10305

Diagram No. 8802-3

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-10-3-89

Registery No. ... H-10305

LOCALITY

State ... Alaska

General Locality ... Alaska Peninsula

Sublocality ... Nakalilok Bay

1989

CHIEF OF PARTY
CAPT J.C. Albright

LIBRARY & ARCHIVES

DATE ... February 7, 1991

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

10305

GP
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16568
16013
16006
16011
16560 New chart
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NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.
H-10305

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-10-3-89

State: Alaska

General locality: Alaska Peninsula

Locality: Nakalilok Bay

Scale: 1:10,000 Date of survey: June 15 to September 10, 1989

Instructions dated: May 1, 1989 Project No.: OPR-P180-RA

Vessel: NOAA Ship RAINIER, Launches RA-3 (2123), RA-4 (2124), RA-5 (2125) Skiff RA-7 (2127)

Chief of party: CAPT J.C. Albrihgt

Surveyed by: LTJG Niichel. LTJG Glang, LTJG Noll, ENS Duffy, ENS Haines ENS Schoonover, ENS Muench

Soundings taken by echo sounder, ~~hand lead, pole~~: DSF-6000N; Pneumatic Depth Gage

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Verification by: R.A. Shipley Automated plot by: PHS Xynetics Plotter

Evaluation by: C.R. Davies

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW

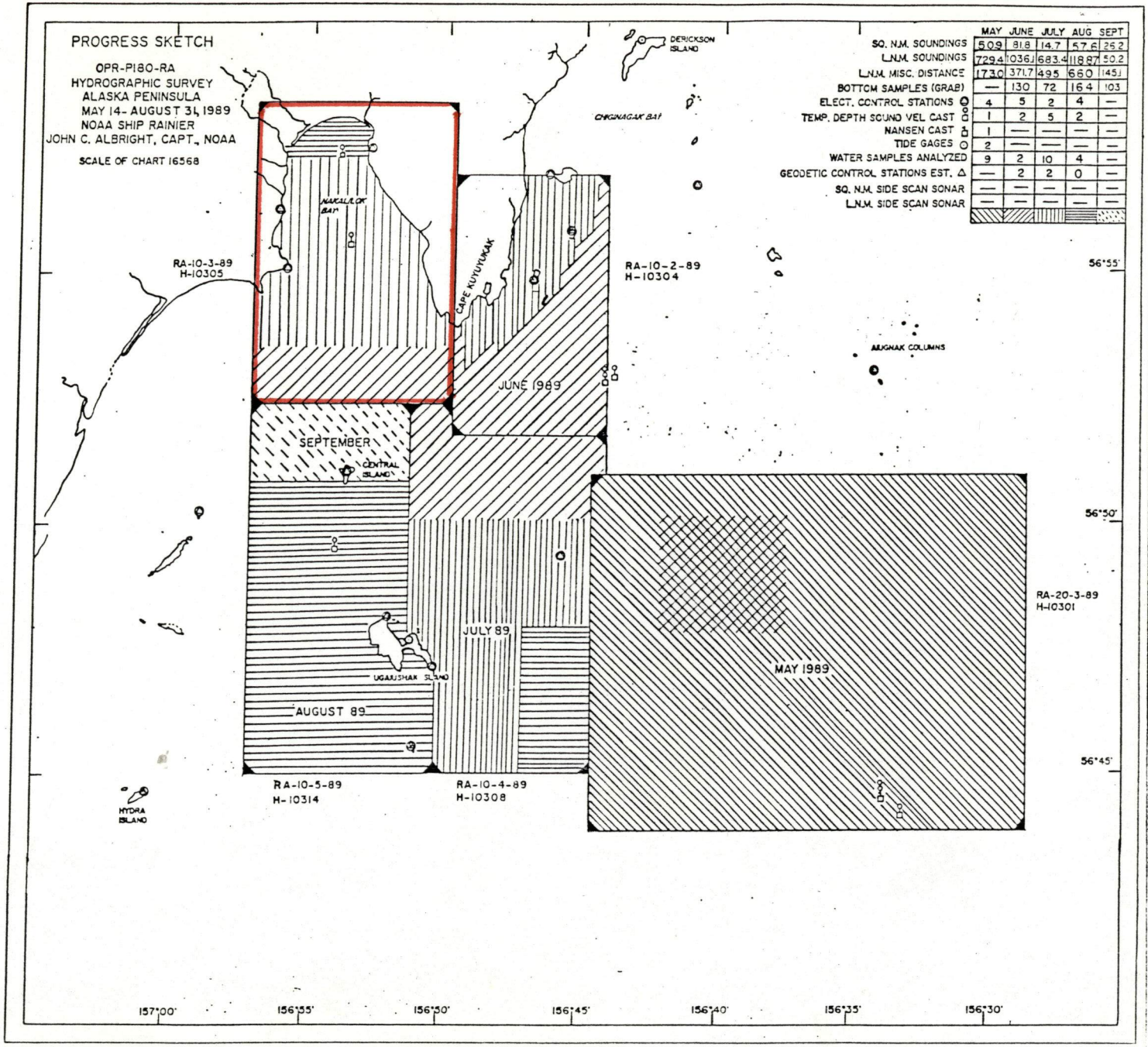
REMARKS: Times in UTC. Revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

AWOIS / SURF MSD 2/20/91

SC 1-30-97
R. W.W.

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215



	MAY	JUNE	JULY	AUG	SEPT
SQ. N.M. SOUNDINGS	509	818	14.7	57.6	25.2
L.N.M. SOUNDINGS	729.4	1036.1	683.4	1188.7	50.2
L.N.M. MISC. DISTANCE	173.0	371.7	495	660	145.1
BOTTOM SAMPLES (GRAB)	—	130	72	164	103
ELECT. CONTROL STATIONS ○	4	5	2	4	—
TEMP. DEPTH SOUND VEL CAST □	1	2	5	2	—
NANSEN CAST □	1	—	—	—	—
TIDE GAGES ○	2	—	—	—	—
WATER SAMPLES ANALYZED	9	2	10	4	—
GEODETIC CONTROL STATIONS EST. △	—	2	2	0	—
SQ. N.M. SIDE SCAN SONAR	—	—	—	—	—
L.N.M. SIDE SCAN SONAR	—	—	—	—	—

Descriptive Report to Accompany Hydrographic Survey H-10305

Field Number RA-10-3-89
Scale 1:10,000
1989

NOAA Ship RAINIER
Chief of Party: Captain John C. Albright, NOAA

A. PROJECT

This basic hydrographic survey along the south central portion of the Alaska Peninsula was completed as specified by Project Instructions OPR-P180-RA dated May 1, 1989 and Change Nos. 1 (May 5, 1989) and 2 (August 3, 1989). The survey is designated Sheet L on the revised sheet layout dated September 16, 1987.

This survey is one in a series which will provide contemporary hydrographic data for existing nautical charts and for a new series of 1:80,000-scale charts. It is part of a continuing program to improve chart coverage of the Alaska Peninsula in response to requests from the U.S. Coast Guard, Alaska congressional delegates, NOAA, Defense Mapping Agency, Fishing Vessel Association, and the Kodiak Shrimp Trawlers Association.

B. AREA SURVEYED

The survey is located along the southern shore of the Alaska Peninsula, and encompasses the large bay in eastern Nakalilok Bay. The survey is bounded to the north by the Alaska Peninsula, and to the south by 56°52'10"N. The east/west limits are 156°49'30"W and 156°57'00"W, respectively. Data acquisition was conducted from June 15 through September 10, 1989 (DN 166 - DN 253).

Numerous ledges exist along the south shores. The north shore is predominantly sandy with few rocks. The bottom is primarily composed of green mud and clay, with sand along the nearshore areas and broken shell and gravel extending south from both capes (Cape Kuyuyukak and the one to the west). Depths in the area range from zero alongshore to 95 fathoms in the south survey area.

C. SOUNDING VESSELS

All data were acquired from NOAA Ship RAINIER, three automated survey launches, and one skiff, as shown below:

Vessel	EDP No.	Operation
RAINIER	2120	Plessey/Nansen Casts
RA-3	2123	Hydrography
RA-4	2124	Hydrography
RA-5	2125	Bottom Samples
RA-7	2127	Shoreline Verification

No changes to the standard sounding configurations were necessary.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

All survey launches were equipped with the Raytheon DSF-6000N echo sounders shown below. The echo sounders were operated in the HIGH + LOW (HIGH DIGITIZED) function, using manual gain controls on both high and low frequencies to obtain the best analog trace. Variations in the instrument initial, stylus arm length, and belt tension are not present in these echo sounders. Soundings were recorded in fathoms and tenths of fathoms. Two-fathom bar checks were conducted and recorded daily, using both the LOW and the HIGH + LOW (HIGH DIGITIZED) functions. The echo sounders were operated in accordance with the Provisional Instructions "Raytheon DSF-6000N Echo-Sounder Operating and Processing Instructions," dated July 5, 1983, and the N/CG2 memorandum "DSF-6000N Depth Errors as a Function of Receiver Gain," dated May 23, 1986.

Raytheon DSF-6000N Echo Sounders

Vessel	Serial No.	DN
2123	A119N	166-188
	A103N	189-196
	A114N	197-253
2124	A103N	179
	A114N	188-191
	A103N	209-222
	A119N	227-242
2125	A117N	179-239

The echo sounders were continuously monitored during data acquisition. All sounding data were scanned at least two times, not only to ensure all significant peaks and deeps were inserted, but also to verify the digitized depths. While running over extremely steep, irregular bottoms, the echo sounders sometimes failed to track properly. Running at minimum speeds usually alleviated this problem, but marginal analog traces could not always be avoided.

Diver-obtained least depths were determined with a 3D Instruments pneumatic depth gage (S/N 8504192N). The gage was operated in accordance with Hydrographic Survey Guideline #55, and was last calibrated March 1, 1989 by the Pacific Operations Group (N/OMA 1214). In addition, field system checks were performed each day the pneumatic gage was used.

Leadline calibrations were performed by RAINIER personnel during February 1989 at PMC. Calibration forms are included in the Summer 1989 Corrections to Echo Soundings Data Package for OPR-P180-RA.

Corrections to Echo Soundings

Corrections to echo soundings were determined for static draft, heave, velocity of sound through water, settlement and squat, and predicted tides. All correctors were applied to the final field sheets. Sounding correctors apply to both narrow and wide beams of the echo sounder. Supporting data and computations for all corrections to echo soundings, except heave, are included in the Summer 1989 Corrections to Echo Soundings Data Package for OPR-P180-RA.

Static Draft ✓

For all launches, the distance from the transducer face to the gunwhale was measured with a large metal carpenter-square. Static draft measurements were then determined by dropping a leadline from the gunwhale to the water and subtracting this distance from the distance measured with the carpenter-square. The measurements from the gunwhale to the waterline were conducted with the fuel tanks averaging 3/4 full and three people aboard. A transducer depth of 0.3 fathom for all launches was determined on February 10, 1989. This transducer depth agrees with the launches' historical records.

Heave ✓

Corrections for heave were applied while scanning. The scanning technique used in comparing the analog trace with the digital record was chosen to eliminate fluctuations greater than 0.2 fathom resulting from sea action. In certain areas, the extremely irregular bottom topography made it sometimes difficult to determine which fathogram features were caused by sea action. Review of data indicated no significant problem

Sound Velocity ✓

Correctors for the velocity of sound through water were determined from the eight Plessey SVD casts listed below:

Cast No.	Deepest Depth (m)	DN	Geographic Position
2	200	163	56°44.4'N, 156°33.4'W
3	140	176	56°52.8'N, 156°44.2'W
4	125	194	56°53.1'N, 156°43.9'W
5	90	196	56°56.0'N, 156°53.7'W
6	100	210	56°55.5'N, 156°52.7'W
8	140	211	56°52.9'N, 156°44.3'W
9	140	224	56°53.4'N, 156°43.3'W
10	180	240	56°49.5'N, 156°54.4'W

The Plessey Sound Velocity Sensor, S/N 5653, was connected to a Hewlett/Packard 5326B Universal Frequency Counter, S/N 1312A02159. The sound velocity sensor was calibrated at Northwest Regional Calibration Center in Bellevue, WA on January 26, 1989.

The thermometers used in the Nansen cast were calibrated between January 6, 1988 and January 19, 1989. The Beckman Salinometer, S/N 24663, was calibrated on March 1, 1989. The thermometers and the salinometer were also calibrated at the Northwest Regional Calibration Center.

