

FE251

Diagram No. 8102-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey .. Field Examination ..
Field No. RA-5-2-83 ..
Office No..... FE-251 ..

LOCALITY

State Alaska ..
General Locality Tongass Narrows ..
Locality Ward Cove ..

1983

CHIEF OF PARTY
LCDR D.W. Yeager

LIBRARY & ARCHIVES

DATE July 5, 1984 ..

☆U.S. GOV. PRINTING OFFICE: 1980-766-230

Area 6
CHTS
17428 INSET } to see
Record of application

HYDROGRAPHIC TITLE SHEET

FE-251

INSTRUCTIONS - 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.

RA-5-2-83

State Alaska

General locality Tongass Narrows

Locality Ward Cove

Scale 1:5,000

Date of survey Sep. 27 - Oct. 27, 1983

Instructions dated September 14, 1983

Project No. S-0907-RA-83

Vessel NOAA Ship RAINIER Launches 2124 and 2125

Chief of party LCDR D. W. Yeager

Surveyed by ENS J. Judson, SST R. Hastings

Soundings taken by echo sounder, hand lead, ~~XXX~~

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Verified ~~Plotted~~ by R. Davies

Automated plot by PMC Xynetics Plotter

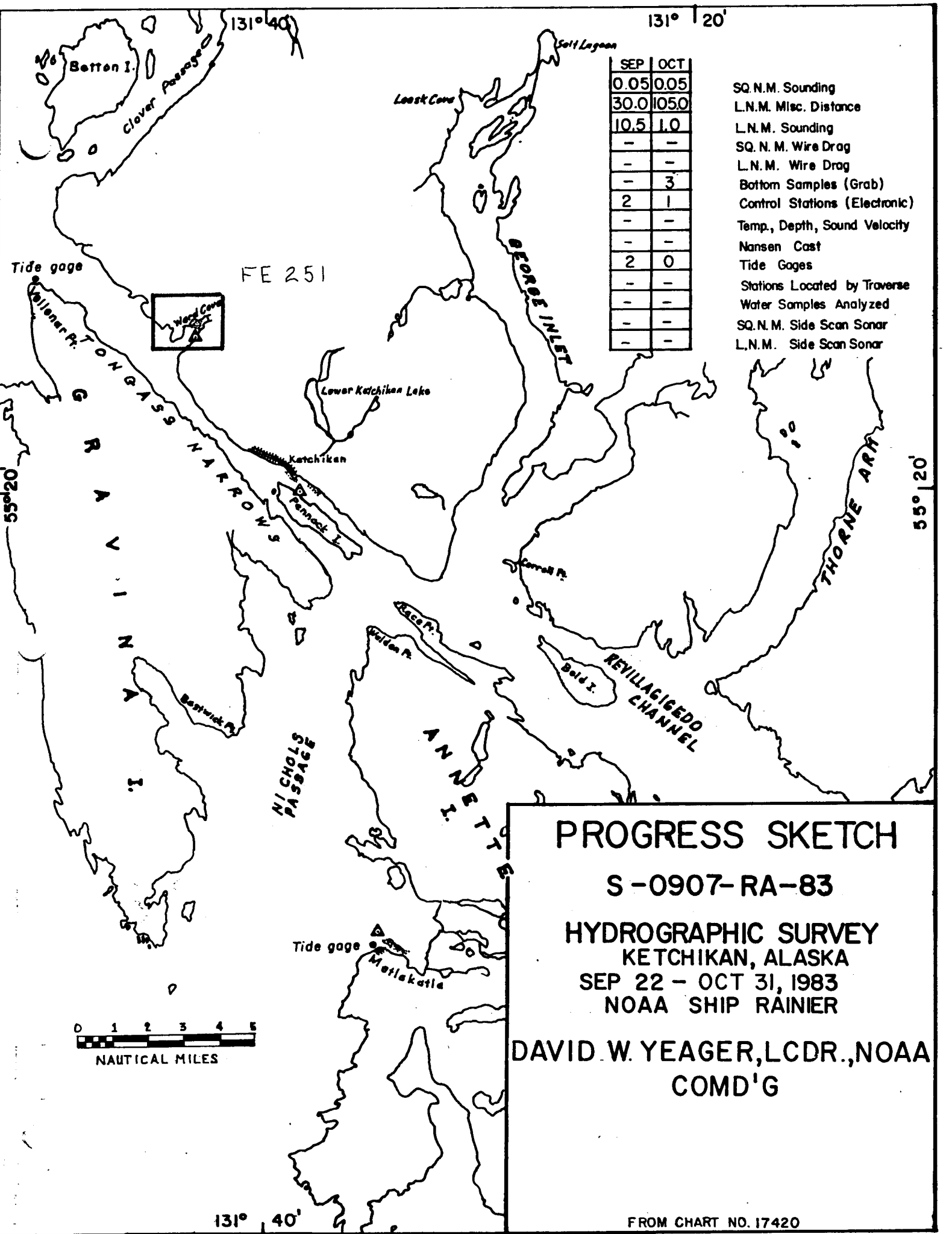
Evaluated ~~Reviewed~~ by J. Green

Soundings in fathoms ~~XXXX~~ at MLLW ~~XXXX~~ and tenths of fathoms

REMARKS: Revisions and marginal notes in black are by the evaluator.

Awacs checked 3/5/85 SJV
surf checked 3/5/85 SJV

App'd to STD 7-9-89 PJ



SEP	OCT
0.05	0.05
30.0	105.0
10.5	1.0
-	-
-	-
-	3
2	1
-	-
-	-
2	0
-	-
-	-
-	-
-	-

- SQ.N.M. Sounding
- L.N.M. Misc. Distance
- L.N.M. Sounding
- SQ.N.M. Wire Drag
- L.N.M. Wire Drag
- Bottom Samples (Grab)
- Control Stations (Electronic)
- Temp., Depth, Sound Velocity
- Nansen Cast
- Tide Gages
- Stations Located by Traverse
- Water Samples Analyzed
- SQ.N.M. Side Scan Sonar
- L.N.M. Side Scan Sonar

PROGRESS SKETCH
S-0907-RA-83
HYDROGRAPHIC SURVEY
KETCHIKAN, ALASKA
SEP 22 - OCT 31, 1983
NOAA SHIP RAINIER

DAVID W. YEAGER, LCDR., NOAA
COMD'G

 FROM CHART NO. 17420

A. PROJECT

This field examination was conducted in accordance with Project Instructions S-0907-RA-83, Ward Cove, Ketchikan, and Metlakatla, Alaska, dated September 14, 1983. The purpose of this field examination was to investigate a specific area of concern in Ward Cove, Alaska, as noted by the Southeastern Alaska Pilots' Association and in the U.S. Coast Pilot Field Reports. ✓

B. AREA SURVEYED

This field examination was conducted in Ward Cove, north of 55° 24.2'N and west of 131° 43.3'W between Julian Date 270 and Julian Date ~~319~~ 300 (September 27 and ~~November 15~~ October 27, 1983). ✓

The Ketchikan Pulp Mill (Louisiana-Pacific, Ketchikan Division) and associated log storage areas are within the limits of the area of this examination. ✓

C. SOUNDING VESSEL

All echo soundings were obtained by RAINIER hydrographic survey launches RA-4 (2124) and RA-5 (2125). All bottom samples were obtained by RA-5. No unusual sounding vessel configurations or problems were utilized or encountered. ✓

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Echo soundings obtained during this field examination were collected by the specified launches and both were equipped with Ross Fineline Fathometer systems. These systems include the following Ross components: Model 4000 transceivers, Model 5000 analog trace recorders, Model 6000 digitizers and 100 KHz transducers. Table I summarizes the serial numbers of these components: ✓

TABLE I

Echo Sounding Component Serial Numbers

<u>Launch</u>	<u>2124</u>	<u>2125</u>
Transceiver	1080	1042
Analog	1071	1040-6
Digitizer	1040	1042

Analog recorder #1071 occasionally failed to advance the paper at a constant rate. No peaks were missed due to this problem. ✓

A problem in the Hydrolog system in RA-5 (2125) developed which occasionally caused "short" marks to appear on the analog trace where none were required. When this problem occurred, in-between soundings were scaled and compared with the digital depths. No soundings were missed due to this problem. ✓

Sound velocity corrections, were determined from an STD cast taken on October 27, 1983 during OPR-0168-RA-83 (see Echo Sounding Report for OPR-0168-RA-83). Copies of the graph, velocity table and a listing of the velocity tape are provided in the separates following the text. The smooth field sheet was prepared using these velocity correctors. ✓

See Eval
Report
Sect 1b

The smooth field sheet was prepared using the launch historical TRA value of 0.3 fathoms, for both RA-4 and RA-5. Copies of the bar check abstracts are provided in the separates following the text. ✓

