

H110679

NOAA FORM 78-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. RA-10-5-96
Registry No. H-10679

LOCALITY

State Alaska
General Locality Southern Stephens Passage
Sublocality Herring Bay and Vicinity

1996

CHIEF OF PARTY
CAPT Dean R. Seidel, NOAA

LIBRARY & ARCHIVES

DATE APR 9 1997

DIAGRAM 8201-4, 8252-3

(A)

Ref: Bp 161086, 161099-161100

Charts

PRODUCTS

CP8

17336

17368

17320

17360

16016NC

H-10679

HYDROGRAPHIC TITLE SHEET

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-10-5-96

State Alaska

General locality Southern Stephens Passage

Locality Herring Bay and Vicinity

Scale 1:10,000 Date of survey April 3 to May 1, 1996

Instructions dated 2/12/96, Change #1-3/7/96 Project No. OPR-0136-RA
Change #2-4/23/96

Vessel NOAA Ship RAINIER, Launches (2122), (2123), (2124), (2125), (2126)

Chief of party CAPT Dean R. Seidel, NOAA

Surveyed by CAPT D.Seidel, LT M.Larsen, LT G.Noll, LT S.Lemke, LTJG M.Harrison,
LTJG S.Meador, ENS N.Bennett, ENS E.Christensen

Soundings taken by echo sounder, hand lead, pole DSF-6000N

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

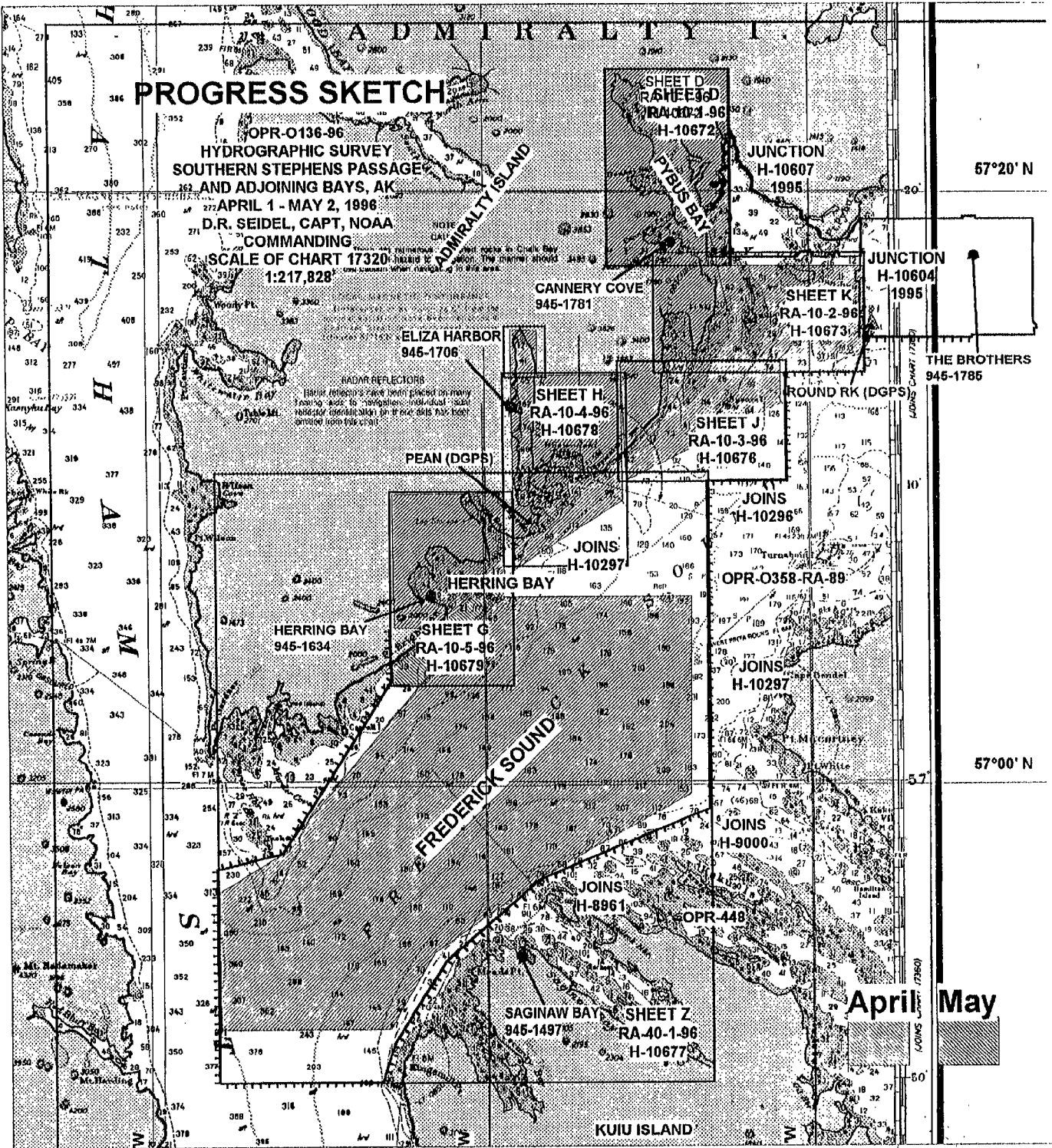
Evaluation by: R. Davies Automated plot by HP Design Jet 650C Plotter

Verification by D. Doles, R. Davies

Soundings in fathoms feet at ~~MLW~~ MLLW

REMARKS: Time in UTC, revisions and marginal notes in black were generated
during office processing. All separates are filed with the
hydrographic data, as a result page numbering may be interrupted
or non-sequential.
All depths listed in this report are referenced to mean lower low
water unless otherwise noted.

SL4897 AWOIS + SURF ✓ RWD 3/97



Descriptive Report to Accompany Hydrographic Survey H-10679

Field Number RA-10-05-96

Scale 1:10,000

April - May 1996

NOAA Ship RAINIER

Chief of Party: Captain Dean R. Seidel, NOAA

A. PROJECT ✓

This basic hydrographic survey was completed in Frederick Sound, Alaska, as specified by Project Instructions OPR-O136-RA dated February 12, 1996, Change number 1 dated March 7, 1996, and Change number 2 dated April 11, 1996. Survey H-10679 corresponds to sheet G as defined in the sheet layout included in the Project Instructions.

This survey will provide contemporary hydrographic survey data for updating existing nautical charts in Southeast Alaska. Requests for hydrographic surveys and updated charts have been received from the United States Coast Guard, the Southeastern Alaska Pilot's Association, and the Alaska Department of Transportation to support the cruise, logging and commercial fishing industries.

B. AREA SURVEYED ✓ See Eval Rpt., section B

The survey area is in Frederick Sound near Herring Bay and Chapin Bay. The survey's eastern limit is 134° 18' 15" W joining survey H-10678, and its western limit is 134° 26' 00" W. Its southern limit joins survey H-10677, bounded by a line extending from 57° 05' 51" N, 134° 18' 15" W to 57° 03' 12" N, 134° 23' 00" W to 57° 03' 12" N, 134° 26' 00" W. The northern limit is the shoreline of Point Brightman, Herring Bay and Chapin Bay. Data acquisition was conducted from April 24, 1996 (DN 115) to May 1, 1996 (DN 122).

