

H10762

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-10-17-97  
Registry No. .... H-10762

### LOCALITY

State ..... Alaska  
General Locality ..... Southwest Alaska Peninsula  
Sublocality ..... South of Cape Kumliun

1997

CHIEF OF PARTY  
CAPT Alan D. Anderson, NOAA

### LIBRARY & ARCHIVES

DATE ..... JUN 30 1998

**HYDROGRAPHIC TITLE SHEET**

H-10762

**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-10-17-97

State Alaska

General locality Southwest Alaska Peninsula

Locality South of Cape Kumliun

Scale 1:10,000 Date of survey July 10 - August 1, 1997

Instructions dated May 15, 1996 \* Project No. OPR-P182-RA

Vessel RA-1(2121), RA-2(2122), RA-4(2124), RA-5(2125), RA-6(2126)

Chief of party CAPT Alan D. Anderson, NOAA

Surveyed by CAPT A. Anderson, LT G. Noll, LT M. Larsen, LT K. Bailey, St. S. Baum, ST N. Shoji

Soundings taken by echo sounder, hand lead, pole DSF 6000N, Knudsen 320M

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by: I. Almacen Automated plot by HP Design Jet 650C

~~Entered by~~ M. Bigelow, D. Doles, E. Domingo, R. Mayor

Verification by \_\_\_\_\_

Soundings in fathoms ~~feet~~ at ~~MHW~~ MLLW and tenths

REMARKS: All times are 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.

\* Change 1, dated June 3, 1997

*AWOIS/SURF 6/17/98 mcr*

PROGRESS SKETCH  
 OPR-P 182-RA-97  
 SOUTHWEST ALASKA PENINSULA  
 JULY-AUGUST 1997  
 CAPT A. D. ANDERSON, NOAA  
 COMMANDING  
 CHART 16566

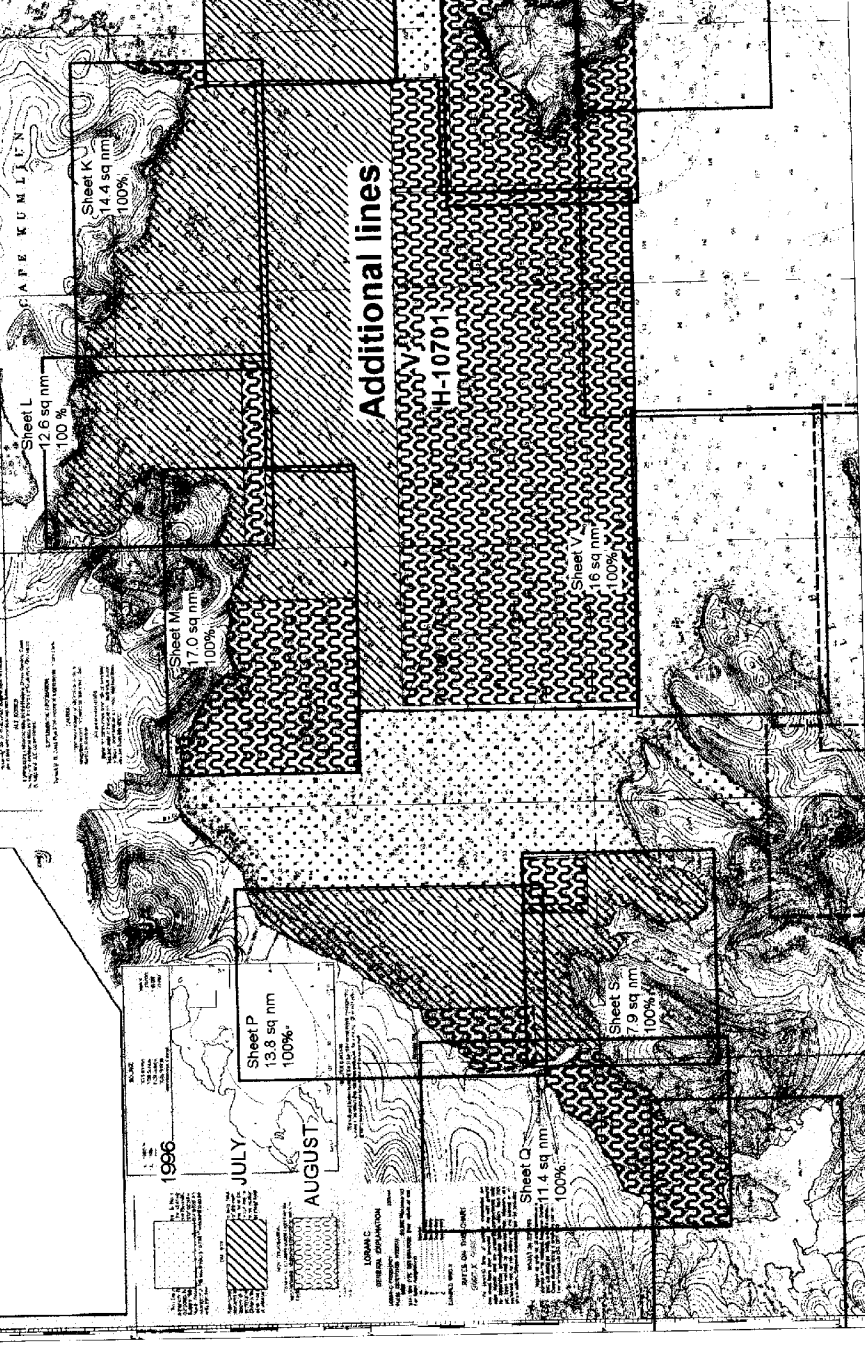
Downtime_Type	July	August
Weather - Hr	0	4
Mechanical -Hr	0	2
Electronic -Hr	0	2

Accomplished	July	August
LNM Hydro	2539.4	1732.6
LNM SSS	20.83	15.85
SQ NM	77.9	224.5
AWOIS Invest.	5	0
Other Invest.	1	8
LNM Multibeam	0	68.5

holidays in  
 1996 work  
 to be done in 1997

Sheet	Reg_No	Started	Percent	Completed	Submitted	SQNM
J	H-10761	7/10	100	8/2		29.3
K	H-10762	7/10	100	8/1		14.4
L	H-10765	7/19	100	8/20		12.6
M	H-10767	7/30	100	8/24		17.0
P	H-10760	7/14	100	8/19		13.8
S	H-10759	7/13	100	8/19		7.9
V	H-10701	7/24	100	8/25		16.0
Q	H-10768	8/5	100	8/22		11.4
X	H-10770	8/15	100	8/26		20.8



