

10463

Diagram No. 8201-4

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. RA-10-3-93
Registry No. H-10463

LOCALITY

State Alaska
General Locality South Stephens Passage
Sublocality Approach to Port Houghton

1993

CHIEF OF PARTY
CAPT R.C. Arnold

LIBRARY & ARCHIVES

DATE April 18, 1994

10463

HYDROGRAPHIC TITLE SHEET

H-10463

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

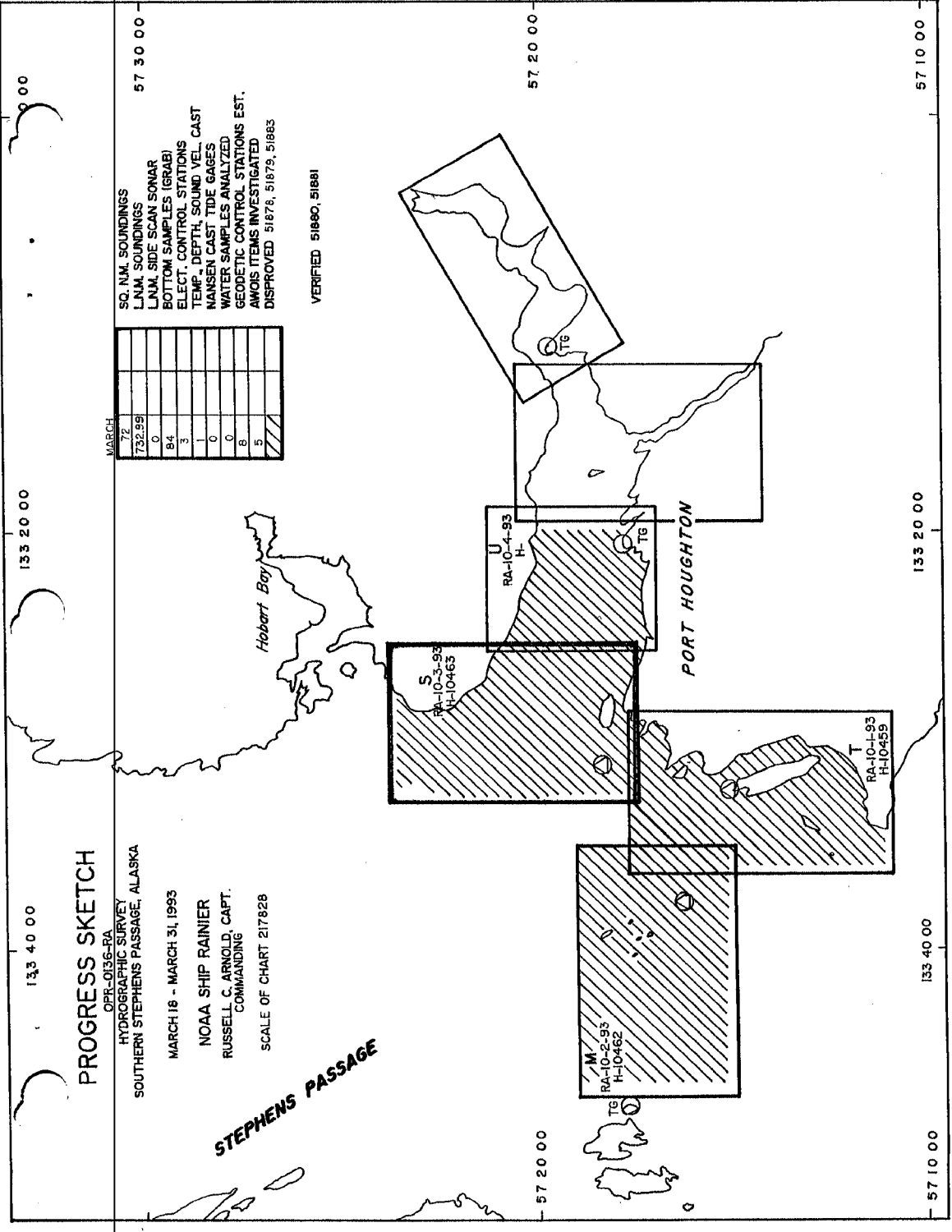
FIELD NO.

RA-10-3-93

State Alaska
 General locality Entrance to Port Houghton
 Locality South Stephens Passage
 Scale 1:10,000 Date of survey March 28 - April 12, 1993
 Instructions dated February 3, 1993 Project No. OPR-0136-RA
 Vessel RAINIER Launches 2123, 2124, 2125, 2126
 Chief of party CAPT Russell C. Arnold, NOAA
 Surveyed by LT M. Brown, LT M. Foran, LTJG S. Lemke, LTJG R. Ramos, ENS G. Glover
 Soundings taken by echo sounder, ~~transducer, probe~~ DSF-6000N
 Graphic record scaled by RAINIER Personnel
 Graphic record checked by RAINIER Personnel
 Verification by: E. Domingo Automated plot by PHS Xynetics Plotter
 Evaluation by: R. Davies
 Soundings in meters and decimeters at ~~MLLW~~ 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.