C. SURVEY VESSELS ✓

Data were acquired by RAINIER survey launches as noted below:

Vessel	EDP #	Operation
RA-3	2123	Hydrography Shoreline Verification
RA-4	2124	Hydrography Shoreline Verification
RA-5	2125	Hydrography Shoreline Verification Sound Velocity Casts Bottom Samples
RA-6	2126	Hydrography

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired and processed with HDAPS. A complete listing of software for HDAPS is included in ~~Appendix VI~~. *

E. SONAR EQUIPMENT ✓

Sonar equipment was not used on H-10679. *Concur*

F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. Serial numbers are included on the headers of the daily Raw Master Printouts. *No problems which affect survey data were encountered. All DSF-6000N soundings were acquired using the High + Low, high frequency digitized setting.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

Correctors for the velocity of sound through water were determined from the cast listed below:

Velocity Table #	Cast #	DN	Cast Position	Deepest Depth (m)	Applicable DN
6	6	115	57° 06' 33" N 134° 18' 29" W	119	115-122

The sound velocity cast was acquired with SBE SEACAT Profiler (S/N 219), calibrated January 16, 1996. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 2.11 (1995), in accordance with Hydrographic Survey Guideline (HSG) No. 69.

A printout of the Sound Velocity Corrector Table used in the HDAPS Post Survey program is included in the "Separates to be Included with Survey Data, IV. Sounding Equipment Calibrations and Corrections". *

Static Draft ✓

A transducer depth was determined using FPM Fig 2.2 for vessels 2123-2126 in the spring of 1996. These values were entered into the offset tables* for each survey platform.

Settlement and Squat ✓

Correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.3, and are included with project data for OPR-O136-RA. The data for vessels 2123-2126 were collected in Shilshole Bay, Washington in the Spring of 1996.

* Filed with the hydrographic data

Offset Tables ✓

*
Offset tables contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 3-6 correspond to the last digit of the vessel number. The offset tables are contained in the "Separates to be Included with Survey Data". *

Heave ✓

The launches are not equipped with heave, roll and pitch sensors.

Bar Check and Lead Lines ✓

Bar check lines were calibrated by RAINIER personnel during Spring 1996. Calibration forms are included with project data for OPR-O136-RA. Bar checks were performed weekly and served as a functional check of the DSF-6000N.

Tide Correctors ✓

Predicted tides for the project were provided on diskette by N/OES334 through N/CG241 for the Juneau, Alaska reference station (945-2210). Predicted tidal correctors as provided in the Project Instructions for H-10679 are amended by N/OES231 in a change dated April 4, 1996:

Zone	Time Correction	Height Correction
19	-0 hr 12 min	X0.87
22	-0 hr 12 min	X0.84

HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report. *

Ketchikan, AK (945-0460) was used as the primary control station for datum determination at all subordinate stations.

RAINIER personnel installed three 8200 digital gages for this survey, one at The Brothers (945-1785) on April 2, 1996; one at Herring Bay (945-1634) on April 9, 1996; and one at Saginaw Bay (945-1497) on April 10, 1995. Each tide staff was connected to five bench marks during the opening level runs. The tide gages functioned without problems during data acquisition.

The station descriptions, field tide records, preliminary field tide notes, and data (Appendix V) * have been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded to N/OES23 in accordance with FPM 4.2.3. *Approved Tide Note dated September 12, 1996 is attached.*

* Filed with the hydrographic data

H. CONTROL STATIONS ✓ See Eval Rpt., Section H.

The horizontal datum for this project is NAD 83. First Order station ROUND ROCK, on Round Rock outside Pybus Bay, was the basis for control for this project as it was recovered in 1989 (OPR-O358-RA) and 1995. A static GPS vector from Second Order station PEAN, located at Point Napean, was used to check ROUND ROCK to 1:64,000. Reference mark measurements at PEAN confirmed that it had not been disturbed since its last recovery in 1989. The control stations are listed in ^{this report} Appendix III. See the OPR-O136-RA-96 Horizontal Control Report for more information.

I. HYDROGRAPHIC POSITION CONTROL ✓ See Eval Rpt., Section I.

Method of Position Control ✓

All soundings and features were positioned using differential GPS. Serial numbers for vessel GPS equipment are annotated on the raw data printouts.* VHF differential reference stations were established at both ROUND ROCK and PEAN. The differences between the computed locations and the published positions were recorded by the MONITOR 3.0 program on DN 092-093 (ROUND ROCK) and DN 103-104 (PEAN) with a 1 meter offset between the Ashtech sensor and the reference GPS station. No multi-path or other systemic error was indicated for either reference station. The United States Coast Guard Differential GPS reference station at Gustavus, Alaska, was used for positioning of vessel 2126 during main scheme hydrography on DN 104. No systematic differences in positions between the Gustavus Beacon and the VHF reference station were apparent.

Calibrations & Systems Check Methods ✓

Launch-to-launch DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM. Six observations of position were made from three DGPS base stations (ROUND ROCK, PEAN, and GUSTAVUS) while the launches were rafted together with their GPS antennae within 2 meters of each other. RAINIER began using SHIPDIM, version 2.2R (April 1996) on April 16 (DN 107) after this program was modified for use with the Trimble Centurion P-code receiver. Either station ROUND ROCK or station PEAN, and station GUSTAVUS provided input for periodic comparisons. Some outliers were noted, but none indicated systematic or continuous errors in the GUSTAVUS beacon. Performance checks were performed periodically using SHIPDIM while the beacon was in use. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-O136-RA.

Problems ✓

The reception of VHF correctors by vessel 2126 in Chapin Bay on DN 119-120 was intermittent, so the Gustavus beacon was used for positioning. Sounding comparisons between these data and other boats' data indicated no systemic error in positioning. *Data was analyzed during office processing and found to contain no significant problems.*

* Filed with the hydrographic data.

J. SHORELINE ✓ See Eval Rpt., section J

Shoreline map DM-10032 was supplied by N/CS341 in Standard Digital Data Exchange Format (SDDEF). The digital file was projected to the survey grid with OPR-O136-RA geodetic parameters using program Shore version 2.0, provided by N/CS32, and stored in HYPACK (*.DIG) format as well as HDAPS format. Shoreline was plotted at survey scale on boat sheets and processing sheets from HDAPS.

Method of Shoreline Verification ✓

Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch was 30 meters offshore of apparent low tide, or approximately 3 to 5 meters of depth at Mean Lower Low Water. This NALL (Navigational Area Limit Line) varied in distance from shore and depth of water based on the apparent usefulness of the nearshore waters for navigation in the judgement of the hydrographer. See the Shoreline Flow Chart and Limited Shoreline Verification "New Rules" memoranda in Appendix XII for more information regarding the NALL.