Additional lines

1996

JULY

AUGUST

LOWAN C  
 BRUNN, CHANDLER

DATE OF SURVEY  
 1996

SCALE  
 1:50,000

PROJECTION  
 UTM

UNIT  
 METERS

VERTICAL DATUM  
 MSL

HORIZONTAL DATUM  
 NAD 83

MAP SHEET NO.  
 16566

MAP SHEET TITLE  
 SOUTHWEST ALASKA PENINSULA

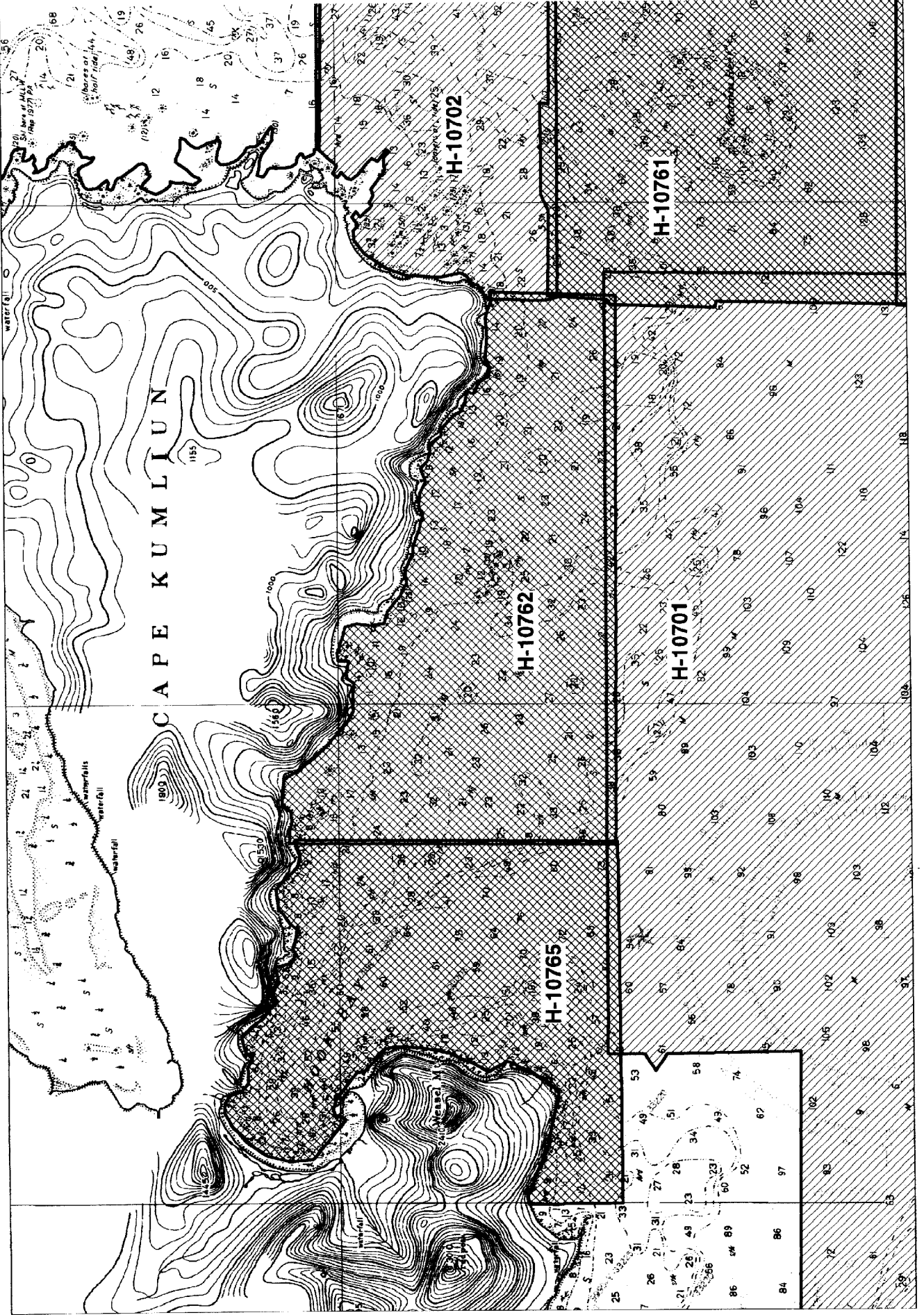
MAP SHEET SCALE  
 1:50,000

MAP SHEET PROJECTION  
 UTM

MAP SHEET UNIT  
 METERS

MAP SHEET VERTICAL DATUM  
 MSL

MAP SHEET HORIZONTAL DATUM  
 NAD 83



# Descriptive Report to Accompany Hydrographic Survey H-10762

Field Number RA-10-17-97

Scale 1:10,000

July 1997

**NOAA Ship RAINIER**

Chief of Party: Captain Alan D. Anderson, NOAA

## A. PROJECT ✓

This hydrographic survey was completed as specified by Project Instructions OPR-P182-RA dated <sup>May</sup> ~~December~~ 20, 1996, and change number 1 dated June 3, 1997. Survey H-10762 corresponds to sheet K as defined in the sheet layout. The purpose of this survey is to provide contemporary surveys for updating National Ocean Service (NOS) nautical charts. The majority of charted hydrography in the 1997 project area is from 1924 and 1925 lead-line hydrographic surveys. Requests for hydrographic surveys and updated charts in this area have been received from a U.S. Senator, a U.S. Congressman, the United States Coast Guard (USCG), the commercial fishing industry, and NOAA.

## B. AREA SURVEYED (See EVAL. RPT., Sec. B)

The survey area is in the Southwest Alaska Peninsula, south of Cape Kumliun. The survey limits are 56° 26' 57"N to the south; 157° 51' 53"W to the east, 158° 02' 50"W to the west, and it is bound by <sup>south shore of</sup> Cape Kumliun to the north. Data acquisition was conducted from July 10 to ~~July 24~~ <sup>Aug. 1</sup>, 1997 (DN 191-205).

## C. SURVEY VESSELS ✓

Data were acquired by RAINIER and her survey launches as noted in the Survey Information Summary included with this report.

## D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired and processed using the Hydrographic Data Acquisition and Processing System (HDAPS.) The final field sheet was generated using MapInfo (Version 4.1) and MapBasic software developed by N/CS32 and modified by Rainier personnel. A complete listing of software for HDAPS is included in Appendix VI.\*

## E. SONAR EQUIPMENT ✓

Neither Side Scan Sonar nor multi-beam echo sounder equipment were used on this survey. *CONCUR.*

## F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. The Knudsen 320M is a dual frequency, thermal depth sounder using the same transducer frequencies. Serial numbers are included on the headers of the daily Raw Master Printouts.\* No new problems, which affect survey data, were encountered. All soundings were acquired in meters using the High + Low, high frequency digitized setting.

## G. CORRECTIONS TO ECHO SOUNDINGS ✓

Two sound velocity casts were used for this survey. Information on the casts is included in the Survey Information Summary report.

\* Filed with the hydrographic data.

