

H11454

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. N/A

Registry No. H11454

LOCALITY

State ALASKA

General Locality NORTON SOUND

Sublocality Southeast Approaches to Nome

2005

CHIEF OF PARTY
ANNE S. DOLLARD

LIBRARY & ARCHIVES

DATE

HYDROGRAPHIC TITLE SHEET

H-11454

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.

N/A

State Alaska

General Locality Norton Sound

Sublocality Southeast Approaches to Nome

Scale 1:10,000

Date of Survey 7/9/2005 - 8/16/2005

Instructions Date 3/1/2005

Project No. OPR-R394-KR-05

Vessel Bristol Endeavor

Chief of Party Lamar Gates

Surveyed by Terra Surveys, LLC

Soundings taken by echo sounder, hand lead, pole Reson 8101

Graphic record scaled by N/A

Graphic record checked by N/A

Evaluation by G. Nelson

Automated plot by HP Design Jet 1050CM

Verification by G. Nelson

Soundings in Feet

at

MLLW

REMARKS: Time in UTC. Revisions and end notes in red

were generated during office processing. As a result, page

numbering may be interrupted or non-sequential.

All separates are filed with the hydrographic records.

Descriptive Report to Accompany Hydrographic Survey H-11454

Sheet C

Scale 1:10,000

July 29 - August 15, 2005

Terra Surveys, LLC

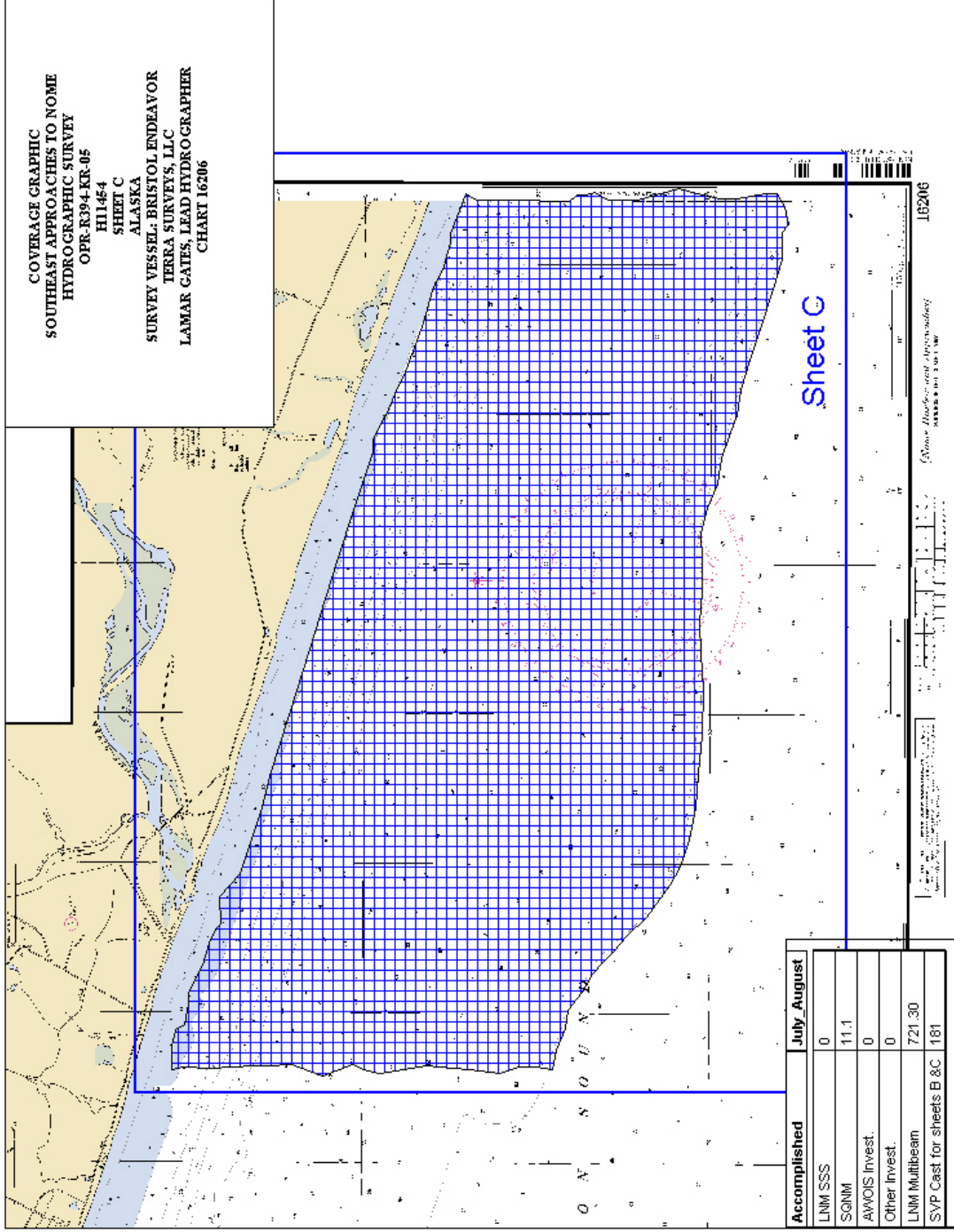
Lead Hydrographer: Lamar Gates

A. AREA SURVEYED

This navigable area survey was conducted in accordance with Hydrographic Project Instructions OPR-R394-KR-2005, Approaches to Nome, Southwestern Alaskan Peninsula, Alaska dated March, 2005.

The purpose of this contract was to provide NOAA with modern, accurate hydrographic survey data with which to update the nautical charts of this area. The project area is approximately 11.1 square nautical miles and lies in Norton Sound, south and east of the city of Nome. Nome is the commercial hub of remote northwestern Alaskan villages. The Southeast approach to Nome is a major commercial shipping lane. The ships that use them rely heavily on the accuracy of the nautical chart for this area. The area surrounding Nome has over 30 active mines as of this report. Gold, tin and industrial mineral development will contribute to the increasing ship traffic.

