H10966

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-20-04-00

Registry No. H-10966

LOCALITY

State Alaska

General Locality West Coast of Kodiak Island

Sublocality Spiridon Bay and Northern Portion of Uyak Bay

2000

CHIEF OF PARTY

Commander Daniel R. Herlihy, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-10966

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-20-04-00

State **Alaska**

General Locality **West Coast of Kodiak Island**

Sublocality **Spiridon Bay and Northern Portion of Uyak Bay**

Scale **1:20,000** Date of Survey **5/15/2000-7/20/2000**

Instructions Dated **4/26/00** Project No. **OPR-P312-RA-00**

Change #1 dated 6/12/2000

Vessel **RAINIER(2120), RA-1(2121), RA-2(2122), RA-3(2123), RA-4(2124), RA-5(2125), and RA-6(2126)**

Chief of Party **Commander D. R. Herlihy, NOAA**

Surveyed by **Ship personnel and physical scientists from Pacific Hydrographic Branch**

Soundings taken by echo sounder, hand lead, pole **Knudsen 320, RESON 8101, SB 1180 & 1050D**

Graphic record scaled by **RAINIER Personnel**

Graphic record checked by **RAINIER Personnel**

Evaluation by **L. Deodato** Automated plot by **HP DesignJet 1050C**

Verification by **R. Mayor, R. Davies, E. Domingo, M. Lathrop**

Soundings in **Fathoms and tenths** at **MLLW**

REMARKS: **Time in UTC.**

Revisions and annotations appearing as endnotes were generated during office processing.

All depths listed in this report are referenced to mean lower low water unless otherwise noted.

Descriptive Report to Accompany Hydrographic Survey H10966

Project OPR-P312-RA-00 Larsen Bay and Approaches
Scale 1:20,000
May-July 2000
NOAA Ship RAINIER
Chief of Party: Commander Daniel R. Herlihy, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-P312-RA-00, dated April 27, 2000, and the Draft Standing Project Instructions dated April 6, 1998. The survey area includes Spiridon Bay and the Northern portion of Uyak Bay and corresponds to sheet B as defined in the project layout. The survey's northern limit is latitude 57°43'06"N[1] and the southern limit is latitude 57°34'25"N. The survey's western limit is longitude 154°03'13"W[2] and the eastern limit is longitude 153°35'18"W[3].

Data acquisition was conducted from May15 to July 20, 2000 (DN 136 to 202). The entire survey area of sheet B was not completed; an area along the northern shore of Spiridon Bay out to approximately ½ nautical mile from shore was not surveyed due to time constraints.[4]

B. DATA ACQUISTION AND PROCESSING

A complete description of data acquisition and processing systems, survey vessels, quality control procedures, and data processing methods, can be found in the *OPR-P312-RA-00 Data Acquisition and Processing Report* submitted under separate cover. Items specific to this survey and any deviations from the aforementioned report are discussed in the following sections.

B1. Equipment and Vessels

Data were acquired by RAINIER and her survey launches (vessel numbers 2120, 2121, 2122, 2123, 2124, 2125 and 2126). RAINIER was used to acquire intermediate-depth multibeam soundings and sound velocity profiles. Vessels 2121, 2123, 2124 and 2126 were used to acquire shallow-water multibeam soundings and sound velocity profiles. Vessels 2122 and 2125 were used to acquire vertical-beam echo soundings and detached positions (DPs). Vessel 2125 was also used to collect bottom samples. No unusual vessel configurations or problems were encountered on this survey. [5]

B2. Quality Control

Crosslines

Vertical Beam Echo Sounder crosslines totaled 32.3 nautical miles, comprising 18.0% of mainscheme hydrography. Crosslines agreed within 1 meter of mainscheme hydrography in relatively flat areas. Many areas in this survey where VBES data were acquired are near shore and steep, therefore crosslines do not always correlate well with mainscheme soundings in these areas. [6]

SWMB crosslines totaled 28.16 nautical miles, comprising 6.0% of SWMB hydrography. The Quality Control Report (CARIS HIPS) for the checkline file averaged 70.49%, with a depth tolerance factor of

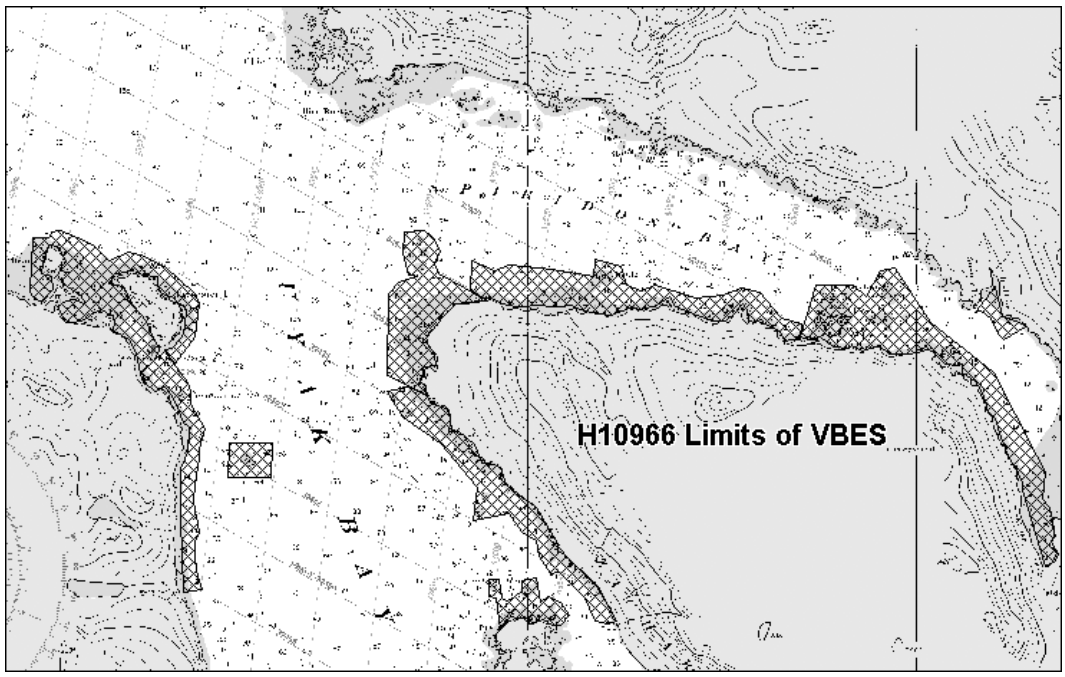


Figure 1: Vertical-beam echsounder survey limits

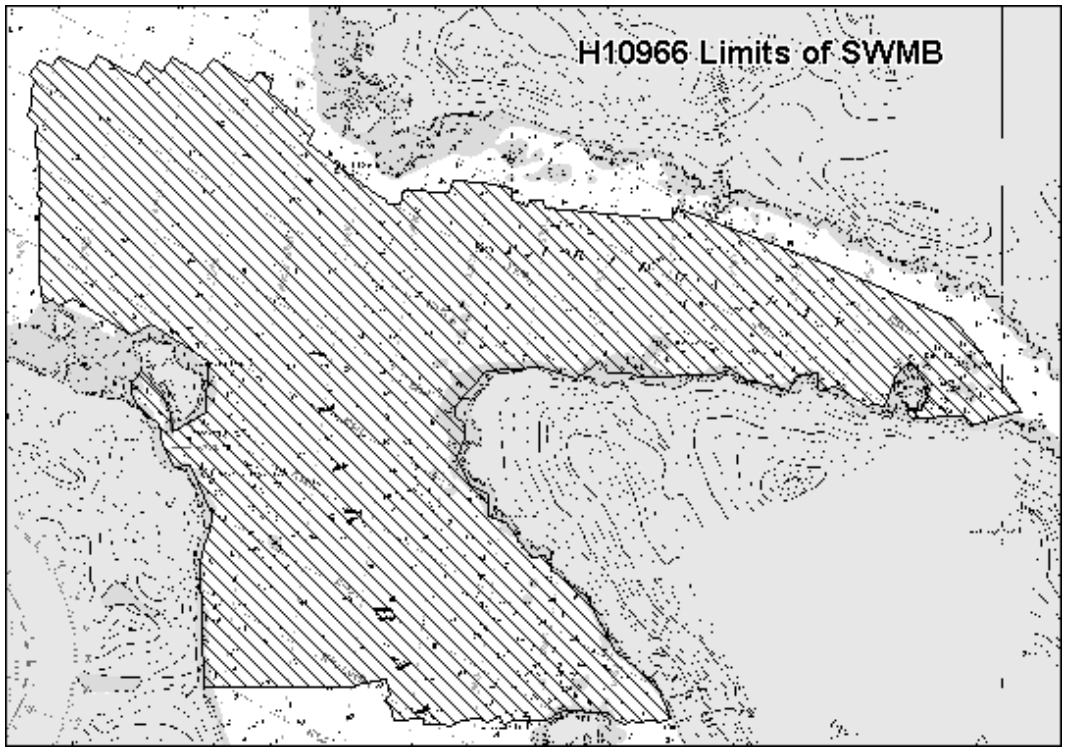


Figure 2: Shallow-water multibeam survey limits

0.013 which conforms to International Hydrographic Organization Order 1 specifications as detailed in Special Publication S-44, Edition 4. During data cleaning, the hydrographer noted no systematic errors that could account for the low checkline value. However, much of the survey was conducted in steeply

sloping or undulating areas, which would account for the low values. [7] See Appendix V for the detailed report. [8]