Launch settlement and squat determinations were conducted on February 14, 1983 at Shilshole Bay, Puget Sound, Washington. No correctors for settlement and squat have been applied to the smooth field sheet. All soundings were obtained at a speed (700 RPM) for which the correctors are zero. A copy of the results of the settlement and squat determinations are provided in the separates following the text. (Filed with field records) ✓

During survey operations, the blanking depth was set to a value shoaler than the shoalest bottom expected. Analog depths were substituted for missing or erroneous digital depths as part of standard scanning procedures. ✓

The initial trace on the analog recorders was maintained at zero. Corrections for variation of the initial were applied during scanning. ✓

Phase calibrations and belt tension checks were performed in accordance with section 4.9.6 of the Hydrographic Manual, Hydrographic Survey Guidelines and PMC OORDER, Appendix B. ✓

All soundings on the smooth field sheet have been corrected for predicted tides. Ketchikan, Alaska served as the reference station for the predicted tides. ✓

Manual soundings were obtained by use of a hand-held lead line where required. Depth markings on the lead line were compared with a steel measuring tape prior to survey operations and were found to be accurate. More details on the corrections in this section can be found in the Corrections to Echo Soundings Report, OPR-0168-RA-83. ✓

E. HYDROGRAPHIC SHEET

Field sheet RA-5-2-83 was prepared on the RAINIER using the PDP 8/e Hydroplot system which produces modified, transverse Mercator projection. A list of parameters used to define the hydrographic sheet are provided in the separates following the text. All field records will be sent to the Pacific Marine Center, Seattle, Washington. The smooth field sheet is plotted on a page-size mylar and is included with this report.

F. CONTROL STATIONS

All control stations utilized were existing Third-Order, Class I geodetic stations on the North American 1927 Datum.

G. HYDROGRAPHIC POSITION CONTROL

Range/Azimuth was the only method used for sounding line position control. Motorola Mini-Ranger positioning systems and a Wild Theodolite (S/N 65516) were used. The tables below summarize the location of all Mini-Ranger mobile and shore equipment:

TABLE II

Mini-Ranger Mobile Equipment

<u>Vessel</u>	<u>Console S/N</u>	<u>R/T S/N</u>
2124	B 0269	B 1388
2125	715	B 1108

TABLE III

Mini-Ranger Shore Equipment

<u>Code</u>	<u>Transponder S/N</u>	<u>Station No.</u>
B	4951	103
D	1569	103

The smooth field sheet was plotted using correctors determined from the initial baseline calibration. For more information concerning calibrations, refer to the Electronic Control Report, OPR-0168-RA-83.

System checks were performed daily. These checks were accomplished by the static calibration method.

Mobile and shore equipment performed very well and the calibration data as applied to the smooth field sheet are adequate.

A copy of the Abstract of Corrections to Electronic Position Control is provided in the separates following the text. ✓

H. SHORELINE

The shoreline on the smooth field sheet was transferred from shoreline map T-10597 (unregistered, scale 1:10,000) enlarged to a scale of 1:5,000. All shoreline from this map is shown in brown on the smooth field sheet. ✓

During this examination, a discrepancy was found between the shoreline as shown on the above map and the actual shoreline. The area is west of the pulp mill and is shown in red on the field sheet. The source of this shoreline was a blueprint of the area supplied to the RAINIER by the senior engineer at the pulp mill (see Miscellaneous Information section in separates following text for names and addresses of pulp mill officials). The pulp mill obtained the shoreline position from an aerial photograph in their possession. This area has been completely filled and reclaimed. The shoreline blueprint is included with the survey records. ✓

See Eval
Report
Sect 2

No other shoreline discrepancies were noted during this field examination. Refer to section Q for an additional discussion of the shoreline in this area. ✓

I. CROSSLINES

Crosslines account for 44% of the total mileage run in Ward Cove. In all cases, crossline agreement is excellent. ✓

J. JUNCTIONS

Junction surveys are not applicable to this field examination.

See Eval
Report
Sect 5

K. COMPARISON WITH PRIOR SURVEYS

Three presurvey review items were within the limits of this field examination. ✓

Item No. 50606

This item called for a bottom drag investigation of the wreck charted at 55° 24' 21.36"N and 131° 43' 23.48"W. At the time of this field examination an anchored house float was located at this position, making a bottom drag impractical. It is recommended that this item remain as charted.

See Eval
Report
Sect 6

Item No. 50607

This item called for investigation of a ~~2.0 fm~~ shoal at 55° 24' 26.4"N, 131° 43' 24.0"W created by an earth slide during construction of the pulp mill pier. ✓

(2 fathom 4 feet cleared depth)

The shoal was verified by echo sounder and lead-line investigation. ✓

Lead-line soundings were obtained along the face of the pulp mill pier. These soundings indicate a shoal area at the eastern end of the pier. Officials of the mill assured the field party that they are aware of this shoaling and that no ships are allowed to dock that far down the pier. This area is used only for unloading of "chip barges". Spilling of the chips is the cause of the shoaling. It is recommended that the soundings from the present survey be used to update this area of the chart.

Concur

Item No. 50608

This "information" item described shoaling on the 30 foot depth curve by fill from behind the face of the wharf. A least depth of 3.5 fm was found at 55° 24' 25"N, 131° 43' 29.5"W. See Item 50607 for shoaling at the east end of this pier.

See Eval
Report,
Sect 6

Prior surveys, H-7869 (1951) and wire drag survey H-8101 (1953), were compared to the present field examination. Both surveys were done at a scale of 1:5,000.

See Eval
Report,
Sect 6

Comparison of this field examination with survey H-7869 shows a general shoaling trend, averaging 1.0 to 2.0 fm throughout the area. ✓

Survey H-7869 was conducted in 1951, prior to the beginning of operation of the pulp mill. Operation of the mill is the most probable cause of the shoaling trend in this area. Officials of the mill stated that pieces (and sometimes entire logs) sink in the area and accumulate on the bottom. Also, bottom samples taken during field work indicate that the bottom is primarily made up of small wood chips. ✓

The most notable shoaling appears in the northwest corner of the area. There are two sewage outfalls in this area from the treatment plant associated with the pulp mill which may be a contributing factor to the shoaling in this area. ✓

Comparison of this field examination with wire drag survey H-8101 showed good overall comparison with no significant differences.

See Eval
Report,
Sect. 6

L. COMPARISON WITH THE CHART

This field examination was compared to NOS Chart No. 17428, 4th Edition, February 1980, 1:10,000 scale enlarged to a scale of 1:5,000. This comparison also indicates a general shoaling trend in the area. ✓

The major shoaling occurs in the western and northeastern portions of the area. The 10 fathom depth curve extends up to 50 yards farther offshore than charted in the western portion of the area investigated. In the northeastern area of this examination, the 10 fathom curve is no longer configured as charted. This curve presently extends as far as 350 yards south of its charted position. ✓

It is recommended that the soundings obtained by this field examination supersede those previously charted in this area.

The charted dolphins at positions 55° 24' 21"N, 131° 43' 45"W and 55° 24' 22"N, 131° 43' 40"W should be deleted from the chart. The senior engineer of the pulp mill stated that he personally supervised the removal of these dolphins and that they were totally removed. ✓

The disposal area charted at approximately 55° 24.2'N and 131° 43.6'W is no longer active. This information was obtained from officials of the pulp mill. It is recommended that this symbol be deleted from the chart. Other charted features and recommendations are discussed in section ~~X~~.
K

M. ADEQUACY OF SURVEY

This field examination is complete and sufficient to supersede all prior surveys for charting purposes except as noted in sections ~~M~~ and Q.
K

N. AIDS TO NAVIGATION

No aids to navigation exist in the area of this field examination. ✓

O. STATISTICS

<u>Survey Launch</u>	<u>Linear Nautical Miles</u>	<u>Square Nautical Miles</u>	<u>Number of Positions</u>
RA-4 (2124)	2.93	----	130 138
RA-5 (2125)	0.67	----	27
Total	3.60	0.12	157 165

Bottom Samples: 3

P. MISCELLANEOUS

No anomalous currents were observed during field work and none were indicated during conversations with local inhabitants of the area. ✓

This area was difficult to survey due to the logging activities of the pulp mill. The log booms within which logs are stored are not permanently placed. Their location is changed by the tides as well as by employees of the mill. A "holiday" exists on this field examination at approximately 55° 24.2'N and 131° 43.5'W due to these booms. ✓

See Eval Report Sect 7

See Eval Report, Sect 7

See Eval Report, Sect 7

See Eval Report Sect 6 & 7

It is recommended that a note be added to the chart to caution mariners of the variability of the locations of these log storage areas. Photographs of the area are included in the separates following the text.

Concur

Q. RECOMMENDATIONS

It is recommended that this area be scheduled for aerial photography prior to the next edition of the chart. As stated in section H, there have been changes to the shoreline since the last photographs were compiled. Also, there is a dike project being conducted on the eastern shore of Ward Cove, south of Ward Creek, which will change the shoreline in this area.