A shallow-water multibeam sonar system was used to locate and determine the least depth over the obstructions, wrecks and shoals as well as to determine the least depths over the entire project area. This survey has a maximum depth of 65 feet and a minimum depth of 6.



Section B Data Acquisition and Processing

B.1 Equipment

Soundings for this survey were acquired using the motor vessel *Bristol Endeavor*.

Bristol Endeavor

All soundings for this survey were acquired from the motor vessel The *Bristol Endeavor* is a 71.5-foot steel hull boat with a 21-foot beam and a draft of 3 ft. Major systems used on the *Bristol Endeavor* are listed in the following table.

Bristol Endeavor Survey Equipment

<i>Operating System</i>	<i>Manufacturer</i>	<i>Model / Part</i>	<i>Serial Number</i>
Multibeam Sonar	Reson	8101	1301045
Sonar Processor	Reson	SeaBat 81-P	32030
Positioning System	Seatex	Seapath 200 RTK	799
Motion Sensor	Seatex	MRU-5	1410
Sound Velocity	Applied Microsystems	SV Plus (500 dBar)	3259
Sound Velocity	Applied Microsystems	SV Plus (500 dBar)	3279

Equipment performance details are provided in OPR-R394-KR-05 Data Acquisition and Processing Report,¹ Sections A. Equipment and B. Quality Control.

B2. Quality Control

The internal consistency and integrity of the survey data was found to be good. All of the soundings that appear on the smooth sheet meet or exceed the accuracy requirements in the specifications.²

Crosslines

Survey H-11454 had 701 nautical miles (NM) of main scheme lines and 36 NM of crosslines. This equates to 5.15% of the mainscheme lines; which is more than required by the Specifications and Deliverables, Sec. 5.5.3. A total of 25 crossings were analyzed, and the comparisons were good. The crossings varied spatially and temporally.