Junctions

The following contemporary survey junctions with H10966:

Registry #	Scale	Date	Junction side
H10965	1:10,000	2000	Southwest

Survey H10965 junctions very well with this survey, with differences generally one fathom or less.[9]

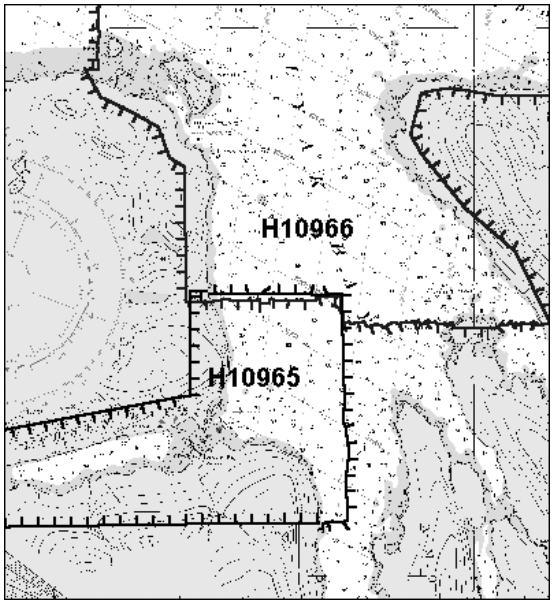


Figure 3: H10966 Survey Junction

Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after the application of smooth tides.[10]

Data Quality Factors

No unusual conditions were encountered during the survey, which affected the expected accuracy and quality of survey data.[11]

B3. Data Reduction

During excessing in HP Tools ZoomEdit, character size was increased from 3.5 to 5.0 mm to allow for proper sounding density on the Final Field Sheet. All other data reduction procedures for survey H10966 conform to those detailed in the *OPR-P312-RA-00 Data Acquisition and Processing Report.*

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H10966 can be found in the *OPR-P312-RA-00 Horizontal and Vertical Control Report* submitted under separate cover. A summary of horizontal and vertical control for this survey follows.

Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. The U.S. Coast Guard Beacons at Kodiak, AK, and Kenai, AK, were the sources of differential correctors. Launch-to-launch DGPS performance checks were performed in accordance with Section 3.2 of the Field Procedures Manual (FPM). Copies of the performance checks are included in the *OPR-P312-RA-00 Horizontal and Vertical Control Report*.

Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide station at Kodiak, Alaska (945-7292) will serve as control for datum determination. RAINIER personnel installed Sutron 8200 "bubbler" tide gauges at the following subordinate stations in accordance with the Project Instructions:

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
Uyak	945-7728	30-day	13 May 2000	20 July 2000
Larsen Bay	945-7724	30-day	13 May 2000	12 June 2000

Raw water level data from these gauges were forwarded to N/OPS1 throughout the project period, with the final package submitted on September 2, 2000 in accordance with Hydrographic Survey Guideline (HSG) 50 and FPM 4.7. The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing.[12] A request for delivery of final approved (smooth) tides for survey H10966 was forwarded to N/OPS1 on August 18, 2000 in accordance with FPM 4.8. Field tide notes, final tide notes, and a copy of the "Request for Approved Tides/Water Levels" are included in Appendix IV[13] of this report.

D. RESULTS AND RECOMMENDATIONS[14]

D.1 Automated Wreck and Obstruction Information System (AWOIS) Investigations

One AWOIS item was within the limits of H10966 and investigated during this survey. Investigation methods, results, and charting recommendations have been entered into the Microsoft Access AWOIS database and are submitted with the digital data. A printout of the AWOIS Database form is included in Appendix VI of this report.[15]

D.2 Chart Comparison

Survey H10966 was compared with chart 16597 (8th Ed.; Oct 7, 1989, 1:80,000) and chart 16599 (6th Ed.; May 5, 1990, 1:20,000).

Depths from Chart 16597 and 16599 were generally one fathom deeper than survey depths.[16] However, the bottom characteristics throughout the survey area are highly irregular, especially around the southern shore of Spiridon Bay and the western shore of Uyak Bay. H10966 frequently located soundings shoaler than those charted in close proximity to charted soundings, likely representing least depths over shoals and pinnacles not located on prior surveys. This is likely attributable to full bottom coverage obtained with SWMB. [17] In several other instances the charted soundings fell on the slopes of these peaks but missed the highpoints, which H10966 located in close proximity. Other notable differences are addressed below.

In the vicinity of a charted 35-fathom sounding at 57º40'41.02"N, 153º46'18.26"W (453,975 E, 6,393,130 N), the present survey revealed a depth of 44 fathoms. The charted sounding is 200 meters away from[18] a similar depth from the present survey, therefore the discrepancy is probably attributable to improved modern positioning and sounding equipment.[19] This area was covered by 100% SWMB.[20]

In the vicinity of a charted 69-fathom sounding at 57º40'28.86"N, 153º47'39.36"W (452,627 E, 6,392,769 N), the present survey revealed a depth of 56[21] fathoms This area was covered by 100% SWMB.[22]

In the vicinity of a charted 45-fathom sounding at 57º39'25.91"N, 153º50'54.78" W (449,365 E, 6,390,862 N), the present survey revealed a depth of 37 fathoms. The charted sounding is 100 meters away from[23] a similar depth from the present survey, therefore the discrepancy is probably attributable to improved modern positioning and sounding equipment. This area was covered by 100% SWMB.[24]

In the vicinity of a charted 52-fathom sounding at 57º40'09.40"N, 153º52'59.14"W (447,321 E, 6,392,233 N), the present survey revealed a depth of 46[25] fathoms, although a depth of 35 fathoms was positioned 220 meters to the northwest. The charted sounding is 170 meters away from[26] a similar depth from the present survey, therefore the discrepancy is probably attributable to improved modern positioning and sounding equipment. This area was covered by 100% SWMB.[27]

In the vicinity of a charted 57-fathom sounding at 57º40'16.99"N, 153º54'14.93"W (446,068 E, 6,392,485 E), the present survey revealed a depth of 61 fathoms. The charted sounding is 140 meters away from a similar depth from the present survey, therefore the discrepancy is probably attributable to improved modern positioning and sounding equipment. This area was covered by 100% SWMB.[28]

In the vicinity of a charted 64-fathom sounding at 57º41'11.65"N, 153º55'03.24"W (445,291 E, 6,394,186 N), the present survey revealed a depth of 60 fathoms. This is in a steeply sloping area; the charted sounding is only 100 meters from a similar depth from the present survey. This area was covered by 100% SWMB.[29]

In the vicinity of a charted 76-fathom sounding at 57º39'50.86"N, 153º55'07.15"W (445,192 E, 6,391,688 N), the present survey revealed a depth of 80[30] fathoms. The charted sounding is 120 meters away from a similar depth from the present survey, therefore the discrepancy is probably attributable to improved modern positioning and sounding equipment. This area was covered by 100% SWMB.[31]

In the vicinity of a charted 142-fathom sounding at 57º41'18.85"N, 153º58'48.28"W (441,567 E, 6,394,461 N), the present survey revealed a depth of 138[32] fathoms. The charted sounding is 260[33] meters away from a similar depth from the present survey, therefore the discrepancy is probably attributable to improved modern positioning and sounding equipment. This area was covered by 100% SWMB.[34]

In the vicinity of a charted 116-fathom sounding at 57º39'07.78"N, 153º56'47.18" W (443,516 E, 6,390,379 N), the present survey revealed a depth of 104 fathoms. This area was covered by 100% SWMB.[35]

In the vicinity of a charted 97-fathom sounding at 57º38'35.29"N, 153º55'18.49"W (444,973 E, 6,389,354 N), the present survey revealed a depth of 94 fathoms. The charted sounding is 270 meters away from a similar depth from the present survey, therefore the discrepancy is probably attributable to improved modern positioning and sounding equipment. This area was covered by 100% SWMB.[36]

In the vicinity of a charted 37-fathom sounding at 57º38'40.6"N, 153º53'53.94"W (446,377 E, 6,389,500 N), the present survey revealed a depth of 23 fathoms. This is in a steeply sloping area; the charted sounding is only 170 meters from a similar depth from the present survey. This area was covered by 100% SWMB.[37]

In the vicinity of a charted 45-fathom sounding at 57º35'40.79"N, 153º50'09.81"W (450,024 E, 6,383,892 N), the present survey revealed a depth of 42 fathoms. This area was covered by 100% SWMB.[38]