AWOIS and SURF ✓ 4/94 RWD



PROGRESS SKETCH

OPR-0136-RA
 HYDROGRAPHIC SURVEY
 SOUTHERN STEPHENS PASSAGE, ALASKA
 MARCH 18 - MARCH 31, 1993
 NOAA SHIP RAINIER
 RUSSELL C. ARNOLD, CAPT.
 COMMANDING
 SCALE OF CHART 217828

MARCH	
72	
732.99	
0	
84	
3	
1	
0	
0	
6	
5	

- SG. N.M. SOUNDINGS
- L.N.M. SOUNDINGS
- L.N.M. SIDE SCAN SONAR
- BOTTOM SAMPLES (GRAB)
- ELECT. CONTROL STATIONS
- TEMP., DEPTH, SOUND VEL. CAST
- MANSEN CAST TIDE GAGES
- WATER SAMPLES ANALYZED
- GEODETIC CONTROL STATIONS EST.
- AMOUS ITEMS INVESTIGATED
- DISPROVED 51676, 51679, 51683

VERIFIED 51680, 51681

STEPHENS PASSAGE

133 40 00

133 20 00

133 00 00

57 20 00

57 10 00

57 20 00

57 10 00

57 00 00

Descriptive Report to Accompany Hydrographic Survey H-10463

Field Number RA-10-3-93

Scale 1:10,000

March - April 1993

NOAA Ship RAINIER

Chief of Party: Captain Russell C. Arnold

A. PROJECT ✓

This basic hydrographic survey was completed in Southern Stephens Passage, Alaska, as specified by Project Instructions OPR-O136-RA dated February 5, 1993.

Survey H-10463 corresponds to "Sheet S" as defined in the Project Instructions.

This survey will provide contemporary hydrographic survey data for updating existing nautical charts, and for a new series of metric charts as part of a continuing program to improve chart coverage of the Inside Passage in Southeast Alaska. Requests for hydrographic surveys and updated charts have been received from the Southeastern Alaska Pilot's Association, the Alaska Department of Transportation, and other private interests such as the cruise line and fishing industries.

B. AREA SURVEYED ✓

This survey area is located in the southern end of Stephens Passage and covers the entire entrance to Port Houghton from Point Walpole at the southern end to Point Hobart at the northern limit. The northern limit of the survey area is $057^{\circ}23'45''N$, the southern limit is $057^{\circ}17'36''N$, the western limit is $133^{\circ}33'30''W$, and the eastern limit is $133^{\circ}26'15''W$. The shoreline of Point Hobart is steep and rocky with intermittent gravel beaches. The shoreline from Point Walpole to Robert Islands at the southern portion of the survey area is a number of small, low lying islands connected by rock reefs and ledges. The entire area is heavily wooded with the exception of Hobart Point where logging operations are in progress.

Data acquisition was conducted from March 28, Day Number (DN) 87, through April 12, DN 102.

C. SURVEY VESSELS ✓

Data were acquired by the NOAA SHIP RAINIER and four survey launches as noted below:

<u>Vessel</u>	<u>EDP No</u>	<u>Operation</u>
RAINIER	2120	Velocity Cast / Bottom Samples
RA-3	2123	Hydrography/Shoreline Verification
RA-4	2124	Hydrography/Shoreline Verification
RA-5	2125	Hydrography/Bottom Samples
RA-6	2126	Hydrography

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

Data acquisition and processing were accomplished with the following HDAPS programs:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
AUTOST	3.00	9/24/92
BACKUP	2.00	9/24/92
BASELINE	1.13	9/24/92
BIGABST	2.03	9/24/92
BLKEDIT	2.00	9/24/92
CARTO	2.04	3/1/93
CONTACT	2.01	9/24/92
CONVERT	3.51	9/24/92
DAS_SURV	6.31	2/26/93
DIAGNOSE	3.01	9/24/92
DISC_UTIL	1.00	9/24/92
DP	2.13	3/1/93
EXCESS	4.10	9/24/92
FILESYS	3.01	4/14/92
GRAFEDIT	1.01	2/26/93
HIPSTICK	1.01	9/24/92
HPRAZ	1.26	9/24/92
INVERSE	2.00	9/24/92
INSTALL	4.00	9/24/92
LSTAWOIS	3.01	9/24/92
LISTDATA	1.00	9/24/92
LOADNEW	2.01	9/24/92
MAINMENU	1.00	9/24/92
MAN_DATA	2.00	9/24/92
NEWPOST	6.00	9/24/92
PLOTALL	2.08	2/26/93
POINT	2.10	9/24/92
PREDICT	2.00	9/24/92
PRESURV	7.01	2/26/93
PRINTOUT	4.01	9/24/92
QUICK	2.03	2/26/93
RAMSAVER	1.01	9/24/92
RECOMP	2.02	9/24/92
REAPPLY	2.01	9/24/92
SCANNER	1.00	9/24/92
SELPRINT	2.02	9/24/92
SYMBOLS	2.00	9/24/92
ZOOMEDIT	2.10	9/24/92

Velocity corrections were determined using:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
VELOCITY	2.0	24 Mar 1993

E. CORRECTIONS TO ECHO SOUNDINGS ✓

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

<u>Velocity Table No.</u>	<u>Cast No.</u>	<u>Deepest Depth (m)</u>	<u>Applicable DN</u>	<u>Cast Position</u>	<u>Day</u>	
1	1	425.2	087-102	57°15'45"N 133°45'05"W	82	OUTSIDE Survey AREA

The sound velocity cast was acquired with a SBE SEACAT Profiler, S/N 220.