A Nansen cast was taken on the same day as Plessey Cast #1 (DN 148) to ensure the Plessey sensors were operating properly. The sound velocities determined by the two methods showed good agreement. Surface water temperatures and samples were obtained during each Plessey cast as additional checks on the Plessey system.

The surface water temperature, and the corresponding sound velocity, increased over time. Two casts were conducted in the northern half of the survey area due to possible freshwater runoff from numerous streams. The casts used for each velocity table, and the days to which each velocity table is applied, are shown below:

Velocity Table No.	Cast No.	Applicable DN	Sheet
1	2	166	Both
2	3	172-179	Both
3	4	188-200	RA-10-3S
4	5	188-200	RA-10-3N
5	6	208-215	RA-10-3N
6	8	208-215	RA-10-3S — No hydrography
7	9	221-229	Both
8	10	234-253	Both

Velocity correctors within each table were computed at 0.1-fathom increments using the PC program VELOCITY. HDAPS listings of each velocity table used are appended to this report. *

Settlement and Squat ✓

Settlement and squat correctors were determined for the automated survey launches at Shilshole Bay, Washington on February 23 and March 3, 1989. The correctors were determined for RAINIER at Turnabout Island, Frederick Sound, Alaska on April 1, 1989. All tests were conducted over a hard bottom in depths well exceeding seven times the vessels' drafts. Both sea and wind were calm. Observations were made through a Zeiss Ni2 leveling instrument (S/N 103453) to a rod held vertically on deck, directly over the transducer.

Ten level readings were made at each speed tested, and the average taken, to compute the correctors. Tide staff readings were taken concurrently with each set of level readings, and all tidal height differences were normalized to the tidal height of the dead-in-the-water level readings before the correctors were computed.

The settlement and squat correctors used on-line are listed in Offset Table 1 which is appended to this report. *

Tide Correctors ✓

Tidal zoning and correctors applicable to predicted tides for the Kodiak, Alaska tide station (945-7292) were provided on the chart accompanying the Project Instructions. The zone applicable to this survey has a height correction ratio of "x 1.18" and time corrections of plus 20 minutes for high water and plus 40 minutes for low water. The HDAPS listings of the data used for computing predicted incremental values from the 1989 NOS Tide Tables are appended to this report. *

* Filed with the hydrographic data

Tide stations at Ugaiushak Island (945-8553) and Derickson Island (945-8522) were established and maintained by RAINIER personnel. Only the Ugaiushak Island tide data was required for this survey, but data from the Derickson Island tide gages may be applicable. The field tide records and the Field Tide Note for both stations have been forwarded to N/OMA121 in accordance with Hydrographic Survey Guideline #50 and Section 4.3 of the Field Procedures Manual (FPM). A request for approved tides has been forwarded to N/OMA121. Copies of the Field Tide Note and the request for approved tides are appended to this report. *

E. HYDROGRAPHIC SHEETS ✓

The two 1:10,000-scale final field sheets (based on a Modified Universal Transverse Mercator projection) are designated RA-10-3N-89 and RA-10-3S-89. Each final field sheet has an accompanying 1:10,000-scale detached position/bottom characteristic overlay. One 1:10,000-scale development overlay was used to portray additional soundings acquired on the southern half of the survey.

Depth contours are drawn on the final field sheets in accordance with the Hydrographic Manual except in areas of steep bathymetry where all prescribed contours could not be drawn without degrading the legibility of the sheets.

All field sheets, accompanying field records, and this Descriptive Report are being forwarded to the Pacific Hydrographic Section (N/CG245) for ~~verification~~ office processing.

F. CONTROL STATIONS ✓

A listing of the geodetic stations used to control this survey is appended to this report. A "*" on the listing marks stations located on offshore islands where the station symbols may obscure the depiction of the islands' shoreline.

Positions for all existing stations are from the NGS data base. All existing stations were recovered in accordance with methods stated in FPM 5.2.4. New stations were positioned in 1989 by RAINIER personnel via closed traverse. The field positions for new stations are unadjusted. All stations meet or exceed Third-order, Class I standards for positioning. Geographic positions are based on the North American Datum of 1927 and the Clark Ellipsoid of 1866. Further information can be found in the Summer 1989 Horizontal Control Report for OPR-P180-RA.

G. HYDROGRAPHIC POSITION CONTROL ✓

Soundings were located using Motorola Mini-Ranger Falcon 484 microwave, multi-range positioning equipment. Positions obtained for bottom samples were acquired using Motorola Mini-Ranger III equipment in HYDROPLOT's range-range mode and converted to an HDAPS format via Contact File Nos. 4, 5, 6, 8, 9, and 10. Several shoreline detached positions were positioned via range/azimuth method, and were entered into Contact File No. 1 for ease in plotting. Listings of all contact files are appended to this report. *

* Filed with the hydrographic data

Positioning Equipment

Two Mini-Ranger Falcon 484 console/R-T pairs, two Mini-Ranger III console/R-T pairs, and nine shore transponders were used during the survey. The following tables summarize the mobile and shore equipment used.

Mobile Equipment

EDP No.	Vessel	Equipment	Console/R-T	DN
2123	RA-3	Falcon	F0247/D2395	166-253
2124	RA-4	Falcon	D0051/911615	178-253
2125	RA-5	MR III	711/F3413	208-213
"	"	"	720/B1405	214-253

Shore Equipment

Transponder Serial No.	Code	Transponder Serial No.	Code
911697	A	B1412	0
G3500	C	D2384	1
911711	D	B1106	2
G3501	F	E2713	3
		B1413	5

Several shoreline detached positions were obtained from Vesno 2127 using the following Wild T-2 theodolite/Wild Distomat 3000 EDMI serial number combinations: 320734 / 67384 and 320741 / 67384 from station PR-52 (121).

Baseline Calibrations

Opening and closing baseline calibrations were conducted over water, and in accordance with FPM 3.1.2.1 (see table below). Calibration data and descriptions of the baselines can be found in the Summer 1989 Electronic Control Data Package for OPR-P180-RA.

Location	Distance	DN	Description
Kodiak, AK	1626 m	130-131	Bell Flats-USCG tidal BM
Chiginagak Bay, AK	1351 m	207	Nonrecoverable shore-to-shore (Codes 1, 3[new], 5 and B)
Seattle, WA	966 m	262-272	Lake Union MR CAL 2

The final field sheets were plotted with the opening baseline calibration correctors, except for data collected by Vesno 2124 and 2125 using Code 1 (S/N D2384), which was plotted with the Kodiak corrector until DN 207, and thereafter plotted with the Chiginagak Bay corrector. Differences between opening and closing baseline correctors agreed within limits specified by FPM 3.1.2.3 for all codes except those listed in the tables below. The hydrographer recommends that opening baseline calibration correctors be applied during final processing, except where the following prorated correctors are applicable. Opening baseline calibrations were used for this survey.

Recommended Prorated Correctors for Console-R\T:

Vessel 2124

D0051/911615 with CODE A	
DN	Corrector (m)
166-174	-21
175-196	-20
197-218	-19
219-240	-18
241-253	-17

Vessel 2123

F0247/D2395 with CODE A	
DN	Corrector (m)
166-168	+0
169-187	+1
188-206	+2
207-225	+3
226-244	+4
245-253	+5

The present HDAPS configuration does not allow field units to change baseline correctors. Prorated correctors are recommended for final processing, assuming N/CG245's HDAPS processing system hardware and software allow for changes to baseline correctors. Opening baseline used, cannot use final baseline correctors to recompute positions

System Check Procedures ✓

Critical systems checks were conducted in accordance with FPM 3.1.2.2. Theodolite-EDMI critical systems checks were used for checking the Mini-Ranger systems. The following Wild T-2/EDMI serial numbers were used: 320734 / 67306. Three-point sextant fixes were also used for critical systems checks, with the following Tamaya sextant serial numbers: T2985, T3007, T3862 (Vesno 2123), and T2975, T3009, T3859 (Vesno 2124). Half-way through the survey, verbal permission was granted by N/CG241 to utilize the multiple-LOP screen dump as a means of obtaining a critical systems check.

Noncritical systems checks were obtained daily when critical checks were not acquired. Noncritical system checks were conducted using the multiple-LOP method. In general, noncritical system checks fell within the allowable rejection limits; no systematic discrepancies with opening baseline correctors were observed.

Problems and Unusual Position Configurations ✓

Mini-Ranger Falcon F0247/D2395 on Vesno 2123 displayed signal strengths of 99 when nearing its signal strength cut-off value. Ranges with low signal strength values were thereby indiscriminately acquired. The HDAPS on-line feature of displaying and recording position quality information (residual and error circle radius (ECR) values) for each sounding allowed the data to be examined on-line and off-line to assure that the maximum residuals never exceeded 0.5 mm at the scale of the survey. If a residual was large, the position was flagged and checked for accuracy.

Null zones and erratic ranges were occasionally experienced due to the destructive interference of direct and reflected microwaves. Time-and-course interpolations were used during data processing to correct the position of soundings taken when launches approached null zones (as indicated by the launches' erratic steering needles and increased ECR and residual values).

A small amount of positioning data was acquired with signal strengths one unit below the computed cutoff values. No soundings acquired during these periods plotted off-line; therefore, positional quality was not affected.

Antenna Offset Distances (ANDIST) ✓

The ANDIST corrector was 0.0 meters for all launches as each launch had its antenna located over the transducer.

H. SHORELINE See section 2 of Form Report

Shoreline features on the final field sheets were transferred from a 1:10,000-scale enlargement of shoreline map ("T-sheet") TP-01152 (1:20,000; 1985). The 18-meter westward shift of all shoreline detail was applied to the T-sheet and all final field sheets in accordance with N/CG2's memorandum dated September 18, 1986 (See attached) ~~Supplemental Appendix~~).

Shoreline verification was conducted in accordance with FPM 7.0. There were no areas where shoreline verification was not completed. Shoreline details which were verified or added to the T-sheet are shown in black on the ~~final field~~ smooth sheets.

Detached positions (D.P.'s) taken at low water indicate that the photography for the T-sheet was flown during a stage of tide higher than MLLW, possibly as high as mid-tide. Ledges were found to be more extensive, isolated rocks often were high points of ledges, and several new rocks were found. Some T-sheet islets were also found to be rocks on ledges, once heights were reduced to the sounding datum. All HWL changes to the T-sheet are shown in red on the ~~final field~~ smooth sheets and listed in the Form Report, Section 2

The following three T-sheet features were disproved:

1. An islet at 56°57.4'N, 156°55.8'W. The area is a sloping sand beach near the mouth of a tidal estuary. The islet was possibly a sand bar which no longer exists.

2. Two rocks at 56°54.0'N, 156°50.3'W and 56°54.2'N, 156°50.6'W. These rocks were searched for visually at a tide two feet less than MLLW, but were not found. Echo sounder depths in these areas ranged from 3 to ~~9~~ 10 fathoms.

Recommendation: Delete the islet and two rocks shown at the positions listed above. Apply to the smooth sheet soundings from this survey. Concur

D.P.'s taken on alongshore and offshore features were recorded on the raw master printouts and in one sounding volume. Position numbers for all D.P.'s are plotted on the two D.P. overlays. Cartographic codes have been included in the field records. Heights are recorded in feet, and are reduced to MLLW based on predicted tides. The heights recorded for islets refer to the features' highest points.

I. CROSSLINES ✓

A total of 37.7 nautical miles of crosslines were run perpendicular to the mainscheme sounding lines, representing 12.2% of the mainscheme hydrography. Crossline soundings agree very well (within two fathoms) with mainscheme soundings. In several instances, the vessel acquiring the crossline data did not acquire the mainscheme data. The agreement between soundings obtained by different echo sounders in a common area is as stated above.

In areas of extremely steep bottom topography, some crossline soundings occurring near mainscheme soundings differed by more than two fathoms. However, considering the surrounding bathymetry, these soundings accurately depict the bottom topography.

J. JUNCTIONS See Evac Report, Section 5

This survey junctions with H-10304 (1:10,000; 1989; east), H-10308 (1:10,000; 1989; southeast) and H-10314 (1:10,000; 1989; south). No contemporary survey exists to the west. No irregularities were found when comparing soundings and depth contours. Minor discrepancies exist in areas of steep bathymetry, but overall agreement of overlapping soundings between surveys is excellent. All soundings agree to within two fathoms of the junction soundings.

K. COMPARISON WITH PRIOR SURVEYS ✓

There are no prior surveys within the limits of this survey.

L. COMPARISON WITH THE CHART ✓

This survey was compared to NOS Preliminary Chart 16568, 6th edition, April 29/89, 1:106,600 (NAD 83).