The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 219), calibrated December 16, 1996. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 3.3 (1997), in accordance with Field Procedure Manual (FPM) Section 2.4.3. 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". \*

A static transducer depth was determined using FPM Fig 2.2 for vessels 2121-2126 in the spring of 1997. 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-P182-RA. The data for vessels 2121, 2122, 2123 were collected in Shilshole Bay, Washington in the Spring of 1997; data for vessels 2124 and 2126 were measured in the same location in Spring of 1996. The data for 2125 was collected near Scull Island, Alaska in March 1997. All offset tables contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 1-6 correspond to the last digit of the vessel number. Offset table 7 is for RAINIER. The offset tables are included with project data for OPR-P182-RA.\* The launches are not equipped with heave, roll and pitch sensors. *CONCUR.*

The Coastal and Estuarine Oceanography Branch (N/OES334) through N/CS31 provided predicted tides for the project on diskette for the Southwest Alaska Peninsula, West End, Sutwik Island, Alaska reference station (945-8665). HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report.\* Tidal correctors as provided in the project instructions for H-10762 are in the Survey Information Summary included with this report.

Sand Point, Alaska (945-9450) is the primary control stations for datum determination at all subordinate stations. RAINIER personnel installed a Sutron 8200 tide gage at Unavikshak Island (945-8762) on July 09, 1997, and removed it August 27, 1997. Refer to the Field Tide Notes and supporting data in Appendix V for individual gage performance and level closure information. This information has been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded at the completion of the project to N/OES23. *Approved Tide Note dated January 5, 1998 is attached.*

#### H. CONTROL STATIONS (See EVAL RPT., Sec. H)

The horizontal datum for this project is NAD 83. Station SHAK was recovered and used as primary hydrographic positioning control for the survey. The control stations used for this survey are listed in <sup>1157 of</sup> Appendix H. See the OPR-P182-RA-97 Horizontal Control Report for more information. *is included in this report.*

#### I. HYDROGRAPHIC POSITION CONTROL (See EVAL RPT., Sec. I)

All soundings were positioned using differential GPS. Primary control was the VHF differential reference station at SHAK. The US Coast Guard Beacon at KODIAK was used when VHF was not usable. Launch-to-launch DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM. Two observations of position were made from two different DGPS base stations, SHAK and KODIAK, while the launches were rafted together with their GPS antennae within 2-3 meters of each other. RAINIER also used SHIPDIM, version 2.2R (April 1996) with a Trimble Centurion P-code receiver and an Ashtech sensor (both differentially-corrected) to monitor the performance of the USCG Beacon. SHAK was compared to KODIAK during 8-hour daily comparisons and occasional performance checks. Some outliers were noted, but none indicated systematic or continuous errors in the KODIAK beacon. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-P182-RA.

#### J. SHORELINE (See EVAL RPT., Sec. J)

The shoreline manuscript from Coastal Mapping survey CM-8309 was supplied by N/CS341 on stable base Mylar. Shoreline features were manually transferred from TP-00907 and TP-00909 to the boat sheets.

\* Filed with the hydrographic data.

TP sheets were scanned, registered in MapInfo and digitized by RAINIER personnel. One vector table was created from multiple page-sized raster images. Digitization was performed on only one graphic file at a time to prevent improper registration. This vector file is plotted on the final plots. ✓

Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch is 5-50 meters offshore of apparent low tide, generally 3-10 meters of depth at Mean Lower Low Water. Features shown on the SHORELINE NOTES layer in the MapInfo workspace inshore of the NALL are the hydrographer's representation of the shoreline while slowly transiting along the shore, and are intended to aid chart compilation. *The hydrographer's information was analyzed during office processing and applied to the smooth sheet as warranted.* ✓

Shoreline manuscript and field features were compared to an enlargement of chart 16566 8<sup>th</sup> Edition, August 3, 1996 BSB version. This was converted to a raster image and registered in MapInfo, and plotted at survey scale by RAINIER personnel. The charted shoreline was revised by the photogrammetric survey. There was general agreement between the photogrammetric shoreline and the hydrographer's fieldwork. *Concur* ✓

The south shore of Cape Kumliun that was the majority of the shoreline on this survey is generally foul with rocks and thick kelp with the exception of a couple of shallow sloping sand beaches. Due to the dangerous nature of the shoreline, and the omnipresent ocean swell, the NALL shoreline hydrography was done further offshore and in deeper water than RAINIER personnel have done in the past. ✓

The following paragraphs list the differences noted between the manuscript, chart, and this survey:

A new rock at position 56° 29' 59.08"N, 158° 01' 01.05"W, (Fix number 10295), 2.6 meters submerged. *[ 1.5 RK ]*

A new rock at position 56° 29' 50.91"N, 157° 59' 26.34"W, (Fix number 50529), 0.9 meter exposed. *[ \* (3) ]*

A charted rock<sup>\*</sup> at position 56° 28' 26.80"N, 157° 57' 52.36"W, was searched for but not found (Fix number 50905). This charted rock is at the position of T-Sheet rock (fix 10006). A 10-minute search in a 200 m radius in 15-25 m water with a 3.5 m visibility revealed no other indication of this feature. The hydrographer recommends removing the charted rock and charting the T-Sheet rock as shown on the manuscript. *Concur. Chart rock @ Lat 56/28/27.0 N, Long. 157/57/50.6 W. \* (4)*  
*Charted rock was found approximately 25 meters east of prior survey location.*

A charted rock at position 56° 29' 00.88"N, 157° 55' 29.25"W, was searched for but not found (Fix number 50909). A 10-minute search in a 200 m radius in 10-20 m water, at low water, with a 3.5 m visibility revealed no indication of this feature. The area inshore of this position is foul, and should be charted as shown on field sheet. The hydrographer recommends removing the charted rock. *Do not Concur. Chart the area based on the present survey with transfer of rock from prior survey H-4508. Rock plots outside foul area and search is not adequate for supersession.*

A charted rock at position 56° 28' 55.89"N, 157° 55' 02.03"W, was searched for but not found (Fix number 50911). A 10-minute search in a 200 m radius in 10-20 m water, at low water, with a 3.5 m visibility revealed no indication of this feature. The hydrographer recommends removing the charted rock. *Concur. Chart the area based on the present survey.*

A charted rock at position 56° 28' 54.75"N, 157° 54' 57.42"W, was searched for but not found (Fix number 50913). A 10-minute search in a 200 m radius in 10-20 m water, at low water, with a 3.5 m visibility revealed no indication of this feature. The hydrographer recommends removing the charted rock. *Do not Concur. Chart the area based on the present survey with transfer of rock from prior survey H-4508. Rock plots outside foul area and search is not adequate for supersession.*

A charted rock at position 56° 29' 46.0"N, 157° 59' 27.0"W, was searched for but not found. Ten meter line spacing over the area did not reveal significant shoaling. Comparison with the prior survey revealed a rock near the new rock position 56° 29' 50.91"N, 157° 59' 26.34"W, (fix number 50529). The hydrographer recommends deleting the charted rock and charting it at the new location. *Concur. Chart rock @ Lat 56/29/50.9 N, Long. 157/59/26.3 W. \* (3)*  
*Charting rock*  
*New rock plots approximately 100 meters north of charted rock*