Concur

There are no further recommendations other than those previously stated in sections K, L, and P.

✓

R. AUTOMATED DATA PROCESSING

Data acquisition and processing were accomplished in accordance with the Hydrographic Manual (Fourth Edition, 1976), Manual of Automated Hydrographic Surveys, the PMC OORDER, Hydrographic Survey Guidelines and the Hydrographic Data Requirements for 1983.

✓

Soundings and positions were taken by an ASI Logger and a Hydroplot system using Range/Azimuth program FA181. There are daily master tapes and corresponding corrector tapes which include the TRA for the launches and electronic control baseline correctors for Mini-Ranger consoles and R/T units and all depth corrections. Velocity tapes were generated from a sound velocity, temperature, depth (STD) cast. The following is a list of all computer programs and version dates used for data acquisition or processing:

✓

	<u>PDP 8/e Programs</u>	<u>Version Dates</u>
FA181	Range/Azimuth Hydrolog	2/23/78
RK201	Grid, Signal and Lattice Plot	4/18/75
RK212	Visual Station Table Load	4/01/74
RK216	Range/Azimuth Non-Real Time Plot	2/09/81
RK300	Utility Computations	10/21/80
RK330	Reformat and Data Check	5/04/76
PM360	Electronic Corrector Abstract	2/02/76
RK407	Geodetic Inverse/Direct Computation	9/25/78
AM500	Predicted Tide Generator	11/10/72
RK561	H/R Geodetic Calibration	12/01/82
AM602	Elinore-Line Oriented Editor	12/08/82
RK606	Tape Duplicator	8/22/74

	<u>PDP 8/e Programs</u>	<u>Version Dates</u>
AM607	Self-Starting Binary Loader	8/10/80
RK610	Binary Tape Duplicator	12/01/82
RK612	Line Printer List	3/22/78
RK900	Plot Test Tape Generator For AM902	5/07/76
PM901	Core Check	3/01/72
AM902	Real Time Checkout	11/10/72
DA903	Diagnostic-Instruction Timer	2/27/76
RK905	Hydroplot Controller Checkout	3/18/81
RK935	Hydroplot Hardware Tests	3/15/82
RK950	Hardware Tests (Documentation Only)	6/02/75

The HP-9815 and HP-97 calculators were used to compute geographic positions of electronic control and visual stations and velocity of sound corrections for the plotting of smooth field sheets. ✓

S. REFERRAL TO REPORTS

The following reports contain information related to this survey: ✓

Echo Sounding Report	OPR-0168-RA-83
Electronic Control Report	OPR-0168-RA-83
Coast Pilot Report	OPR-0168-RA-83

Respectfully submitted,

Joyce L. Judson

Joyce L. Judson
ENS, NOAA

PARAMETER TAPE LISTING
RA-5-2-33 FIELD EXAMINATION

WARD COVE, ALASKA

SKEW: 0.10.10
FEST=10000
CLAT=6130000
CHER=131/41/0
GRID=15
PLSCL=5000
PLAT=55/24/00
PLON=131/44/10
VESNO=2124
YR=33
ANDIST=0.0

SKEW: 90.3.10
FEST=10000
CLAT=6130000
CHER=131/41/0
GRID=15
PLSCL=5000
PLAT=55/24/00
PLON=131/43/10
VESNO=2124
YR=33
ANDIST=0.0

FIELD TIDE NOTE

Field tide reduction of soundings for RA-5-2-83, Ward Cove, was based on predicted tides from Ketchikan, Alaska (945-0460). Corrections were obtained from Preliminary Tidal Zoning OPR-0168-RA-83. The predicted tides were derived using program AM500. ✓

The reference station at Ketchikan was leveled at the beginning of survey operations on September 22, 1983. Three permanent benchmarks (including the primary mark) were connected to the ETG reading mark. Final levels were run on November 14, 1983. Initial and final levels compared favorably. ✓

One subordinate tide station provided data for this survey. A bubbler tide gage was installed on September 24, 1983 at the historical site on Vallenar Point (945-0511), $55^{\circ}25.6'N$, $131^{\circ}50.8'W$. Three permanent benchmarks were recovered and two benchmarks were established at this location. Initial levels were run on September 24, 1983. The staff value of the zero line on the analog tide record is +12.62 feet. The gage operated well throughout the time of hydrography except for a period of 18 hours on J.D. 298 when a gap in the record occurred due to a paper jam. Final levels for this gage were run on November 15, 1983. Comparison of initial and final levels indicated that no significant movement of the staff occurred during the survey period. The time meridian used for records annotation was 0° (UTC). ✓

GEOGRAPHIC NAMES

FE-251

Name on Survey	A ON CHART NO. 17428 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 IP 10597									
	A	B	C	D	E	F	G	H	K	
ALASKA (title)										1
BOLLES LEDGE	X								X	2
WARD COVE	X								X	3
WARD COVE (locality)	X								X	4
TONGASS NARROWS (title)										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

Approved:

Charles E. Harrington

Chief Geographer - NCG 25

22 MARCH 1984

VELOCITY TAPE LISTING
RA-20-2-83 (H-10115)
RA-20-3-83 (H-10118)
FE-251

TABLE NO. 7

000055	0	0000	0007	001	000000	000000
000129	0	0001				
000198	0	0002				
000262	0	0003				
000331	0	0004				
000395	0	0005				
000469	0	0006				
000543	0	0007				
000617	0	0008				
000696	0	0009				
000780	0	0010				
000874	0	0011				
000973	0	0012				
001072	0	0013				
001460	0	0015				
001950	0	0020				
002425	0	0025				
002920	0	0030				
003435	0	0035				
999999	0	0040				

TC/TI TAPE LISTING
RA-5-2-33
WARD COVE, ALASKA



LAUNCH - 2124(RA-4)
FATHO: 1071

210040 0 0003 0007 270 212400 000000 ← 212300 0.0 0 271
~~100013 0 0003 0007 272 000000 000000~~
170700

LAUNCH - 2125(RA-5)
FATHO: 1040

202557 0 0003 0007 300 212500 000000
~~214400 0 0000~~
210330 0 0
210400 3 7

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2124

SHEET : RA-5-2-83

TIME	DAY	PATTERN 1	PATTERN 2
210040	270	+00000	-63476
223500		+00000	+00000
175227	271	-00002	-04534
211500		-00002	+00000
170930	272	-00002	-38007
195018		-00002	+00000

DISREGARD PATTERN 2 CORRECTORS FOR
RANGE/AZIMUTH HYDRØ.

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 2125

SHEET : RA-5-2-83

TIME	DAY	PATTERN 1	PATTERN 2
202557	300	-00001	-02000
214400		+00000	+00000

DISREGARD PATTERN 2 CORRECTORS FOR RANGE/AZIMUTH HYDRØ.

MASTER STATION LIST
S-0907-RA-33
WARD COVE, KETCHIKAN, AND METLAKATLA, ALASKA

VERSION 11/29/83

100	4	55	23	56544	131	44	26823	139	0001	000000	✓
/DECOY 1951										551313(1052)	
103	4	55	24	06655	131	43	09945	250	0003	000000	✓
/BAHEL 1951										551313(1010)	
104	4	55	24	30433	131	42	59185	139	0000	000000	✓
/WARD COVE HOUSE W GABLE 1951										551313(1220)	
105	4	55	23	46541	131	44	39270	139	0002	000000	✓
/ABIDE 1951										551313(1003)	
201	4	55	19	51236	131	37	59035	250	0001	000000	
/HICK 1906										551313(1035)	
202	4	55	20	02438	131	37	35032	139	0000	000000	
/STANDARD OIL PIER EAST LT										FFAID FILE	
203	4	55	20	04096	131	37	38719	139	0000	000000	
/STANDARD OIL PIER WEST LT										FFAID FILE	
204	4	55	20	19486	131	38	29770	139	0014	000000	
/THOMAS BASIN LT 3 1977										G-16105(ADJUSTED)	
205	4	55	03	21646	131	34	40941	250	0001	000000	
/LUMP 1913										551313(1107)	
206	4	55	07	34702	131	32	24345	250	0003	000000	
/CAS 1913										551313(1032)	
207	4	55	20	22482	131	38	13328	139	0036	000000	
/KETCHIKAN RADIO TOWER KTKN 1977										G-16105(ADJUSTED)	
208	4	55	07	40553	131	34	31287	139	0000	000000	
/METLAKATLA TOWN HALL CUPOLA 1914										551313(1116)	
209	4	55	07	38382	131	34	37551	139	0000	000000	
/METLAKATLA W CHURCH TOWER 1914										551313(1117)	
210	4	55	07	53240	131	35	01611	139	0000	000000	
/METLAKATLA BREAKWATER LT 2											