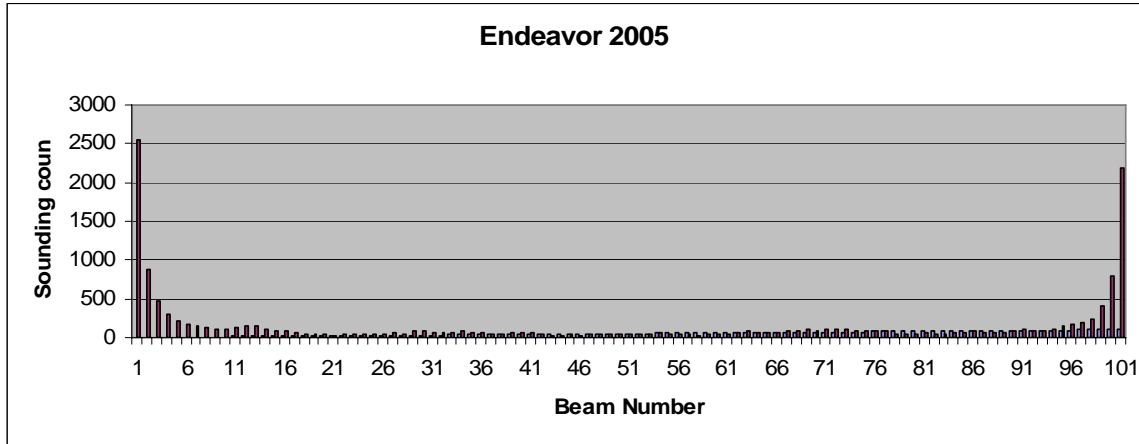
The crosslines were analyzed with a program developed in-house in accordance with Specifications and Deliverables 2003, Section 5.5.3. A comprehensive explanation of the program is in the OPR-R394-KR-05 Data Acquisition and Processing Report. The reports generated from the crossline analysis are in Separate V. Crossline Comparisons of this report.

An estimated 95% confidence level generated from crossline analysis was used as a guide in determining data acceptability. In practice, the subjective nature of multibeam data cleaning resulted in a slight variance of final smooth sheet soundings from the estimated 95% confidence level. However, the data were acceptable in light of these variations.³

Smooth Sheet Soundings

Final smooth sheet soundings were compiled into a spreadsheet and plotted. *Figure 1*, on the next page, is a histogram depicting the number of soundings per beam on the smooth sheet. The Reson 8101 multi-beam echo sounder has 101 beams and is numbered from port to starboard, 1-101 with beam 51 representing the nadir beam. There was no standard filtering practice overall. Each area was filtered as deemed necessary and the overall data quality met specifications for this survey. Some anomalies were experienced in sound velocity profiles causing the outer beams to reflect shoaler soundings due to their convex distribution. As Filters were applied for beams 1-5 and 96-101, remaining outer beams were caught by the shoal-biased algorithm and therefore selected for the smoothsheet. This explains the high sounding number for outer beams in *Figure 1* on the following page. Refer to OPR-R394-KR-05 Data Acquisition and Processing Report, Section B. for filtering details.

Figure 1.



Contemporary Survey Junctions

The westerly limits of this survey junctions the easterly limits of H-11453 (2005, Scale 1:10,000) (see *Figure 2.*). There is good agreement between the soundings in the two surveys.⁴