Velocity correctors were computed using the PC program VELOCITY in accordance with Hydrographic Survey Guideline (HSG) #69. A printout of the Sound Velocity Corrector Tables used in the HDAPS Post Survey program is included in the "Spring 1993 Corrections to Echo Sounding Data Package for OPR-O136-RA."

Static Draft ✓

A transducer depth was determined for launches 2123, 2124, 2125 and 2126 on March 19, 1993 and is in the offset tables for each launch.

Settlement and Squat ✓

Correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.2 and 2.3, and are included in the "Spring 1993 Corrections to Echo Sounding Data Package for OPR-O136-RA." The data used was collected in Shilshole Bay, Washington on March 11, 16, and 18 of 1992. Revised settlement and squat correctors were received from Pacific Marine Center on October 21, 1992. Authorization was obtained from N/CG241 to use the 1992 data. These revised correctors were applied to the data on sheet S.

Offset Tables

<u>Vessel</u>	<u>Offset Table No.</u>
2120	1
2123	3
2124	4
2125	5
2126	6

Heave ✓

Data were not acquired during periods of significant sea action so heave was not a factor.

Bar Check and Lead Lines ✓

Bar check and lead lines were calibrated by RAINIER personnel on February 19, 1993 at PMC. Calibration forms are included in the "Spring 1993 Corrections to Echo Sounding Package for OPR-O136-RA."

Tide Correctors ✓

Tide correctors for the project were found in the Tide Table 2 of the published predicted tides for the Juneau, Alaska, reference station (945-2210). Correctors for Port Houghton were used for sheet S. Tidal correctors are:

	<u>TIME</u> (min)	<u>HEIGHT</u> (ft)
Low Water	-17	-0.1
High Water	-21	-0.8

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

Tide gages were installed and maintained by RAINIER personnel at The Brothers, Frederick Sound (945-1785) and Port Houghton, Stephens Passage (945-1771). The control station was Juneau, Alaska (945-2210). Opening levels for the control station were completed by RAINIER personnel on April 2, 1993. Closing levels will be completed by RAINIER personnel on April 16, 1993.

The station descriptions, field tide records, and Field Tide Notes will be forwarded to N/OES212, in accordance with HSG 50 and FPM 4.3, at the end of the project. Requests for approved tides will be forwarded to N/OES2. *Approved tides were used to reduce the soundings on the smooth sheet.*

F. CONTROL STATIONS ✓

A listing of the geodetic stations used to control this survey is included in Appendix III of this report.

Positions for all existing stations are from the National Geodetic Survey (NGS) data base. All existing stations were recovered in accordance with methods stated in Section 5.2.4 of the Field Procedures Manual. New stations were positioned via GPS methods to meet third-order class I standards. Further information can be found in the "Spring 1993 Horizontal Control Report for OPR-O136-RA."

G. HYDROGRAPHIC POSITION CONTROL ✓**Method of Position Control** ✓

All soundings and features were positioned using differential GPS. Falcon was used solely for GPS system checks. Serial numbers for Falcon R/T units, RPU's and Ashtech GPS equipment are annotated on the data printouts. Lists of all positioning equipment serial numbers are included in the "Spring 1993 Electronic Control Data Package for OPR-O136-RA."

Calibrations & Systems Check Methods ✓**Falcon 484**

Baseline calibrations were conducted in accordance with FPM 3.1.2.1 and 3.1.3.2. Calibrations were performed at the MATTHEWS PARK BEACH BASELINE on March 1-2, 1993 (DN 60-61). Calibration data and a description of the baseline is included in the "Spring 1993 Electronic Control Data Package for OPR-O136-RA."

* Filed with the hydrographic data

Ashtech GPS ✓

A VHF Differential shore station was established at station INDX. After the station was established, a remote sensor was directly connected to the MXII shore station and its antenna was collocated with the shore station. The computed position was transmitted back to the ship via VHF radio modem link. The difference between the computed location and the station's published position was recorded by the MONITOR program on a PC. Data from a 24-hour period were recorded and examined for signs of multi-path signal reflection, which was not evident at the station.

Launch system checks were made by using one of two methods, either by a direct comparison of the Falcon position with the GPS position or by comparing the GPS position with a known, fixed point. HDAPS Survey Screen Two was used for the Falcon comparison method, and was dumped to the system printer to record the results. Three such dumps were made for each system check. For the fixed point method, a taped distance was measured between the antenna and a known position. Eastings and Northings, HDOP, and number of satellites received were manually recorded three times from Screen One. The absolute value of the inverse distance was then compared to the taped distance to determine if position error criteria were met. System checks were normally made each day, and days with no system checks were always bracketed by days with good checks. Formal system checks are recorded on a form included with data for the beginning and ending of each leg.

Problems ✓

The differential GPS station on INDX ran without problem for sheet S.

Offset

The launch GPS antenna is mounted on the mast of the Falcon R/T unit. Antenna offsets are stored in the HDAPS Offset Tables as listed in Section E. Copies of the Offset Tables are included in the "Separates to be Included with Survey Data," III. Horizontal Position Control and Corrections to Position Data."

H. SHORELINE *See Eum. Report, section 2*

Shoreline maps (T-sheets) used to transfer shoreline detail to the final sheets were TP-01387, TP-01389, and TP-01390, (1:10,000, NAD83).