The manuscript high water line was the seaward extent of flora in most areas of the survey, with a sand, gravel, and rock beach fronting this foliage. Detached positions and foul limit lines were acquired on manuscript features offshore of the NALL line to verify positions and determine extent of reefs, kelp, and connecting ledges which were not fully represented on the manuscript.

Shoreline notes describing offshore features found and the nature of the foreshore are in the detached position folders and portrayed on the Detached Position and Bottom Sample final plot submitted with this survey. Field cartographic codes were assigned to detached positions; until their heights can be reduced in final processing, rocks have been assigned code 089 if near vertical datum and code 165 if submerged. Heights are recorded in meters and decimeters and are corrected to predicted MLLW. All shoreline positions offshore of the NALL are plotted on the final field sheet. Heights of rocks plotting offshore of the NALL line are shown on the smooth sheet in feet and have been corrected for approved tides. Heights of rocks plotting along the shoreline were not determined during survey operations. There were no revisions to the mean high water line.

Charted Features ✓

Chart 17336, 7th Edition, April 5, 1986, 1:20,000 scale, (NAD 83) was enlarged to 1:10,000 for comparison purposes. Some positional differences were attributed to the enlargement process. Charted rocks offshore of the navigational area limit line were either identified as shoreline manuscript rocks or positioned as new rocks. Manuscript rocks inshore of the NALL were often matched to charted rocks, but were not positioned hydrographically; refer to the hydrographer's notes on the final Detached Position and Bottom Sample Plot. Manuscript rocks have been shown on the smooth sheet as warranted.

During this survey some disagreements between the charted shoreline and the shoreline as depicted in DM-10032 were observed by the hydrographer. The hydrographer recommends the shoreline from DM-10032 and this survey supersede the charted shoreline. Concur

* Filed with the hydrographic data.

K. **CROSSLINES** ✓

Crosslines agreed within 1 meter with mainscheme hydrography. Total mileage, including the shoreline buffer (NALL), was 30.1 nautical miles or 14.2 % of total mainscheme hydrography.

L. **JUNCTIONS** ✓

This survey junctions with surveys H-10678, RA-10-04-96, 1:10,000, at the eastern limit, and H-10677, RA-40-01-96, at the southern limit. Soundings were found to be in agreement. Final comparison will be made at the Pacific Hydrographic Branch (PHB). *See Evac Report, section L*

M. **COMPARISON WITH PRIOR SURVEYS**

Two prior surveys cover different parts of this survey: H-2151 (1:20,000, 1892) and H-2333 (1:80,000, 1897). Though the scale and age of the prior surveys made comparisons somewhat inexact, the soundings from these prior surveys were generally in good agreement with the present survey. Differences in soundings were probably due to modern sounding and positioning equipment. Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey. *See Evac Report, section M.*

N. **ITEM INVESTIGATIONS**

Summary of AWOIS Items Assigned to this survey:

<u>Number</u>	<u>Short Description</u>	<u>Search Used</u>	<u>Results</u>	<u>Day/Fix Numbers</u>
51194	Obstruction/Rock	Visual/Echo Sounder	Confirmed	116/ 30334
51196	Obstruction/Rock	Visual/Echo Sounder	Confirmed	115/ 30163
51826	Obstruction/Rock	Visual	Confirmed	115/ 30118
51828	Obstruction	Visual/Echo Sounder	Disproved	120/ 60285-60302

Detailed Investigation Reports:

ITEM NO.: AWOIS 51194 ✓ Rock Awash	CHART NO.: 17336 (1:20,000) EDITION: 7th Edition CHART DATE: April 5, 1986
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DESCRIPTION AND SOURCE OF ITEM:

Reported ^{CL 384/96} as a rock awash about 40 feet long and 5 feet wide in a NE-SW direction, surrounded by a shoal 150 feet on all sides. The rock is reported ~~by 1.3 fathoms deep.~~ _{as awash .5 FT at MLLW} Position scaled from chart at 1:20,000.

SOURCE POSITION:

latitude	57° 06' 19.7" N	57° 06' 18.48" N
longitude	134°20' 56.5 " W (NAD27)	134° 21' 02.75" W (NAD83)

SURVEY REQUIREMENTS: Visual Search, Echo Sounder, Bottom Drag, Dive

METHOD OF INVESTIGATION:

Visually investigated on DN 116.

RESULTS OF INVESTIGATION:

Rock awash was determined to be charted rock. Depth of rock was measured with a leadline and covers at ~~0.0~~^{1.4} m at MLLW and is covered in kelp. Surrounding shoal was confirmed and developed by echo sounder with 25 m line spacing. The rock is located at 57°06'19.38" N, 134°21'02.36" W.

COMPARISON WITH PRIOR SURVEYS:

H-2333 (1:80,000, 1897) shows a rock awash in the vicinity of this feature.

COMPARISON WITH THE CHART AND CHARTING RECOMMENDATIONS:

Charted position appears to be in close agreement with that found in this survey. Recommend charting rock awash and surrounding shoal as described in this survey. *CONCUN*

ITEM NO.: AWOIS 51196 ✓
Rock awash

CHART NO.: 17336 (1:20,000)
EDITION: 7th Edition
CHART DATE: April 5, 1986

DESCRIPTION AND SOURCE OF ITEM:

Rock awash reported at a three fathom shoal near the entrance to Chapin Bay. Rocks scaled from 1:20,000 chart. Rock awash not depicted on subsequent photogrammetry. *CL 229/14*

SOURCE POSITION:

latitude 57° 07' 45" N 57° 07' 48.78" N
longitude 134° 19' 00" W (NAD27) 134° 19' 06.25" W (NAD83)

SURVEY REQUIREMENTS:

Visual Search, Echo Sounder, Bottom Drag, Dive

METHOD OF INVESTIGATION: Visual Search at low water.

RESULTS OF INVESTIGATION:

The rock did not uncover at low water. However, an abundance of kelp was observed and shoal soundings were measured in the vicinity of the feature. The shoalest depth recorded was 3.4³ (1.8 FA) meters on DN 115 at position 30163.

COMPARISON WITH PRIOR SURVEYS:

H-2151 (1:20,000, 1892) shows a three fathom shoal sounding in the vicinity of the shoalest depth found during this survey.

COMPARISON WITH THE CHART AND CHARTING RECOMMENDATIONS:

The chart retains the three fathom sounding from the prior survey. Position is in general agreement with the shoalest depth found in the vicinity during the current survey. The hydrographer recommends charting the shoal as described in the current survey, deleting the statement "Bares at Low Water". *Chart soundings found on this survey. Shoalest depth is a 1.8 fathom sndg at 57°07/47.09N, 134°19/09.53W. delete note "bares at low"*

ITEM NO.: AWOIS 51826 ✓
Rock Awash

CHART NO.: 17336 (1:20,000)
EDITION: 7th Edition
CHART DATE: April 5, 1986

DESCRIPTION AND SOURCE OF ITEM:

Rock awash scaled from USGS quad (Sitka 1948); subsequent photogrammetry did not show charted rock, although a rock is shown approximately 60 meters to the west.

