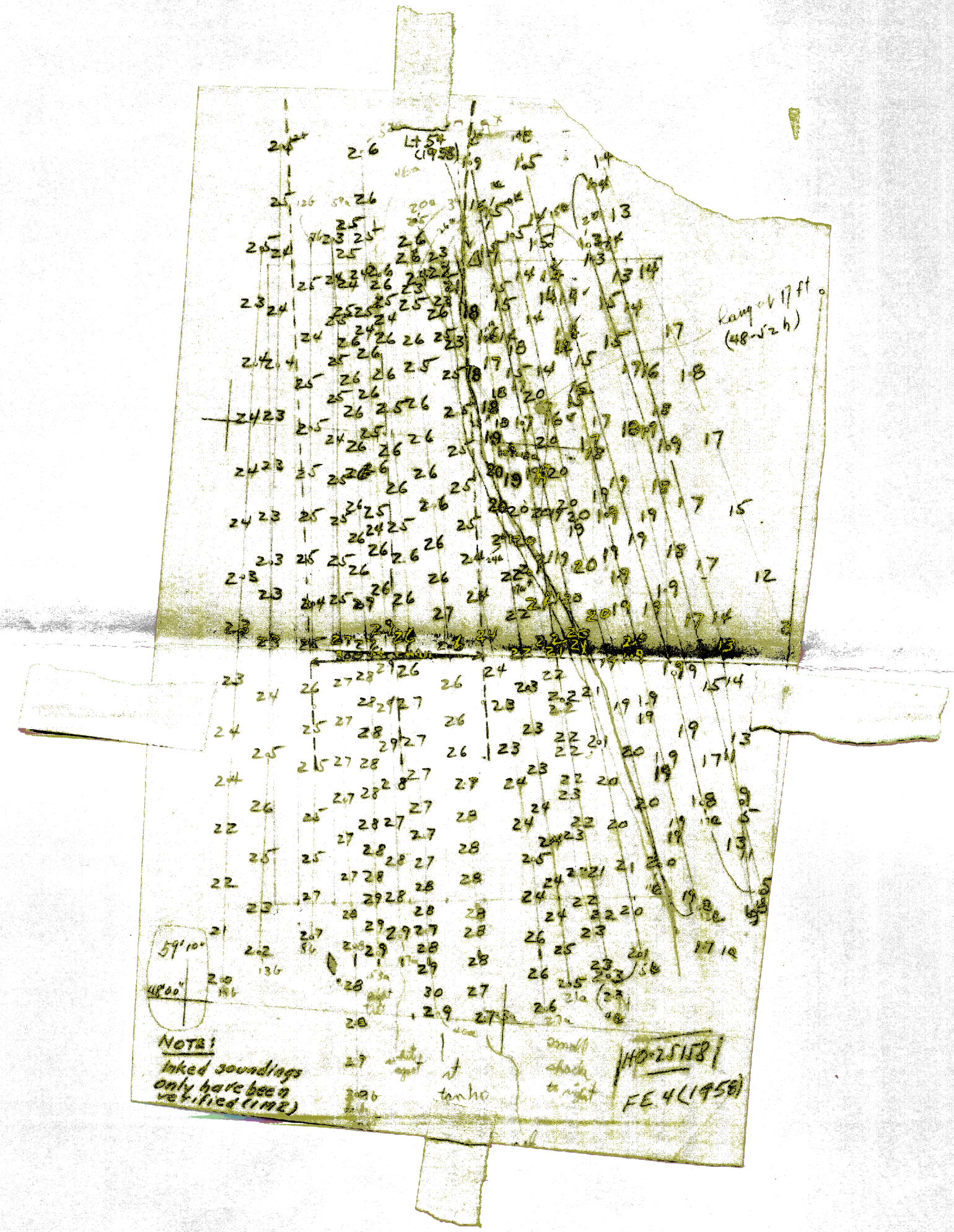
FIELD EXAMINATION NO. 4 1958

AREA & DEPTH DIAGRAM

WRANGELL NARROWS CHANNEL BETWEEN BOUYS 7TC & 28

SCALE 1: 2,500

SURVEYED AUGUST 8 - 21, 1958



F.E. No. 4, 1958
HYDROGRAPHY
WRANGELL NARROWS CHANNEL
VICINITY OF CHANNEL LT. 54
Scale- 1:2,500 Surveyed-July 30-31, 1958
Soundings in feet at M. L.L.W.

54'10"

Lt. 54 (1958 & 1952)

cleared by 14 ft
Depth as surveyed

58'50"

48'10"

obstruction charted

hung at 20 (55-foot)
cleared by 14 (31-foot)

Split

56'48"

FE No. 4, 1958
A & D DIAGRAM
WRANGELL NARROWS CHANNEL
VICINITY OF CHANNEL LT. 54
Scale - 1: 2,500 Surveyed July 31 - Aug. 14, 1958
Effective depths in feet at MLLW

H0-2-5158

59' 20"

59' 10"

132° 59' 00"

58' 50"

48' 20"

Lt 54 (1958)