Shoreline verification was conducted near predicted lower low water in accordance with FPM 7.1. Shoreline verification was accomplished by assigning sequential reference numbers and taking detached positions (DPs) as explained later in this section.

Inshore hydrography shows that photogrammetric and hydrographic positioning are in excellent agreement.

Shoreline and T-sheet features verified via visual inspection were assigned sequential reference numbers, described, and recorded in the field using sounding volumes and corresponding 1:10,000 photocopies of the T-sheet. Heights were corrected to MLLW using predicted tides. Corresponding notes were annotated on the photocopies of the T-sheet when deemed necessary. The annotated photocopies of the T-sheet are attached to the sounding volumes which are included with the survey data.

DPs taken during shoreline verification were recorded on the master printouts and indicate significant T-sheet features, features not found on the T-sheet, and locations of disprovals. Where possible, positions

* Filed with the hydrographic data

of some T-sheet features were verified during inshore mainscheme hydrography and annotated on the master printouts.

Detailed 1:10,000 "Rough Bottom Sample and Detached Position Plots" are provided showing all DPs and reference numbers and notes relating to each feature. The information from these plots was transferred to a field shoreline plot. Verified T-sheet features were retained and shown in black. Disproved features were removed from the shoreline plot and changes to the shoreline were shown in red. Field cartographic codes were assigned using the HDAPS DP editor. Heights are recorded in meters and are corrected to predicted MLLW.

Disprovals ✓

None.

Changes

Seventeen changes to the T-Sheet shoreline were found and depicted on the field shoreline plot.

The T-Sheet rock in the vicinity $057^{\circ}18'00''\text{N}$, $133^{\circ}28'57''\text{W}$, Position No. 3179 is the end of a reef. ^{17.52, 6.90} Height of the reef, uncovers 1 meter at MLLW.

The two T-Sheet rocks in the vicinity $057^{\circ}17'53''\text{N}$, $133^{\circ}28'05''\text{W}$, Position No. 1411 are a reef. ^{15, 2.79} High point of the reef, uncovers 1.2m at MLLW.

The T-Sheet rock in the vicinity $057^{\circ}17'52''\text{N}$, $133^{\circ}27'54''\text{W}$, Position No. 1413 is the offshore end of a ledge; see RA3-11 below, "New Features." ^{84, 2.4} T-Sheet rock was retained as high point of ledge, uncovers 3.8m at MLLW.

The T-Sheet rock in the vicinity $057^{\circ}17'49''\text{N}$, $133^{\circ}28'48''\text{W}$, Position No. 1409 is the offshore limit of a ledge. ^{14, 7.77} T-Sheet rock not shown, uncovers 0.3m at MLLW.

The T-Sheet rocks in the vicinity $057^{\circ}17'38''\text{N}$, $133^{\circ}26'12''\text{W}$, are within a foul area defined by Position Nos. 1599 - 1602, 1419, 1420, 1421.

The T-Sheet rocks in the vicinity $057^{\circ}22'30''\text{N}$, $133^{\circ}28'30''\text{W}$, are within a foul area defined by Position Nos. 3305 - 3310. ✓

The T-Sheet ledge in the vicinity $057^{\circ}18'00''\text{N}$, $133^{\circ}28'00''\text{W}$, Position No. 1412, is the high point of a ledge that connects two islands. ^{17.58, 27.58, 70} High point of ledge, uncovers 2.2m at MLLW.

Position No. 1595 marks the T-Sheet ledge limit in the vicinity of the west end of Walpole Island, lat. $57^{\circ}18'2.06''\text{N}$, long. $133^{\circ}31'20.58''\text{W}$, uncovers 1.1m at MLLW.

The T-Sheet rock in the vicinity $057^{\circ}18'35''\text{N}$, $133^{\circ}29'35''\text{W}$, Position No. 3173 is part of a ledge and the limit of a foul area, uncovers 0.8m at MLLW. ^{55, 1.06}

The two T-Sheet rocks in the vicinity $057^{\circ}18'41''\text{N}$, $133^{\circ}31'30''\text{W}$, Position Nos. 1596 - 1597 are a reef. ✓

The T-Sheet rock in the vicinity $057^{\circ}18'21''\text{N}$, $133^{\circ}29'34''\text{W}$, Position No. 3178 marks the limit of a foul area. ^{2.80, 3.84} T-Sheet rock, uncovers 1.2m at MLLW. ✓

The T-Sheet rocks in the vicinity $057^{\circ}18'32''\text{N}$, $133^{\circ}29'45''\text{W}$, Ref. No. RA4-2 are part of a ledge at the offshore limit of a foul area defined by Position No. 3174. ^{4.10, 7.0} T-Sheet not shown, uncovers 0.5m at MLLW.

The T-Sheet rock in the vicinity $057^{\circ}18'12''\text{N}$, $133^{\circ}29'22''\text{W}$, Ref. No. RA4-7 is the offshore limit of a ledge. ^{4.10, 7.0} T-Sheet rock not shown,

The T-Sheet rock in the vicinity 057°17'35"N, 133°29'02"W, Ref. No. RA3-1 is the offshore limit of a ledge. *T-Sheet rock not shown.*

The T-Sheet rock in the vicinity 057°17'36"N, 133°28'35"W, Ref. No. RA3-2 is the offshore limit of a ledge. *T-Sheet rock not shown.*

The T-Sheet rock in the vicinity 057°17'52"N, 133°28'25"W, Ref. No. RA3-3 is the offshore limit of a ledge. *T-Sheet rock not shown.*

The T-Sheet rock in the vicinity 057°17'36"N, 133°27'30"W, Ref. No. RA3-17 is the offshore limit of a ledge. *T-Sheet rock not shown.*

Recommendations: The hydrographer recommends that the shoreline changes from this survey be used to supersede prior shoreline information compiled on T-sheets (T-01387, T-01389, and T-01390). *Comment* ✓

New Features

Five new features were found and depicted on the field sheet.