SOURCE POSITION:

latitude 57° 07' 26.3" N 57° 07' 25.08" N
longitude 134° 19' 33" W (NAD27) 134° 19' 39.25" W (NAD83)

SURVEY REQUIREMENTS: Visual Search, Bottom Drag, Dive

METHOD OF INVESTIGATION:

Visually investigated on DN 115 (NALL).

RESULTS OF INVESTIGATION:

Item was determined to be an outcropping from the charted ledge located at approximately 57°07' 25" N latitude and 134° 19' 36" W longitude. The ledge and outcropping lie within the Navigable Area Limit Line.

COMPARISON WITH PRIOR SURVEYS:

Survey H-2333 (1:80,000, 1897) depicted a ledge and kelp in the vicinity.

COMPARISON WITH THE CHART AND CHARTING RECOMMENDATIONS:

The chart shows a ledge extending off the point and position is in general agreement with current survey although current data show the ledge to extend approximately 10 meters further to the east than is charted. Both the chart and current survey indicate the area is covered in kelp. The hydrographer recommends charting the feature as an extension of the ledge inside the NALL based on the current data. *In addition, recommend labeling this area foul with kelp. (Concur) do not concur*

** Kelp symbols have been added in the area of the ledge and should be shown on the chart.*

ITEM NO.: AWOIS 51828 ✓
Log Storage Area

CHART NO.: 17336 (1:20,000)
EDITION: 7th Edition
CHART DATE: April 5, 1986

DESCRIPTION AND SOURCE OF ITEM:

CL 517/79

Log storage located in southern sector of Chapin Bay. Source is Corps of Engineer's permit. Local sources reported that commercial logging occurred around Chapin Bay as late as the early 1960's but not since.

SOURCE POSITION: (of northernmost point scaled from chart)

latitude 57° 09' 07" N 57° 09' 05.78" N
longitude 134° 20' 20" W (NAD27) 134° 20' 26.26" W (NAD83)

SURVEY REQUIREMENTS: Visual Search

METHOD OF INVESTIGATION:

Visually investigated on DN 115, developed with echo sounder using 25 meter line spacing on DN 120.

RESULTS OF INVESTIGATION:

No evidence of the log storage area remains.

COMPARISON WITH PRIOR SURVEYS:

H-2151 (1:20,000, 1892) does not show the log storage area.

COMPARISON WITH THE CHART AND CHARTING RECOMMENDATIONS:

Charted soundings are in general agreement with current survey. Recommend removing the "Log Storage Area" label ^{and associated limit lines.} from the chart. *CONCUN*

O. COMPARISON WITH THE CHART See Eval Rpt, section O.

This survey was compared in the field to NOS chart 17336, 7th Edition, April 5, 1986, 1:20,000 scale, (NAD 83). In addition, an enlargement of this chart was used to place features and soundings (converted to meters) on the boat sheet.

In general, charted soundings were found to be in good agreement with those from the current survey. Least depths from this survey were often shoaler due to the use of modern positioning and sounding equipment. Comparisons to the chart were complicated by the fact that the shoreline of the chart did not consistently match that of the current survey. Areas in which charted soundings appear shoaler than those from this survey have been adequately sounded and probably arise from positioning and scaling errors from the older surveys. In the following areas, charted soundings appear to be shoaler than current survey soundings: There are several additional shoaler soundings that are charted and which originate from prior surveys H-2151 and H-2333. Refer to the Evaluator's Report, Section O, and 7.5 Fathoms. Charted depths of 4.75 and 8.5 fathoms at the entrance to Chapin Bay in the vicinity of 57° 07' 55" N, 134° 19' 28" W. Present survey depths are 13-14 Fathoms.

A charted depth of 6.5 fathoms off Point Brightman. (Latitude 57°06'02" N, Longitude 134°22'00" W)
Present survey depths exceed 20 fathoms.

Non-sounding features are discussed in Section J. Final comparisons will be made at PHB after application of real tide correctors.

Dangers to Navigation ✓

Twenty-four dangers to navigation within the limits of H-10679 were reported to the Seventeenth Coast Guard District, May 12, 1996. Copies of the correspondence can be found in Appendix I of this report.

P. ADEQUACY OF SURVEY ✓

Survey H-10679 is complete and adequate to supersede prior soundings and features in their common areas. *Concur*

Q. AIDS TO NAVIGATION ✓

No Aids to Navigation exist within the survey area. *Concur*

R. STATISTICS ✓

NM Hydrography	211.76
Velocity Casts	1
Detached Positions	13
Selected Soundings	14978
Bottom Samples	20
Tide Stations	3
NM ² Hydrography	9
Dives	0

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian Institution in accordance with Project Instructions. No unusual tidal currents were found during the time of this survey.

Secchi disk observations were performed during hydrographic data operations, and results will be forwarded upon completion of this project. General water visibility was 5-10 meters, which is common in this area before the spring plankton blooms, which usually occur in late May.

T. RECOMMENDATIONS ✓

None

U. REFERRAL TO REPORTS ✓

The following supplemental reports contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Spring 1996 Horizontal Control Report for OPR-O136-RA.	June, 1996	N/CS34
Spring 1996 Coast Pilot Report for OPR-O136-RA.	June, 1996	N/CS26
Project related data for OPR-O136-RA.	Incremental	N/CS34
Secchi Disk Observations for OPR-O136-RA	June, 1996	N/CS31

Respectfully Submitted,



Eric J. Christensen
Ensign, NOAA

Approved and Forwarded,



Dean R. Seidel
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 19 Apr 1996 ✓

No	Type	Latitude	Longitude	H	Cart	Freq	Vel Code	MM/DD/YY	Station Name
1	F	057°15'35.170	133°56'12.977	17	250	0.0	0.0	04/01/96	ROUND ROCK, 1917
2	F	057°08'32.216	134°16'45.822	7	250	0.0	0.0	04/12/96	PEAN, 1917
3	F	057°15'59.415	134°05'00.129	14	250	0.0	0.0	04/15/96	GRAVE ISLAND, 1996



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

NOAA Ship RAINIER

May 11, 1996

Commander
Seventeenth Coast Guard District
Post Office Box 3-5000
Juneau, Alaska 99802

**ADVANCE
INFORMATION**

Dear Sir:

During the processing of hydrographic survey H-10679, in Southern Stephens Passage, twenty-four dangers to navigation have been discovered. These dangers affect the following charts:

<u>Chart</u>	<u>Edition/Date</u>	<u>Datum</u>
17320	11TH ED. JUN 01/91	NAD83
17360	29TH ED. JUL 09/94	NAD83
17336	7TH ED. APR 05/86	NAD83

It is recommended that these dangers to navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Branch at (206) 526-6835.

Sincerely,

Dean R. Seidel
Captain, NOAA
Commanding Officer
NOAA Ship RAINIER

Enclosure

cc: DMA/HTC
PMC
N/CS26



P 122205Z MAY 96
 FM NOAA S RAINIER
 TO CCGDSEVENTEEN JUNEAU AK
 DMAHTCCNAVWARN WASHINGTON DC//MCMN//
 INFO NOAA MOP SEATTLE WA
 BT
 UNCLAS

**ADVANCE
 INFORMATION**

NOAA SHIP RAINIER HAS LOCATED 24 DANGERS TO NAVIGATION IN SOUTHERN STEPHENS PASSAGE, AK (PROJECT: OPR-0136-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10679.

THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

AFFECTED CHARTS: 17320 11TH ED. JUN 01/91 1:217828 NAD83
 17360 29TH ED. JUL 09/94 1:217,828 NAD83
 17336 7TH ED. APR 05/86 1:20,000 NAD83

ITEM	DANGER	DEPTH	LATITUDE (N)	LONGITUDE (W)
A	ROCK	COVERS 3/4 FM	57:06:31.9	134:21:54.7
B	SHOAL	COVERS 5 1/4 FM	57:06:45.9	134:21:25.9
C	SHOAL	COVERS 3 1/4 FM	57:07:01.1	134:21:50.2
D	SHOAL	COVERS 4 FM	57:07:06.9	134:21:14.0
E	SHOAL	COVERS 4 1/2 FM	57:07:00.4	134:20:21.0
F	ROCK	COVERS 1 FM	57:07:22.0	134:19:24.3
G	SHOAL	COVERS 4 1/2 FM	57:07:39.3	134:19:11.9
H	ROCK	COVERS 1 3/4 FM	57:07:47.0	134:19:09.5
I	SHOAL	COVERS 2 1/4 FM	57:07:55.2	134:18:35.3
J	ROCK	AWASH	57:07:55.3	134:18:17.4
K	SHOAL	COVERS 2 1/2 FM	57:08:23.9	134:19:48.3
L	SHOAL	COVERS 4 3/4 FM	57:08:39.9	134:19:52.1
M	ROCK	AWASH	57:07:45.5	134:19:33.9
N	ROCK	AWASH	57:06:19.3	134:21:02.3
O	ROCK	AWASH	57:04:47.4	134:23:37.1
P	SHOAL	COVERS 3 3/4 FM	57:06:00.7	134:22:14.5
Q	SHOAL	COVERS 2 1/2 FM	57:06:45.9	134:23:39.8

**ADVANCE
INFORMATION**

R	SHOAL	COVERS 3 1/2 FM	57:06:38.8	134:23:13.2
S	ROCK	UNCOVERS 3 FT	57:06:35.6	134:22:04.3
T	ROCK	COVERS 1 3/4 FM	57:07:01.9	134:22:37.5
U	ROCK	COVERS 2 FM	57:07:01.9	134:22:11.5
V	ROCK	COVERS 1 1/2 FM	57:07:35.2	134:22:55.6
W	SHOAL	COVERS 2 FM	57:06:34.0	134:23:48.7
X	ROCK	COVERS 1/2 FM	57:07:28.6	134:22:39.6

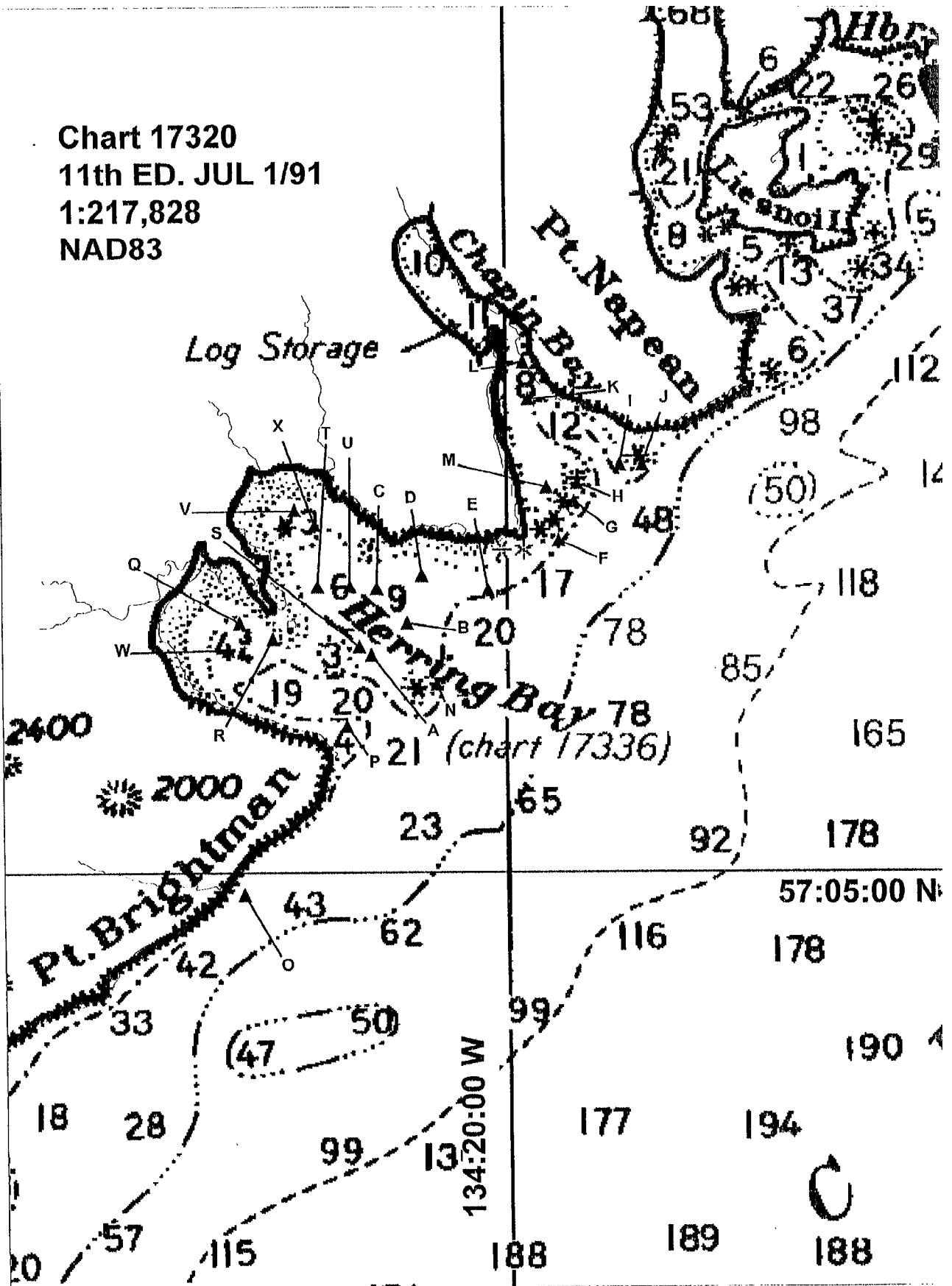
THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC HYDROGRAPHIC BRANCH AT (206) 526-6835. A LETTER WITH ATTACHED CHARTLET

WILL BE MAILED TO CONFIRM THIS MESSAGE.