A T-Sheet/charted rock at position 56° 28' 12.61"N, 157° 51' 59.64"W, was searched for but not found (Fix number 10034). A 10-minute search in a 200 m radius in 15-35 m water, at low water, with a 3.5 m visibility revealed no indication of this feature. The hydrographer recommends removing the manuscript rock. *Concur. Chart the area based on the present survey.*

A T-Sheet rock at position 56° 28' 16.49"N, 157° 52' 07.16"W, was searched for but not found (Fix number 10039). A 20-minute search in a 200 m radius in 10-15 m water with a 3.5 m visibility revealed a rock at position 56° 28' 16.25"N, 157° 51' 59.47"W, 9.1 meter exposed, (fix number 10038), approximately 100 m from the manuscript position. The hydrographer recommends deleting the manuscript rock and portraying it at the new location. *Concur. Chart islet @ Lat 56/28/16.25N, Long. 157/51/59.47W. (13)*

#### K. **CROSSLINES** ✓

Crosslines agreed within 1 meter with mainscheme hydrography. There was a total of 38.4 nautical miles of crosslines, comprising 13.9% of mainscheme hydrography.

#### L. **JUNCTIONS** (See EVAL RPT., Sec. L)

This survey junctions with H-10702, 1:10,000, 1996 to the east, H-10765, 1:10,000, 1997 to the west, and H-10701, 1:20,000, 1996 to the south. Soundings on these surveys were found to be in good agreement. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

*H-10761, 1:10,000, 1997 to the east*

#### M. **COMPARISON WITH PRIOR SURVEYS** (See EVAL RPT., Sec. M)

The following prior surveys share common area with H-10762.

REGISTRY NUMBER	YEAR	SCALE	COMMON AREA
H-4397	1928 <del>4</del>	1:20,000	Western Portion
H-4449	1924	1:60,000	Southern Portion
H-4508	1925	1:20,000	Central Portion
H-4509	1925	1:60,000	East and Southeast Portion

Prior surveys H-4397, H-4449, and H-4509 were compared with H-10762. Due to modern survey techniques and positioning systems there were numerous instances where H-10762 revealed shoaler depths than the prior surveys. Prior survey H-4508 could not be located aboard RAINIER and therefore was not compared with H-10762 in the field. Sounding comparisons for the area covered by H-4508 are discussed in Section O. Final comparisons will be performed at the Pacific Hydrographic Branch (PHB) after final tides have been applied to H-10762.

#### N. **ITEM INVESTIGATIONS** ✓

No AWOIS items were located within H-10762 survey area. *Concur.*

#### O. **COMPARISON WITH THE CHART** (See EVAL RPT., Sec. O)

Chart 16566, 1:77,477, 8th Edition, 8/3/96 is the largest scale chart covering the survey area. With the exception of the area covered by prior survey H-4508, comparison of soundings is described in Section M. Soundings from this survey are generally shoaler than charted soundings. Two charted soundings were shoaler than those from H-10762, all were developed using 25-meter splits on DN 205, VN 2125. The table below summarizes the results of the developments.

SOUNDING	POSITION	PRIOR SURVEY	LEAST DEPTH	RECOMMENDATIONS
19 fm (35 m)	Lat. 58° 28' 00"N Lon. 157° 53' 30"W	H-4509	20 fm (38m) Fix 50894+6	Chart soundings from current survey
25 fm (46 m)	Lat. 58° 27' 19"N Lon. 158° 02' 01"W	H-4449	28 fm (52m) Fix 40152+4	Chart soundings from current survey



In all cases the questionable charted soundings were within <sup>100-</sup>300 meters of comparable or shoaler soundings from this survey. The hydrographer recommends that all charted soundings within the survey area be superseded by H-10762. *Concur.*

Non-sounding features are discussed in Section J. Final sounding comparisons will be made at PHB after reduction to final vertical datum.

#### Dangers to Navigation ✓

No dangers to navigation were reported to the 17<sup>th</sup> Coast Guard by the hydrographer. The chart adequately depicts the foul nature of the inshore areas south of Cape Kumliun, and there were no dangers found offshore.

One additional danger to navigation was discovered during office processing and has been transmitted to the United States Coast Guard and Nos. Source Data Section. (See letter attached)

#### P. ADEQUACY OF SURVEY ✓

Survey H-10762 is complete and adequate to supersede prior soundings and features in their common areas. *Concur.*

#### Q. AIDS TO NAVIGATION ✓

There were no aids to navigation within the survey area. *Concur.*

#### R. STATISTICS ✓

This survey contained 23,768 selected soundings, additional statistics are listed in the Survey Information Summary included with this report.

#### S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian in accordance with Project Instructions. No unusual tidal currents or magnetic variations were found during this survey.

#### 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>
OPR-P182-RA Horizontal Control Report	September 1997	N/CS34
OPR-P182-RA 1997 Coast Pilot Report	September 1997	N/CS26
Project related data for OPR-P182-RA	Incremental	N/CS34
Secchi Disk Observations for OPR-P182-RA	September 1997	N/CS31

Respectfully Submitted,

  
Steven A. Lemke  
Lieutenant, NOAA

Approved and Forwarded,

  
Alan D. Anderson  
Captain, NOAA  
Commanding Officer

# Survey Information Summary

**Project:** OPR-P182-97      **Project Name:** SW ALASKA PENINSULA - YEAR 2  
**Instructions Dated:** 5/15/96      **Project Change Info:**

Change #	Dated
1	6/3/97

**Sheet Letter:** K      **Registry Number:** H-10762  
**Sheet Number:** RA-10-17-97

**Survey Title:** SOUTH OF CAPE KUMLIUN

**Data Acquisition Dates:**      **From:** 10-Jul-97      191      **To:** 01-Aug-97      213

## Vessel Usage Summary

VESNO	MS	SPLITS	DEV	XL	S/L	DP	BS	DIVE
2121	1	1	3	2	1	3		
2122	2	1			2	3		
2124		2		2				
2125	5	1	4	2		2	5	
2126	4	2		4	1			

## Sound Velocity Cast Information

Launch Table #	Ship Table #	Cast DN	Max Depth	Position	Applicable DN
3	13	205	165	56/26/57	203-LSD
				158/02/56	
1	0	192	287	56/25/15	FSD-203
				157/51/28	

## Tide Zone Information

Zone #	Time Corr.	Height Corr.
SAP11	000 hr 00 min	X0.97

## Tide Gage Information

Tide Gage #	Gage Name	Installed	Removed
945-8762	UNAVIKSHAK IS	7/9/97	8/27/97
945-9450	SAND POINT, AK	1/1/90	12/31/99