ABSTRACT OF POSITIONS
RA-5-2-83

Vessel: 2124 (RA-4)
Andist: 0-0

<u>DAYS</u>	<u>POSITIONS</u>	<u>CTRL</u>	<u>S1 M S2</u>	<u>REMARKS</u>
270	4000-4012	11	103-R/AZ	Mainscheme lines
270	4013-4015	11	103-R/AZ	D. P. Floating Dock
270	4016-4033	11	103-R/AZ	Radial Lines
271	4034-4072	11	103-R/AZ	Mainscheme lines
271	4073-4083	11	103-R/AZ	D. Ps. Log Boom
271	1000-1008	13	Manually scaled	Leadline pier face
272	4084-4093	11	103-R/AZ	D. Ps. dolphins & log booms
272	4094-4105	11	103-R/AZ	Radial lines
272	4106	11	103-R/AZ	D. P. S.W. edge of float
272	4107-4118	11	103-R/AZ	Radial lines
272	4119-4129	11	103-R/AZ	D. Ps. log booms

Vessel: 2125 (RA-5)
Andist: 0-0

300	5000-5021	11	103-R/AZ	Mainscheme lines
300	5022-5023	11	103-R/AZ	D. P. on shoal
300	5024-5026	11	103-R/AZ	Bottom samples

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATAU.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

VESSEL		PROJ. NO.		YEAR		CHECKED BY				DATE CHECKED		
2125		S-0907-RA-83		1983		WARD COVE, ALASKA				BEB		11-20-83
SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms)	WEIGHT OF SAM- PLER	AP. PROX. PENE- TRA- TION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, denting cutter, stat. no., type of bottom relief i.e., slope, plain, deposition, etc.)	OBS	
		LATITUDE	LONGITUDE (°W)								INIT.	INIT.
5024	10/27/83	24°/14.58'	43°/25.80'	8.0	45 M				WOOD CHIPS	SMALL SEA URCHIN	JJ	JJ
5025	"	24°/20.62'	43°/33.24'	10.7	"			bk	WOOD CHIPS < 2mm	STRONG SEWAGE-LIKE ODCR	JJ	JJ
5026	"	24°/11.69'	43°/44.05'	20.8	"			bk	WOOD CHIPS < 2mm	STRONG SEWAGE-LIKE ODCR	JJ	JJ

Use more than one line per sample if necessary.



Ketchikan Division of Louisiana-Pacific Corporation,
Ward Cove, Alaska. Note sewage outfall at left and
"chip barge" at right-hand (eastern) end of pier.



Note "house float" & "chip barge" at 6 left.

MISCELLANEOUS



Ketchikan Division

Thomas L. Hogan
Senior Engineer

P.O. Box 6600
Ketchikan, Alaska 99901
907/225-2151

Pulp Mill Official

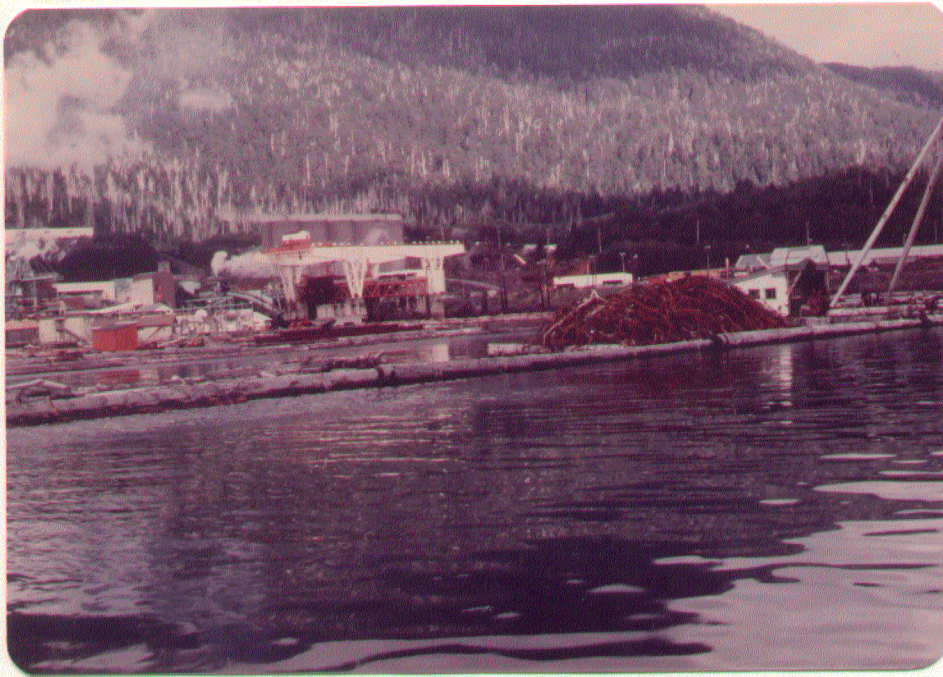


Ketchikan Division

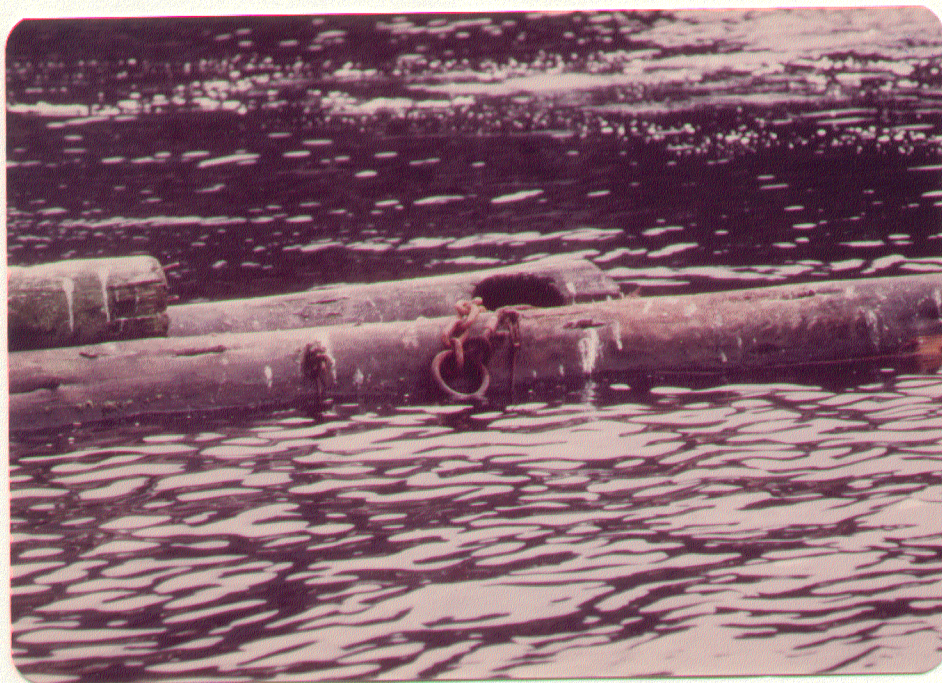
Dan Loltz
Plant Engineer

P.O. Box 6600
Ketchikan, Alaska 99901
907/225-2151

Pulp Mill Official



Note "house float" & "chip barge" at 6 left.



Anchored log boom.

APPROVAL SHEET
DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY
RA-5-2-83

In producing this sheet, standard procedures were observed in accordance with the Hydrographic Manual, PMC OORDER, Hydrographic Survey Guidelines, and the 1983 Data Requirements Letter. The data was examined daily during the execution of the survey.

The boatsheet and the accompanying records have been examined by me, are considered complete and adequate for charting purposes, and are approved.