BT

ADVANCE
INFORMATION

Chart 17320
11th ED. JUL 1/91
1:217,828
NAD83





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
Seattle, Washington 98115-0070

December 10, 1996

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 25517
Juneau, AK 99802

Dear Sir:

During office review of hydrographic survey H-10679, Alaska, Southern Stephens Passage, Herring Bay and Vicinity, six shoal soundings were found and are considered potential dangers to navigation affecting the following chart.

<u>Chart</u>	<u>Edition/date</u>	<u>Datum</u>
17336	7th, 4/05/86	NAD 27

It is recommended that the enclosed Report of Dangers to Navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Branch at (206) 526-6853.

Sincerely,

Kathy A. Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Enclosure

cc: DMA/HTC
NCS/261



REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10679

Survey Title: State: ALASKA
Locality: SOUTHERN STEPHENS PASSAGE
Sublocality: HERRING BAY AND VICINITY

Project Number: OPR-O136-RA, NOAA Ship Rainier

Survey Date: April 3 - May 1, 1996

Features are reduced to Mean Lower Low Water using approved tides and are positioned on NAD 83.

Chart affected: 17336 7th Edition/April 5, 1986, scale 1:20,000, NAD 27

<u>DANGER TO NAVIGATION</u>	<u>LATITUDE(N)</u>	<u>LONGITUDE(W)</u>
Shoal, covers 1 1/4 fathoms	57/06/43.6	134/22/22.1
Shoal, covers 9 1/2 fathoms	57/06/08.8	134/20/44.4
Shoal, covers 7 1/4 fathoms	57/06/29.7	134/20/38.4
Shoal, covers 8 fathoms	57/06/48.6	134/20/20.9
Shoal, covers 4 1/2 fathoms	57/07/15.6	134/19/23.0
Shoal, covers 8 fathoms	57/07/36.6	134/18/45.8

Questions concerning this report should be directed to the Chief, Pacific Hydrographic Branch at (206)526-6853.

FREDERICK SOUND

Scale 1:20,000

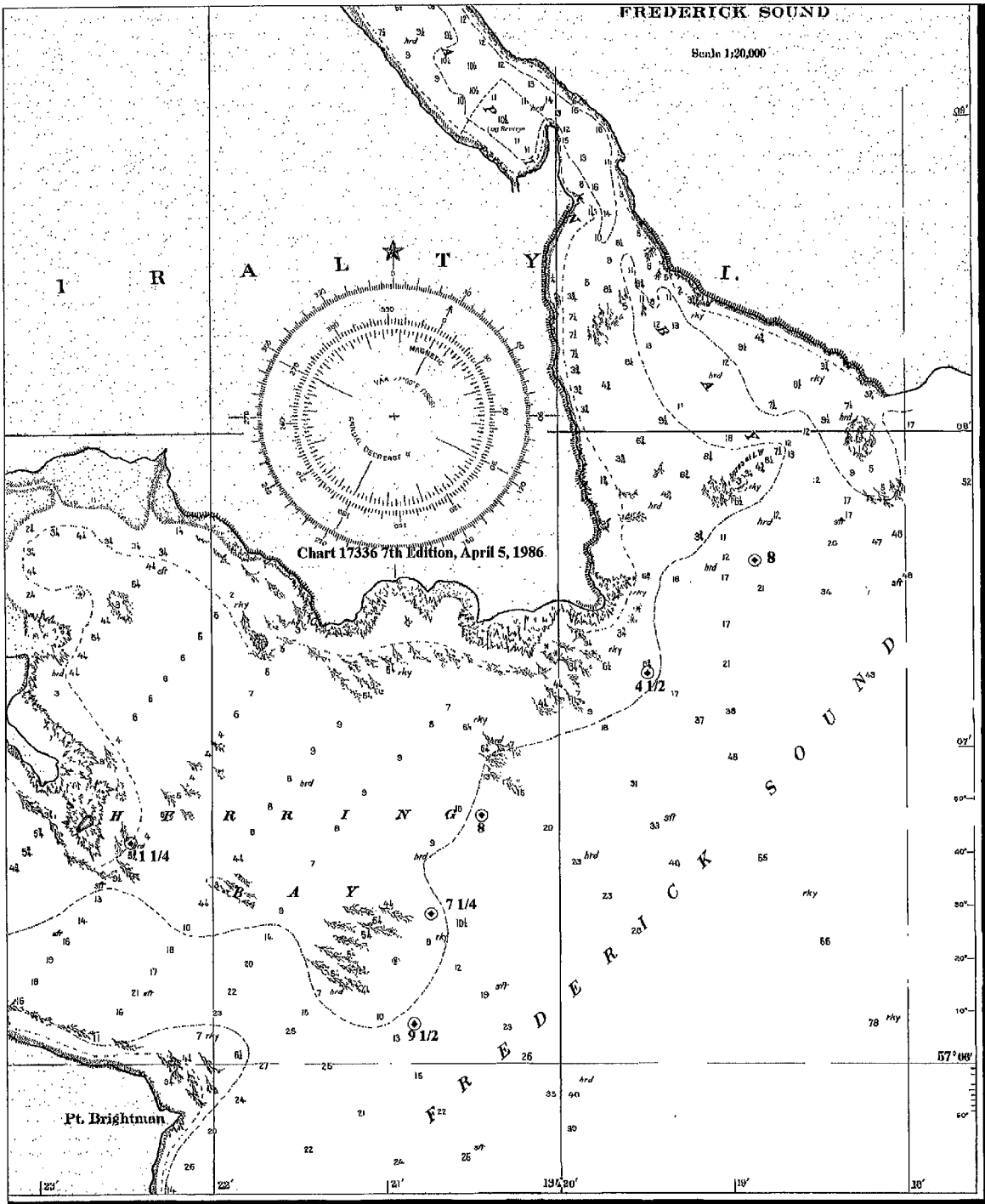


Chart 17336 7th Edition, April 5, 1986

Pt. Brightman

IRALTY I.

FRICK SUND

APPROVAL SHEET

for

H-10679

RA-10-05-96

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Guidelines; and the 1994 version of the Field Procedures Manual in producing this survey. The data were examined daily during data acquisition and processing.

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



Dean R. Seidel
Captain, NOAA
Commanding Officer



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Rockville, Maryland 20852

TIDE NOTE FOR HYDROGRAPHIC SURVEY

ORIGINAL

DATE: September 12, 1996

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-0136-RA

HYDROGRAPHIC SHEET: H-10679

LOCALITY: Herring Bay and Vicinity, Southern Stephens
Passage, Alaska

TIME PERIOD: April 24 - May 2, 1996

TIDE STATION USED: 945-1497 Saginaw Bay, Frederick Sound, AK
Lat. 57° 54.2'N Lon. 134° 18.2'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.916 meters

TIDE STATION USED: 945-1634 Herring Bay, Frederick Sound, AK
Lat. 57° 06.8'N Lon. 134° 22.8'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.928 meters

TIDE STATION USED: 945-1706 Eliza Bay, Frederick Sound, AK
Lat. 57° 11.3'N Lon. 134° 17.2'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.039 meters



page 2 of 3 for H-10679

REMARKS: RECOMMENDED ZONING

Zone SEA26 -bounded by the polygon points:

LONGITUDE (W)	LATITUDE (N)
-134.002726	57.066095
-134.024114	57.019638
-134.360263	57.162783
-134.324654	57.262534
-134.282912	57.263669
-134.223011	57.18332
-134.002726	57.066095

Times and heights are direct using Eliza Bay, AK (945-1706).