## Statistics Summary

Type	Total:
BS	38
DEV	33.71
DP	37
MS	276.04
S/L	8.18
SPLIT	226.06
XL	38.41

Percent XL: 13.9%

SQNM: 14.4

CONTROL STATIONS as of 9 Oct 1997 ✓

No	Type	Latitude	Longitude	H	Cart	Freq	Vel Code	MM/DD/YY	Station Name
001	G	056:30:09.724	157:43:12.024	162	250	0.0	0.0	00/00/97	SHAK
002	G	056:26:06.935	158:17:01.986	33	250	0.0	0.0	00/00/97	ANG
100	G	057:37:07.800	152:11:21.000	0	250	0.0	0.0	A 03/01/96	KODIAK 313 KHZ USCG DGPS
101	G	055:05:30.000	162:31:54.000	0	250	0.0	0.0	B 06/25/96	COLD BAY 289 KHZ USCG DGPS
003	G	056:21:50.308	157:50:26.735	310	250	0.0	0.0	00/00/97	NAK
004	G	056:18:34.550	158:23:01.380	24	0	0.0	0.0	00/00/97	CHIGNIK LT



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SERVICE  
OFFICE OF COAST SURVEY  
Pacific Hydrographic Branch  
Seattle, Washington 98115-0070

March 18, 1998

**ADVANCE  
INFORMATION**

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

Dear Sir:

During office review of hydrographic survey H-10762, Alaska, Alaska Peninsula, South of Cape Kumliun, one (1) danger to navigation has been identified. This potential danger affects the following chart:

Chart	Edition/Date	Scale	Datum
16566	8th/Aug. 3, 1996	77,477	NAD 83

The attached information is provided for publication in the Local Notice to Mariners.

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

Sincerely,

Kathryn Timmons  
Commander, NOAA  
Chief, Pacific Hydrographic Branch

Enclosures

cc: NIMA  
N/CS261



REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10762

Survey Title:           State:           ALASKA  
                          Locality:       ALASKA PENINSULA  
                          Sublocality:   SOUTH OF CAPE OF KUMLIUN

Project Number: OPR-P182-RA, NOAA Ship RAINIER

Survey Date:           July 10-August 1, 1997

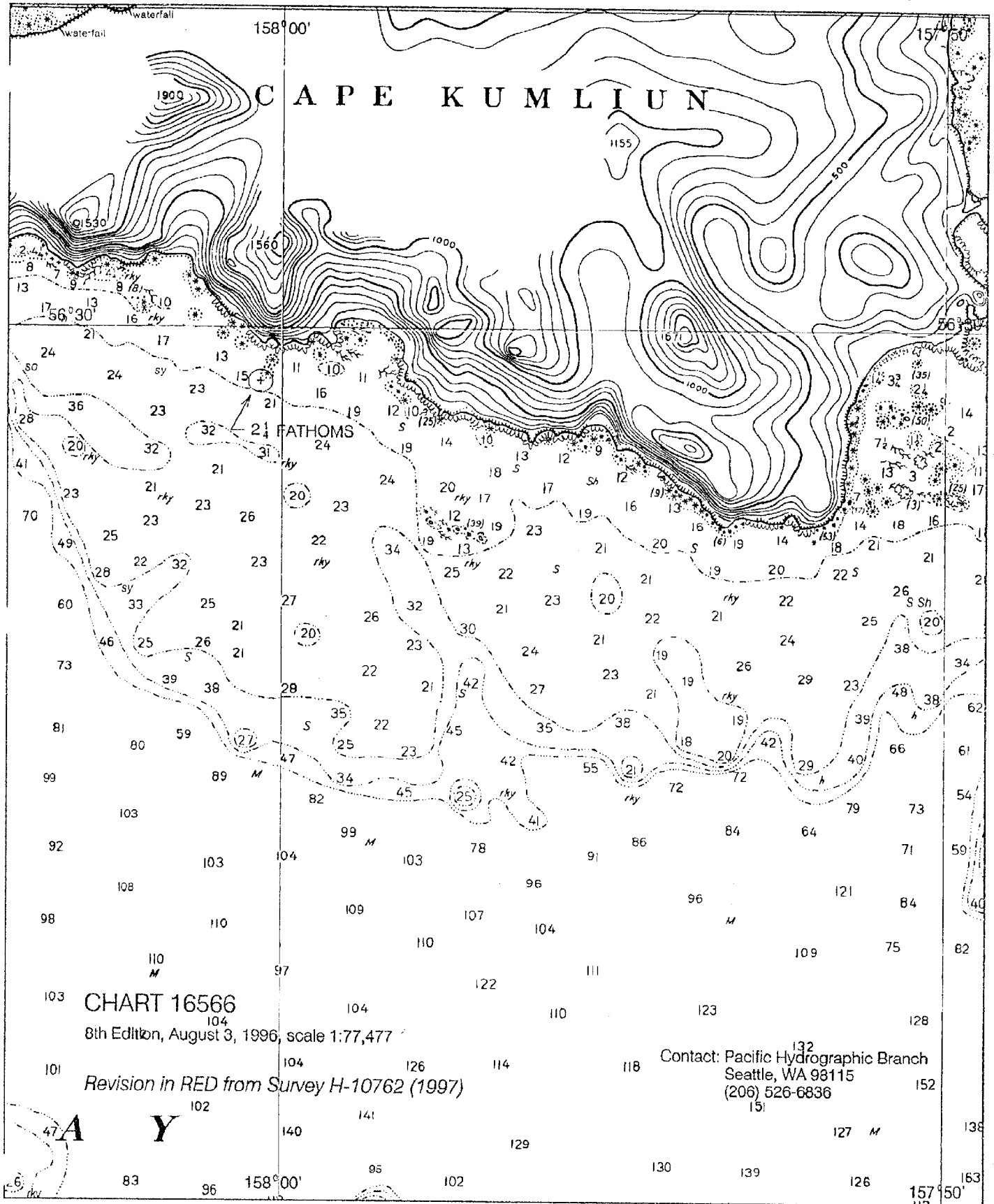
Features are reduced to Mean Lower Low Water (MLLW) using approved tides and are positioned on NAD 83.

Chart affected:       16566, 8th Edition/August 3, 1996, scale 1:77,477, NAD 83

<u>DANGER TO NAVIGATION</u>	<u>LATITUDE(N)</u>	<u>LONGITUDE(W)</u>
Shoal, covers 2.4 fathoms	56/29/33.9	158/00/18.5

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

**ADVANCE  
INFORMATION**



APPROVAL SHEET

for

H-10762

RA-10-17-97

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.