Comparison of Sounding Features ✓

The seventy-eight charted soundings which lie within the limits of this survey originate from BP 39180. This blueprint was compiled from a 1944 1:20,000-scale USC&GS reconnaissance survey, but was not available for comparison. Sounding agreement between this survey and the chart is fair to ~~good~~ poor (within ~~4~~ 12 fathoms). There is no uniform shift in the positions of charted depths; no general shoaling or deepening trends were observed.

A charted 62-fathom sounding at 56°52.5'N, 156°52.6'W lies in an area of ~~82~~ 74-fathom soundings on this survey. There are no 62-fathom soundings within a half-mile radius. Similarly, a 67-fathom sounding charted at 56°56.2'N, 156°53.6'W lies in an area of 57-fathom soundings. The techniques used for positioning and sounding during the reconnaissance surveys, coupled with the irregularity of the bottom, are the probable causes of any discrepancies found.

Recommendation: Delete the two charted soundings at the positions given above, and apply soundings from this survey to the chart.

Concur

Line spacing was reduced to 50 meters over most of the survey area in order to locate shoal depths and to better define depth contours. Additional shoal developments of 25-, 20-, and 10-meter line spacing were run, both parallel and perpendicular to mainscheme hydrography.

Dive investigations resulted in least depths determined for 17 features identified within the areas of shoal developments. Each echo sounder depth considered for a dive was assigned a dive site number; these numbers, along with the least depths originally investigated, appear on the dive investigation forms. The forms contain detailed descriptions and sketches of each feature and are included within the accordion files submitted with this survey.

Significant diver-obtained least depths which could be legibly plotted on the chart were reported as dangers to navigation. A copy of the dangers to navigation radio message appended to this report includes the position number of each dive. Dive investigations which were not reported as dangers are listed below.

Feature	Dive Site No.	Pos. No.	Geographic Position	Least Depth (fms)
Ridge	2	1578	56°53'23.5"N, 156°50'26.5"W	4.2
Ridge	2A	1576	56°53'16.6"N, 156°50'31.7"W	8.~~4~~6
Ridge	4A	1584	56°54'29.5"N, 156°54'11.7"W	~~7.9~~ 8.0
Pinnacle	8A	6784 ~~(excessed)~~	56°53'21.3"N, 156°55'19.1"W	~~8.9~~ 7.6 (4564/09)
Pinnacle	8B	~~1587~~	56°53'22.6"N, 156°55'23.2"W	10.2 i
Ridge	12	1619	56°55'12.5"N, 156°55'09.8"W	8.8 i

Recommendation: The hydrographer recommends least depths and general soundings found within the survey data be used to update the chart. concur

Non-Sounding Features ✓

In general, rocks, ledges and kelp areas do exist as charted. However, based on predicted tides, some charted rocks were reefs or islets, and ledges were found to be more extensive.

The following charted non-sounding features were disproved:

1. The islet charted at 56°57.4'N, 156°55.8'W was investigated visually at low water and not found. The islet is possibly a sandbar which no longer exists.

2. The foul area charted at 56°55.2'N, 156°53.5'W was investigated by echo sounder and divers. A rock shoal with a least depth of 0.5 fathom (DN 227, Pos. No. 1620) was found at the location of the charted foul area. Small amounts of kelp were visible in the area.

Recommendation: The hydrographer recommends deleting from the chart the two disproved non-sounding features and applying to the chart data from this survey. concur

There are no AWOIS items within the limits of this survey.

Dangers to Navigation ✓

Thirteen dangers to navigation originating from eleven dive investigations and two shoal developments were reported by radio message and letter to the Seventeenth Coast Guard District and the Defense Mapping Agency Hydrographic Topographic Center. A copy of the dangers to navigation correspondence is included with this report. Position numbers assigned to the reported dangers are noted on the radio message.

M. ADEQUACY OF SURVEY ✓

This is the first basic hydrographic survey to be conducted in this area. The survey is complete and adequate to be used for charting purposes, and to supersede any historical data.

Concur

N. AIDS TO NAVIGATION ✓

There are no aids to navigation, bridges, overhead cables, submarine cables, pipelines or ferry routes within the limits of the survey.

O. STATISTICS ✓

Vessel:	2123	2124	2125	2127	Total
# of Pos	3077	911	136	36	4160
NM Hydro	558.7	139.6	0.0	0.0	698.3

NM^2 Hydrography	16.7	Velocity Casts	8
Bottom Samples	136	Tide Stations	2
Detached Positions	229	Current/Magnetic Stations	0

P. MISCELLANEOUS ✓

No current measurements were made during this survey, as no anomalous currents were observed.

All bottom samples have been submitted to the Smithsonian Institution.

The format recommended in Hydrographic Survey Guideline #66 for reporting dangers to navigation was modified for submission by radio message. All the information required in the guideline was included in the radio message forwarded from RAINIER.

In accordance with Section 6.5.2.1 of the Project Instructions, the inlet at $56^{o}58.0'N$, $156^{o}56.5'W$ was visually examined for use as a possible small boat refuge. The inlet is a shallow tidal estuary which can be entered by skiff at high water, but is cut off from sea by a sand beach at low water. This inlet is not recommended as a refuge for small fishing vessels.

Concur

Q. RECOMMENDATIONS

The hydrographer compared the 1987 Coast Pilot No. 9 (13th Ed.) to the chart. The Coast Pilot indicates that Nakalilok Bay extends from Cape Kuyuyukak west to the unnamed cape at longitude 157°05'W which forms the east limit of Yantarni Bay. The hydrographer recommends that the origin of the geographic name "Nakalilok Bay" be reviewed and, if the Coast Pilot usage is confirmed, the name "Nakalilok Bay" on Chart 16568 be centered between Cape Kuyuyukak and the unnamed cape at longitude 157°05'W to portray the true extent of the bay. Present survey portrays Nakalilok Bay as charted.
The hydrographer strongly endorses the Nautical Charting Division's current plan to correct and republish NOS Preliminary Chart 16568 in March/April 1990, and annually thereafter as long as new surveys are available. See subject memos dated July 17, 1989 and August 21, 1989 in the Supplemental Appendix. concur

R. AUTOMATED DATA PROCESSING ✓

HDAPS programs "SURVEY" (Version 3.01-3.03), "FILESYS" (Version 1.11-1.31) and "POSTSUR" (Version 3.01-3.03) were used in the creation of all field sheets, and in the acquisition and processing of data. Version 3.03 of "POSTSUR", field-modified to plot without position numbers and to rotate soundings, was used in plotting the final field sheets. The survey data were forwarded to N/CG245 on 32-track tape cartridges, which store the data by field sheet; therefore, all data are stored on cartridges labelled Sheet 01 (RA-10-3N-89) and Sheet 02 (RA-10-3S-89). A listing of the acquisition and processing hardware components is appended to this report. Field acq/ hydro data

The HYDROPLOT PDP 8/e computer system and the following programs were used to acquire and process bottom sample data obtained by Vesno 2125:

NUMBER	DESCRIPTION	VERSION
RK 112	HYPERBOLIC,R/R HYDROPLOT	3/01/86
RK 201	GRID, SIGNAL, AND LATTICE PLOT	4/18/75
RK 221	COMB R/R & HYPER PLOT	5/30/88
RK 300	UTILITY COMPUTATIONS	10/21/80
RA 362	DATA FORMAT/LINE EDITOR (330 & 602)	8/20/84

HYDROPLOT raw positioning of bottom samples was converted for HDAPS use by computing easting and northing values via RK 300, and entering these values into Contact File Nos. 4, 5, 6, 8, 9, and 10.

The following position numbers were used more than once:

2123:	DN 166	3000-3008, 3015-3024
	DN 195	4488-4585
2124:	DN 210	6525-6572
	DN 213	6741
	DN 214	6751-6781
	DN 221	6782-6783
	DN 222	1587
	DN 238	6785-6790, 6793-6804

S. REFERRAL TO REPORTS ✓

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

Title	Date Sent to N/CG245
Summer 1989 Horizontal Control Report for OPR-P180-RA	October, 1989
Summer 1989 Electronic Control Data Package for OPR-P180-RA	October, 1989
Summer 1989 Corrections to Echo Soundings Data Package for OPR-P180-RA	October, 1989
Summer 1989 Coast Pilot Report, OPR-P180-RA	October, 1989

Respectfully Submitted,

Torsten Duffy
Lieutenant (jg), NOAA

Approved and Forwarded,

John C. Albright
Captain, NOAA
Commanding Officer

CONTROL STATIONS

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY
101	F	056:53:03.001	156:34:16.924	33	250	0.0	0.0	0	06/09/89
115	F	056:51:04.244	156:53:50.796	109	250	0.0	0.0	5	07/28/89
102	F	056:56:42.909	156:41:05.540	16	250	0.0	0.0	0	06/09/89
116	F	056:56:14.461	156:56:03.047	44	250	0.0	0.0	F	08/02/89
117	F	056:47:02.929	156:50:25.485	28	250	0.0	0.0	E	08/24/89
110	V	056:47:42.226	156:51:10.030	29	139	0.0	0.0		06/09/89
111	F	056:54:52.504	156:46:48.812	39	250	0.0	0.0	4	06/09/89
119	F	056:55:04.147	156:55:52.500	32	250	0.0	0.0	3	07/28/89
120	V	056:58:04.612	156:53:23.217	7	139	0.0	0.0		06/09/89
121	F	056:57:09.164	156:53:00.506	6	250	0.0	0.0	2	06/09/89
118	F	056:56:57.521	156:46:21.810	34	250	0.0	0.0	F	06/09/89
112	F	056:48:55.108	156:45:39.204	20	250	0.0	0.0	1	06/09/89
125	V	056:47:51.458	156:52:27.133	138	139	0.0	0.0		06/22/89
010	V	056:47:51.214	156:50:56.714	1	139	0.0	0.0		06/09/89
122	V	056:54:32.546	156:50:18.558	167	139	0.0	0.0		06/22/89
123	V	056:48:03.186	157:00:53.913	11	139	0.0	0.0		06/22/89
124	F	056:48:07.757	156:52:01.751	45	250	0.0	0.0	D	06/22/89
126	F	056:50:15.116	156:50:54.445	32	250	0.0	0.0	F	08/22/89
128	V	056:45:38.956	156:51:05.936	15	139	0.0	0.0		08/11/89
100	V	056:58:33.386	156:32:48.468	11	139	0.0	0.0		00/00/00
129	F	056:44:38.595	157:00:49.893	32	250	0.0	0.0	0	08/21/89
511	F	056:51:04.244	156:53:50.796	109	250	0.0	0.0	2	08/15/89
103	F	046:51:29.174	084:04:08.541	0	250	0.0	0.0		00/00/00
104	F	046:50:10.861	083:51:42.973	0	250	0.0	0.0		00/00/00
165	F	046:59:57.636	083:55:13.153	0	250	0.0	0.0	1	00/00/00

CONTROL STATIONS (By Station Number, Name, and Year)

~~101 AIUGNAK 1944~~
~~102 CHIG 1944~~
~~110 PR-54 1988~~
~~111 KAYAK 1988~~
*112 RADIAL 1988
115 CENTRAL 1944
116 CLIFF 1944
~~117 HAWK 1944~~
~~118 HUEY 1982~~
119 NAKOL 1944
~~120 NAKALILOK EAST BASE 1944~~
121 PR-52 1989
~~122 YUYU 1944~~
~~123 LONG 1944~~
~~*124 PENNY 1989~~
~~125 UGAI 1944~~
126 WOLFF 1989
~~127 CUPCAKE TP 1989~~
~~128 TOEE 1989~~
*129 HYDRA 1944
~~300 KAY CAL PT 1989~~
~~301 UGI CAL PT 1989~~

*Station located on offshore island where station symbol may obscure the depiction of the island's shoreline.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship RAINIER S221
1801 Fairview Avenue East
Seattle, Washington 98102-3767

September 25, 1989

Director
DMAHTC
6500 Brooks Lane
Washington, D.C. 20315

Dear Sir:

While conducting hydrographic survey operations along southcentral Alaska Peninsula, NOAA Ship RAINIER discovered 19 dangers to navigation and six information items. They have been reported to DMAHTC (NAVWARN) and the Seventeenth Coast Guard District. A copy of the correspondence describing them is enclosed.