In the vicinity of a charted 54-fathom sounding at 57º35'16.90"N, 153º49'20.60"W (450,833 E, 6,383,143 N), the present survey revealed a depth of 41 fathoms. This is in a steeply sloping area; the charted sounding is only 110 meters from a similar depth from the present survey. This area was covered by 100% SWMB.[39]

In the vicinity of a charted 33-fathom sounding at 57º34'51.78"N, 153º48'56.36"W (451,226 E, 6,382,361 N), the present survey revealed a depth of 51[40] fathoms. The charted sounding is 200 meters away from a similar depth from the present survey, therefore the discrepancy is probably attributable to improved modern positioning and sounding equipment. This area was covered by 100% SWMB.[41]

In the vicinity of a charted 28-fathom sounding at 57º35'05.68"N, 153º57'26.50"W (442,759 E, 6,382,902 N), the present survey revealed a depth of 35[42] fathoms. This area was covered by 100% SWMB.[43]

D.3 Shoreline

N/NGS3 supplied photogrammetric shoreline data in raster format for TP-00908W, TP-00908E, TP00316, and TP-00902 for use as source shoreline. The T-sheet (TS) raster images were registered and digitized in MapInfo by RAINIER personnel and the resultant vector data were used in Hypack for field verification. In addition, features shown on the current editions of charts 16597 and 16599 were digitized in MapInfo by RAINIER personnel and displayed in Hypack for field verification.

Shoreline verification was conducted near predicted low water in accordance with the Project Instructions and FPM 6.1 and 6.2. For this survey the general limit of safe navigation of a survey launch was 5-30 meters offshore of apparent low tide. Water depths along this limit of safe navigation were around 4 meters at Mean Lower Low Water (MLLW). Features unreachable by survey launch are the hydrographer's approximate representation of the shoreline.

Detached positions (DPs) taken during shoreline verification were recorded in HYPACK and on DP forms, and processed in HPS. These indicate revisions to features, and features not found on the T-sheet or chart. In addition, hard copies of applicable T-sheets were taken into the field and annotated by hand to reflect verification of source features and updates to both the chart and T-sheet. DP forms are included in Section I of the *Separates to be included with Survey Data.*[44]

A detailed Detached Position and Bottom Sample Plot, in both paper copy and MapInfo format, is provided showing all detached positions and bottom samples with notes relating to each feature. The updated shoreline and features are also depicted on the final sounding plot. An inset is provided at a scale of 1:10,000 for the area encompassing Harvester Island due to the number of features positioned and detail required to depict this area.[45]

Chart Disproval

Chart 16599

The charted rock at 57°39'15.85"N, 154°00'59.7"W (439,334 E, 6,390,689 N), Fix #21300, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius (fixes 55455-55468). It was also covered with 100% SWMB coverage. This rock was labeled "existence doubtful" on the chart. The Hydrographer recommends removing the rock from the chart.[46]

Chart 16597

The charted rock at 57°39'43.52"N, 154°02'32.06"W (437,816 E, 6,391,568 N), Fix #21968, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. The Hydrographer recommends removing the rock from the chart.[47]

The charted rock at 57°39'36.27"N, 154°01'43.53"W (438,617 E, 6,391,332 N), Fix #54899, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. The Hydrographer recommends removing the rock from the chart.[48]

The charted rock at 57°39'31.6"N, 154°01'39.56"W (438,680 E, 6,391,186 N), Fix #54897, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. The Hydrographer recommends removing the rock from the chart.[49]

The charted rock at 57°37'21.01"N, 153°58'53.7"W (441,371 E, 6,387,107 N), Fix #50792, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. The Hydrographer recommends removing the rock from the chart.[50]

The charted rock at 57°34'42.94"N, 153°49'53.64"W (450,271 E, 6,382,100 N), Fix #20404, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. The Hydrographer recommends removing the rock from the chart.[51]

The charted rock at 57°34'46.54"N, 153°49'39.59"W (450,506 E, 6,382,208 N), Fix #20398, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. The Hydrographer recommends removing the rock from the chart.[52]

The charted rock at 57°34'49.54"N, 153°49'21.68"W (450,804 E, 6,382,297 N), Fix #20397, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. It was also covered with 100% SWMB coverage. The Hydrographer recommends removing the rock from the chart.[53]

The charted rock at 57°35'23.88"N, 153°48'54.64"W (451,266 E, 6,383,354 N), Fix #55350, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius (fixes 55351-55362). The Hydrographer recommends removing the rock from the chart.[54]

The charted rock at 57°38'59.06"N, 153°52'15.48"W (448,016 E, 6,390,049 N), Fix #52252, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius (fixes 55241-55263). The Hydrographer recommends removing the rock from the chart.[55]

The charted rock at 57°39'26.78"N, 153°48'16.5"W (451,989 E, 6,390,857 N), Fix #52396, was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. It was

also covered with 100% SWMB coverage. A new rock was positioned 80 meters to the southeast (fix 52395). The Hydrographer recommends removing the rock from the chart and adding the new rock.[56]

The charted rock at 57°38'43.79"N, 153°43'38.11"W (456,589 E, 6,389,476 N), Fix #23388 was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. The Hydrographer recommends removing the rock from the chart.[57]

The charted rock at 57°38'36.73"N, 153°42'41.86"W (457,519 E, 6,389,248 N), Fix #23387 was disproved using a 5-minute echosounder and visual search in a grid pattern over a 50-meter radius. The Hydrographer recommends removing the rock from the chart.[58]

Source Shoreline Disproval

The T-Sheet islet at 57°36'41.01"N, 153°58'59.27"W (441,260 E, 6,385,872 N, Fix #50793) was disproved by visual inspection of the shoreline. The position of the islet was onshore and inaccessible from a survey launch. However, the shore was found to be a gravel beach with an even slope and no discernable islet or other features. This islet is not charted and the Hydrographer does not recommend charting it.[59]

Several changes and new features were found and are depicted on the final DP plot.[60] T-sheet rocks were often identified as high points or extents of new ledges.

The Hydrographer recommends that the shoreline as depicted on the DP and BS plot and final sounding plot supersede and complement shoreline information compiled on the T-sheets as noted. [61]These revisions are recorded in the MapInfo digital files named "H10966_Shoreline" and "H10966_Shoreline_Updates". In addition, field notes made by the Hydrographer, including verification of source features and descriptions of shoreline classification, are submitted in the digital MapInfo file "H10966_Shoreline_Notes."

D.4 Dangers to Navigation

Forty-Six dangers to navigation were found and reported to the Pacific Hydrographic Branch for verification and final submission to the Seventeenth Coast Guard District on December 20, 2000.[62]

A copy of the preliminary Danger to Navigation Report is included in Appendix I[63].

D.5 Aids to Navigation

All aids to navigation within the survey limits were found to be correctly charted and serve their intended purpose.[64]

D.6 Miscellaneous

Project Instructions for project OPR-P312-RA-00 state that the survey is to have 100% multibeam coverage with the possible exception of regions where there is no indication of shoaling. This requirement was not met for survey H10966 due to time constraints. Every effort was taken to minimize the impact of not having full bottom coverage and to this extent, the majority of the bottom coverage gaps

in the survey area are on the order of 15 meters or less with no indications of shoaling, with one exception. In the vicinity of one SWMB coverage gap located 600 meters northwest of Anguk Island at 57°39'09.81"N, 153°42'25.15"W (457,807 E, 6,390,267 N), outer beams past 60° off nadir were accepted in an attempt to fill the hole. These outer beams were accepted in CARIS line mode and then reexamined in subset mode. However, there is still a gap that measures approximately 25 meters wide and 70 meters long. This gap appears to be over the high point of a rock and depths surrounding the rock are on the order of 15 fathoms with the shoalest depth surveyed being 2.8 fathoms. Examination of the SWMB data indicates the possibility of a shoaler depth in the coverage gap. The Hydrographer recommends charting this as a dangerous submerged rock with a unknown depth.[65] Possible traffic in this area would be that of fishing vessels with a size on the order of 30 to 40 feet.