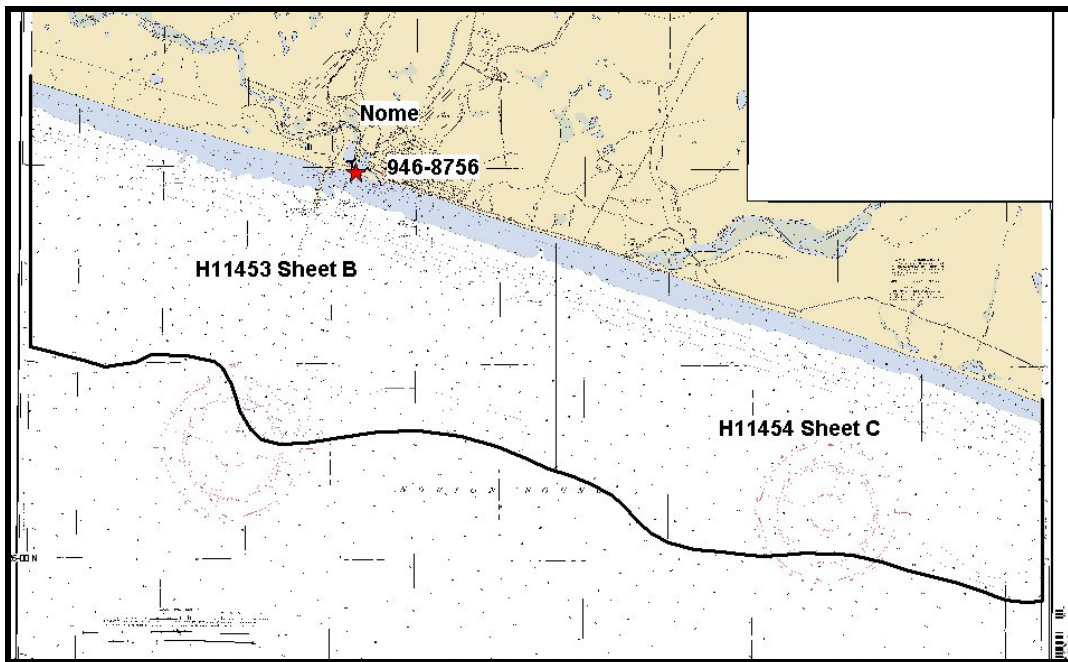


Figure 2: The junction location of H11453 and H11454 (Chart 16206, 7th Ed.)

Quality Control Checks

Nadir Beam versus Lead line checks were accomplished daily when practical. The results of the quality control checks are contained in Separate I. Acquisition and Processing Logs of this report.⁵ There were no unique problems that pertain to this survey. Line acquisition logs are also included in Separate I. detailing all required aspects of quality control for each line.

B3. Corrections to Echo Soundings

Hydrographic Survey H-11454 was performed with one other survey in Project OPR-R394-KR-05. Any change to the corrections to echo soundings affects all surveys in the area and is described in the Data Acquisition and Processing Report.

NOAA primary tide station Nome (946-8756) provided initial and final tide processing for this project. Verified data from the Nome gauge was downloaded from the NOAA internet Hydro Hot list (<http://co-ops.nos.noaa.gov/hydro.shtml>). Refer to the Vertical and Horizontal Control Report⁶ for tide zone methods and operations.

C. Vertical and Horizontal Control

This survey was tide corrected using NOAA primary tide station Nome, Norton Sound (946-8756, Lat N 64° 30.0', Long W 165° 25.8'). Refer to the Horizontal and Vertical Control Report for methods and operations. Verified final tides were applied to the data after the final sounding extraction from CARIS. There was no zoning applied for this survey.

The horizontal control datum for this survey is North American Datum of 1983 (NAD 83). The projection used during collection was UTM, Zone 3. A temporary control point "TBM1" was established and used as the local differential GPS (DGPS) base station for the entirety of the Approaches to Nome survey project. The point was a standard brass cap, set in a boulder located approximately 1.5 km east of the Nome boat harbor, located on a parcel of land owned by Mr. Wiley Scott. The central location of this point afforded excellent project wide differential corrector coverage, with a maximum view of common satellites. The location of Mr. Scotts' parcel offered a relatively secure environment as well an uninterrupted power supply for DGPS base station operations.

The horizontal position for "TBM1" was determined by way of simultaneously observed static and differential GPS survey techniques, tying in one National Ocean Service (NOS) monument recovered in Nome, along with three Continuously Operating Reference Station (CORS) monuments.