David W. Yeager
Lieutenant Commander, NOAA
Acting Commanding Officer

HYDROGRAPHIC SURVEY STATISTICS

FE-251

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1 (in D.R.)	SMOOTH OVERLAYS: POS., ARC, EXCESS		6 (in D.R.)
DESCRIPTIVE REPORT		1	FIELD SHEETS AND OTHER OVERLAYS		1 (in cahier)
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDIAN FILES				1	
ENVELOPES					
VOLUMES	1				
CAHIERS	1				
BOXES					

SHORELINE DATA

SHORELINE MAPS(List): T-10597 (plus 2X of Ward Cove area)
 PHOTOBATHYMETRIC MAPS(List):
 NOTES TO THE HYDROGRAPHER(List):
~~ENGINEERING REPORTS(List):~~ Engineering drawings (3 ea.) (in cahier)
 NAUTICAL CHARTS(List): 17424 (2X of Ward Cove area)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			185
POSITIONS REVISED	9	0	9
SOUNDINGS REVISED	36	0	36
CONTROL STATIONS REVISED	0	0	0
	TIME - HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL	7	1	8
VERIFICATION OF POSITIONS	5	1	6
VERIFICATION OF SOUNDINGS	11	1	12
VERIFICATION OF JUNCTIONS			0
APPLICATION OF PHOTOBATHYMETRY			0
SHORELINE APPLICATION/VERIFICATION	1		1
COMPILATION OF SMOOTH SHEET	10	1	11
COMPARISON WITH PRIOR SURVEYS AND CHARTS		10	10
EVALUATION OF SIDESCAN SONAR RECORDS			0
EVALUATION OF WIRE DRAGS AND SWEEPS			0
EVALUATION REPORT	3	13	16
OTHER	1	2	3
Digitization	6		6
TOTALS	44	29	73

Pre-processing Examination by	Beginning Date	Ending Date
Verification of Field Data by C. R. Davies	2/6/84 Beginning 2/6/84	Ending Date 4/5/84
Verification Check by J. L. Stringham, B. A. Olmstead	Time(Hours) 6	Ending Date 4/5/84
Evaluation and Analysis by J. S. Green	4/10/84 Beginning 4/10/84	Ending Date 5/31/84
Inspection by D. Hill	Time(Hours) 2	Ending Date 6-1-84

PACIFIC MARINE CENTER
EVALUATION REPORT

REGISTRY NO: FE-251

FIELD NO: RA-5-2-83

Alaska, Tongass Narrows, Ward Cove

SURVEYED: September 27 - October 27, 1983

SCALE: 1:5,000

PROJECT NO: S-0907-RA-83

SOUNDINGS: Ross Model 5000 Fathometer
Leadline
Fathoms and tenths of fathoms

CONTROL: Motorola Mini-Ranger
Range-azimuth

Chief of Party.....Lt.Cdr. D. W. Yeager

Surveyed by.....Ens. J. Judson
SST R. Hastings

Automated Plot by.....PMC Xynetics Plotter

Verified by.....C. R. Davies
J. N. Shofner

Evaluated by.....J. S. Green

1. INTRODUCTION

FE-251 is a field examination conducted in accordance with Project Instructions S-0907-RA-83, Ward Cove, Ketchikan, and Metlakatla, Alaska, dated September 14, 1983. This Field Examination of Ward Cove at 1:5,000 scale, is bordered to the east by house floats and log storage areas, to the west by a log storage area, to the north by the shoreline. To the south it extends offshore to the 20 fathom depth curve.

During verification the following data were changed:

- a. Plotting parameters were changed to the PMC format and to change the projection to polyconic.
- b. The velocity table was recompiled to correct discrepancies noted in a new HP-97 program for velocity table calculations.
- c. The TC/TI table was amended to provide for leadline depths.
- d. Tide level values are from observed tides at Tide Station 945-0460, Ketchikan, Alaska zoned to Ward Cove.

Numerous abstracts and supplements not relevant to the user of the processed data were removed from the Descriptive Report and filed with the field records.

2. CONTROL AND SHORELINE

Horizontal control and hydrographic positioning are adequately discussed in paragraphs F and G of the Descriptive Report.

The smooth sheet is plotted utilizing published NGS positions on the North American Datum of 1927.

The shoreline shown in brown, for orientation purposes only, originates mostly from unregistered shoreline manuscript T-10597 (1:10,000 scale). Dates of photography and field edit are unavailable. The shoreline shown on the smooth sheet from longitude 131°43'46"W to longitude 131°43'52.5"W is from the field sheet which is based on an engineering drawing (copy with survey records).

3. HYDROGRAPHY

Soundings at crosslines are in good agreement. The standard depth curves could be adequately drawn, except where additional soundings at latitude 55°24'20"N, longitude 131°48'21"W could have better defined the 5- and 3-fathom curves. Supplementary brown depth curves were added as necessary. The development of the bottom configuration and delineation of least depths is adequate except as follows:

- a. 3.5 fm sndg at latitude 55°24'15.5"N, longitude 131°43'26.5"W
- b. 3.9 fm sndg at latitude 55°24'21"N, longitude 131°43'23"W
- c. 6.6 fm sndg at latitude 55°24'21.5"N, longitude 131°43'31.5"W

4. CONDITION OF SURVEY

The hydrographic records and final report adequately conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change 3, except:

- a. Least depth of shoal indications, as identified in Section 3 of this report, were not determined.
- b. The velocity table was initially submitted in error.

5. JUNCTIONS

There are no contemporary junctional surveys bordering on FE-251. The 20-fathom depth curve is in fair agreement with charted depths, however, the shoaling as a result of deposits from the pulp mill have resulted in substantial change in the areas of the 10-fathom and shoaler depth curves.

6. COMPARISON WITH PRIOR SURVEY

AWOIS Item 50606 is a sunken barge charted at latitude 55°24'21.36"N, longitude 131°43'23.48"W, as a Wk cleared 6 fathoms 5 feet. The charted position of this item is within the limits of an anchored house float found during this survey, therefore the wreck was not investigated. A shoal depth of 3.9 fathoms was found 35 meters south of the charted wire drag cleared depth, however, the 3.9

is believed to be the result of wood chip deposits. The house float area limits and the 3.9 fathom sounding should be charted in this area, however, the wreck has not been disproven. If the anchored house float is moved the wreck should be recharted with H-8101WD as the source.

AWOIS Item 50608 is an information item noting fill encroaching on the 30 foot depth curve along the entire face of the wharfin the vicinity of latitude 55°24'25"N, longitude 131°43'30"W. The ship's discussion of this item is supplemented as follows: The five fathom depth curve as shown on this survey has moved offshore approximately 10 meters from the charted curve. Outside the charted ten fathom curve, shoaling from wood chip deposits is apparent. This area should be charted according to the present survey.

The hydrographer's discussion of AWOIS Item 50607 is adequate.

FE-251 was compared with the following prior surveys:

- a. H-7869 (1951) 1:5,000
H-8101WD (Supplemental Hydrography) (1953) 1:5,000

H-7869 was accomplished prior to construction of the pier facilities in Ward Cove and use of the present log storage areas, which restrict the area coverage of FE-251. The supplemental hydrography on H-8101WD provided coverage of the newly constructed pier facility. A general shoaling trend of 1 to 2 fathoms is apparent throughout the survey area, with several areas, where dumping of wood chips occur, up to 8 fathoms shoaler. The prior 10-fathom depth curve has shifted approximately 300 meters southwestward indicating a gradual filling of Ward Cove from its head seaward. FE-251 is adequate to supersede H-7869 and that portion of H-8101WD containing supplemental hydrography within the area of common coverage.

- b. H-8101WD (1953) 1:5,000

The following areas common with H-8101WD are now shoaler than that cleared on the prior wire drag survey:

- (1) latitude 55°24'15"N, longitude 131°43'26"W
- (2) latitude 55°24'20"N, longitude 131°43'22"W
- (3) latitude 55°24'26"N, longitude 131°43'24"W (AWOIS Item 50607)

Except for the above three areas, the prior wire drag information is consistent with data shown on FE-251.

7. COMPARISON WITH CHART

17428 (4th Ed., February 16, 1980)

a. Hydrography - The charted information originates from the above discussed prior surveys and unknown sources. The shoaling trends noted in Section 6 of this report also apply to the comparison with charted depths. All charted features have been adequately investigated and discussed except as follows:

(1) The dolphins charted at latitude 55°24'21.1"N, longitude 131°43'45"W and latitude 55°24'22"N, longitude 131°43'40"W were not searched for; instead, the hydrographer contacted the senior engineer of the pulp mill who stated that he personally supervised the removal of these dolphins and that they were totally removed. Based upon this statement, I recommend that the dolphins be removed from the chart.

(2) The disposal area charted at latitude 55°24'15"N, longitude 131°43'36"W should be shown as discontinued with depths updated to 1983.

Dangers to navigation were identified during the preprocessing examination. A copy of the letter to the Coast Guard is attached.

FE-251 is adequate to supersede the charted information for the areas of common coverage.

b. Controlling Depths - There are no controlling depths charted within the limits of the present survey.

c. Aids to Navigation - There are no aids to navigation within the limits of this survey.

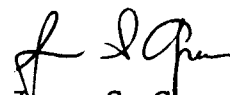
8. COMPLIANCE WITH INSTRUCTIONS

FE-251 adequately complies with the project instructions except as mentioned in section 4 of this report.

9. ADDITIONAL FIELD WORK

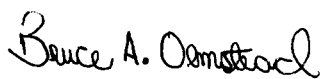
FE-251 is a good field examination. Additional field work to develop the shoal indications and the small holiday noted in Section 3 of this report should be accomplished on a non-priority basis. In addition, aerial photography to update the shoreline and log storage areas should be accomplished prior to the next edition of the chart.

Respectfully,



James S. Green
Supervisory Cartographer
May 24, 1984

This survey has been verified and evaluated. I have examined this survey and it meets Charting and Geodetic Services survey standards and requirements for use in nautical charting except as noted in the Evaluation Report. This survey is recommended for approval.