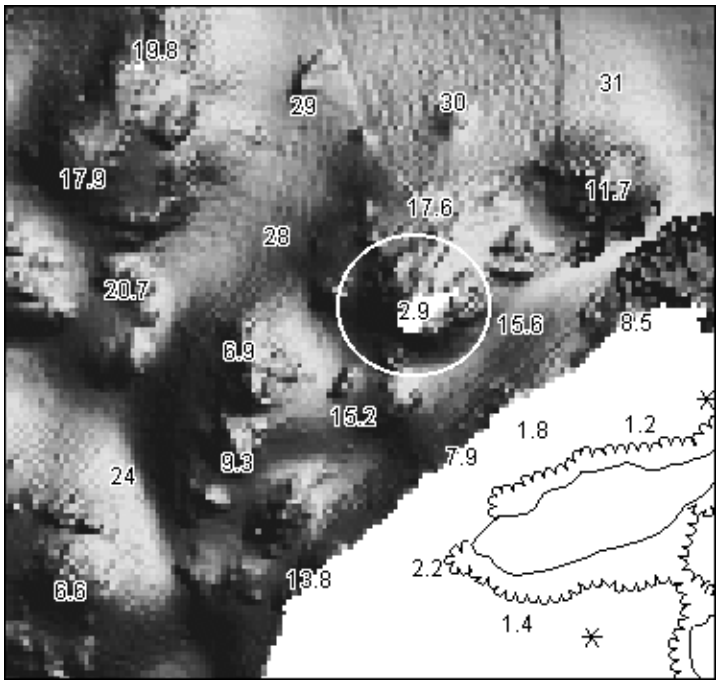


Figure 4: Shoal with coverage gap northwest of Anguk Island

E. APPROVAL

As Chief of Party, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; the Field Procedures Manual, and the NOS Hydrographic Surveys Specifications and Deliverables, as updated for 2000.

The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.

Survey H10966 was not completed to the 4-meter curve along the north shore of Spiridon Bay due to time constraints. Fishing gear also prevented adequate inspection around the north and northwest shores of Harvester Island. Additionally, hydrography acquired east of 153°39'45.71"W were VBES data only run at 100-meter line spacing, and should be considered reconnaissance hydrography only (this area is denoted on the Final Field Sheet). As a result, further development is recommended in this area as well as the waters surrounding the northern shore of Spiridon Bay and Harvester Island.[66] Otherwise, H-10966 is adequate to supersede charted soundings and features in their common areas.[67]

Listed below are supplemental reports submitted separately which contain additional information relevant to this survey.

Title	Date Sent	Office
Data Acquisition and Processing Report for OPR-P312-RA-00	October 13, 2000	N/CS34
Horizontal and Vertical Control Report for OPR-P312-RA-00	October 13, 2000	N/CS34
Tides and Water Levels Package for OPR-P312-RA-00	September 2, 2000	N/OPS1
Coast Pilot Report for OPR-P312-RA-00	TBD	N/CS26

Approved and Forwarded: Daniel R. Herlihy

Daniel R. Herlihy
Commander, NOAA
Commanding Officer

In addition, the following individuals were also responsible for overseeing data acquisition and processing of this survey:

Survey Sheet Manager: Bradley H. Fritzler

Bradley H. Fritzler
Ensign, NOAA

Field Operations Officer: E. J. Van Den Ameele

Edward J. Van Den Ameele
Lieutenant, NOAA

AWOIS/SURF
6/24/04

[1] PHB Revision - Revise GP to 57°43'00"N
[2] PHB Revision - Revise GP to 154°03'00"W
[3] PHB Revision - Revise GP to 153°35'52"W
[4] The unfinished portion of this survey will be completed at some future date.
[5] Concur
[6] Concur
[7] Concur
[8] Filed with the hydrographic data.
[9] Concur
[10] Concur. The junction with survey H10965 is complete. A "Joins" note has been added to the smooth sheet where applicable.
[11] Concur
[12] Concur. Approved tide note dated November 2, 2000 is attached.
[13] Filed with the hydrographic data.
[14] The present survey was compared to the following prior surveys.

Survey	Year	Scale	Datum
H2964	1908	1:10,000	Unknown
H2981	1908	1:20,000	Unknown
H4937	1929	1:20,000	NAD27
H4938	1929	1:20,000	NAD27
H4941	1929	1:20,000	NAD27
H4948	1929	1:40,000	NAD27
H4949	1929	1:10,000	NAD27
H4950	1929	1:20,000	NAD27

The above prior surveys were conducted using early echo sounder technology, leadlines, and visual positioning. Present survey depths reflect a consistent shoal bias of 1-3 fathoms. These depth differences can be attributed to present state-of-the-art positioning, sounding, and data acquisition techniques. In the vicinity of Uyak Anchorage, the hydrographer use chart 16597 with a scale 1:80,000 for the comparison of charted features. Chart 16599 with a scale of 1:20,000 should have been used in this area. This caused some charted rocks not being investigated. The uninvestigated rocks originating from prior surveys H02964, H04937, H04949, and H04950 were transferred to the present survey. With the transfer of the rocks, the present survey is adequate to supersede all prior surveys within the common area.
[15] Copy is attached.
[16] Concur
[17] Concur
[18] PHB Revision - Strikethrough ~~-away from~~ and replace with SE of
[19] Concur
[20] Concur
[21] PHB Revision - Strikethrough ~~56~~ and replace with 53
[22] Concur
[23] PHB Revision - Strikethrough ~~-away from~~ and replace with E of
[24] Concur
[25] PHB Revision - Strikethrough ~~46~~ and replace with 50
[26] PHB Revision - Strikethrough ~~-away from~~ and replace with NE of
[27] Concur
[28] Concur
[29] Concur
[30] PHB Revision - Strikethrough ~~80~~ and replace with 87
[31] Concur
[32] PHB Revision - Strikethrough ~~138~~ and replace with 140
[33] PHB Revision - Strikethrough ~~260~~ and replace with 140
[34] Concur

[35] Concur
[36] Concur
[37] Concur
[38] Concur
[39] Concur
[40] PHB Revision - Strikethrough ~~51~~ and replace with 50
[41] Concur
[42] PHB Revision - Strikethrough ~~35~~ and replace with 34
[43] Concur
[44] Filed with the hydrographic data
[45] PHB Revision, the area mentioned above was drawn at a scale of 1:20,000 on the smooth sheet.
[46] Concur
[47] Concur with clarification, this rock is charted on Chart 16599 and its charted position should have been used in the search. A new rock was found 90 meters to the south of the charted rock. It is recommended that the charted rock be removed and the new rock with a height of 3 feet at MLLW at latitude 57/39/41.03N, longitude 154/02/30.74W be charted.
[48] Concur with clarification; the rock charted on 16597 is a 1 ¾ fathom sounding on chart 16599. It is recommended that the charted rock on chart 16597 be removed and depths from the present survey be used for charting.
[49] Concur
[50] Concur
[51] Concur
[52] Concur
[53] Concur
[54] Concur with clarification, a new rock was found 60 meters to the northwest of the charted rock. It is recommended that the charted rock be removed and the new rock with a height of 1 foot at MLLW at latitude 57/35/24.84N, longitude 153/48/57.65W be charted.
[55] Concur
[56] Concur
[57] Concur
[58] Concur
[59] Concur
[60] Concur
[61] Concur
[62] Concur
[63] PHB Revision -- strikethrough ~~included in Appendix I~~ and replace with attached
[64] Concur with clarification. Harvester Island Spit Light 2 (LL #26960) was not positioned during survey operations and not shown on the smooth sheet. It should be retained as charted.
[65] Concur; retain submerged rock with unknown depth as charted.
[66] Concur
[67] Concur with clarification; with the transfer of prior survey data, survey H-10966 is adequate to supersede all charted data in the common area.

RECRD	52584	VESSLTERMS	OBSTRUCTION	CHART	16597	AREA	P
		CARTOCODE	0067	SNDINGCODE		DEPTH	

LAT83	57 36 52.88	LONG83	153 57 11.91	NATIVDATUM	31
LATDEC:	57.614688888889	LONDEC:	153.95330833333	GPQUALITY	Low
				GPSOURCE	Scaled

PROJECT	OPR-P312	ITEMSTATUS	Assigned	SEARCHTYPE	Full
RADIUS	500	INIT	MCR	ASSIGNED	4/11/00
TECNIQ	MB,ES				

Techniqnote

History

HISTORY
CL171/42--COE, ON FEB. 5, 1942 THE SURVEY VESSEL ROBERT GRAY DISCOVERED AN UNCHARTED SUBMERGED REEF LOCATED IN APPROX. POS. 57 36 45N, 153 57 30 (NAD 27?). SOUNDING DEVICE RECORDED A 20 FT DEPTH, TWO HOURS BEFORE LOW WATER. FEATURE WAS CHARTED AS 2 1/2 FM
H-4948/29--SOUNDING LINES MISSED THE FEATURE.

Fieldnote

INVESTIGATION

DATE(S): 05/15/00 AND 05/16/00 (DN: 136, 137)

VN: 2125 AND 2124 TIME:1825Z AND 1946Z RESPECTIVELY

INVESTIGATION METHODS USED: (IE DI, 200% SIDE SCAN SONAR, ECHO SOUNDER) VERTICAL BEAM ECHO SOUNDER AND 100% SHALLOW WATER MULTIBEAM ECHOSOUNDER

OBSERVED POSITION: LAT. LON. N/A

POSITION DETERMINED BY: DIFFERENTIAL GPS

INVESTIGATION SUMMARY: AN INITIAL INVESTIGATION WAS CONDUCTED WITH SINGLE BEAM SOUNDINGS AND THEN FOLLOWED UP WITH 100% MULTIBEAM COVERAGE. NO INDICATION OF THE SHOAL WAS EVIDENT AND THE LEAST DEPTH IN THE SEARCH RADIUS WAS 28 FATHOMS.