NGS Published Coordinate Values (NAD83, Geographic)

Point Name	NGS PID	Latitude	Longitude
NOS BM "8756K 1992"	DF3653	N 64°30'26.13382"	W 165°25'48.10529"
KEN1 (CORS)	AF9548	N 60°40'30.284"	W 151°21'00.571"
TLKA (CORS)	AH2494	N 62°18'27.556"	W 150°25'12.976"
TSEA (CORS)	AI0952	N 61°11'14.374"	W 149°53'41.819"

TBM1 Assigned Coordinate

Monument	Latitude	Longitude
TBM1 2005	64°29'43.43231"	165°23'39.24586"

A summary of the daily DGPS confidence checks can be found in "Separate I Acquisition and Processing Logs" included with this report.

D1. Chart Comparison

Local Notice to Mariners Issued and Danger to Navigation Reports

Notice number 38/05 (September 17, 2005) was the last notice reviewed for this project. There were 71 Local Notice to Mariners that affected this chart. Sixty-nine of these notices were regarding the Nome harbor project and were not in the survey area.

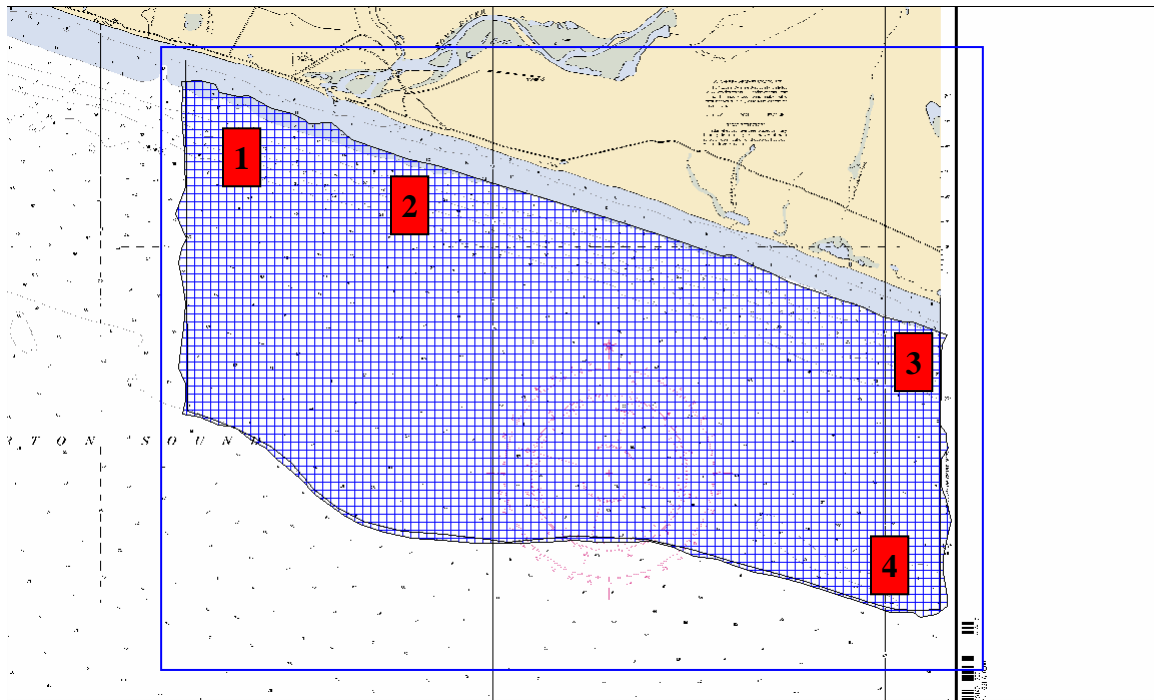
This survey was compared in MicroStation to the following charts:⁷

Chart	Scale	Edition	Date
16206	1:20,000 & 1:2,500	7 th	Jan. 17 1998
16200	1:400,000	13 th	July 1, 1995

Chart 16206, 7th Edition

Trends and Changeable Areas

Several areas within this survey are considerably shoaler than those previously charted. The following pages contain the depth discrepancies found on the smoothsheet.