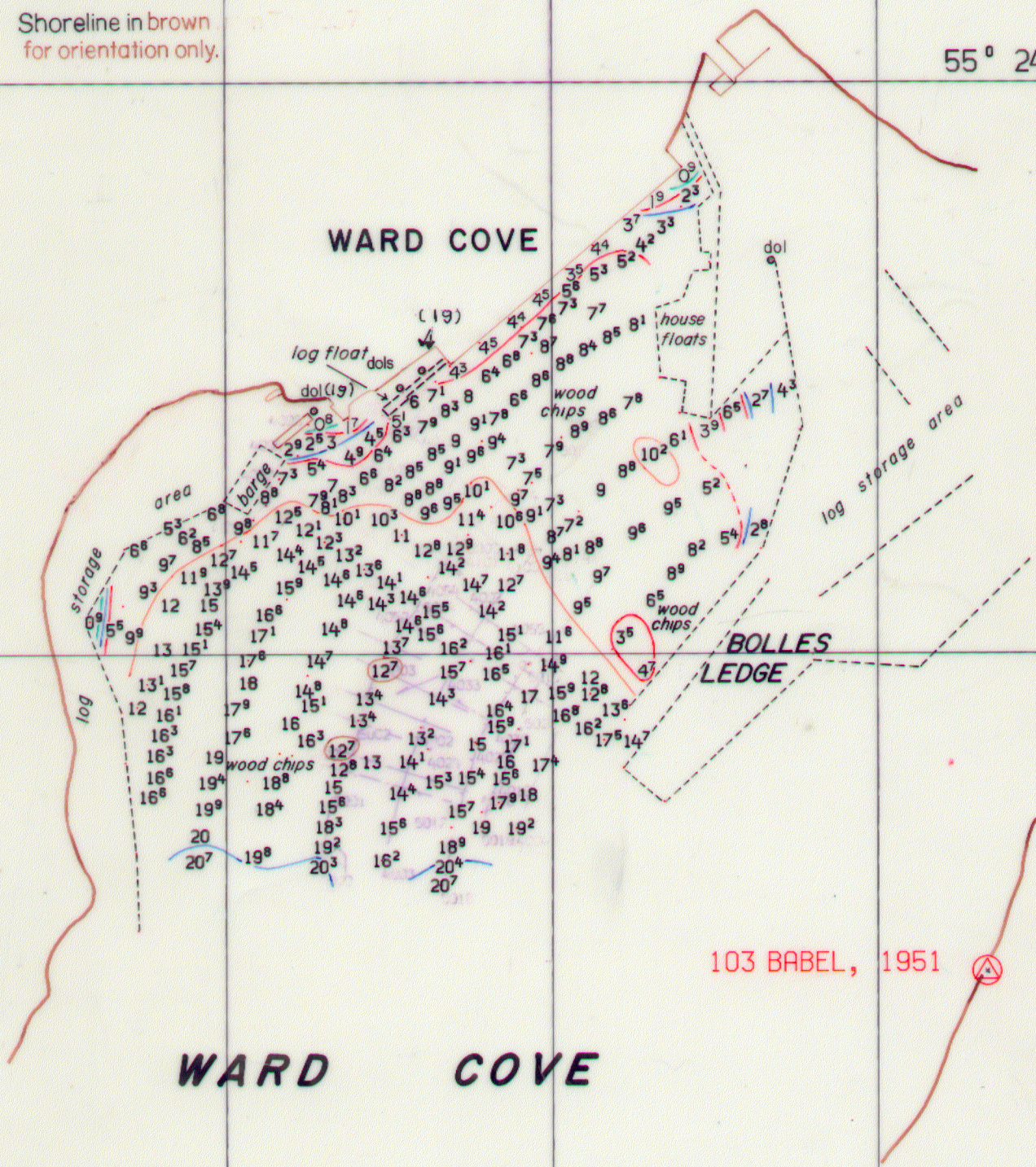


Bruce A. Olmstead
Senior Cartographer

ALASKA
 TONGASS NARROWS
 WARD COVE
 FE-251
 SSP-0907
 SCALE 1:5000
 SURVEYED SEP-OCT 1983
 SOUNDINGS IN FATHOMS AND TENTHS
 REDUCED TO MLLW DATUM
 SSS PL 03-15-84

Shoreline in brown
 for orientation only.

55° 24' 30"



WARD COVE

131° 43' 45"

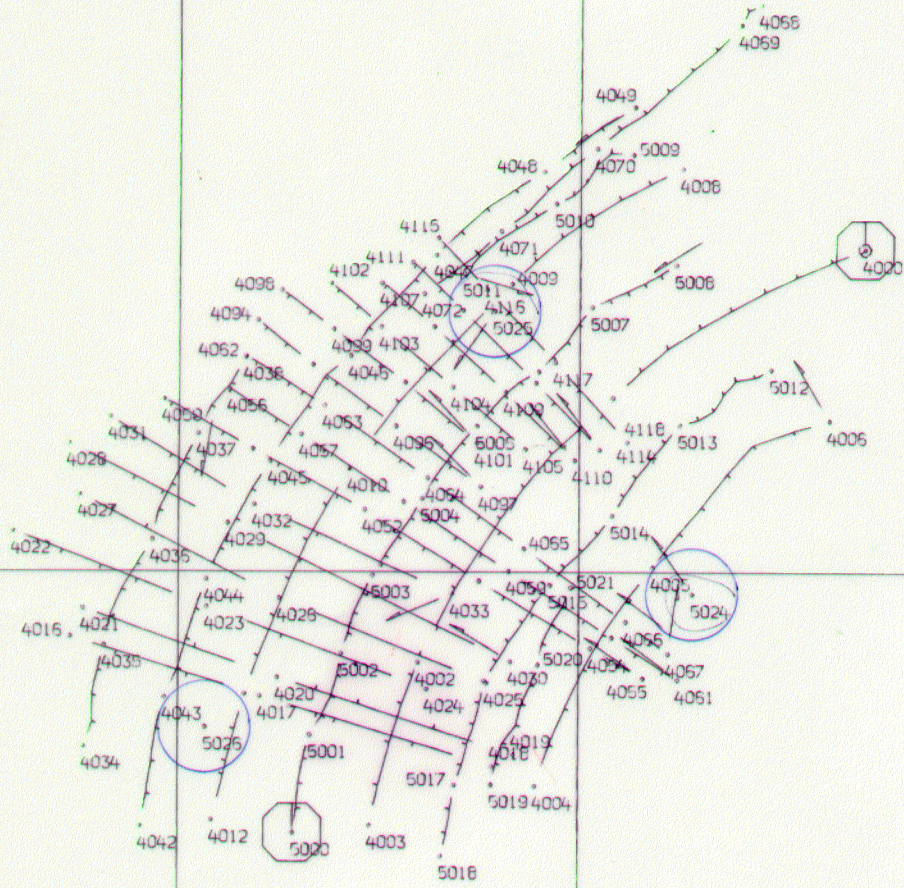
131° 43' 30"

131° 43' 15"


55° 24' 00"

FE-251 03-15-84
POSITION OVERLAY A
SCALE 1:5000
SHEET 1 OF 3

55° 24' 30"



55° 24' 15"

103 BABEL, 1951 

55° 24' 00"