CHARTING RECOMMENDATION (HYDROGRAPHER): HYDROGRAPHER RECOMENDS REMOVING THE 2 1/2 FTM SOUNDING AND REPLACING IT WITH AN APPROPRIATE SOUNDING FROM SURVEY H10966

EVALUATOR COMMENTS:Concur

Proprietary

YEARSUNK NIMANUM

Print Record

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

NOAA Ship RAINIER
December 29, 2000

Commander (mon)
Seventeenth Coast Guard District
Post Office Box 25517
Juneau, Alaska 99802-5517

ADVANCE INFORMATION

Dear Sir or Madam:

It is requested that the following dangers to navigation be included in the Local Notice to Mariners. The NOAA Ship RAINIER positioned these feature while conducting hydrographic survey H10966 in Spiridon Bay and north Uyak Bay, May to July 2000. The dangers are shown graphically on the attached chartlet.

The following dangers to navigation affect the following charts:

Chart	Scale	Edition	Date
16597	1:81,436	8th	7-October-1989
16599	1:20,000	6th	5-May-1990

The positions are on the North American Datum of 1983 (NAD83) datum and depths have been corrected to Mean Lower Low Water (MLLW) using observed water level data.

Feature	Depth (fm)	Latitude (N)	Longitude (W)	Depth (m)
Sub. Rock	1½	57° 38' 42.770" N	153° 40' 40.870" W	3.1
Ledge	0¼	57° 38' 35.660" N	153° 42' 28.100" W	0.5
Sub. Rock	Unknown	57° 39' 09.805" N	153° 42' 25.148" W	Unknown
Sounding	0¼	57° 39' 05.732" N	153° 59' 06.775" W	0.7
Sounding	0½	57° 38' 31.887" N	153° 39' 45.385" W	1.3
Sounding	0¾	57° 37' 30.744" N	153° 52' 13.009" W	1.8
Sounding	1¼	57° 39' 22.177" N	153° 47' 49.538" W	2.4
Sounding	1¼	57° 38' 34.544" N	153° 52' 57.529" W	2.5
Sounding	1½	57° 39' 03.614" N	153° 48' 54.537" W	3.2
Sounding	1¾	57° 38' 49.913" N	153° 45' 17.658" W	3.5
Sounding	2¼	57° 39' 05.577" N	153° 52' 16.944" W	4.5
Sounding	2½	57° 39' 03.310" N	154° 00' 56.321" W	5
Sounding	2¾	57° 38' 53.272" N	153° 43' 50.324" W	5.4
Sounding	2¾	57° 39' 09.800" N	153° 41' 53.593" W	5.4
Sounding	2¾	57° 37' 21.011" N	153° 58' 40.505" W	5.4
Sounding	2¾	57° 39' 11.217" N	153° 48' 19.266" W	5.4
Sounding	3¼	57° 34' 49.469" N	153° 50' 29.465" W	6
Sounding	3¼	57° 38' 37.635" N	153° 42' 57.988" W	6.2
Sounding	3½	57° 38' 19.760" N	153° 52' 43.488" W	6.8
Sounding	3¾	57° 39' 01.945" N	153° 52' 42.185" W	7.1

Feature	Depth (fm)	Latitude (N)	Longitude (W)	Depth (m)
Sounding	4	57° 39' 24.511" N	153° 59' 28.768" W	7.4
Sounding	4¼	57° 37' 42.821" N	153° 53' 26.115" W	8.2
Sounding	4½	57° 35' 08.338" N	153° 49' 52.960" W	8.2
Sounding	4½	57° 36' 38.986" N	153° 51' 10.836" W	8.5
Sounding	4¾	57° 35' 28.026" N	153° 49' 19.836" W	9
Sounding	4¾	57° 38' 57.800" N	153° 52' 56.929" W	9
Sounding	5¼	57° 38' 26.012" N	153° 59' 40.766" W	9.6
Sounding	5¼	57° 39' 08.831" N	153° 41' 00.586" W	9.6
Sounding	5½	57° 39' 43.445" N	153° 52' 40.310" W	10.4
Sounding	5½	57° 38' 55.879" N	153° 40' 33.593" W	10.5
Sounding	5¾	57° 36' 21.232" N	153° 51' 05.058" W	10.7
Sounding	6	57° 35' 03.851" N	153° 50' 51.594" W	11
Sounding	6¼	57° 39' 07.343" N	153° 58' 50.935" W	11.5
Sounding	6½	57° 39' 11.626" N	153° 47' 49.336" W	11.9
Sounding	6½	57° 39' 00.750" N	153° 42' 45.354" W	12
Sounding	6¾	57° 38' 33.522" N	154° 00' 12.615" W	12.4
Sounding	6¾	57° 37' 28.106" N	153° 53' 02.801" W	12.6
Sounding	6¾	57° 37' 37.582" N	153° 52' 57.992" W	12.6
Sounding	7¾	57° 39' 24.950" N	153° 42' 42.407" W	14.4
Sounding	8¼	57° 38' 54.230" N	153° 42' 50.739" W	15.4
Sounding	8½	57° 36' 55.913" N	153° 52' 49.256" W	15.6
Sounding	9½	57° 35' 37.779" N	153° 51' 32.133" W	17.4
Sounding	10½	57° 39' 14.714" N	153° 50' 17.583" W	19.6
Sounding	10½	57° 35' 19.504" N	153° 50' 28.316" W	19.7
Sounding	10¾	57° 39' 15.559" N	153° 47' 07.894" W	19.8
Sounding	10¾	57° 39' 24.753" N	153° 49' 24.144" W	20

ADVANCE INFORMATION

This is advance information subject to office review. Questions concerning this letter should be directed to the Chief, Pacific Hydrographic Branch, (206) 526-6835. Refer to survey project P312-RA-00 and Danger to Navigation message RA-14-00. More information on current RAINIER survey projects may be obtained by e-mail; contact the Field Operations Officer at FOO.RAINIER@NOAA.GOV.