Sincerely,

for John C. Albright
Captain, NOAA
Commanding Officer

Enclosures

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship RAINIER S221
1801 Fairview Avenue East
Seattle, Washington 98102-3767

September 25, 1989

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

Dear Sir:

Enclosed is a confirmation copy of the radio message forwarded to your office regarding the dangers to navigation which I recommended for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. A copy of a chartlet showing the area in which the dangers exist is also enclosed.

Sincerely,

John C. Albright
FOR Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
N/MOP

KVJ | 261650Z SEP
JH | HAND

PTTUZYUW RUHPTEF2307 2691646-UUUU--RUHPSUU.
ZNR UUUUU
P 261646Z SEP 89
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS
NOAA SHIP RAINIER HAS FOUND NINETEEN DANGERS TO NAVIGATION AND SIX INFORMATION ITEMS ALONG THE ALASKA PENINSULA, ALASKA (PROJECT OPR-P180-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEYS H-10305 (EASTERN NAKALILOK BAY; ITEMS A-M), H-10308 (RADIAL ISLAND AND VICINITY; ITEMS N-U) AND H-10314 (UGAIUSHAK ISLAND AND VICINITY; ITEMS V-Y). REQUEST THE FOLLOWING BE PUBLISHED IN LOCAL NOTICE TO MARINERS FOR SEVENTEENTH COAST GUARD DISTRICT:

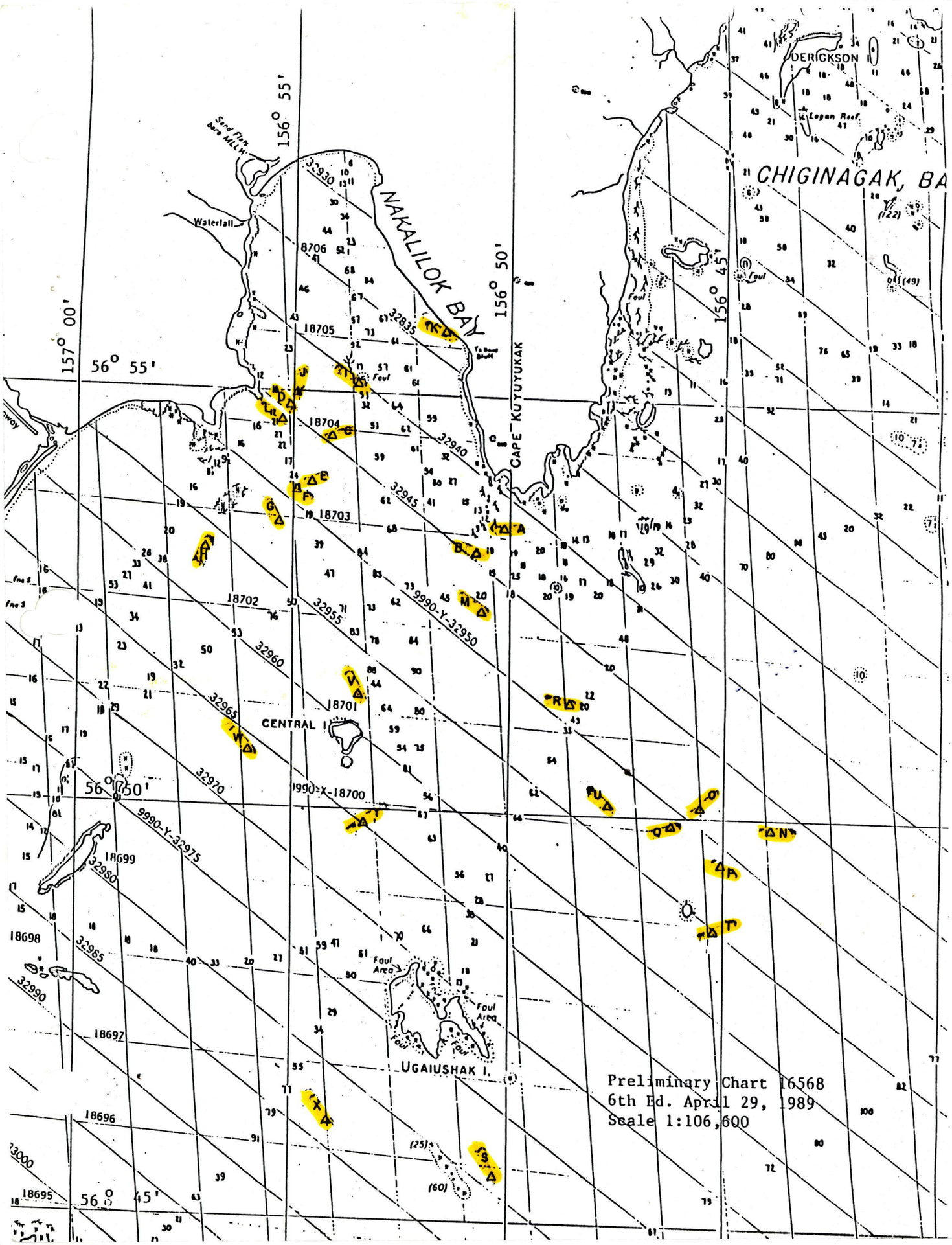
The following depths are not corrected for approximate tides

	dive site #	Pos #
"ROCK SUBMERGED 2 FATHOMS AT LATITUDE 56/53/24.4N, LONGITUDE 156/50/12.9W."	1	1579
B. "ROCK PINNACLE SUBMERGED 1-1/2 FATHOMS AT LATITUDE 56/53/07.3N, LONGITUDE 156/50/51.3W."	3	1582
C. "ROCK SUBMERGED 7-1/2 FATHOMS AT LATITUDE 56/54/31.1N, LONGITUDE 156/54/13.7W."	4	1586
D. "ROCK SUBMERGED 2-1/2 FATHOMS AT LATITUDE 56/54/54.5N, LONGITUDE 156/55/12.6W."	5	1587
E. "ROCK SUBMERGED 7-1/2 FATHOMS AT LATITUDE 56/53/56.5N, LONGITUDE 156/54/39.0W."	6	1633
F. "ROCK SUBMERGED 6-1/2 FATHOMS AT LATITUDE 56/53/51.4N, LONGITUDE 156/55/01.2W."	7	1589
G. "ROCK SUBMERGED 2-1/2 FATHOMS AT LATITUDE 56/53/29.5N, LONGITUDE 156/55/25.9W."	8	6819+4
H. "ROCK SUBMERGED 2-1/4 FATHOMS AT LATITUDE 56/53/06.3N, LONGITUDE 156/57/11.7W."	9	6786
"ROCK PINNACLE SUBMERGED 1/2-FATHOM AT LATITUDE /55/09.9N, LONGITUDE 156/53/37.6W."	10	1620
J. "ROCK SUBMERGED 3/4-FATHOM AT LATITUDE 56/55/03.2N, LONGITUDE 156/55/02.6W."	11	1631
K. "ROCK PINNACLE SUBMERGED 1-3/4 FATHOMS AT LATITUDE 56/55/48.9N, LONGITUDE 156/51/36.9W."	13	1626

	Dive site #	Pos #
I "SHOAL SUBMERGED 9 FATHOMS AT LATITUDE 56/54/43.3N, ITUDE 156/55/25.0W."	——	1689 +2
M. "SHOAL SUBMERGED 11-1/4 FATHOMS AT LATITUDE 56/52/26.2N, LONGITUDE 156/50/39.4W."	——	3554
N. "SHOAL SUBMERGED 10-1/2 FATHOMS AT LATITUDE 56/49/44.1N, LONGITUDE 156/43/56.8W."	——	8112 +3
O. "SHOAL SUBMERGED 10 FATHOMS AT LATITUDE 56/50/00.7N, LONGITUDE 156/45/37.5W."	——	8232 +2
P. "SHOAL SUBMERGED 9 FATHOMS AT LATITUDE 56/49/17.8N, LONGITUDE 156/45/06.6W."	——	8160 +2
Q. "SHOAL SUBMERGED 12-3/4 FATHOMS AT LATITUDE 56/49/45.2N, LONGITUDE 156/46/17.4W."	——	8212 +2
R. "SHOAL SUBMERGED 13-1/4 FATHOMS AT LATITUDE 56/51/17.1N, LONGITUDE 156/48/38.5W."	——	6646 +3
S. "SHOAL SUBMERGED 8-1/4 FATHOMS AT LATITUDE 56/45/22.4N, LONGITUDE 156/50/20.0W."	——	4000
T. HOAL SUBMERGED 14-3/4 FATHOMS AT LATITUDE 56/48/27.7N, TUDE 156/45/14.6W."	——	7076 +3
U. "SHOAL SUBMERGED 12-3/4 FATHOMS AT LATITUDE 56/50/00.3N, LONGITUDE 156/47/44.3W."	——	1523 +5-6
V. "ROCK PINNACLE SUBMERGED 7-3/4 FATHOMS AT LATITUDE 56/51/21.5N, LONGITUDE 156/53/35.0W."	1	4734
W. "ROCK SUBMERGED 4-3/4 FATHOMS AT LATITUDE 56/50/36.5N, LONGITUDE 156/56/07.0W."	2	4763
X. "ROCK SUBMERGED 4-1/4 FATHOMS AT LATITUDE 56/45/59.1N, LONGITUDE 156/54/12.7W."	3	4764
Y. "SHOAL SUBMERGED 15-1/4 FATHOMS AT LATITUDE 56/49/42.6N, LONGITUDE 156/53/25.1W."	——	2250 +10

DEPTHS ARE BASED ON PREDICTED TIDES AND REFERENCED TO MEAN LOWER LOW WATER. GEOGRAPHIC POSITIONS ARE BASED ON NAD83 DATUM. THE NOS CHART AFFECTED IS PRELIMINARY CHART 16568, 6TH EDITION, APR 29/89, 1:106,600.

THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. A L[illegible] WITH ATTACHED CHARTLET WILL BE FORWARDED TO YOUR [illegible]E TO CONFIRM THIS MESSAGE. QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO NOAA PACIFIC MARINE CENTER AT (206) 526-6835.
BT



Preliminary Chart 16568
6th Ed. April 29, 1989
Scale 1:106,600

f 00

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship RAINIER
1801 Fairview Avenue East
Seattle, Washington 98102

July 17, 1989

MEMORANDUM FOR: Rear Admiral Sigmund R. Petersen, NOAA
Director, Pacific Marine Center

FROM: Captain John C. Albright, NOAA
Commanding Officer, NOAA Ship RAINIER

SUBJECT: New Edition Chart 16568

We recently received the new edition of Preliminary Chart 16568 which includes 1987 and previous survey data. A cursory comparison of the chart compilation with FAIRWEATHER field sheet H-10243 (1987) in the Cape Providence area raises several concerns. Either crucial survey data exists but was not shown on the final field sheet or excessive cartographic license was taken during chart complilation. The items below are numbered correspondingly on the attached copies of portions of Chart 16568 and survey H-10243.

1. Does a rock awash really exist at this location, as the chart indicates? Survey H-10243 shows only a least depth of 5.5 fathoms over a rock, as determined by divers. Last summer I selected a route into Chiginagak Bay which passed just south of this feature, between it and the 4-fathom shoal to the south, based on all information available on our copy of field sheet H-10243. Consequently, RAINIER has passed close aboard to this feature many times both last year and this, at various stages of tide. We've seen no evidence of a rock awash. The same is true of our launches and small boats working in the area. If this rock awash exists I will give this area a wider berth. If not, the chart should be revised to accurately portray the available depth.