Limits of Smooth sheet H-11454 overlaid on Chart 16206 7th Ed. For comparison

The hydrographer recommends updating the next edition of the chart with the most current contours and soundings.⁸ The vicinity chart above is referenced to four areas in which significant differences were found in the comparison. The following pages highlight the interested area and note applicable comments.

Area 1

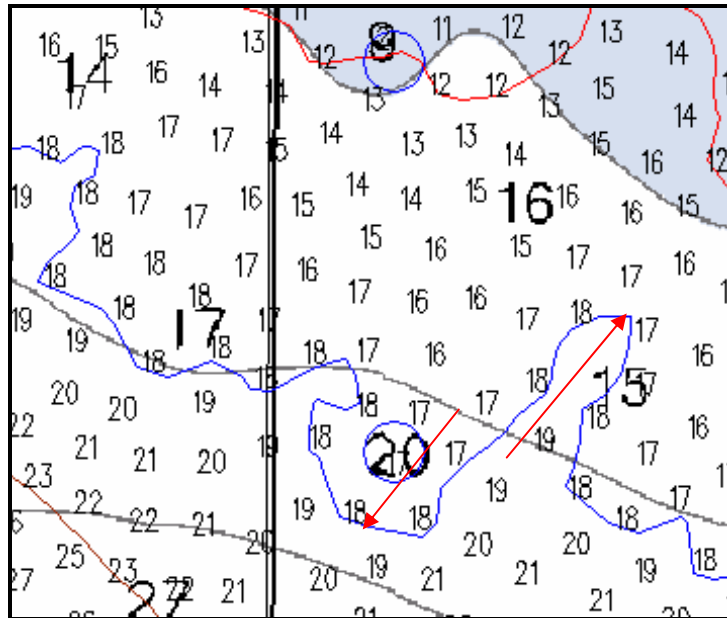
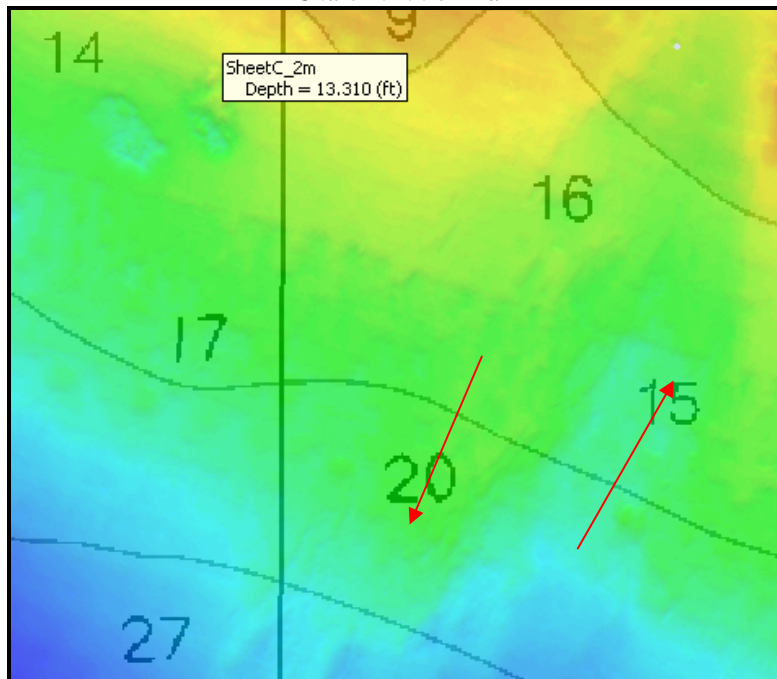