Sincerely,

Daniel R. Herlihy

Daniel R. Herlihy
Commander, NOAA
Commanding Officer

Attachment

cc: NIMA
N/CS261
N/CS34

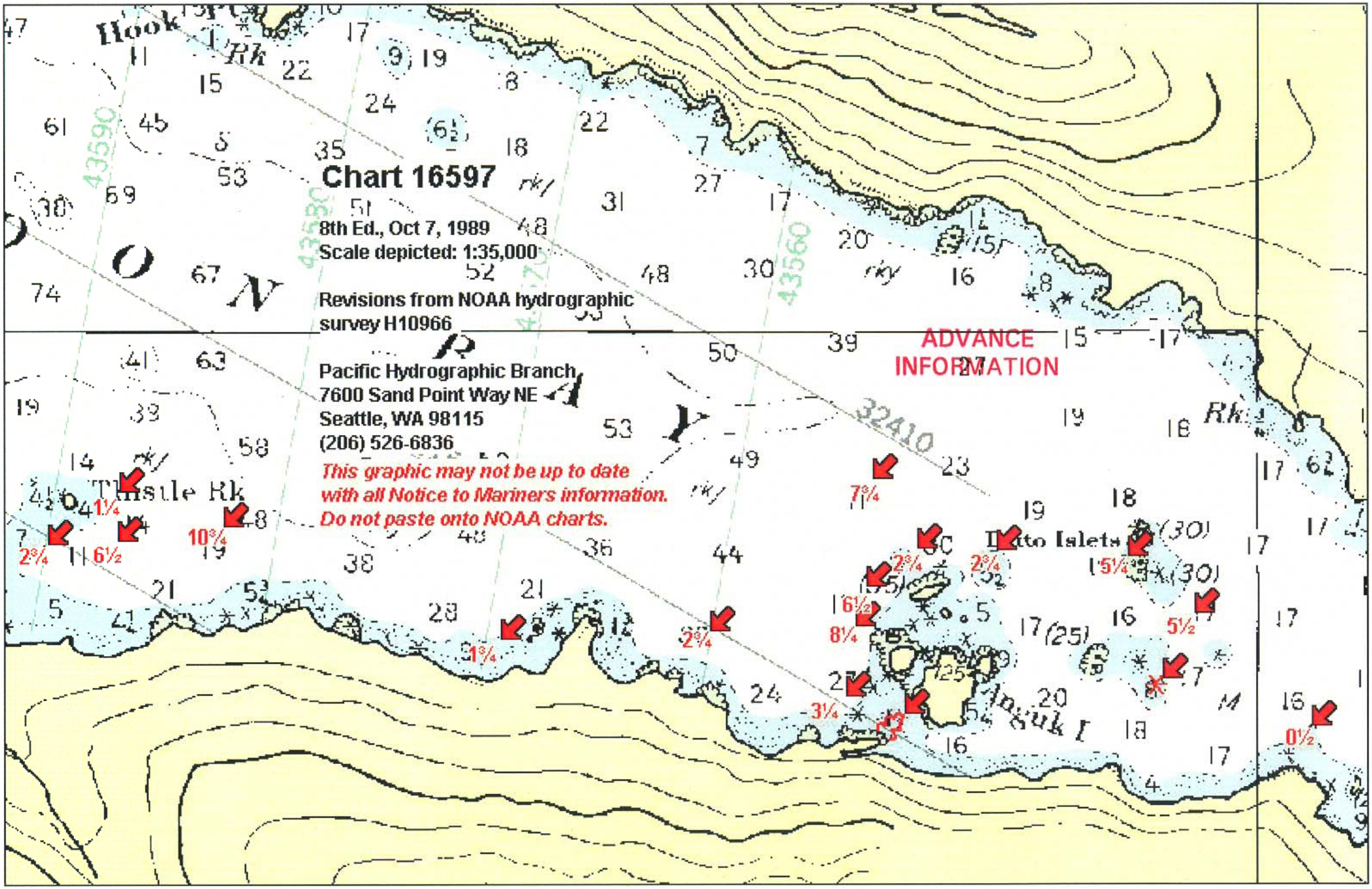
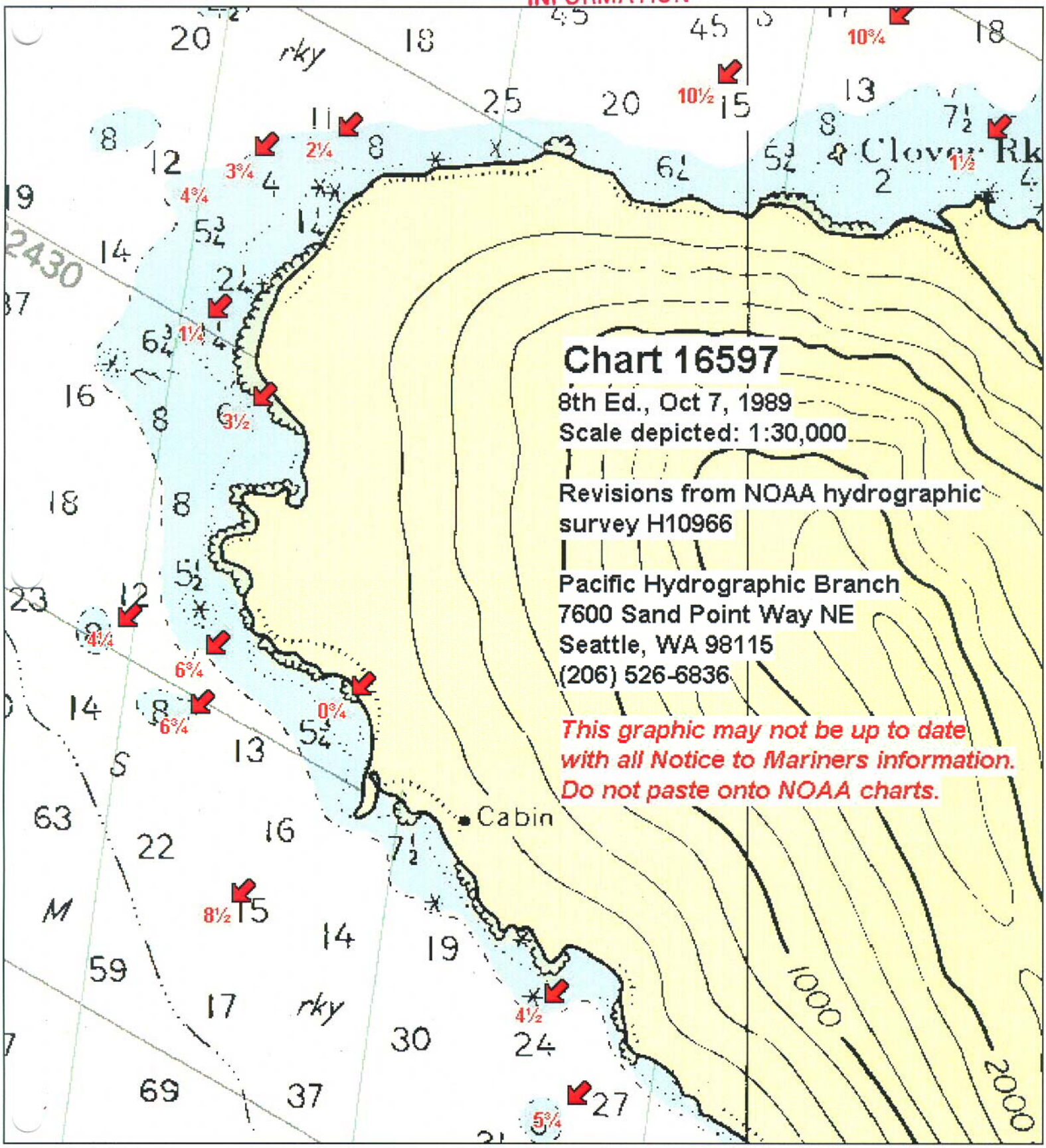


Chart 16597
8th Ed., Oct 7, 1989
Scale depicted: 1:35,000
Revisions from NOAA hydrographic survey H10966
Pacific Hydrographic Branch
7600 Sand Point Way NE
Seattle, WA 98115
(206) 526-6836
This graphic may not be up to date with all Notice to Mariners information.
Do not paste onto NOAA charts.
ADVANCE INFORMATION
Thistle Rk
Ditto Islets
Anguk I
Hook
Rk
43590
43580
43560
32410