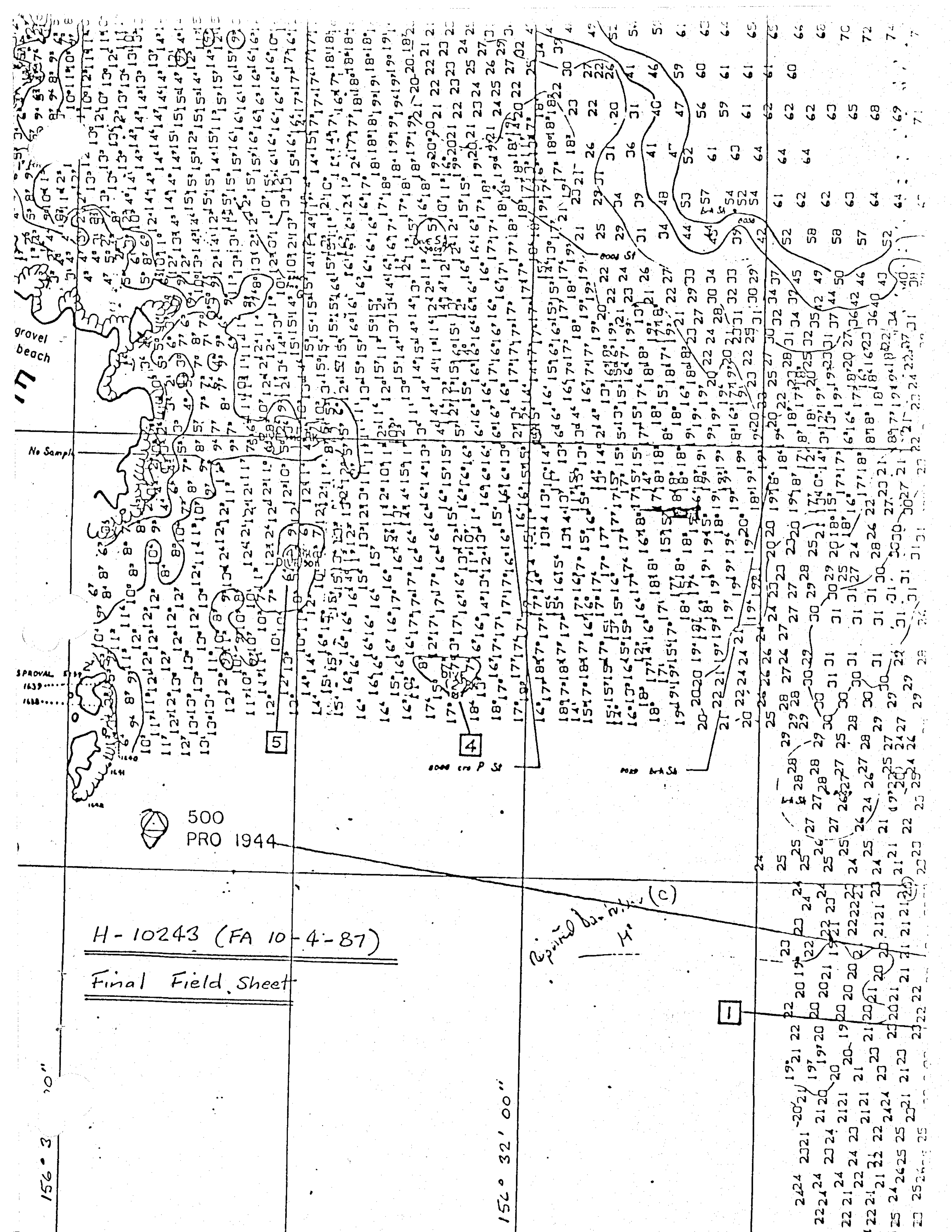
2. The survey records need to be examined to determine if this feature really has a least depth of 4 1/4 fathoms, as charted. I suspect the true depth may be 14 fathoms. Close inspection of a mylar copy of the field sheet reveals that a "1" in front of the "4.2" may have been partially erased to make room for the hand-lettered "11.9." The sounding just to the west is 15.7 fathoms, the "1" just barely discernible on the mylar copy. Adding to my doubt is the absence of a dive investigation on this feature, even though a deeper sounding 0.4 n.m. west, 7.1 fathoms, was dove, and the fact that the feature was apparently not reported as a danger to navigation, as far as I can tell from the marginal notes. Also, the field sheet shows neither the 10- nor 5-fathom depth contours around this feature.

	Chart	Survey H-10243
3.	Rock Awash	Least depth 7.6 fathoms - dive
4.	Rock Awash	Least depth 2.5 fathoms - dive
5.	Rock Awash	Least depth 4.5 fathoms - dive

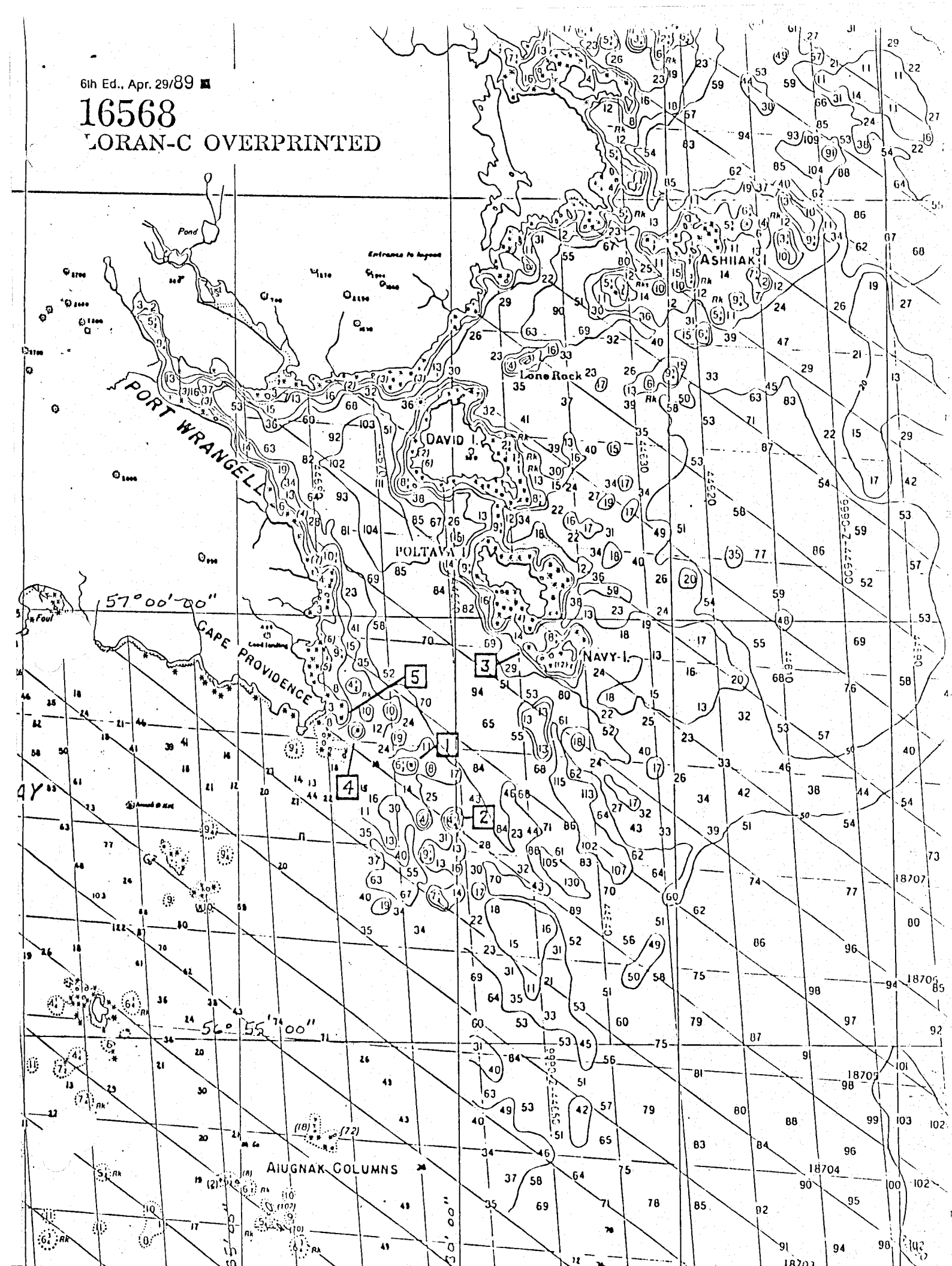
There are additional discrepancies of this nature near Cape Providence. I haven't examined other areas of the chart.

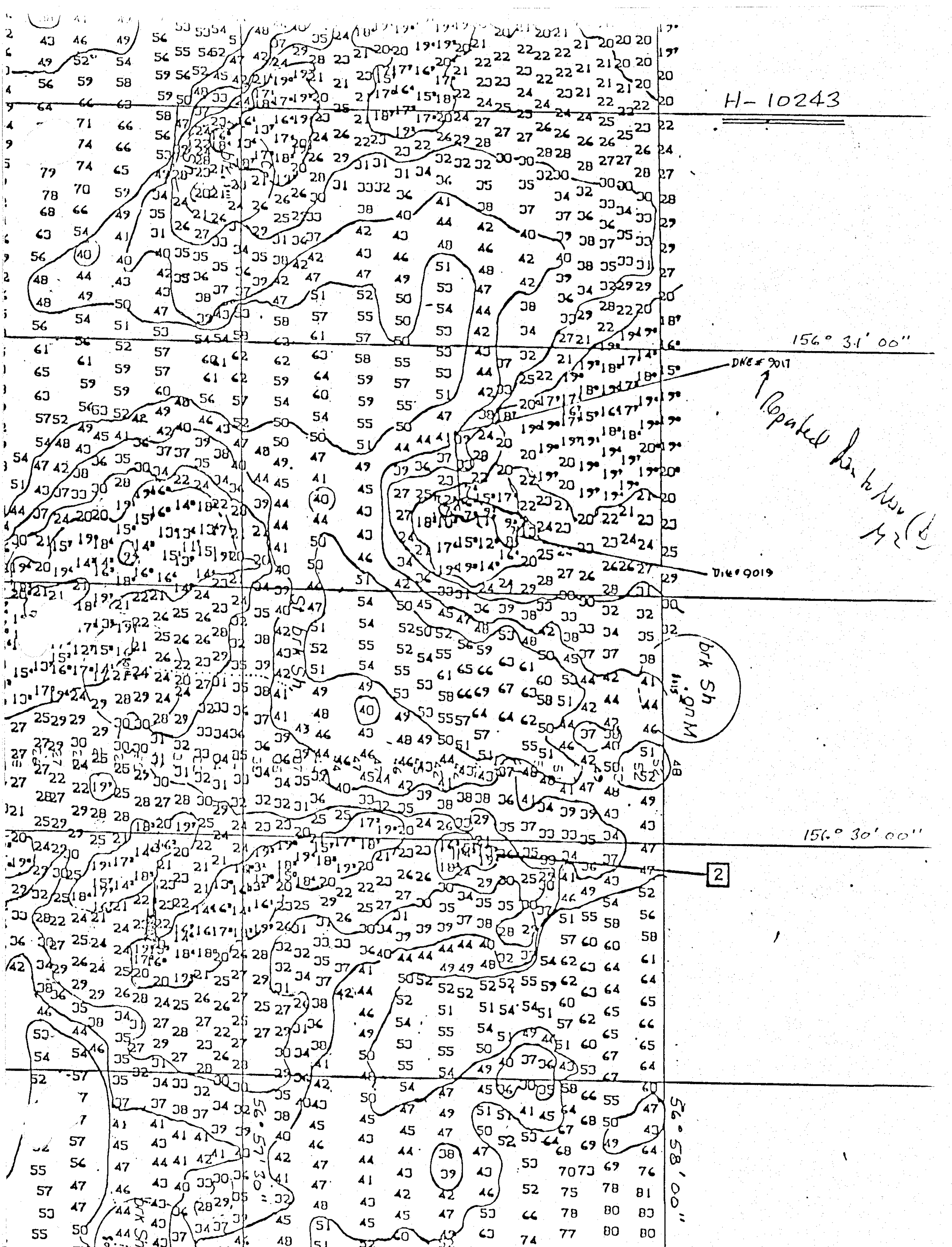
On a related issue, I'd appreciate knowing when the next edition of Preliminary Chart 16568, compiled with 1988 and 1989 data, is scheduled for publication so I can respond to inquiries from local users.