Item	Approximate Position	Position Number	Height (m)	Remarks
Rock	57°22'35"N 133°28'39"W <i>1.6 8.48</i>	3309	<i>4</i> 1.2	<i>uncovered</i> Exposed
Rock	57°18'16"N 133°30'27"W <i>.43 6.94</i>	3177	<i>1.0</i> 0.4	<i>uncovered</i> Exposed

The T-Sheet islands in the vicinity 057°18'10"N, 133°27'30"W, Ref. No. RA3-10 are connected by ledges. ✓

The T-Sheet ledges in the vicinity 057°17'49"N, 133°27'34"W, Ref. No. RA3-11 are connected; see Position No. 1413 above. ✓

Recommendations: The hydrographer recommends that the shoreline detail from this survey be used to supersede prior shoreline information. *Comment*

I. CROSSLINES ✓

Crosslines are in good agreement with mainscheme hydrography. Crosslines totaled 15.24 nautical miles, representing 12.8 % of the total mainscheme hydrography.

J. JUNCTIONS *See Final Report, section 5*

This survey junctions with survey H-10464 (1:10,000, 1993) to the east and H-10459 (1:10,000, 1993) to the south. No irregularities were found when comparing soundings and depth curves. Final comparisons will be made in the office at the Pacific Hydrographic Section (PHS).

K. COMPARISON WITH PRIOR SURVEYS *See Eumc Report, section 6*

H-1996 (1:80,000, 1889-92)

All prior survey soundings originate from survey H-1996. The soundings from this survey generally agree with survey H-1996 in their common area. Final comparisons and recommendations will be made at PHS.

L. COMPARISON WITH THE CHART *See Eumc Report, section 7*

This survey was compared to NOS chart 17360, 28th Edition, February 8, 1992, 1:217,828 (NAD83), NOS chart 17365, 11th Edition, March 23, 1991, 1:20,000 (NAD83), and NOS chart 17363, 11th edition, April 27, 1991, 1:40,000 (NAD83). *** Chart 17365 was not compared with - no charted soundings common to this survey.*

These soundings were found to be in general agreement with this survey. Charted discrepancies are noted below. Final comparisons will be made at PHS.

The charted rock, scaled from chart 17360, shown in the vicinity 057°22'31"N, 133°28'43"W is not at that position. The rock's actual position is approximately 30 meters from the charted rock position and is defined by Position No. 3311.

Recommendation: The charted rock is adequately portrayed at this chart scale. *Do not compare. Chrted rock is same rock as below Awois item 51849*

One AWOIS item was investigated. The findings are discussed on the attached item investigation report form. *Awois item 51849 was found at lat. 57°22'23.01"N, long 133°28'39.89"W, reef with a high point of 1.7m at MLLW.*

Dangers to Navigation ✓

Two dangers to navigation within the limits of this survey were reported to the Seventeenth Coast Guard District and DMAHTC. Copies of the radio message and correspondence are included in Appendix I of this report.

M. ADEQUACY OF SURVEY ✓

This survey is complete and adequate to supersede the T-Sheets, chart letters, and prior survey H-1996 *common* in the common areas.

N. AIDS TO NAVIGATION ✓

None.

O. STATISTICS ✓

<u>Vessel:</u>	<u>2123</u>	<u>2124</u>	<u>2125</u>	<u>2126</u>	<u>Total</u>
# of Pos	942	267	333	130	1666
NM Hydro	96.93	24.37	33.24	31.63	186.18
NM ² Hydrography	21.8				
Velocity Casts	1				
Detached Position	51				
Tide Stations	2				
Reference Numbers	43				
Bottom Samples	65				

P. MISCELLANEOUS ✓

Loran C comparisons were not required according to the Project Instructions.

Bottom samples were sent to the Smithsonian Institution in accordance with the Project Instructions.

The Coast Pilot current and predicted current comparisons were made in accordance with the Project Instructions. The current predictions were adequate and the descriptions accurate.

Q. RECOMMENDATIONS ✓


None.

R. REFERRAL TO REPORTS ✓

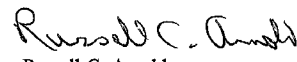
The following supplemental reports contain additional information relevant to this survey:

Title	Date Sent	Office
Spring 1993 Horizontal Control Report for OPR-O136-RA	May 1993	N/CG2333
Spring 1993 Electronic Control Data Package for OPR-O136-RA	March 1993	N/CG245
Spring 1993 Corrections to Echo Soundings Data Package for OPR-O136-RA	May 1993	N/CG245
Spring 1993 Coast Pilot Report for OPR-O136-RA	May 1993	N/CG245
Spring 1993 User Evaluation Report for OPR-O136-RA	May 1993	N/CG245