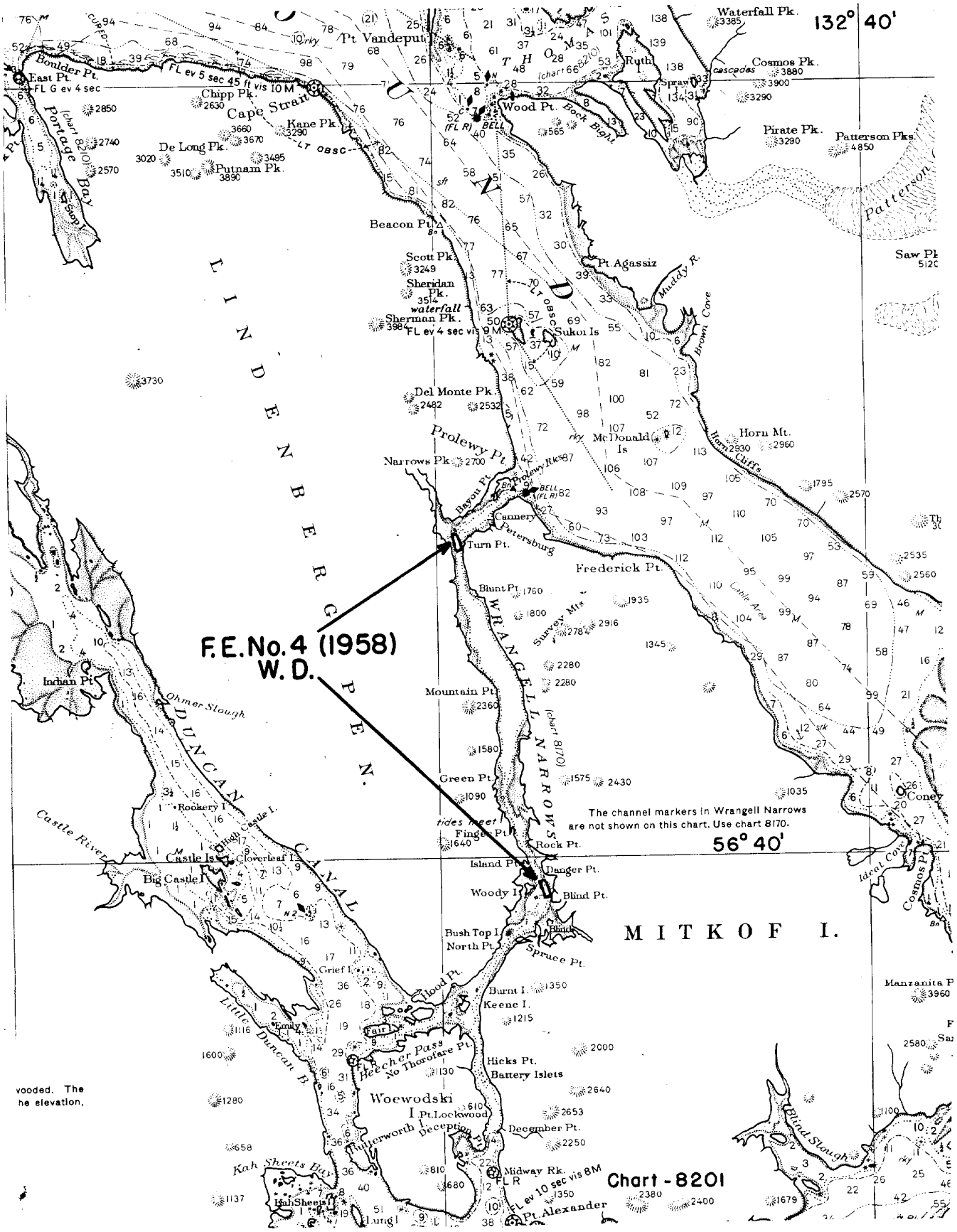
48' 10"

obstruction

WRANGELL NARROWS
CHANNEL LIMITS
VICINITY OF CHANNEL LT. 54
Scale - 1:2,500
Transferred from Chart 8170 (5-19-58

56° 48' 00"

(1)


F.E. No. 4 (1958)
W.D.
LINDENBERG PEN.
DUNCAN CANAL
WRANGELL NARROWS
MITKOF I.
Pt. Vandeput
Cape Strait
Portage Bay
Boulder Pt.
East Pt.
FL G ev 4 sec
FL ev 5 sec 45 ft vis 10 M
Chipp Pk.
Kane Pk.
De Long Pk.
Putnam Pk.
Beacon Pt.
Scott Pk.
Sheridan Pk.
Sherman Pk.
FL ev 4 sec vis 9 M
Del Monte Pk.
Prolewy Pt.
Narrows Pk.
Bayou Pt.
Cannery
Petersburg
Turn Pt.
Frederick Pt.
Blunt Pt.
Survey Mts
Mountain Pt.
Green Pt.
Finger Pt.
Rock Pt.
Island Pt.
Danger Pt.
Woody I.
Blind Pt.
Bush Top I.
North Pt.
Spruce Pt.
Hood Pt.
Burnt I.
Keene I.
Hicks Pt.
Battery Islets
Woewodski I.
Pt. Lockwood
Deception Pt.
December Pt.
Midway Rk. FL R
FL ev 10 sec vis 8M
Pt. Alexander
Kah Sheets Bay
Kah Sheets I.
Indian Pt.
Ohmer Slough
Castle River
Castle I.
Big Castle I.
Rookery I.
Clover leaf I.
Grief I.
Emily I.
Little Duncan Bay
Heecher Pass
No Thoroughfare Pt.
Butterworth I.
Pt. Agassiz
Muddy R.
Brown Cove
Sukoi Is
McDonald Is
Horn Cliffs
Horn Mt.
Waterfall Pk.
Cosmos Pk.
Ruth
Spray I.
Wood Pt.
Bock Bight
Pirate Pk.
Patterson Pks.
Patterson
Saw Pk
Ideal Cove
Cosmos Pt.
Coney I.
Manzanita P
Blind Slough
Cable Area
Chart - 8201
The channel markers in Wrangell Narrows are not shown on this chart. Use chart 8170.
132° 40'
56° 40'

NAUTICAL CHARTS BRANCH

SURVEY NO. F.E.No.4-1958 W.D.

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6-26-59	8170	J.A.Dinsmore	~~Before~~ After Verification and Review
			Fully applied JMA
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.