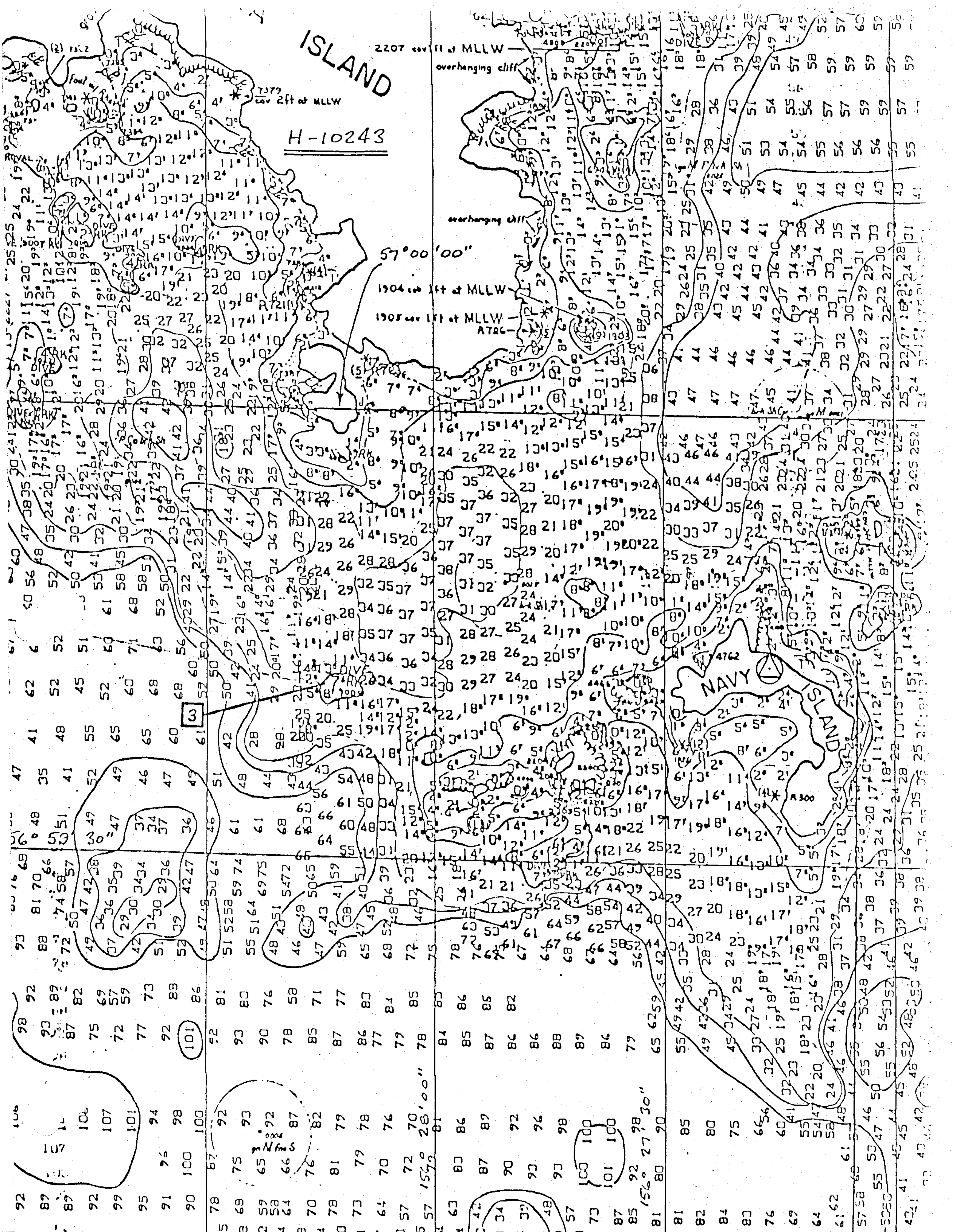
Attachments



gravel beach
No Sample
SPROVAL
500
PRO 1944
5
4
1
(c)
156° 32' 00"
H-10243 (FA 10-4-87)
Final Field Sheet


6th Ed., Apr. 29/89
16568
LORAN-C OVERPRINTED
Pond
Entrance to lagoon
ASHIIAKI
Lone Rock
PORT WRANGELL
DAVID I.
POLTAVA I.
NAVY I.
57°00'00"
CAPE PROVIDENCE
56°55'00"
AIUGNAK COLUMNS
1
2
3
4
5


H- 10243
156° 31' 00"
156° 30' 00"
56° 57' 30"
56° 58' 00"
DNE #9017
brk Sh
2



ISLAND
H-10243
2207 cov 1 ft at MLLW
overhanging cliff
7379 cov 2ft at MLLW
overhanging cliff
57°00'00"
1904 cov 1ft at MLLW
1905 cov 1ft at MLLW
NAVY ISLAND
4762
R300
3
28'00"
27' 30"

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

RECEIVED

PACIFIC MARINE CENTER

AUG 21 198

Action:	Date to MOP
PMC x3	
Orig. x3	CC x1 CO, RA (PMC)
Initial	
Remarks	

COPY FOR YOUR INFORMATION

XO
FOO
Rtn CO

MEMORANDUM FOR: Rear Admiral Sigmund R. Petersen, NOAA
Director, Pacific Marine Center

FROM: Captain Christian Andreasen, NOAA
Chief, Nautical Charting Division

SUBJECT: New Edition Chart 16568

We have not been able to determine how the rocks awash, referred to in your memorandum of July 17, 1989, came to be charted on the 6th edition of chart 16568. The most likely explanation is a misinterpretation of the labels "Rk" on the survey.

The final version of H-10243 will be reexamined prior to the publication of the next edition of chart 16568 and the chart will be brought into agreement with the survey. Chart 16568 is scheduled to be published in March or April 1990; a Notice to Mariners will be issued in the interim. Following the spring 1990 edition, the chart will be republished each year, as long as new surveys are available, then revert to its normal 8-year cycle.

cc:
PMC RA - Albright

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

NOAA Ship FAIRWEATHER
1801 Fairview Ave. East
Seattle, Washington 98102

August 19, 1986

TO: N/MOP - Robert L. Sandquist

FROM: Commanding Officer J. W. Carpenter
NOAA Ship FAIRWEATHER S220

SUBJECT: Aerotriangulation Station and Shoreline Accuracy
for OPR-P180-FA-86

For project OPR-P180-FA-86, Southern Alaska Peninsula, FAIRWEATHER was supplied with 17 aerotriangulated hydrographic control stations (Job CM-8200, Cape Kilokak to Cape Kumlik, Alaska). This field season afforded the first opportunity to use some of the photogrammetric sites for hydrographic control.

To verify the location of station PR-12, launch critical system checks were accomplished using theodolite intersection. Differences of 15 to 20 meters from the Mini-Ranger baseline correctors were found. To verify other photo stations, a First-Order geodetic station (ASH) was occupied with horizontal angles (four-plate settings) turned from a First-Order station (PINA) to PR-72, PR-10, and PR-11. Using the computed distances from ASH to the aerotriangulated stations, differences between the observed and computed angles leads to positional errors of 17 to 18 meters (see Attachment A).

Third-Order, Class I positions were then determined for PR-12, PR-13, and PR-68. All three geodetic positions are approximately 18 meters west of the aerotriangulated positions (see Attachment A). This is the same error that was found with stations PR-72, PR-10, and PR-11, discussed above.

The majority of hydrography running west into the shoreline indicates that the high water line and ledge limits are west of where the shoreline manuscript depicts them. In many cases positive soundings are on or above the high water line. Comparison of detached positions on offshore rocks to the manuscript rock locations is difficult due to the rocks' large size and the launch orientation while taking the fix.

It is recommended that Job CM-8200 be reviewed as an 18-meter error to the east is suspected in both the aerotriangulated positions and the shoreline. FAIRWEATHER will not attempt to use any photogrammetric station positions from this project until the problem is resolved. Geodetic control has been extended south to Cape Providence as of this time.

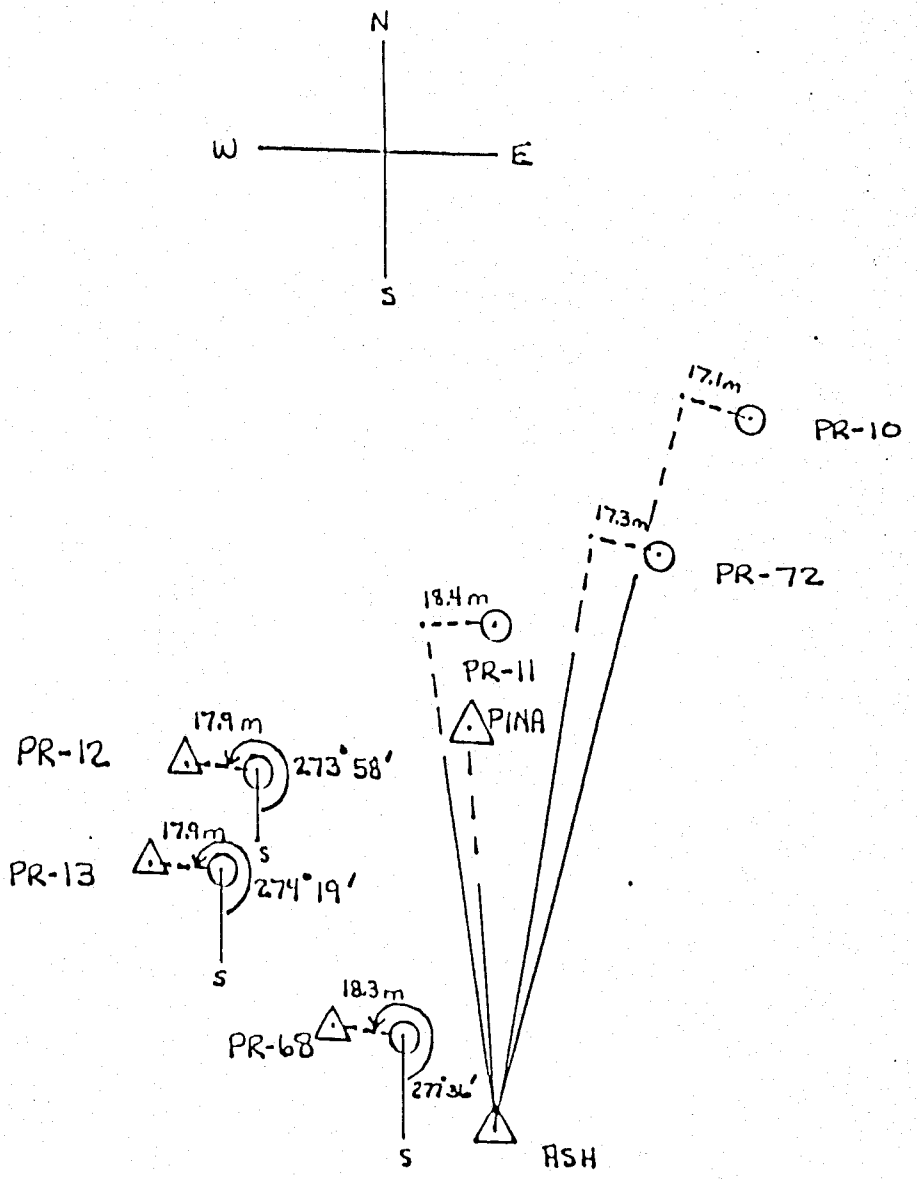
It is felt that to best display manuscript data on the final field sheets all features from the manuscript (including shoreline) should be shifted 1.8 millimeters to the west before application to the final field sheets. As work is beginning on final field sheets H-10214 and H-10215, resolution

of this problem would be appreciated as soon as possible. If instructions have not been received before drafting is to begin, manuscript features will be shifted as described above.

Nautical Chart Branch may have an interest in knowing that the reference number method (PMC OPORDER, Appendix P) was used for verifying the majority of alongshore manuscript rocks. Time and weather conditions will not permit obtaining detached positions on these rocks before the end of the field season.