Alan D. Anderson  
Captain, NOAA  
Commanding Officer



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SERVICE

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

DATE: January 5, 1998

HYDROGRAPHIC BRANCH: Pacific  
HYDROGRAPHIC PROJECT: OPR-P182-RA  
HYDROGRAPHIC SHEET: H-10762

LOCALITY: Southwest Alaska Peninsula

TIME PERIOD: Jul 10 - Aug 27, 1997

TIDE STATION USED: 945-8762 Unavikshak Island, AK.  
Lat. 56° 29.5'N Lon. 157° 44.4'W  
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.519 meters

TIDE STATION USED: 945-8849 Chankluit Island, AK.  
Lat. 56° 08.8'N Lon. 158° 06.4'W  
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.367 meters

TIDE STATION USED: 945-8917 Chignik, Anchorage Bay, AK.  
Lat. 56° 17.8'N Lon. 158° 24.0'W  
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.486 meters

REMARKS: RECOMMENDED ZONING  
Use zone(s) identified as: SAP11  
Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (Meters), relative to MLLW and on Greenwich Mean Time.

Note 2: Use tide data from the appropriate station for each zone according to the order in which they are listed in the "Tidezone" corrector files. For example, tide station one (TS1) would be the first choice for an applicable zone followed by TS2, etc. when data are not available. All zones within a survey sheet may not have the same order of applicable tide stations.

-----  
*[Signature]*  
CHIEF, OPERATIONAL ANALYSIS BRANCH



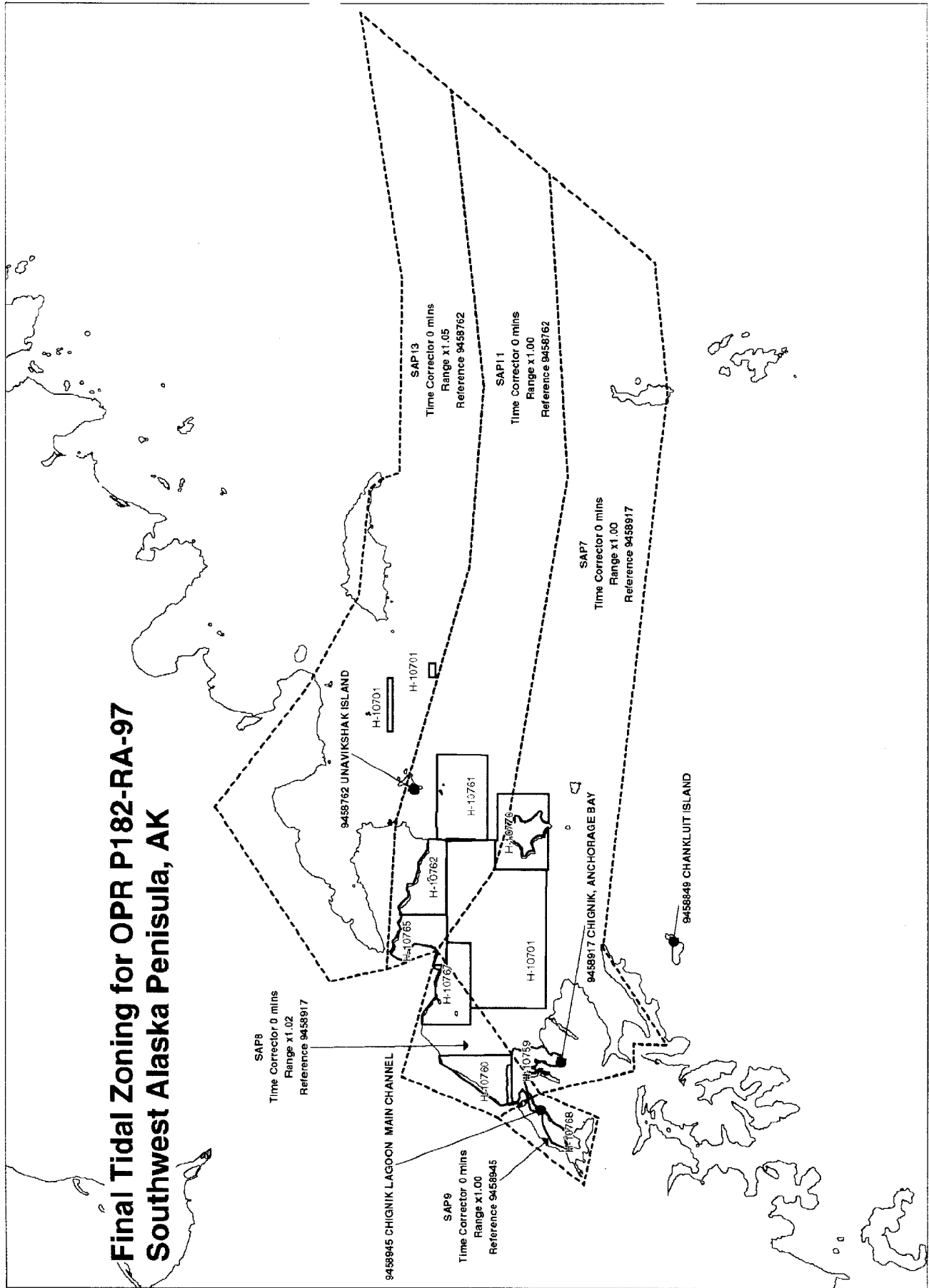


Final tide zone node point locations for OPR P182-RA-97,  
Sheet H-10762.

Format: Longitude in decimal degrees (negative value denotes  
Longitude West),  
Latitude in decimal degrees  
Tide Station (in recommended order of use)  
Average Time Correction (in minutes)  
Range Correction

		Tide Station Order	AVG Time Correction	Range Correction
Zone SAP11				
-158.17548	56.528131	9458762	0	1.00
-158.130628	56.461475	9458917	0	1.03
-157.940076	56.386887	9458849	0	1.09
-157.826885	56.36808			
-156.986771	56.288084			
-156.253456	56.311786			
-156.052556	56.44225			
-156.765615	56.399588			
-157.202448	56.418381			
-157.821992	56.516328			
-158.17548	56.528131			

# Final Tidal Zoning for OPR P182-RA-97 Southwest Alaska Peninsula, AK



GEOGRAPHIC NAMES

H-10762

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">A ON CHART NO. 16566</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">B ON PREVIOUS SURVEY NO.</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">C ON U.S. QUADRANGLE MAPS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">D FROM LOCAL INFORMATION</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">E ON LOCAL MAPS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">F P.O. GUIDE OR MAP</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">G RAND McNALLY ATLAS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">H U.S. LIGHT LIST</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">K</div> </div>											
	ALASKA (title)	X										
ALASKA PENINSULA (title)	X											2
CAPE KUMLIUN	X	X										3
												4
												5
												6
												7
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Approved

*Dennis J. Rensberg*  
Geographer

DEC 23 1997

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

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

SHORELINE DATA	
SHORELINE MAPS (List):	TP-00907, TP-00909
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	NA
SPECIAL REPORTS (List):	NA
NAUTICAL CHARTS (List):	16566, 8th Edition, August 3, 1996

*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			
POSITIONS REVISED			
SOUNDINGS <del>REVISED</del> (selected)			24,314
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	109.5		109.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		14.0	14.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		24.0	24.0
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	109.5	38.0
			147.5

Pre-processing Examination by <b>M. Bigelow</b>	Beginning Date 1/15/98	Ending Date 2/6/98
Verification of Field Data by <b>M. Bigelow, D. Doles, R. Mayor, E. Domingo</b>	Time (Hours) 109.5	Ending Date 2/26/98
Verification Check by <b>B. Olmstead</b>	Time (Hours) 4	Ending Date 4/1/98
Evaluation and Analysis by <b>I. Almacer</b>	Time (Hours) 38.0	Ending Date 3/4/98
Inspection by <b>B. Olmstead</b>	Time (Hours) 7	Ending Date 4/3/98

## **EVALUATION REPORT**

**H-10762**

### **A. PROJECT**

Project information is discussed in the hydrographer's report.