Where data are not available for Eliza Bay, AK, times are direct, and apply a X1.03 range ratio to heights using Herring Bay, AK (945-1634).

Zone SEA27 -bounded by the polygon points:

LONGITUDE (W)	LATITUDE (N)
-134.360263	57.162783
-134.447452	57.108927
-134.264348	56.931486
-134.024114	57.019638
-134.360263	57.162783

Times and heights are direct using Herring Bay, AK (945-1634).

page 3 of 3 pages for H-10679

Zone SEA28 -bounded by the polygon points:

LONGITUDE (W)	LATITUDE (N)
-134.447452	57.108927
-134.59679	57.045017
-134.618484	57.019714
-134.396964	56.842187
-134.289975	56.764998
-134.045143	56.861149
-134.232275	56.929072
-134.264348	56.931486
-134.447452	57.108927

Times and heights are direct using Saginaw Bay, AK (945-1497).

Note: Times are tabulated in Greenwich Mean Time.

William M. Gibson
CHIEF, DATUMS SECTION

GEOGRAPHIC NAMES

H-10679

Name on Survey	CHART NO. 17320 17335, 17368, 17320 ON PREVIOUS SURVEY CON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION ON LOCAL MAPS P.O. GUIDE OR MAP GRAND McNALLY ATLAS U.S. LIGHT LIST										
	A	B	C	D	E	F	G	H	K		
ALASKA (title)	X		X								1
ADMIRALTY ISLAND	X		X								2
CHAPIN BAY	X		X								3
FREDERICK SOUND	X		X								4
HERRING BAY	X		X								5
POINT BRIGHTMAN	X		X								6
STEPHENS PASSAGE (title)	X		X								7
											8
											9
											10
											11
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											19
											20
											21
											22
											23
											24
											25

Approved

[Signature]
Chief Geographer

AUG 9 1996

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS
ACCORDION FILES	2		
ENVELOPES			
VOLUMES			
CAHIERS			
BOXES			1

SHORELINE DATA	
SHORELINE MAPS (List):	DM-10032 and DM-10033
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	NA
SPECIAL REPORTS (List):	NA
NAUTICAL CHARTS (List):	Chart 17336 7th Ed., 4/5/86, Chart 17320 14th Ed., 6/1/91

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			14978
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	73		73
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		9	9
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	73	9 82

Pre-processing Examination by J. Stringham	Beginning Date 6/3/96	Ending Date 6/4/96
Verification of Field Data by J. Stringham, R. Davies	Time (Hours) 73	Ending Date 10/24/96
Verification Check by R. Davies, B. Olmstead	Time (Hours) 3	Ending Date 12/2/96
Evaluation and Analysis by R. Davies	Time (Hours) 9	Ending Date 10/24/96
Inspection by B. Olmstead	Time (Hours) 9	Ending Date 12/6/96

**EVALUATION REPORT
H-10679**

A. PROJECT

The hydrographer's report contains a complete discussion of the Project information.

B. AREA SURVEYED

This survey was conducted in Southern Stephens Passage, Alaska. Specifically, the survey area includes Herring Bay and Chapin Bay between Point Brightman and Point Napean on Admiralty Island .

The hydrographer has determined the inshore limits of safe navigation by defining a Navigable Area Limit Line throughout the survey area. Charted features and soundings inshore of this limit line have not been specifically addressed during survey operations and should be retained as charted. A page-size plot of the charted area depicting the limits of supersession accompanies this report as Attachment 1.

Depths range from 0 to 83 fathoms. The bottom consists primarily of mud, shells.

C. SURVEY VESSELS

The hydrographer's report contains information relating to survey vessels.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data were processed using the same Hydrographic Data Acquisition/Processing System (HDAPS) software used by the hydrographer; the Hydrographic Processing System (HPS) and AutoCad, Versions 12 and 13.

At the time of the survey certification the format for the transmission of digital data had not been finally approved. In the interim, digital data for this survey exists in the standard HPS format which is a database format using the .dbf extension. In addition, the sounding plot, created with the .dbf data and enhanced using the AutoCad system, is filed both in the AutoCad drawing format, i.e., .dwg; and in the more universally recognized graphics transfer format, .dxf. Copies of these data files will be retained at PHB until data transfer protocols are developed and approved.

The drawing files necessarily contain information which is not part of the HPS data set such as geographic name text, line-type, and minor symbolization. In addition, those soundings deleted from the drawing for clarity purposes, remain unrevised in the HPS digital files to preserve the integrity of the original hydrographic data set. Cartographic codes used to describe the digital data are those authorized by Hydrographic Survey Guidelines No. 35 and

No.75.

The field sheet parameters have been revised to center the hydrography on the office plot. Data is plotted using a Modified Transverse Mercator projection and are depicted on a single sheet.

E. SONAR EQUIPMENT

Side scan sonar was not used on survey H-10679.

F. SOUNDING EQUIPMENT

Sounding equipment is discussed in the hydrographer's report.

G. CORRECTIONS TO SOUNDINGS

Predicted tides for Juneau, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned direct from Saginaw Bay, Herring Bay and Eliza Bay, Alaska, gages 945-1497, 945-1634 and 945-1706 were used during office processing. Soundings have been corrected for dynamic draft, actual tides and sound velocity. These reducers have been reviewed and are consistent with NOS specifications.

H. CONTROL STATIONS

Sections H and I of the hydrographer's report contain adequate discussions of horizontal control and hydrographic positioning.

The positions of the horizontal control stations used during hydrography are published values based on NAD 83. The smooth sheet is annotated with a NAD 27 adjustment tick based on values determined with NGS program NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: -1.215 seconds (-37.589 meters)
Longitude: 6.261 seconds (105.398 meters)

The year of establishment of control stations originate with the horizontal control records for this survey.

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS(DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.5 was computed for survey operations. No positions exceeded the limits in terms of horizontal dilution of precision (HDOP). NAD 83 is used as the

horizontal datum for plotting and position computations.

J. SHORELINE

Shoreline map DM-10032 and DM-10033, photography dated May 1989, scale 1:20,000 were compiled on NAD 83 and apply to this survey. Shoreline drawn on the smooth sheet originates from a 1:20,000 scale digital file provided by the Coastal Mapping Program. This file has been merged with the survey file during ACAD processing.

There are no MHW revisions on this survey.

K. CROSSLINES

Crosslines are adequately discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10679 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10677	1996	1:40,000	South
H-10678	1996	1:10,000	East

The junctions with survey H-10677 and H-10678 are complete.