ADVANCE
INFORMATION



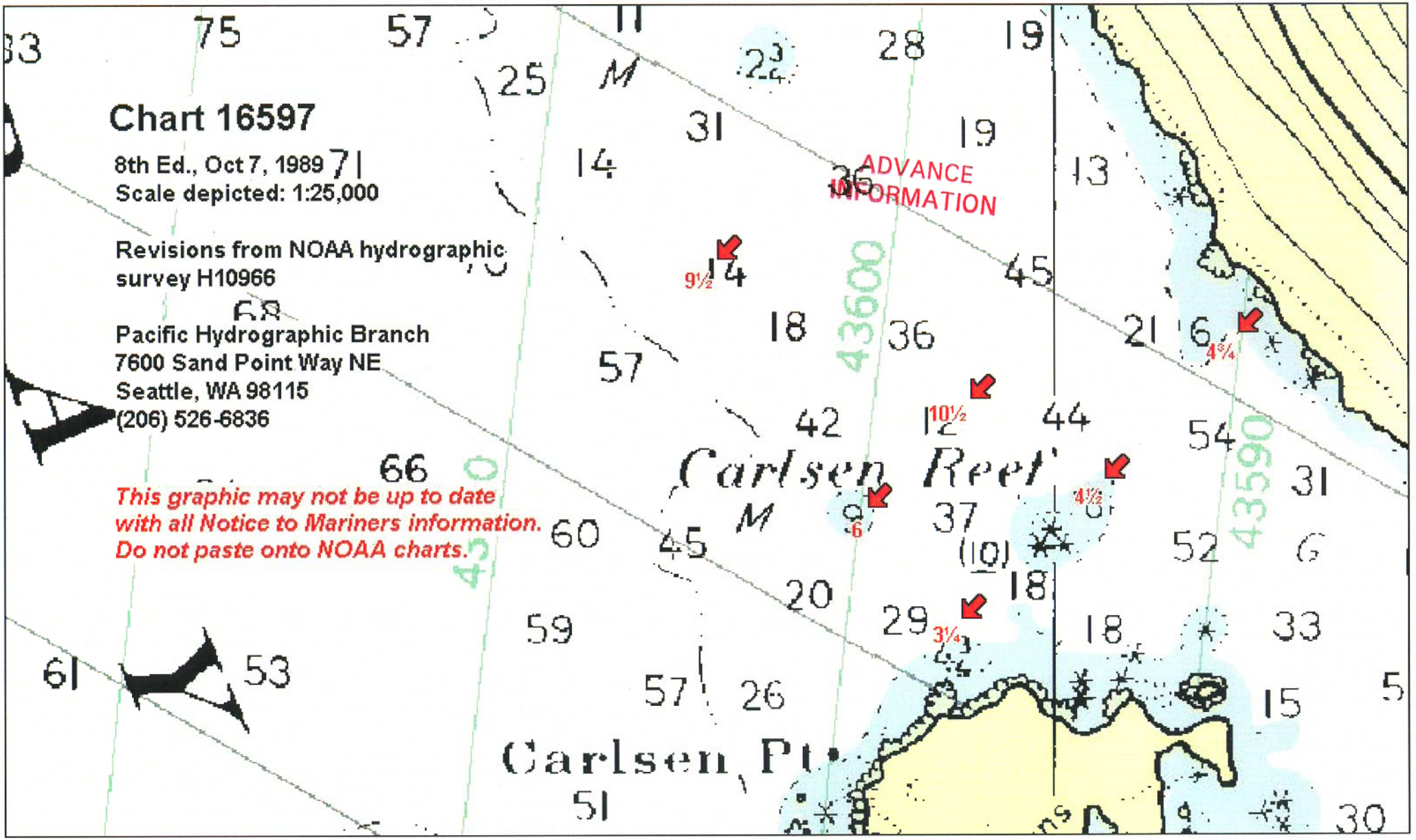
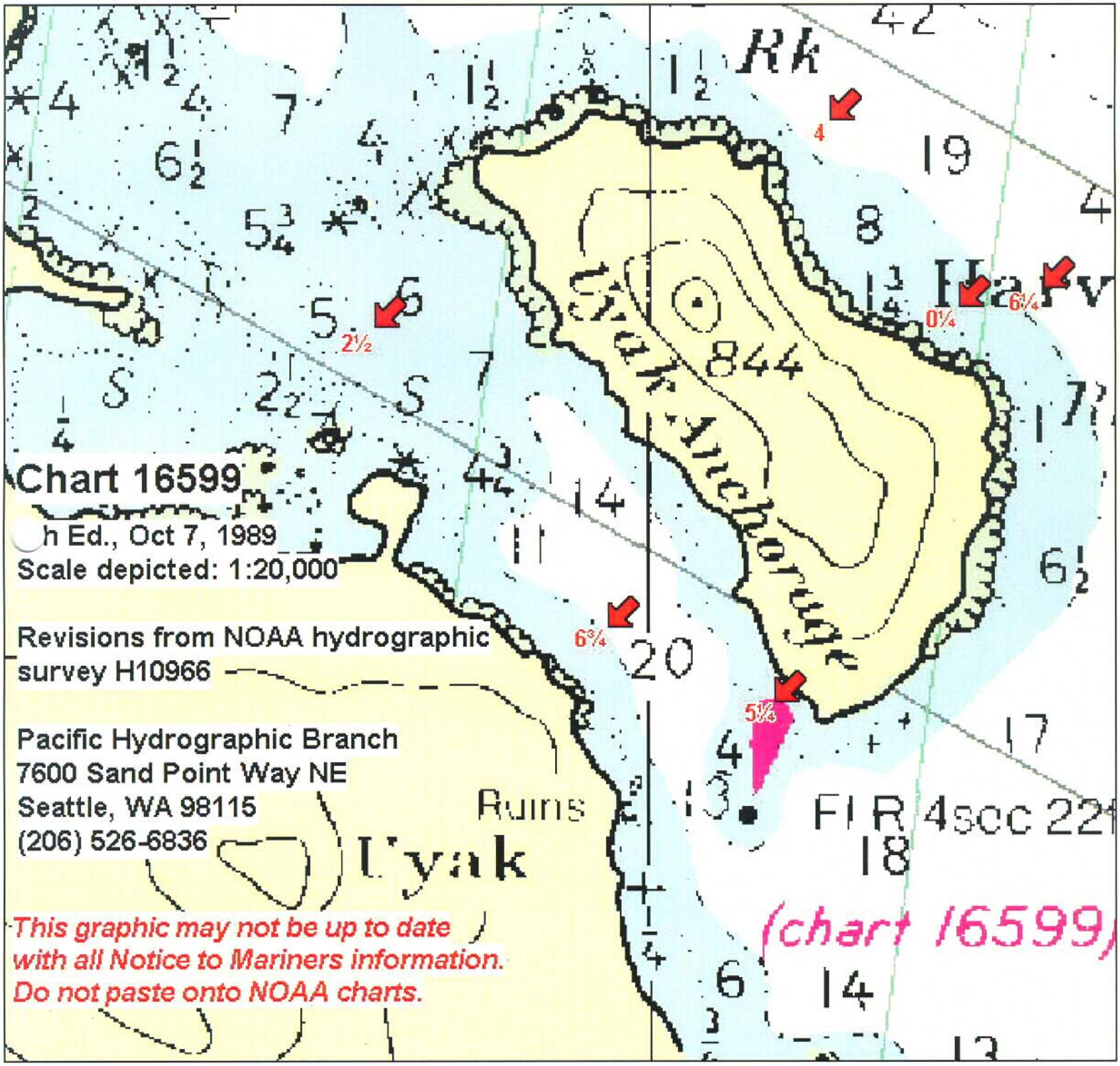
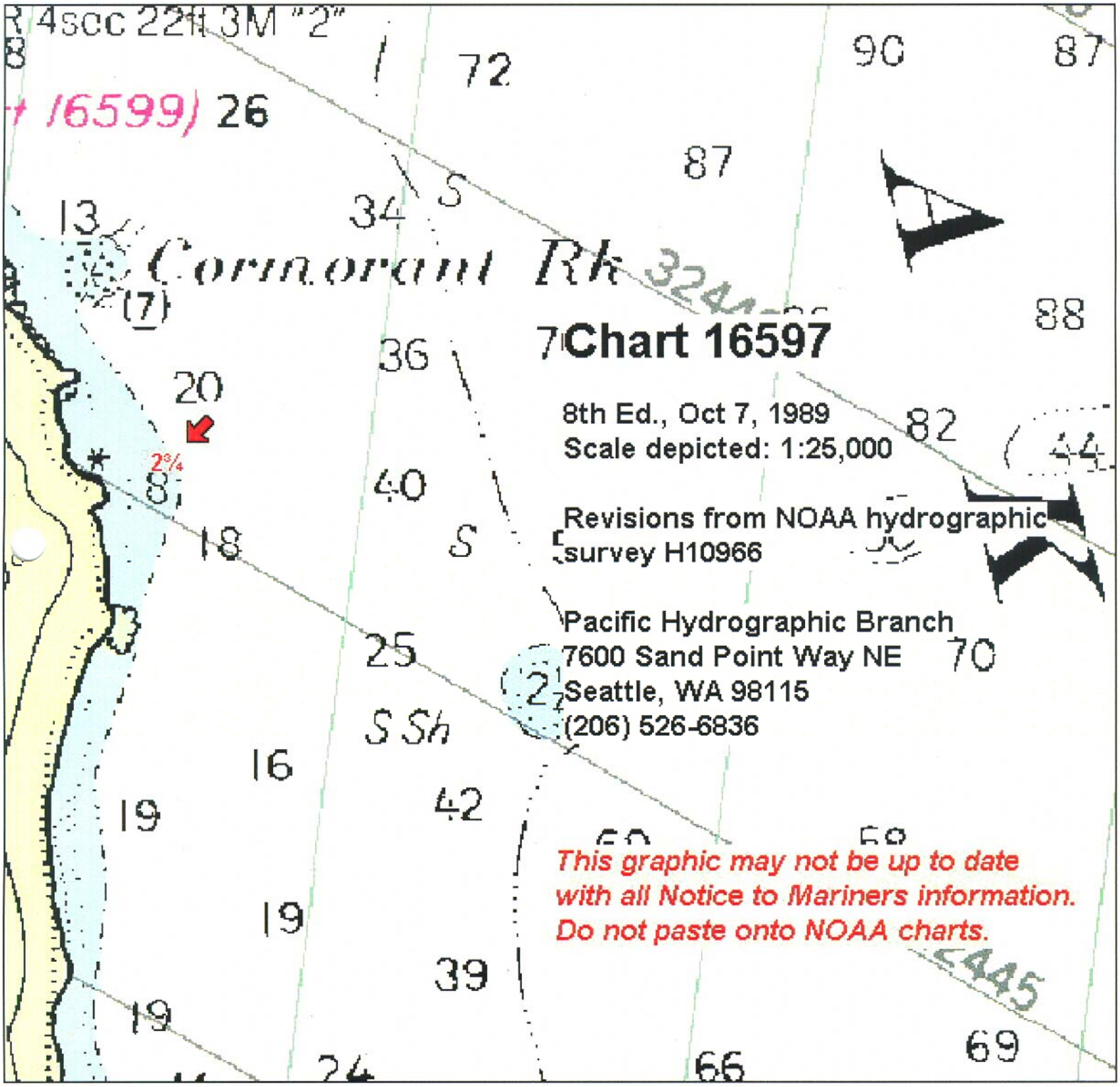


Chart 16597
8th Ed., Oct 7, 1989
Scale depicted: 1:25,000
Revisions from NOAA hydrographic survey H10966
Pacific Hydrographic Branch
7600 Sand Point Way NE
Seattle, WA 98115
(206) 526-6836
This graphic may not be up to date with all Notice to Mariners information.
Do not paste onto NOAA charts.
ADVANCE INFORMATION
Carlsen Reef
Carlsen Pt
43600
43590

ADVANCE
INFORMATION



ADVANCE
INFORMATION



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: November 2, 2000

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P312-RA-2000
HYDROGRAPHIC SHEET: H-10966

LOCALITY: Larsen Bay and Approaches, AK
TIME PERIOD: May 15 - July 20, 2000

TIDE STATION USED: 945-7728 Uyak (Cannery Dock), AK
Lat. 57° 38.5'N Lon. 154° 0.2'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.934 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SS31, LB1, LB2, LB3, LB4 & LB5

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: Kodiak, AK was used for datum control in this hydrographic survey. Accepted datums for this station have been updated recently due to anomalous sea level trends to land emergence resulting from glacial retreat. Therefore, the accepted datums at 945-7292 Kodiak, AK are based on the 1994-1998 update of Mean Sea Level (MSL) on the 1960-1978 Epoch.