### **B. AREA SURVEYED**

The survey area is discussed in the hydrographer's report with the following supplemental information.

The coast is comprised mostly of rocky ledges and off-lying rocks with stretches of gently sloping gravel and sandy beaches. The inshore area is mostly covered with thick concentration of kelps. The bottom is generally made up of sand, mud, gravel and pebble mixed with broken shells. Depth range from 0.4 to 66.0 fathoms.

The hydrographer has determined the inshore limits of safe navigation by defining a Navigable Area Limit Line (NALL) within the survey area. The NALL line determination was accomplished in accordance with the Project Instructions (Attachment 1). A page-size chartlet of the survey area indicating the limits of supersession is included in this report as Attachment A.

### **C. SURVEY VESSELS**

Survey vessel information is found in the hydrographer's report.

### **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), AutoCad (Version 12 & 13) and MicroStation 95.

Digital data for this survey exists in the standard HPS format, that is a database format using the .dbf extension. In addition, the plot is filed both in the MicroStation drawing format, i.e., dgn (extension), and in the more universally recognized graphics transfer format, .dxf (extension). Copies of these files will be retained at PHB until data forwarded to headquarters has been accepted and approved. Database records forwarded are in the Internal Data Format (IDF) and are in compliance with specifications in existence at the time of survey processing.

The drawing files necessarily contain information which is not part of the HPS data set such as geographic names text, line-type data, 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 the 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 during this survey.

#### **F. SOUNDING EQUIPMENT**

Sounding equipment is discussed in the hydrographer's report.

#### **G. CORRECTIONS TO SOUNDINGS**

The sounding data have been reduced to Mean Lower Low Water (MLLW). The reducers include corrections for actual tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with NOS specifications.

Predicted tides were used for reduction of soundings during field processing. During office processing, tide reduction is derived from approved hourly heights zoned direct from tide gage Unavikshak Island, Alaska, gauge (945-8762). There was a gap in corrector values for this gauge between August 3, 1997 at 204200 and August 6, 1997 at 204200, however, no field data were collected for this survey at this particular time. Chankluit Island and Chignik, Anchorage Bay, Alaska gauges were not used. Refer to the approved tide note attached to this report concerning recommended tidal zoning.

#### **H. CONTROL STATIONS**

Control stations used during this survey are adequately discussed in the hydrographer's report. The stations used during survey operations are based on NAD 83 datum.

The MicroStation generated smooth sheet is annotated with an NAD 27 adjustment tick based on values determined with NGS program NADCON. Data based on NAD 27 may be referenced to this survey by applying the following corrections.

Latitude: -2.770 seconds (-85.668 meters)  
Longitude: 7.369 seconds (126.112 meters)

## **I. HYDROGRAPHIC POSITION CONTROL**

Hydrographic position control is adequately discussed in the hydrographer's report. Differential GPS (DGPS) was used to control this survey. The maximum allowable horizontal dilution of precision (HDOP) limit of 3.75 has not been exceeded and the quality of the data obtained in the field is considered good. The reference site confirmation test and the daily DGPS performance checks conducted in the field were adequate.

## **J. SHORELINE**

The "limited" shoreline verification method applied to this survey is adequately discussed in the hydrographer's report. The digitized shoreline file and the survey file were merged during Microstation processing.

The digital shoreline maps TP-00907 and TP-00909 originating from Coastal Mapping survey CM-8309 were compiled on NAD 83 and applied to this survey. These files have been merged with the survey file during office processing. The presently charted shoreline should be revised based on the latest shoreline map information and the results of the field shoreline verification depicted on the smooth sheet.

## **K. CROSSLINES**

Crosslines are discussed in the hydrographer's report.

## **L. JUNCTIONS**

Survey H-10762 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10701	1996	1:20,000	South
H-10702	1996	1:10,000	East
H-10761	1997	1:10,000	East
H-10765	1997	1:10,000	West

Surveys H-10701 and H-10702 have been previously processed and forwarded for charting. The depth curves and soundings within the junction areas are in satisfactory agreement. An "Adjoins" note has been shown on the smooth sheet.

The junctions with surveys H-10761 and H-10765 are complete. Soundings and depth curves are in good agreement within the common areas. A "Joins" note has been shown on the smooth sheet. Comparisons with these surveys are good and the junctions have been adequately effected.

## **M. COMPARISON WITH PRIOR SURVEYS**

Survey H-10762 was compared with the following prior surveys.

H-4397 (1924), scale 1:20,000

H-4449 (1924), scale 1:60,000

H-4508 (1925), scale 1:20,000

H-4509 (1925), scale 1:60,000

The above listed prior surveys covers the area of the present survey. Comparisons with these surveys are considered satisfactory. The present survey depths were found to be generally shoaler by 1-3 fathoms. The changes noted could be attributed to the increased sounding density of the present survey, differences in the reference datum used and the application of more advanced surveying methods. All depths originating from these prior hydrographic surveys were adequately addressed during survey operations. A more complete and thorough coverage of the area has been undertaken during this recent survey in comparison to work conducted in 1924-25..

The islet charted at latitude 56/29/05N, longitude 157/55/07W, originating from survey H-4508 was not mentioned in the hydrographer's report. However, this islet was not depicted on the latest shoreline map of the area. It appears that this feature might has been fully wiped out by continuous erosion since 1925 and was not visible any more at the time of the recent photography. It is recommended that this islet be deleted from the chart.

The following charted rocks originating from the prior survey H-4508 (1925) were not adequately investigated and disproved during this survey. These features were brought forward to the present survey.

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
Rock Awash	56/28/54.8	157/54/57.4
Rock Awash	56/29/00.9	157/55/29.2

With the exception of the items listed above, survey H-10762 is adequate to supersede the prior surveys within the common area.

## **N. ITEM INVESTIGATIONS**

There were no AWOIS item investigations assigned to this survey.

## **O. COMPARISON WITH CHART**

Survey H-10762 was compared with the following charts.