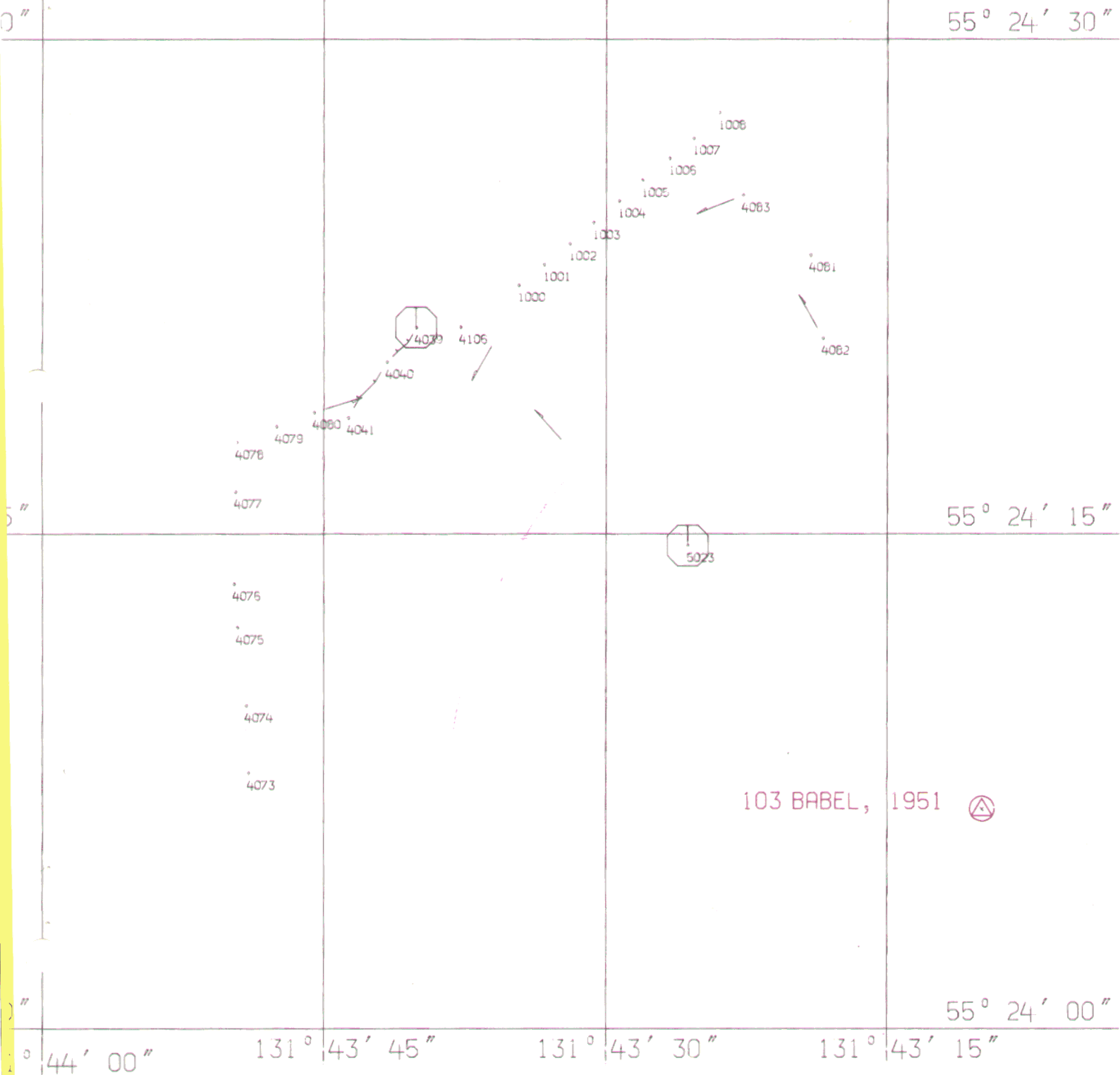
1° 44' 00"

131° 43' 45"

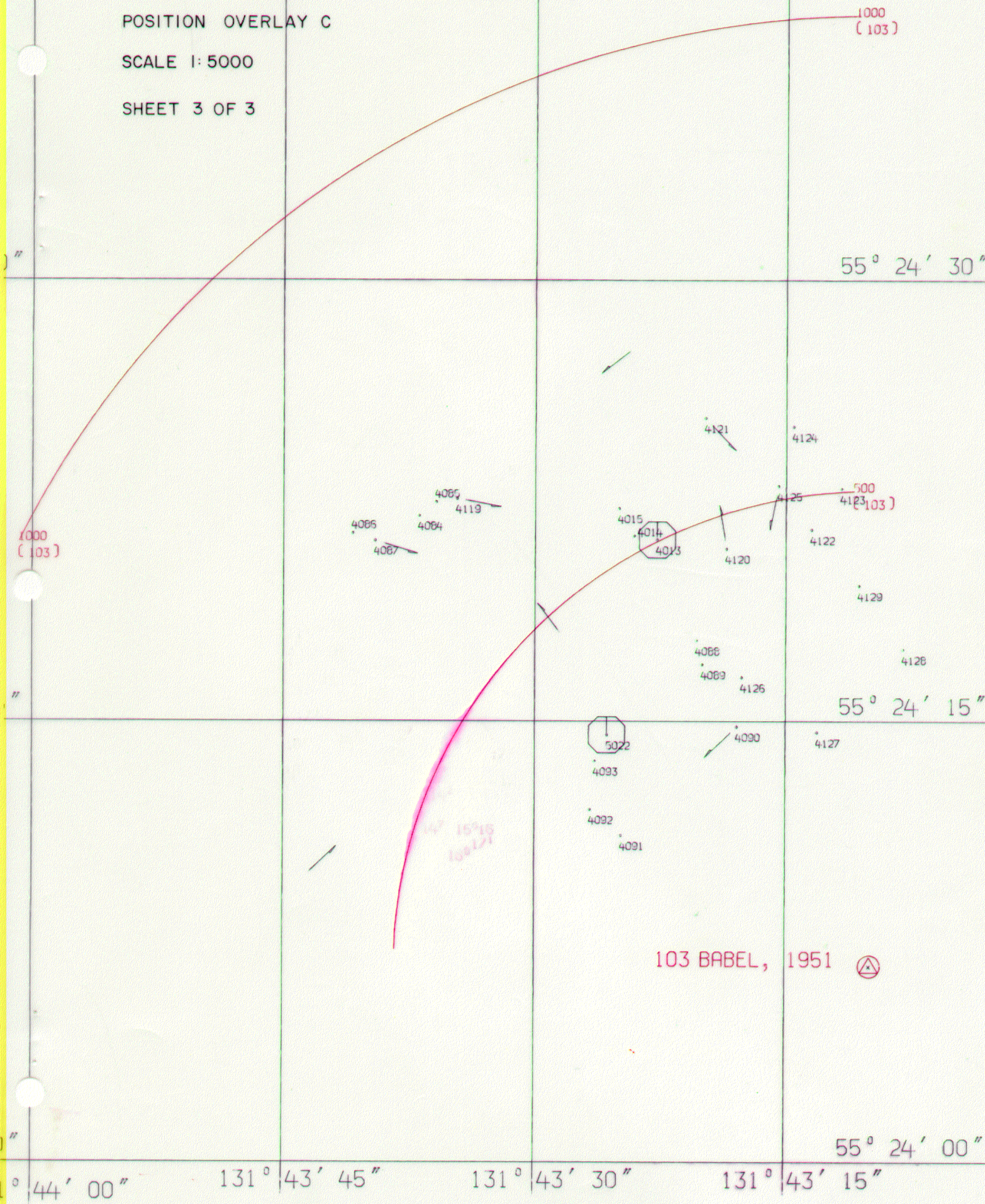
131° 43' 30"

131° 43' 15"

FE-251 03-15-84
POSITION OVERLAY B
SCALE 1:5000
SHEET 2 OF 3



FE-251 03-15-84
POSITION OVERLAY C
SCALE 1:5000
SHEET 3 OF 3



1000
(103)

55° 24' 30"

1000
(103)

500
4123 (103)

55° 24' 15"

5022

103 BABEL, 1951

55° 24' 00"

131° 44' 00"

131° 43' 45"

131° 43' 30"

131° 43' 15"

FE-251 03-15-84

EXCESS SOUNDING OVERLAY

SCALE 1:5000

EXCESS LEVEL 1 OF 3

55° 24' 30"

2725

55° 24' 15"

103 BABEL, 1951



55° 24' 00"

131° 44' 00"

131° 43' 45"

131° 43' 30"

131° 43' 15"

FE-251 03-15-84

EXCESS SOUNDING OVERLAY

SCALE 1:5000

EXCESS LEVEL 2 OF 3

0"

55° 24' 30"

5"

55° 24' 15"

0"

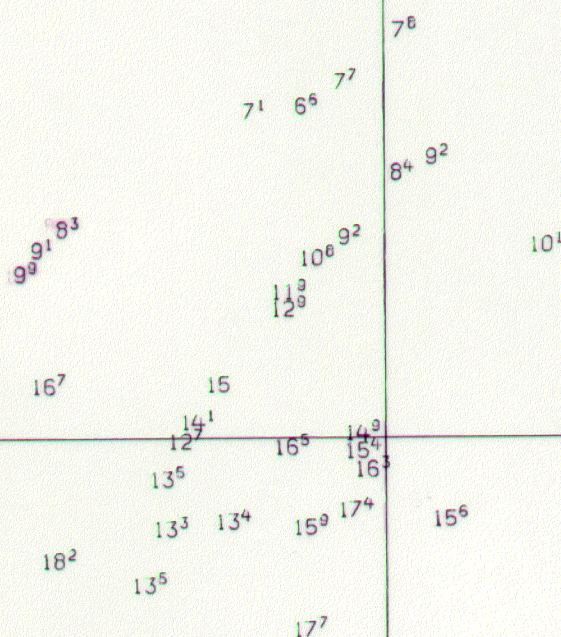
55° 24' 00"


1° 44' 00"

131° 43' 45"

131° 43' 30"

131° 43' 15"



103 BABEL, 1951 

FE-251 03-15-84

EXCESS SOUNDING OVERLAY

SCALE 1:5000

EXCESS LEVEL 3 OF 3

55° 24' 30"

8⁵

8³

8⁵

10³

11¹

14⁴

55° 24' 15"

16⁵

16¹

103 BABEL, 1951 

55° 24' 00"

44' 00"

131° 43' 45"

131° 43' 30"

131° 43' 15"

February 9, 1984

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Pacific

OPR: 0907

HYDROGRAPHIC SHEET: FE-251

Locality: Ward Cove, Alaska

Time Period: September 27 - October 27, 1983

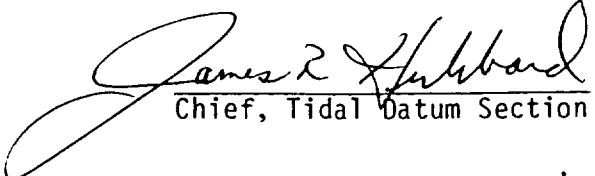
Tide Station Used: 945-0460 Ketchikan, Alaska

Plane Of Reference (Mean Lower Low Water): 6.23 feet

Height Of Mean High Water Above Plane Of Reference: 14.5 feet

Remarks: Recommended Zoning:

For the survey area located within the following boundaries; Latitude $55^{\circ}25.0'$, Latitude $55^{\circ}24.0'$, Longitude $131^{\circ}44.0'$, and Longitude $131^{\circ}43.0'$. Apply x 1.03 range ratio to all heights.