Respectfully Submitted,


Steven A. Lemke
Lieutenant (jg), NOAA

Approved and Forwarded,


Russell C. Arnold
Captain, NOAA
Commanding Officer

**NOAA SHIP RAINIER
Item Investigation Report**

AWOIS/Investigation #: 51849

Item Description: Rock, Exposed 8' MLW

Source: USC&GS LTR DTD 8/90, Sextant Pos. Scaled from Chart 17360 (1:217,828)

Investigation Date: 30 MAR 93 DN: 090 Time: 21:20 UTC
7 APR 93 097 21:00 UTC

Position Number(s): On 30 MAR, DP No. ~~3311~~ 3306; on 7 APR Pos No. 1680 - 1708

Vessel(s): 2123, 2124

Corrections Applied: ~~Velocity Drift~~ ^{actual} ~~Predicted Tides~~ ~~Pressure~~ ~~Sea~~

Depth/Height: ~~1.4~~ 1.7 meters

Position	Latitude ^{28.73}	Longitude ^{84.22}
Reported	57/22/30N	133/28/48W (NAD 27 83)
Observed	57/22/30.7N 23.01	133/28/40.4W (NAD 83) 39.89

Positioning Method: ~~DGPS~~ ~~Fixation~~ ~~R/A~~

Method of Investigation: Area was split to 25 meter line spacing in a 200 meter circle about the reported position.

Findings: AWOIS 51849 is not present at the charted location. A rock is located approximately 190 meters east of the AWOIS position. The rock's position was verified by Pos. No. ~~3311~~ 3306. The hydrographer believes that the new rock is the AWOIS item rock.

Charting Recommendation: Correct the rock's position and height using the survey information. ~~Remove charted rock.~~ *CMAN*

Compilation Use Only	
CHART	APPLIED
17363	rock
17360	rock

Wed, Mar 17, 1993

CONTROL STATIONS as of 13 Apr 1993

No	Type	Latitude	Longitude	R	Cart	Freq	Vel Code	RM/DD/YY	Station Name
100	F	057:16:13.397	133:37:53.400	25	250	0.0	0.0	03/27/93	INDX(DGPS)
101	F	057:15:03.805	133:32:35.533	7	250	0.0	0.0	0-03/23/93	BILL POINT
107	F	057:10:17.893	133:31:16.092	7	250	0.0	0.0	5-03/23/93	WAL
200	0	057:17:57.880	133:27:52.297	0	254	0.0	0.0	03/23/93	ROBERT IS. TP FIXED CAL 1
201	0	057:17:45.967	133:20:36.141	0	254	0.0	0.0	03/23/93	PORT HOUGHTON TP FIXED CAL 1
202	0	057:19:34.133	133:11:00.320	0	254	0.0	0.0	03/23/93	BLUNT BEA BH A (FIXED CAL 1)
203	0	057:24:45.171	133:26:25.846	0	254	0.0	0.0	04/13/93	ENTRANCE ISLAND PILING (FIXED CAL 1)

- P80 4/13



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

April 13, 1993

**ADVANCE
INFORMATION**

Director
DMAHTC
Attn: MCNM
6500 Brookes Lane
Washington, DC 20315-0030

Dear Sir:

While conducting hydrographic survey operations in Southern Stephens Passage, Alaska, NOAA Ship RAINIER discovered two dangers to navigation. They have been reported to DMAHTCNAVWARN and the Seventeenth Coast Guard District. A copy of the correspondence describing the dangers is enclosed.

Sincerely,

Russell C. Arnold
Russell C. Arnold
Captain, NOAA
Commanding Officer

Enclosures





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

April 13, 1993

**ADVANCE
INFORMATION**

Commander
Seventeenth Coast Guard District
Post Office Box 25517
Juneau, AK 99802-5517

Dear Sir:

Attached is a confirmation copy of the radio message sent to your office regarding the dangers to navigation which I recommend for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. A copy of the chart showing the areas in which the dangers exist is also attached.

Sincerely,

Russell C. Arnold
Russell C. Arnold
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC



P 122300Z APR 93
FM NOAA S RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTCCNAVWARN WASHINGTON DC//MCNM//
INFO NOAA MOP SEATTLE WA
ACCT CM-VCAA

**ADVANCE
INFORMATION**

BT
UNCLAS

NOAA SHIP RAINIER HAS LOCATED 2 DANGERS TO NAVIGATION AT THE ENTRANCE TO PORT HOUGHTON, ALASKA (PROJECT OPR-O136-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY H-10863. THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

CHARTS AFFECTED: 17363 11TH ED APR 27/91 1:40,000 NAD 83
17360 28TH ED FEB 8/92 1:217,828 NAD 83

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

ITEM	DANGER	CHART	DEPTH	LATTITUDE	LONGITUDE
A.	SHOAL	17363	1/4 FM	57/23/44.30N	133/28/25.99W
B.	SHOAL	17360	6 3/4 FM	57/18/27.01N	133/31/39.60W

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

BT

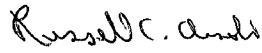
APPROVAL SHEET

for

H-10463
RA-10-3-93

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and 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.