<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
16566	8th	Aug. 3, 1996	1:77,477	NAD 83

a. Hydrography

Charted hydrography originates with the previously mentioned prior hydrographic surveys. These prior surveys have been adequately addressed in the preceding section of this report and requires no further discussion.

The following charted rocks located inshore of the NALL line were visually verified by the hydrographer and found to be an extension of the ledges shown on the latest shoreline manuscript. These features should be revised based on the latest field information.

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>
Rock Awash	56/28/22.0	157/52/27.0
Rock Awash	56/28/24.0	157/53/05.0
Rock Awash	56/28/22.0	157/53/12.0
Rock Awash	56/28/39.0	157/54/12.0
Rock Awash	56/29/12.0	157/57/38.0
Rock Awash	56/29/04.0	157/56/02.0

Except for the items mentioned in the preceding section of this report, survey H-10762 is adequate to supersede charted hydrography within the common area of coverage.

b. Dangers to Navigation

No dangers to navigation were reported by the hydrographer during this survey. However, a potential danger to navigation was identified during office processing and was reported to the USCG for inclusion to the Local Notice to Mariners. A copy of the report is attached.

**P. ADEQUACY OF SURVEY**

The hydrography on survey H-10762 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; and
- c. show the survey was properly controlled and soundings are correctly plotted.

Hydrography on survey H-10762 was acquired in the field in metric units while the smooth

sheet for this survey was compiled in fathoms to conform to the sounding unit of the existing NOS nautical charts of the area.

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 with the exception of the following. In the event that the field units submission of survey data will exceed four weeks from completion of field work, the Chief of Party will submit a written explanation for the delay indicating the anticipated transmittal date to the Chief of the appropriate processing section. Marine Center ships will forward their explanation through the Marine Center Director. Field work for survey H-10762 was completed on August 1, 1997 but not received for office processing until October 15, 1997.

**Q. AIDS TO NAVIGATION**

There are no aids to navigation located inside the survey limits.

There are no prominent features of landmark value noted within the survey area.

**R. STATISTICS**

Statistics are itemized in the hydrographer's report.

**S. MISCELLANEOUS**

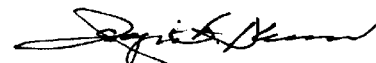
Miscellaneous information concerning this survey is discussed in the hydrographer's report. No additional miscellaneous items were noted during office processing.

**T. RECOMMENDATIONS**

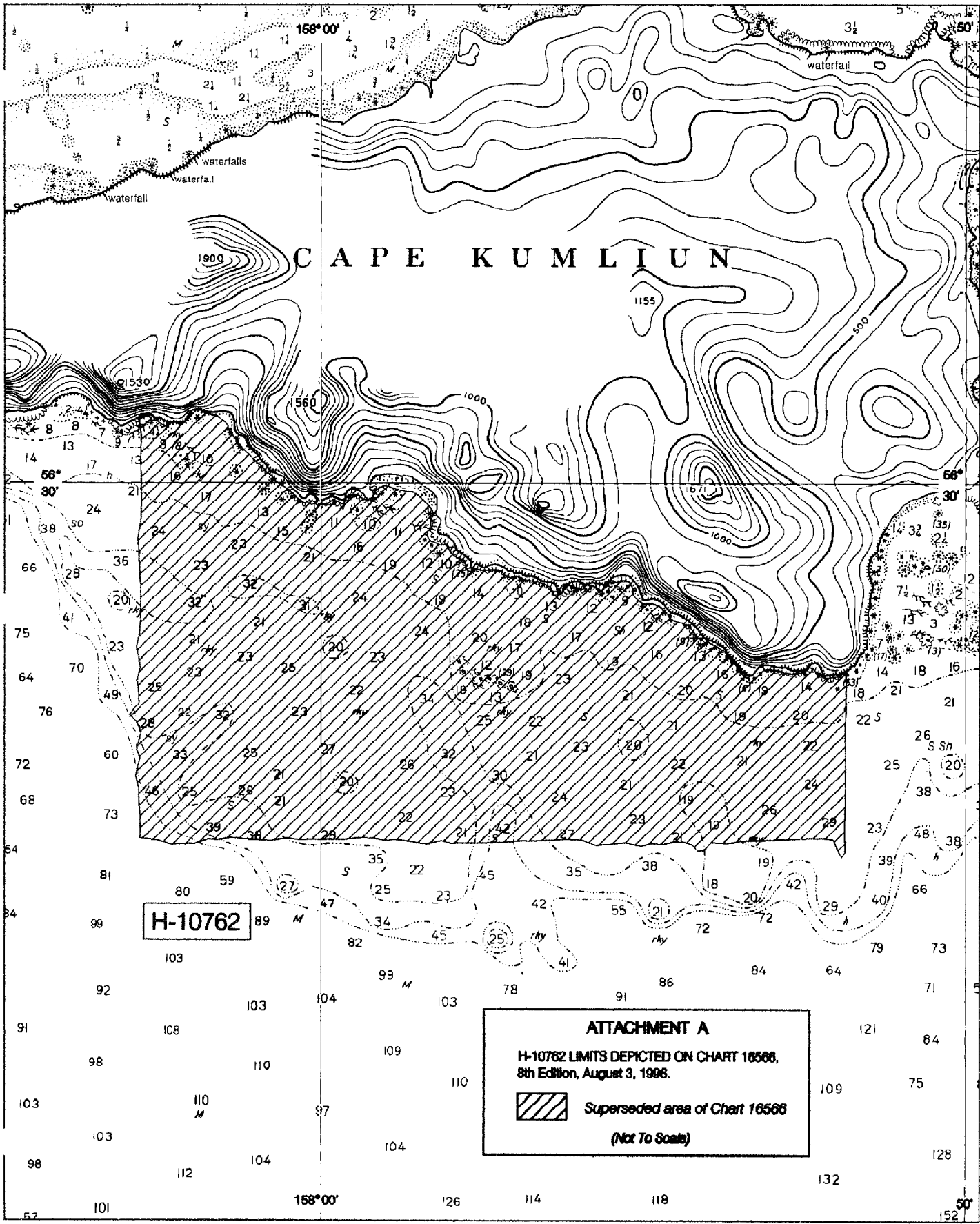
Survey H-10762 is a good hydrographic survey and no additional field work is required.

**U. REFERRAL TO REPORTS**


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



Isagani A. Almacen  
Cartographer



H-10762

**ATTACHMENT A**  
H-10762 LIMITS DEPICTED ON CHART 16566,  
8th Edition, August 3, 1996.  
 Superseded area of Chart 16566  
(Not To Scale)

APPROVAL SHEET  
H-10762

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: 4/27/98  
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: 5/9/98  
Kathy Timmons  
Commander, NOAA  
Chief, Pacific Hydrographic Branch

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Final Approval

Approved:

Andrew A. Armstrong III Date: June 30, 1998  
Andrew A. Armstrong III  
Captain, NOAA  
Chief, Hydrographic Surveys Division