Chief, Tidal Datum Section



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

N/MOP21:MRK

Commander (OAN)
Seventeenth Coast Guard District
P. O. Box 3-5000
Juneau, Alaska 99802

Dear Sir:

During preliminary office review of the field examination in Ward Cove, Tongass Narrows, Alaska, general shoaling was noted in the area and is considered a danger to navigation. Questions concerning the survey may be directed to Capt. Ned C. Austin, Chief, Nautical Chart Branch, telephone (206) 527-6835.

~~The following statements are recommended for inclusion in the Local Notice to Mariners:~~

"In Ward Cove, Tongass Narrows, north of latitude 55°24'10", and west of longitude 131°43'20", general shoaling has occurred. Depths are 1 to 3 fathoms shoaler than charted. Shoal depths (MLLW based on predicted tides) were found at the following positions:

4.9 fathoms at latitude 55°24'15.5"N, longitude 131°43'26.5"W,
4.0 fathoms at latitude 55°24'20.7"N, longitude 131°43'23.5"W,
6.7 fathoms at latitude 55°24'21.7"N, longitude 131°43'31.5"W
(Chart 17428)."

"An uncharted shoal covered by 1.9 fathoms (MLLW based on predicted tides) is at latitude 55°24'27", longitude 131°43'25.5", at the face of the pulp mill pier in Ward Cove, 33 yards from the NE end. At the NE end of the pier, latitude 55°24'27.7", longitude 131°43'24", is a shoal covered by 0.9 fathoms (MLLW based on predicted tides) (Chart 17428)."

Sincerely,

K. W. Jeffers
for Charles K. Townsied
Rear Admiral, NOAA
Director, Pacific Marine Center



ATTACHMENT TO DESCRIPTIVE REPORT FOR FE-251

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

David W. Yeager 6/6/84
Chief, Nautical Chart Branch (Date)

CLEARANCE:

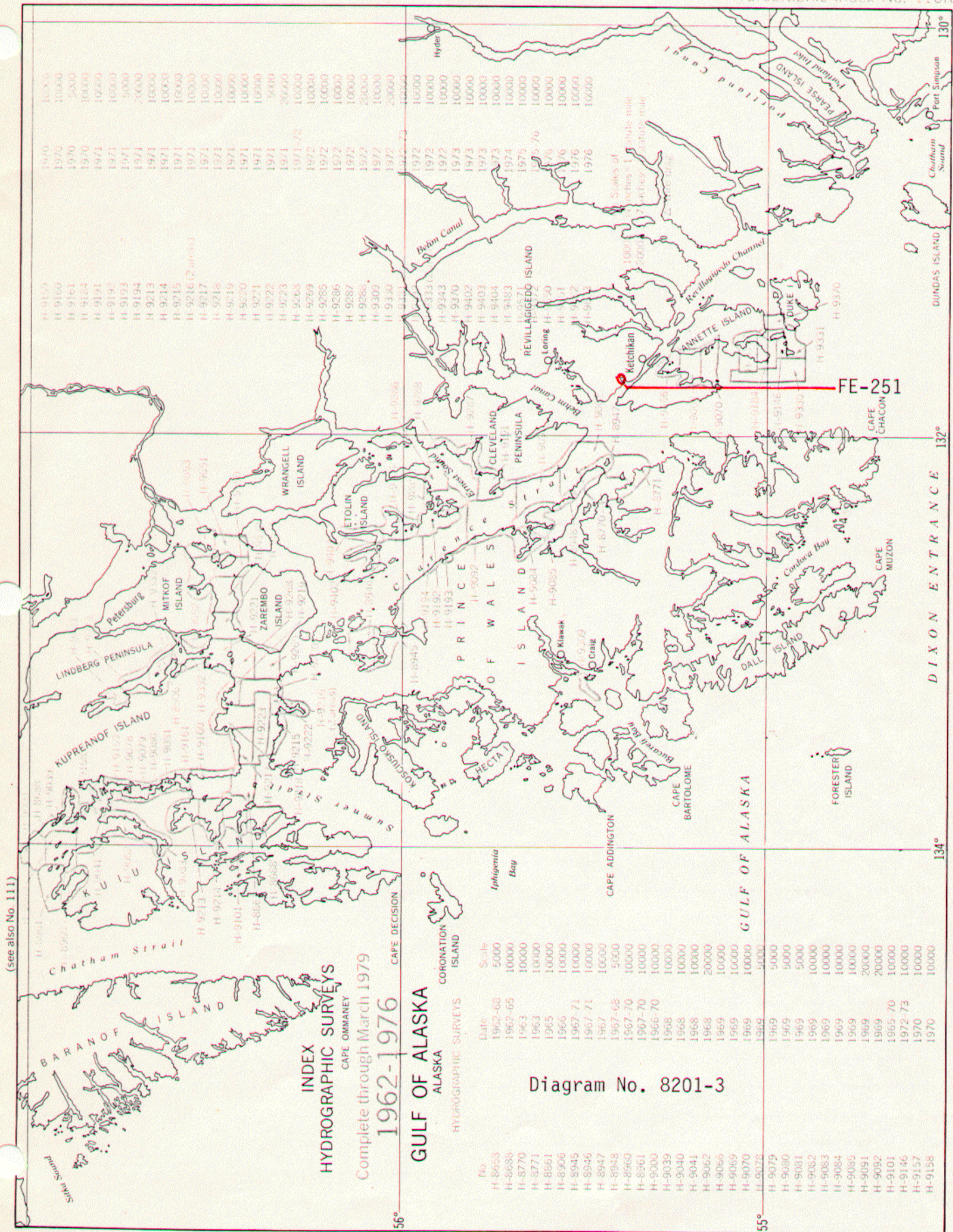
N/MOP2:LW Mordock

SIGNATURE AND DATE:

Larry W. Mordock 6/11/84

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Charles K. Townsend 6/12/84
Director, Pacific Marine Center (Date)



(see also No. 111)

**INDEX
 HYDROGRAPHIC SURVEYS**
 Complete through March 1979
 1962-1976

**GULF OF ALASKA
 ALASKA**

HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-8653	1962-63	5000
H-8688	1962-65	10000
H-8770	1963	10000
H-8771	1963	10000
H-8861	1965	10000
H-8906	1966	10000
H-8945	1967-71	10000
H-8946	1967-71	10000
H-8947	1967	10000
H-8948	1967-68	5000
H-8960	1967-70	10000
H-8961	1967-70	10000
H-9000	1966-70	10000
H-9039	1968	10000
H-9040	1968	10000
H-9041	1968	10000
H-9062	1968	20000
H-9066	1969	10000
H-9069	1969	10000
H-9070	1969	10000
H-9078	1969	5000
H-9079	1969	5000
H-9081	1969	5000
H-9082	1969	10000
H-9083	1969	10000
H-9084	1969	10000
H-9085	1969	10000
H-9091	1969	20000
H-9092	1969	20000
H-9101	1965-70	10000
H-9146	1972-73	10000
H-9157	1970	10000
H-9158	1970	10000

Diagram No. 8201-3

RECORD OF APPLICATION TO CHARTS

FE-251

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. _____

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.

2. In "Remarks" column cross out words that do not apply.

3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
17428 Ward Cove Inset	1-23-95	Thomas J. Franklin	Full Part Before After Verification Review Inspection Signed Via Drawing No. 7 Applied to Ward Cove Inset; No correction on main panel, due to scale. 2/2/95 DC
17428 Ward Cove Inset	1-17-97 1-17-97	WJF D. [unclear]	Full Part Before After Verification Review Inspection Signed Via Drawing No. 8 Re-application of source, 1-17-97-WJF
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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