Russell C. Arnold
Captain, NOAA
Commanding Officer



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Silver Spring, Maryland 20910

ORIGINAL

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: August 18, 1993

MARINE CENTER: Pacific

OPR: O136

HYDROGRAPHIC SHEET: H-10463

LOCALITY: Approach to Port Houghton, Stephens Passage, Alaska

TIME PERIOD: March 28, 1993 - April 12, 1993

TIDE STATION USED: 945-1785 The Brothers, Alaska
Lat. 57° 17.7'N Lon. 133° 47.8'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): = -0.88 feet
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 13.8 feet

TIDE STATION USED: 945-1771 Port Houghton, Alaska
Lat. 57° 17.8'N Lon. 133° 21.2'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): = -1.03 feet
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 14.3 feet

REMARKS: RECOMMENDED ZONING

1. West of a line between Pt. Hobart and the west end of Robert Island, times and heights are direct on The Brothers, Ak. (945-1785). Data from the back-up gauge at The Brothers (945-1786) is used.
2. East of a line between Pt. Hobart and the west end of Robert Island, times and heights are direct on Port Houghton, Ak. (945-1771).

NOTE: Hourly heights for The Brothers and Port Houghton are tabulated on Greenwich Mean Time.

William M. Johnson
ACTING CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

H-10463

Name on Survey	ON CHART No. 17360 Chart 17363 Chart 16365 TP-01387 TP-01389 TP-01390 RAND McNALLY ATLAS U.S. LIGHT LIST										
	A	B	C	D	E	F	G	H	K		
ALASKA (title)	X	X	X								1
CROW ISLAND			X	X							2
HOBART, POINT	X	X		X							3
HOUGHTON, PORT	X		X	X	X						4
ROBERT ISLANDS	X				X	X					5
RUSSIAN COVE					X						6
STEPHENS PASSAGE	X				X						7
WAPOLE, POINT	X				X						8
											9
											10
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											25

Approved:

Charles E. Harrington
Chief Geographer - N/C 2x5

NOV 29 1993

HYDROGRAPHIC SURVEY STATISTICS

H-10463

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1	SMOOTH OVERLAYS: POS., ARC, EXCESS		0
DESCRIPTIVE REPORT		1	FIELD SHEETS AND OTHER OVERLAYS		0
DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION FILES					
ENVELOPES					
VOLUMES	2				
CAHIERS	2				
BOXES					

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

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			1666	
POSITIONS REVISED				
SOUNDINGS REVISED				
CONTROL STATIONS REVISED				
	TIME-HOURS			
	VERIFICATION	EVALUATION	TOTALS	
PRE-PROCESSING EXAMINATION				
VERIFICATION OF CONTROL				
VERIFICATION OF POSITIONS	60		60	
VERIFICATION OF SOUNDINGS	99		99	
VERIFICATION OF JUNCTIONS				
APPLICATION OF PHOTOBATHYMETRY				
SHORELINE APPLICATION/VERIFICATION				
COMPILATION OF SMOOTH SHEET	42		42	
COMPARISON WITH PRIOR SURVEYS AND CHARTS		8	8	
EVALUATION OF SIDE SCAN SONAR RECORDS				
EVALUATION OF WIRE DRAGS AND SWEEPS				
EVALUATION REPORT		5	5	
GEOGRAPHIC NAMES				
OTHER*				
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	201	13	214

Pre-processing Examination by D. Haines	Beginning Date 3/28/93	Ending Date 4/12/93
Verification of Field Data by E. Domingo, J. Stringham	Time (Hours) 201	Ending Date 1/14/94
Verification Check by J. Stringham	Time (Hours) 21.5	Ending Date 2/14/94
Evaluation and Analysis by R. Davies	Time (Hours) 13	Ending Date 2/28/94
Inspection by D. Hill	Time (Hours) 2	Ending Date 4/5/94

**EVALUATION REPORT
H-10463**

1. INTRODUCTION

Survey H-10463 is a basic hydrographic survey accomplished by the NOAA Ship *Rainier* under the following Project Instructions.

OPR-O136-RA, dated February 5, 1993

This survey was conducted in Alaska and covers a portion of southern Stephens Passage. This survey includes the approach to Port Houghton between Point Hobart in the north and the Robert Islands in the south. The surveyed area extends from latitude 57/17/27N to latitude 57/23/45N, and from longitude 133/26/15W to longitude 133/33/31W. The shoreline in the area is characterized by a steep and rocky coastline with intermittent gravel beaches and a few isolated reefs and islands offshore. The bottom consists of mud, pebbles and sand. Depths range from zero along the shoreline to 223 meters offshore.

Predicted tides for Juneau, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from The Brothers and Port Houghton, Alaska, gages 945-1785 and 945-1771, were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. NAD 83 is used as the horizontal datum for plotting and position computation. The offset values and sound velocity correctors are adequate. An accompanying computer printout contains the parameters and the correctors.

A digital file has been generated for this survey that includes categories of information required to comply with Hydrographic Survey Guidelines No. 52, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections H and I of the hydrographer's report and the Spring 1993 Horizontal Control Report for OPR-O136-RA, contain adequate discussions of horizontal control and hydrographic positioning.

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of 66 positions exceeded the limit in terms of HDOP. A review of the data, however, indicates that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with the surrounding information. These fixes are considered acceptable.

The position of the horizontal control station used during hydrography is a 1993 field value based on NAD 83.

The smooth sheet and accompanying overlays are annotated with NAD 27 adjustment ticks 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: -1.245 seconds (-38.508 meters)
Longitude: 6.213 seconds (103.915 meters)

The year of establishment of control stations shown on the smooth sheet originates with the horizontal control records for this survey.