M. COMPARISON WITH PRIOR SURVEYS

H-2151(1892) 1:20,000

H-2333(1897) 1:80,000

Surveys cover the entire area of the present survey. Comparison with the present survey generally reveals differences of 1 to 2 fathoms between survey depths. There appears to be no consistent pattern of shoaling or an increase of depths. These differences can be attributed to greater sounding coverage and relative accuracy of the data acquisition techniques. All critical depths originating from the prior survey were adequately addressed during survey operations. Reference section B of this report regarding charted features inshore of the defined NALL line.

Survey H-10679 is adequate to supersede the prior surveys within the common area.

N. ITEM INVESTIGATIONS

There were four AWOIS items within the survey area. These items were adequately

addressed in the hydrographer's report, section N.

O. COMPARISON WITH CHART

Survey H-10679 was compared with the following charts.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
17336	7th	April 5, 1986	1:20,000	NAD 27
17320	14th	June 1, 1991	1:217,878	NAD 83

a. Hydrography

Charted hydrography originates with the prior surveys mentioned in section M and miscellaneous sources. The prior surveys are discussed in section M and require no further discussion. Charted items offshore of the NALL line were adequately addressed during survey operations.

Survey H-10679 is adequate to supersede charted hydrography within the common area.

b. Dangers to Navigation

Twenty-four dangers to navigation were reported to the USCG, DMAHTC and N/CS 261 on May 12, 1996. Six additional dangers to navigation were found during office processing. Copies of the reports are attached.

P. ADEQUACY OF SURVEY

Hydrography is adequate:

- a. delineate the bottom configuration, determine least depth, and draw the standard curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigations; and
- c. show the survey was properly controlled and soundings are correctly plotted.

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, April 1994 Edition.

Q. AIDS TO NAVIGATION

There no fixed or floating aids to navigation located within the survey area.

There are no charted landmarks or features that would be of landmark value within the survey area.

R. STATISTICS

Statistics are itemized in the hydrographer's report.

S. MISCELLANEOUS


Miscellaneous information is found in the hydrographer's report. There were no additional miscellaneous items noted during office processing.

T. RECOMMENDATIONS

This is a good hydrographic survey. No additional field work is recommended.

U. REFERRAL TO REPORTS

Referral to reports is discussed in the hydrographer's report.



C.R. Davies
Cartographer

APPROVAL SHEET
H-10679

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Bruce A. Olmstead Date: 12/6/96
Bruce A. Olmstead
Senior Cartographer, Cartographic Section
Pacific Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Kathy Timmons Date: 12/9/96
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

Final Approval

Approved:
Andrew A. Armstrong III Date: Apr 9, 1997
Andrew A. Armstrong III
Captain, NOAA
Chief Hydrographic Surveys Division



1:1187, May 1908, 1:100000

Nautical Chart Catalog No. 3, Panel Q


HERRING BAY AND CHAPIN HAY FREDERICK SOUND

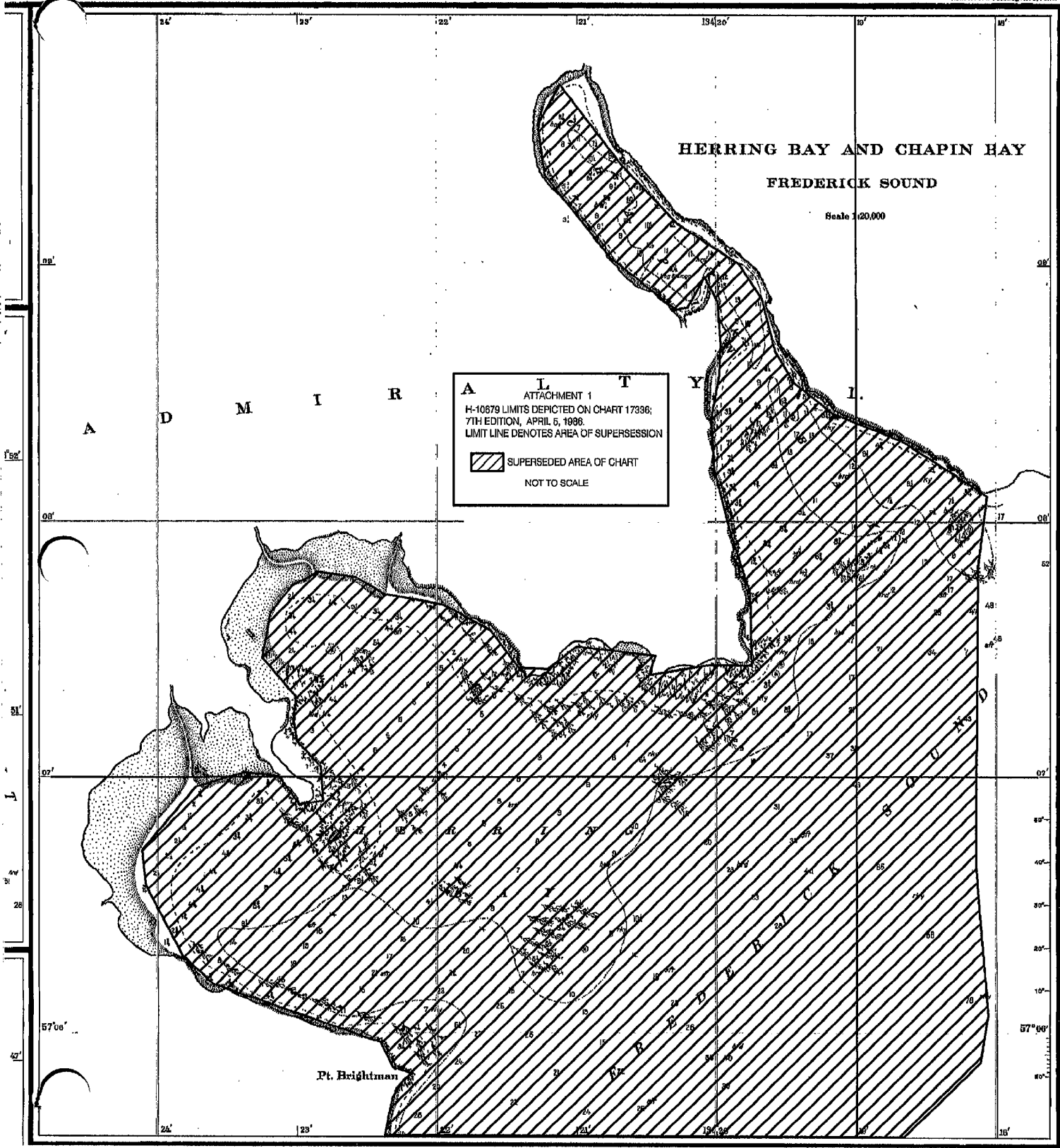
Scale 1:20,000

A
D
M
I
R

A L T Y I

ATTACHMENT 1
 H-10679 LIMITS DEPICTED ON CHART 17336;
 7TH EDITION, APRIL 5, 1986.
 LIMIT LINE DENOTES AREA OF SUPERSESSION

 SUPERSEDED AREA OF CHART
 NOT TO SCALE



Pt. Heigtmann

HERRING BAY

CHAPIN HAY

FREDERICK SOUND