Attachments

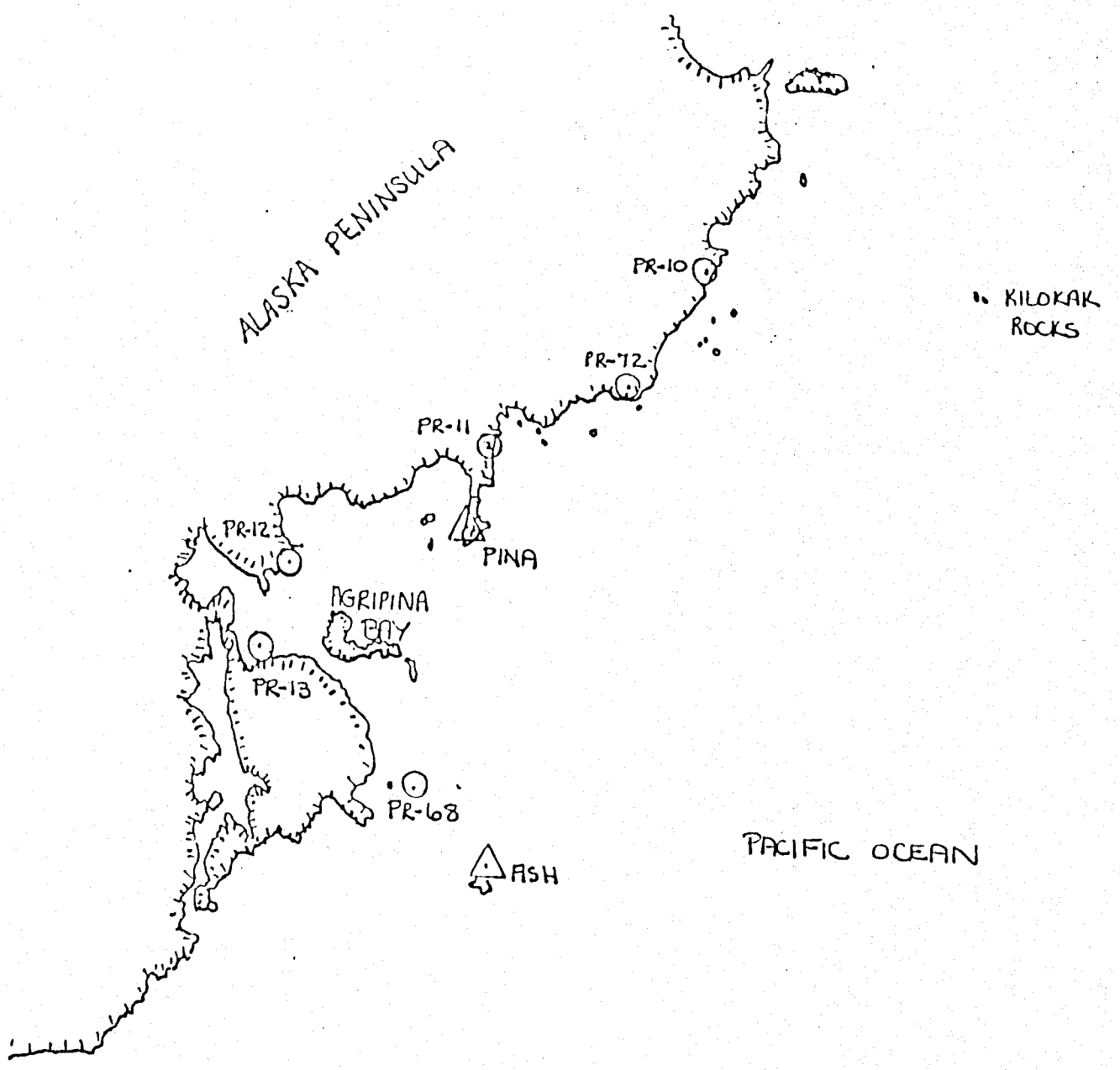
ATTACHMENT A - Displacement of Stations



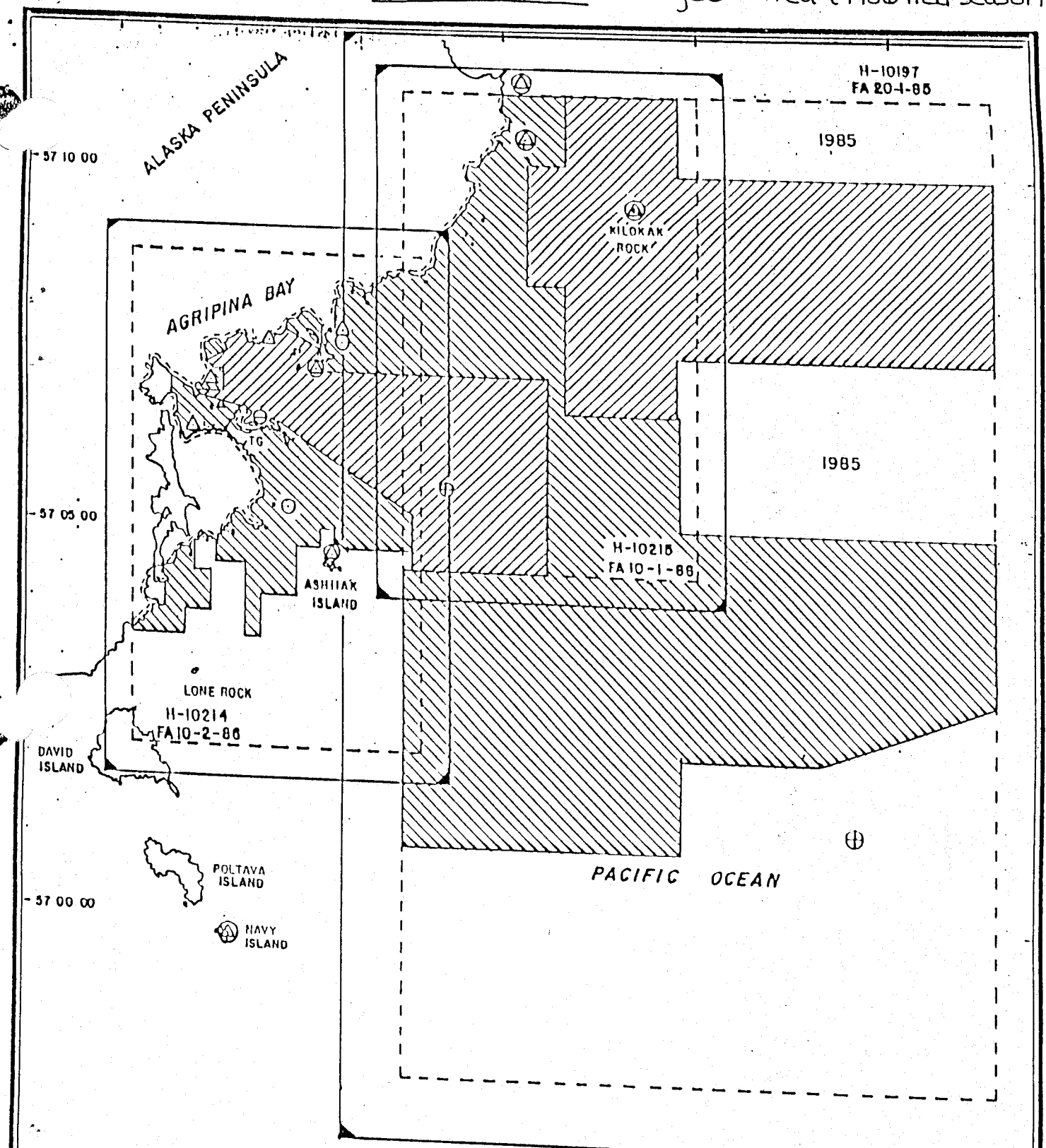
⊙ - Aerotriangulated Positions

△ - Geodetic Positions

ATTACHMENT B - Station Locations



Attachment C - Project Area (1986 field season)



	JUNE	JULY	AUG	SEPT
SQ NM SOUNDING LINE	30	37		
LNM SOUNDING LINE	352	818		
BOTTOM SAMPLE	30	80		
HYDRO CONTROL STATIONS	4	8		
SV/D-NANSEN CAST	3	2		
WATER SAMPLES ANALYZED	4	1		
TIDE GAGE INSTALLATIONS	1	0		
LNM S/L VERIFICATION	3.6	193		
HYDROGRAPHY				

SV/D NANSEN CAST
STA RECOVERED
TG TIDE GAGE
STA ESTABLISHED
S/L VERIFICATION

MONTHLY PROGRESS SKETCH
OPR-P180-FA-86
SOUTHERN ALASKA PENINSULA

KILOKAK ROCKS TO DAVID ISLAND
NOAA SHIP FAIRWEATHER S-220
CAPT JOHN CARPENTER, CMDG
SCALE FROM NOS CHART 16568

156 30 00 156 25 00 156 20 00 156 15 00 156 10 00

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

September 18, 1986 N/CG2311:PD

TO: N/MOP - Robert L. Sandquist

FROM: N/CG2 - J. Austin Yeager

SUBJECT: Aerotriangulation Stations and Shoreline Accuracy for OPR-P180-FA-86

REF: Memorandum to N/MOP from Commanding Officer, NOAA Ship FAIRWEATHER, Same Subject, dated August 19,1986

The Commanding Officer, NOAA Ship FAIRWEATHER S220, has established that the control points furnished by the Aerotriangulation Unit, Photogrammetry Branch (PB), for Job CM-8200, Cape Kilokak to Cape Kumlik, Alaska, have a datum shift of approximately 18 meters. PB investigated this discrepancy and found it correct. When this project was bridged by aerotriangulation, the control points used were based on a [illegible]3 geodetic adjustment. A new geodetic adjustment was [illegible]formed in 1976. This adjustment caused a datum shift in longitude of approximately 1 second and .05 to .1 second in latitude.

Five geodetic control stations were selected from Job CM-8200 extending over the whole project. A comparison was made between the 1948 and 1976 adjustments.

Station	1948 Adjustment	1976 Adjustment	Datum Shift	Meters
Lagoon 1944	57°06'02.626"	57°06'02.722"	.096"	2.97
	156°30'28.250"	156°30'29.290"	1.040"	17.50
Port 1944	57°00'40.699"	57°00'40.792"	.093"	2.87
	156°35'41.795"	156°35'42.836"	1.041"	17.57
Yant 1944	56°50'45.505"	56°50'45.579"	.074"	2.29
	157°06'22.039"	157°06'23.072"	1.033"	17.51
Sut 1925	56°34'17.611"	56°34'17.673"	.062"	1.92
	157°12'56.916"	157°12'57.916"	1.000"	17.08
[illegible]	56°40'38.729"	56°40'38.779"	.050"	1.55
	157°31'53.263"	157°31'54.285"	1.022"	17.40

e mean value of this adjustment is 17.4 meters in longitude and 3 meters in latitude. This should be taken into consideration when applying these manuscripts.

A copy of this Memorandum will be inserted in each Descriptive Report for Job CM-8200.

cc:
N/MOP21 - Richards ✓
N/CG22 - Nortrup
N/CG23 - Brewer
N/CG24 - Matsushige

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

OCT 8 1986 N/MOP21/TWR

RECEIVED
BY _____
OCT 20 1986
NOAA FAIRWEATHER (S220)
Seattle, Washington

TO: Commanding Officer
NOAA Ship FAIRWEATHER

FROM: N/MOP - Robert L. Sandquist

SUBJECT: Aerotriangulation Stations and Shoreline Accuracy for OPR-P180-FA-86.

REF: NOAA Ship FAIRWEATHER Memorandum Dated 8/19/86 Same Subject

REF: N/CG2311 Memorandum Dated 8/19/86 Same Subject

The Photogrammetry Branch has determined that the shoreline map discrepancy reported by FAIRWEATHER was due to photogrammetry using geodetic control based upon a 1948 adjustment during aerotriangulation bridging rather than using the most recent 1976 adjustment. They recommend mean adjustment values of 17.4 meters in longitude and 2.3 meters in latitude be used when applying data from these manuscripts.

Your proposed solution of shifting all manuscript data 1.8 millimeters to the west before applying them to your 1:10,000 scale final field sheets is totally acceptable. The recommended values proposed by the Photogrammetry Branch will be used by the Nautical Chart Branch when compiling the smooth sheets for these surveys.

Further instructions for the future use of data from Job CM8200 will be contained in your 1987 project instructions for OPR-P180.

You are commended for your diligence in uncovering this discrepancy in the field. Well done.

w/Attachment (Ref. 2)
cc: N/CG24
N/MOP211

APPROVAL SHEET

for

H-10305

RA-10-3-89

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.

John C. Albright
Captain, NOAA
Commanding Officer

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY
REVISED

DATE: Jan 23, 1990

MARINE CENTER: Pacific

OPR: P180

HYDROGRAPHIC SHEET: H-10305

LOCALITY: Alaska Peninsula, Gulf of Alaska, Eastern Nakalilok Bay

TIME PERIOD: June 15 - September 10, 1989

TIDE STATIONS USED:
945-8553 Ugaiushak Island, Ak
945-8522 Derickson Island, Ak

PLANE OF REFERENCE (MEAN LOWER LOW WATER):

945-8553	7.91 feet
945-8522	2.31 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:

945-8553	9.2 feet
945-8522	9.3 feet

REMARKS: RECOMMENDED ZONING
For June data, apply a x0.99 range ratio to all heights and a +0 hr 10 min time correction on Derickson Island. For July thru September data, zone direct on Ugaiushak Island.

CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10305

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 1603 16568	B ON PREVIOUS SURVEY NO. TP-01152	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (title)	X	X								1
ALASKA PENINSULA	X	X								2
KUYUYUKAK, CAPE	X	X								3
NAKALILOK BAY	X	X								4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
				Approved:						17
				Charles E. Hamilton						18
				Chief Geographer - N/CG2x5						19
										20
				OCT 18 1990						21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H) (9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10305

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	7
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	6

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	2					
ENVELOPES						
VOLUMES	1					
CAHIERS						
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			
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	189		189
VERIFICATION OF SOUNDINGS	391		391
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION	82		82
COMPILATION OF SMOOTH SHEET		5	5
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		28	28
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	662	33	

Pre-processing Examination by D. Hill	*Beginning Date* 11/2/89	*Ending Date* 11/30/89
Verification of Field Data by R.A. Shipley	*Time (Hours)* 662	*Ending Date* 12/14/90
Verification Check by J. Stringham, C.R. Davies	*Time (Hours)* 55	*Ending Date* 12/28/90
Evaluation and Analysis by C.R. Davies	*Time (Hours)* 33	*Ending Date* 12/28/90
Inspection by D. Hill	*Time (Hours)* 4	*Ending Date* 1-29-91

EVALUATION REPORT
H-10305

1. INTRODUCTION

Survey H-10305 is a basic hydrographic survey accomplished by the NOAA Ship RAINIER under the following Project Instructions.