Chart 16206 7th Ed



Caris Base Surface overlay with chart 16206 7th Ed

In the vicinity of Latitude N 64° 28' 46", Longitude W 165° 19' 50", contours are migrating up to 120 meters seaward and 130 meters shoreward. The hydrographer recommends updating Chart 16206 with current contours and soundings from the H11454 Final Smooth Sheet.⁹

Area 2

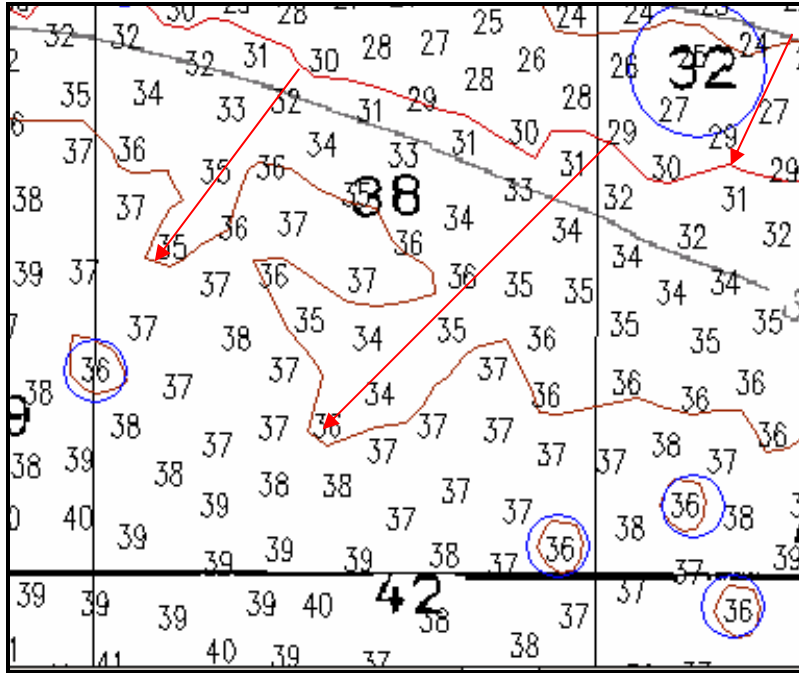


Chart 16206 7th Ed

In the vicinity of Latitude N 64° 28', Longitude W 165° 17', contours are migrating 100-200 meters seaward, and 2005 soundings reflect four 36 foot contours not previously charted. The hydrographer recommends updating Chart 16206 with current contours and soundings from the H11454 Final Smooth Sheet.¹⁰

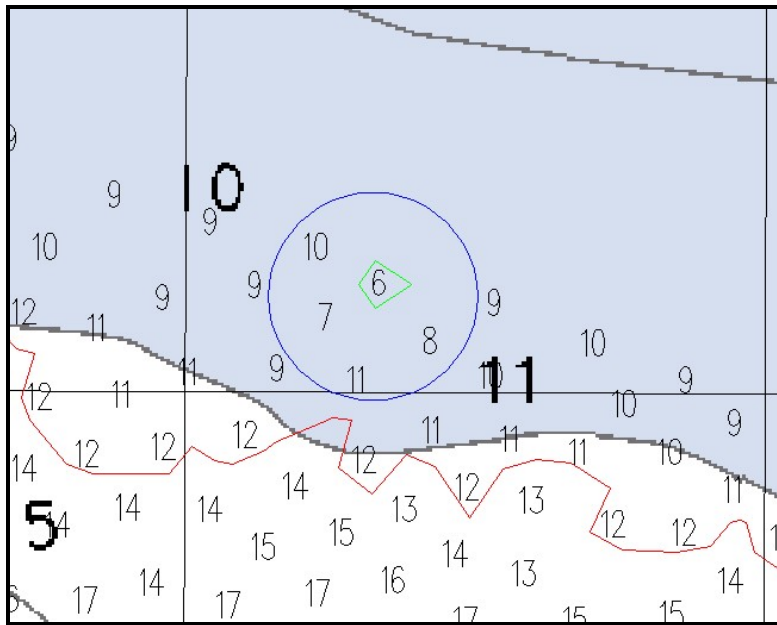


Chart 16206 7th Ed

In the vicinity of Latitude N 64° 28' 32", Longitude W 165° 16' 50", there is a six foot contour not previously charted. The hydrographer recommends updating Chart 16206 with current contours and soundings from the H11454 Final Smooth Sheet.¹¹