The following registered shoreline maps were compiled on NAD 83 and apply to this survey.

	<u>Photo Date</u>	<u>Scale</u>
TP-01387	June, August 1988	1:20,000
TP-01388	June, August 1988	1:20,000
TP-01390	June, August 1988	1:20,000

3. HYDROGRAPHY

With the exceptions noted below and elsewhere in this report, hydrography is adequate to;

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

Because of the steep sloping and rocky shoreline, the zero meter curve could not be adequately drawn and developed around the Robert Island and Crow Island but the hydrography is adequate for charting at the smaller scale of chart 17360.

The first holiday listed below, the center of Russian Cove, which apparently could be of use to small vessels, should have been surveyed. All the other holidays listed are small inshore gaps in coverage near rocks and islets. These holidays do not degrade the usefulness of this survey for charting purposes.

Holidays exist in the following areas.

<u>Latitude(N)</u>	<u>Longitude(W)</u>
57/17/43	133/28/39
57/17/51	133/27/14
57/17/45	133/27/25
57/17/51	133/28/43
57/18/06	133/30/08
57/18/22	133/30/25

The following two soundings which differ from the surrounding soundings by as much as 1.8 meters were not investigated for a least depth.

<u>Sounding(meters)</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
9.8	57/18/39	133/29/03
1.5	57/17/59	133/29/07

4. CONDITION OF SURVEY

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, March 1993 edition, except for the following.

Several depths were not investigated adequately during this survey. Refer to section 3 of this report for the identification of these depths and areas.

5. JUNCTIONS

Survey H-10463 junctions with the following survey.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10459	1993	1:10,000	South
H-10465	1993	1:10,000	East
H-10468	1993	1:10,000	Northwest
H-10469	1993	1:10,000	Northeast

The junction with surveys H-10459, H-10465 and H-10469 have been formally completed. The junction with survey H-10468 has not been formally completed because the depth curves drawn on survey H-10468 adhere to the specifications promulgated by N/CG24 through the memorandum, Changes for Smooth Sheet Appearance and Record Submission to Headquarters, dated February 10, 1994. There is good agreement between soundings, however, the depth curves shown on survey H-10468 delineate different depths, and therefore, do not agree. Soundings have been transferred to survey H-10463 from all of the above listed surveys to better portray the bottom in the common areas.

6. COMPARISON WITH PRIOR SURVEYS

H-1996(1889-92) 1:80,000

Survey H-1996 covers the entire area common with the present survey. There is an average difference in depth of 3 meters between the present survey and the prior survey. The present survey is shoaler. There are a few instances where the difference is extreme, 20 meters. These cases are near steep sloping bottoms. This area has experienced possible isostatic rebound, natural accretion and erosional processes. These processes, the different horizontal datums, the greater sounding coverage and the relative accuracy of the data acquisition techniques account for the differences between the soundings on the prior surveys.

In accordance with Hydrographic Survey Guideline No. 39, the effects of the 1964 Prince William Sound earthquake were considered in the comparison of this survey. No reasonable adjustment value for prior soundings could be determined.

Survey H-10463 is adequate to supersede the prior surveys within the common area.

There are no AWOIS Items that originate with the prior survey.

7. COMPARISON WITH CHART

Chart 17360, 28th Edition, February 8, 1992; scale 1:217,828

Chart 17363, 11th Edition, April 27, 1991; scale 1:40,000

a. Hydrography

Charted hydrography originates with the prior survey mentioned in section 6 and miscellaneous sources and requires no further discussion.

Survey H-10463 is adequate to supersede charted hydrography within the common area.

b. AWOIS

AWOIS item 51849 originates with miscellaneous sources. Refer to the hydrographer's report for discussion and disposition of this feature.

c. Controlling Depths

There are no controlling depths found within the survey area.

d. Aids to Navigation

There are no fixed or floating aids within the survey area.

e. Geographic Names

Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation


The hydrographer reported two dangers to navigation to the Seventeenth District of the United States Coast Guard, Juneau, Alaska. A copy of the message is attached. No additional dangers were reported during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10463 adequately complies with the project instructions except where noted in this report.

9. ADDITIONAL FIELD WORK

This is an adequate hydrographic survey. No additional field work is recommended.


C.R. Davies
Cartographer

APPROVAL SHEET
H-10463

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 digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts have been made and are included with the survey records. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Dennis Hill Date: 4-5-94
Dennis J. Hill
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

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.

Douglas G. Hennick Date: 4/5/94
Commander Douglas G. Hennick, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved:

J. Austin Yeager Date: 8/10/94
J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10463

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
17360	4-13-94	Russ Davies	Full Part Before After Marine Center Approval Signed Via <i>Full application</i> Drawing No. <i>of sdgs from smooth sheet</i>
17863	6-3-94	Russ Davies	Full Part Before After Marine Center Approval Signed Via <i>Full Application</i> Drawing No. <i>of sdgs from smooth sheet</i>
300	12/21/94	Bruce A. Olmstead	Full Part Before After Marine Center Approval Signed Via Drawing No. <i>Examined, no corrections and soundings applied.</i>
530	12/21/94	Bruce A. Olmstead	Full Part Before After Marine Center Approval Signed Via Drawing No. <i>Examined, no correction and soundings applied.</i>
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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SUPERSEDES CAGS FORM 8302 WHICH MAY BE USED