OPR-P180-RA, dated May 1, 1989
CHANGE NO. 1, dated May 5, 1989
CHANGE NO. 2, dated August 3, 1989

This survey occurred in Alaska and covers an area along Shelikof Strait just west of Cape Kuyuyukak and includes all of Nakalilok Bay. The surveyed area extends from the southern shore of the Alaskan Peninsula to latitude 56°52'10"N and between longitude 156°49'30"W and longitude 156°57'10"W. The bottom configuration is rugged with many rock pinnacles close to or breaking the water surface and a multitude of ledges protruding from the shoreline. The bottom consists of sand, mud, shells and clay. Depths range from zero to 95 fathoms.

Predicted tides for Kodiak, Alaska, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Ugaiushak and Derickson Islands, gages 945-8553 and 945-8522, 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. The TRA and sound velocity correctors are adequate. An accompanying computer printout contains the parameters and the correctors. The electronic control correctors have been determined according to the established procedures and are adequate.

A digital file has been generated for this survey as required by the specifications contained in Hydrographic Survey Guideline No. 52, Standard Digital Data Exchange Format, April 15, 1986. The file, however, is incomplete. Certain feature descriptive information, all line type data and miscellaneous isolated features are not in the digital record due to the present lack of digitizing resources. The user should refer to the smooth sheet for complete depiction of survey data.

2. CONTROL AND SHORELINE

Sections F and G of the hydrographer's report and the Horizontal and Electronic Control Reports for OPR-P180-RA, 1989, contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1988 and 1989 field and published values based on NAD 27. These values were used during office processing. The smooth sheet and accompanying overlays are annotated with NAD 83 adjustment ticks based on values determined by N/CG121. Geographic positions based on NAD 83 may be plotted on the smooth sheet utilizing the NAD 27 projection by applying the following corrections.

Latitude: 2.657 seconds (82.2 meters)
Longitude: -7.376 seconds (-124.9 meters)

The year of establishment of control stations shown on the smooth sheet originates with the survey records and published data.

The quality of 2299 positions exceeds limits in terms of the error circle radius and residual. A review of the data 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 data.

The following shoreline map applies to this survey.

	Photo Date	Class
TP-01152	October 1985	III

Included in the hydrographer's report are three memoranda titled, "Aerotriangulation Stations and Shoreline Accuracy for OPR-P180-FA-86". The first memorandum, dated August 19, 1986, is from the NOAA Ship Fairweather and notes a problem in the relationship between the map projection and the placement of the shoreline. The second memorandum, dated September 18, 1986, is from N/CG2 and confirms the problem as a datum shift. N/CG2 explains that the problem is with the entire shoreline map projection for project CM-8200. The problem centers on the way the aerotriangulation was bridged with control points based on a 1948 geodetic adjustment. However, a new geodetic adjustment in 1976 resulted in a shift in longitude of approximately 1 second (17.4 meters), and .05 to .1 second in latitude (2.3 meters). The shoreline on the smooth sheet has been plotted with a 1.8 millimeters shift applied to the shoreline maps, as approved in the third N/MOP memorandum, dated October 8, 1986.

The following shoreline changes are depicted in red on the smooth sheet and are supported with positional information. They are adequate to supersede the common photogrammetrically delineated shoreline.

Feature	Latitude(N)	Longitude(W)
HWL	56°57'26"	156°55'54"
HWL	56°55'40"	156°56'28"
HWL	56°55'24"	156°56'09"

3. HYDROGRAPHY

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; and

c. show the survey was properly controlled and soundings are correctly plotted.

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.

5. JUNCTIONS

Survey H-10305 junctions with the following surveys.

Survey	Year	Scale	Area
H-10304	1989	10000	East
H-10308	1989	10000	Southeast
H-10314	1989	10000	South

The junction with surveys H-10304, H-10308, and H-10314 are complete. Some soundings have been transferred to survey H-10305 to better portray the bottom in the common area.

6. COMPARISON WITH PRIOR SURVEYS

There are no prior surveys within survey H-10305 limits.

7. COMPARISON WITH CHART

Chart 16568, 6th edition, dated April 29, 1989; scale 1:106,000
Chart 16568, 7th edition, dated April 14, 1990: scale 1:106,000

a. Hydrography

Charted hydrography on the 6th edition of the chart originates from miscellaneous sources. The 7th edition has been updated from the final field sheet submitted by the hydrographer and miscellaneous sources.

Survey H-10305 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are no AWOIS items applicable to this survey.

c. Controlling Depths

There are no charted channels with controlling depths within the area of this survey.

d. Aids to Navigation

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

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 thirteen dangers, rocks and shoals, to the USCG and DMAHTC. Copies of the messages are attached. No additional dangers were discovered during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10305 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

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

Charles R. Davies
Cartographer

APPROVAL SHEET
H-10305

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: 1-29-91

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.

Date: 1/29/91

Commander Pamela ~~Chelgren~~-Koterba, NOAA
Chief, Pacific Hydrographic Section

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Final Approval

Approved: J. Austin Yeager Date: 2/15/91

J. Austin Yeager
Rear Admiral, NOAA
Director, Charting and Geodetic Services

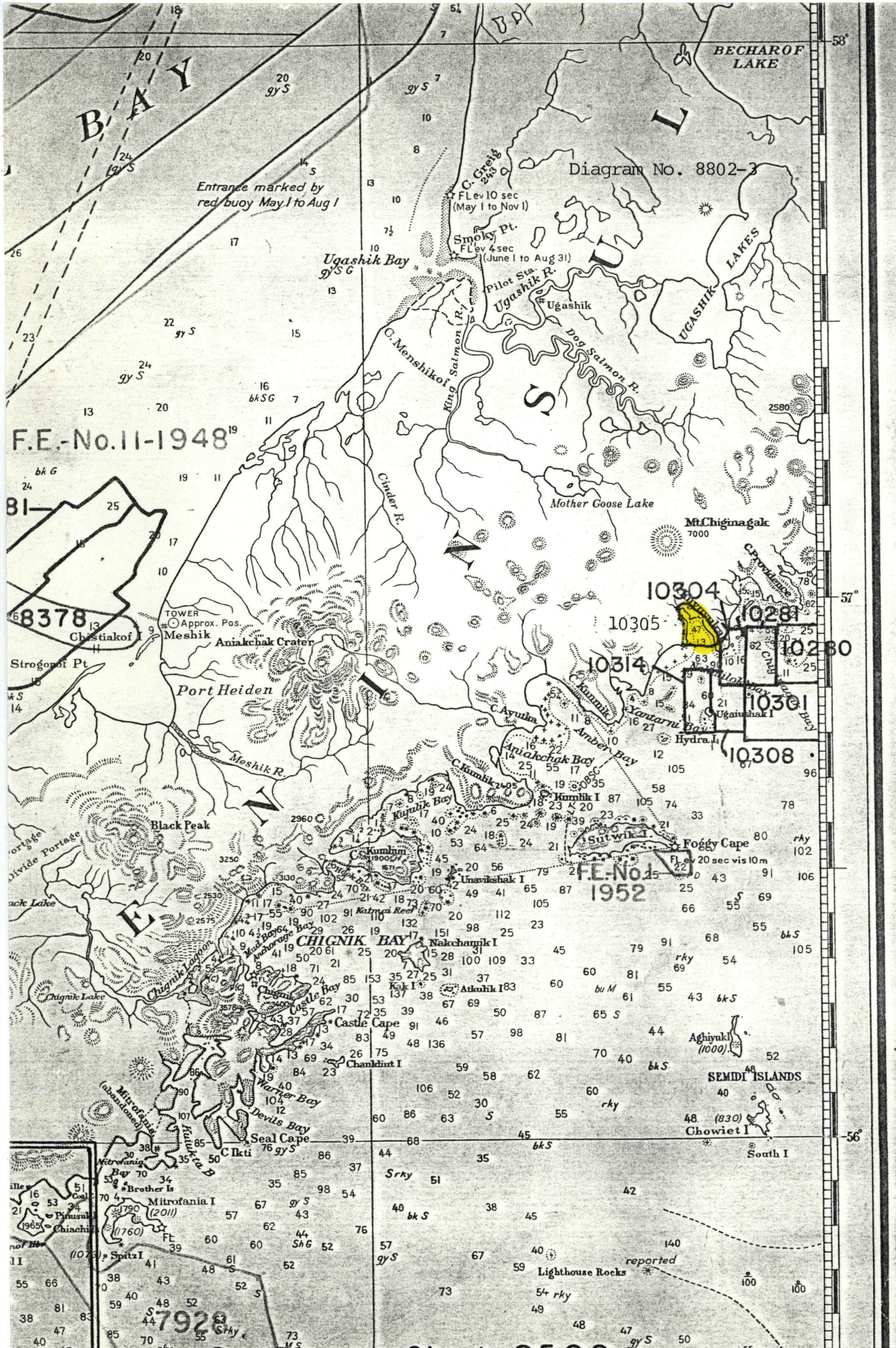
Diagram No. 8802-3
BAY
BECHAROF LAKE
Entrance marked by red buoy May 1 to Aug 1
C. Greig
Fl ev 10 sec (May 1 to Nov 1)
Smoky Pt.
Fl ev 4 sec (June 1 to Aug 31)
Ugashik Bay
Pilot Sta.
Ugashik R.
Ugashik
UGASHIK LAKES
C. Menshikof
King Salmon R.
Dog Salmon R.
Cinder R.
Mother Goose Lake
Mt Chiginagak 7000
C. Providence
F.E.-No.11-1948
8378
TOWER Approx. Pos.
Meshik
Chistiakof I
Strogonof Pt
Aniakchak Crater
Port Heiden
Meshik R.
10304
10305
10281
10280
10314
10301
10308
C. Kumlik
Yantarni Bay
Ugaiushak I
Hydra I
C. Ayutka
Amber Bay
Aniakchak Bay
Kumlik I
Kujulik Bay
Sutwik I.
Foggy Cape
Fl ev 20 sec vis 10 m
F.E.-No.1 1952
Black Peak
Divide Portage
Unavikshak I
Katmai Reef
CHIGNIK BAY
Nakchamik I
Kak I
Atkulik I
Chignik Lagoon
Chignik Lake
Anchorage Bay
Mud Bay
Castle Bay
Castle Cape
Chankliut I
Warner Bay
Devils Bay
Seal Cape
C Ikti
Kuiukta B
Mitrofania (abandoned)
Mitrofania Bay
Brother Is
Mitrofania I
Chiachi I
Spitz I
7928
Aghiyuk I (1000)
SEMIDI ISLANDS
Chowiet I
South I
Lighthouse Rocks reported
57°
56°
58°

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10305

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
16568	12/27/89	ALMACEN	~~Full~~ Part Before ~~After~~ Marine Center Approval Signed Via partial application
			Drawing No. of sndgs from field sheet.
16568	7/16/91	Almacen	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via full application
			Drawing No. of sndgs. from SS.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.

NOAA FORM 75-96
(10-83)

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

EXAMINED FOR NM
GDBU
5-17-91

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10305

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
16568	12/27/89	ALMACEN	~~Full~~ Part Before ~~After~~ Marine Center Approval Signed Via PARTIAL APPLICATION
			Drawing No. OF SDGS FROM FIELD SHEET
16011	6/28/93	Kenny O'Dell KOD	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 31 APPLIED THRU C-16568 # 10.
16013	6/29/93	Kenny O'Dell KOD	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 30 APPLIED THRU C-16011 # 31.
16006	6/30/93	Kenny O'Dell	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 27 APPLIED THRU C-16011 # 31.
500	10-1-93	K. Elliott JK	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 7 Exam, no corrs thru 16006 #27
530	10-1-93	K. Elliott JK	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 36 Exam, no corrs thru 16006 #27
531	10-1-93	K. Elliott JK	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 21 Exam, no corrs thru 16006 #27
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.