Thomas F. Meso 11/2/00

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

Final tide zone node point locations for OPR-P312-RA-2000,
Sheet H-10966.

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 SS31	945-7728	0	0.99
-154.330076 58.093663			
-154.237436 58.139447			
-154.022405 58.178906			
-153.867669 58.021725			
-153.792296 57.855731			
-153.881218 57.724193			
-154.003581 57.655292			
-154.028133 57.652125			
-154.03436 57.653731			
-154.046296 57.647331			
-154.100008 57.646002			
-154.14815 57.814379			
-154.19507 57.911448			
-154.274256 58.034512			
-154.330076 58.093663			
Zone LB1	945-7728	0	1.00
-154.003581 57.655292			
-154.028133 57.652125			
-154.03436 57.653731			
-154.046296 57.647331			
-154.016018 57.64296			
-154.012489 57.646488			
-154.003581 57.655292			
-154.003581 57.655292			
Zone LB2	945-7728	0	1.00
-153.987928 57.62875			
-154.001462 57.62797			

-154.016018 57.64296
-154.012489 57.646488
-154.003581 57.655292
-153.98577 57.641809
-153.987928 57.62875

Zone LB3	945-7728	0	0.99

-154.003581 57.655292
-153.98577 57.641809
-153.987928 57.62875
-153.996546 57.614137
-153.868948 57.634339
-153.849121 57.708871
-153.881218 57.724193
-154.003581 57.655292

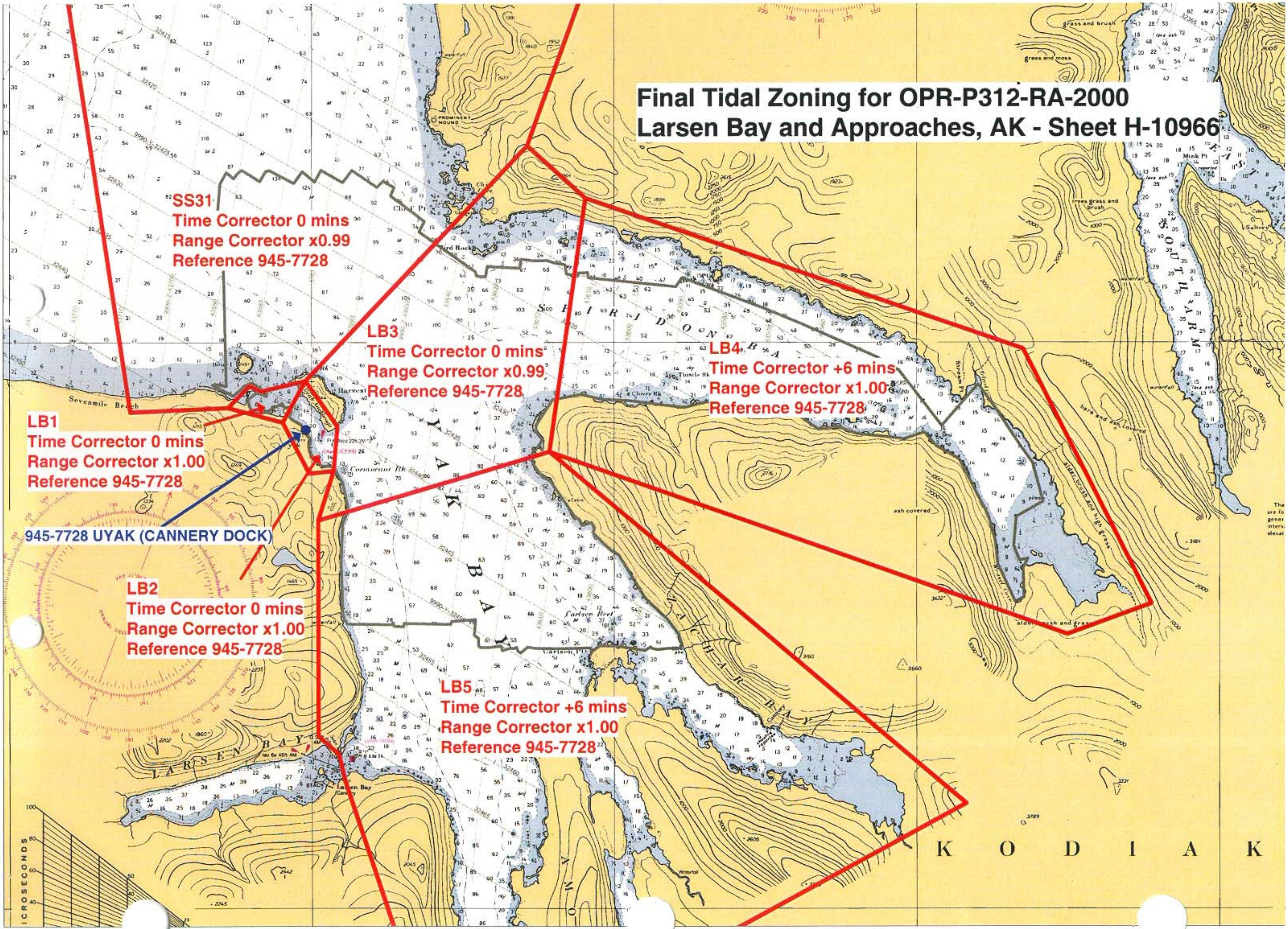
Zone LB4	945-7728	+6	1.00

-153.849121 57.708871
-153.608082 57.664682
-153.537504 57.589644
-153.583699 57.580684
-153.868948 57.634339
-153.849121 57.708871

Zone LB5	945-7728	+6	1.00

-153.868948 57.634339
-153.639442 57.531109
-153.813776 57.48008
-153.830954 57.483346
-153.836005 57.431877
-153.882486 57.409523
-153.909039 57.418907
-153.981894 57.538204
-153.985052 57.545539
-153.996482 57.550868
-153.996546 57.614137
-153.868948 57.634339

Final Tidal Zoning for OPR-P312-RA-2000
Larsen Bay and Approaches, AK - Sheet H-10966



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

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H10966

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

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	1					
ENVELOPES						
VOLUMES						
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			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET			274
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT			42
GEOGRAPHIC NAMES			
OTHER (Chart Compilation)			221
USE OTHER SIDE OF FORM FOR REMARKS — TOTALS			537

Pre-processing Examination by	*Beginning Date* 01/05/2001	*Ending Date*
Verification of Field Data by Domingo, M. Lathrop, R. Mayor, R. Davies, L. Deodato	*Time (Hours)* 274	*Ending Date*
Verification Check by	*Time (Hours)*	*Ending Date*
Evaluation and Analysis by M. Lathrop, L. Deodato	*Time (Hours)* 42	*Ending Date* 08/25/2003
Inspection by R. Davies	*Time (Hours)* 20	*Ending Date* 05/10/2004

☆ U.S. GOVT. PRINTING OFFICE 1983: 764-006/6061

APPROVAL SHEET
H10966

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 Descriptive Report.

Russ Davies Date: 5/10/04

Russ Davies
Cartographic Team
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 Descriptive Report.

E. J. Van Den Ameele Date: 5/18/04

Edward J. Van Den Ameele
Lieutenant, NOAA
Chief, Pacific Hydrographic Branch

****

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-10966

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
16599	12/13/01	M. Lathrop L. Deodato	Full ~~Part~~ Before After Marine Center Approval Signed Via
			Drawing No. Application of soundings and features from smooth sheet.
16597	12/13/2001	M. Lathrop L. Deodato	Full ~~Part~~ Before After Marine Center Approval Signed Via
			Drawing No. Application of soundings and features from smooth sheet and thru Chart 16599
16597	8/13/04	Cliff Cosgrove LEB	Full Part Before After Marine Center Approval Signed Via
			Drawing No. Applied Soundings, depth curves and features from Smooth Sheet
16598	8/13/04	Cliff Cosgrove DRM	Full Part Before After Marine Center Approval Signed Via
			Drawing No. Applied Soundings, depth curves and features from Smooth Sheet
16580	8/13/04	Cliff Cosgrove DRM	Full Part Before After Marine Center Approval Signed Via
			Drawing No. Applied Soundings, depth curves and features from Smooth Sheet
16599	8/13/04	Cliff Cosgrove LEB	Full Part Before After Marine Center Approval Signed Via
			Drawing No. Applied Soundings, depth curves and features from Smooth Sheet
			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.