Area 3

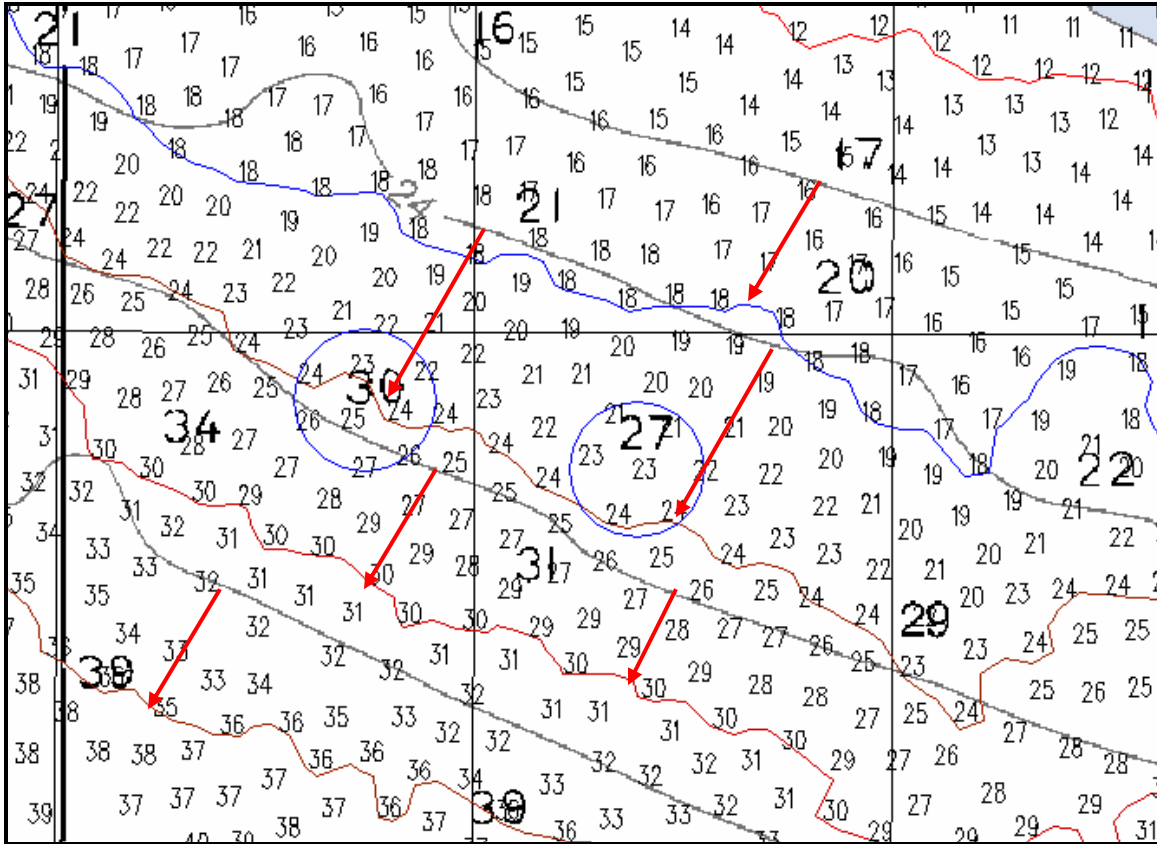


Chart 16206 7th Ed

In the vicinity of Latitude N 64° 27' 27", Longitude W 165° 11' 28", contours are migrating seaward by 100-250 meters. The Hydrographer recommends updating Chart 16206 with soundings and contours from H11454 Final Smooth Sheet.¹²

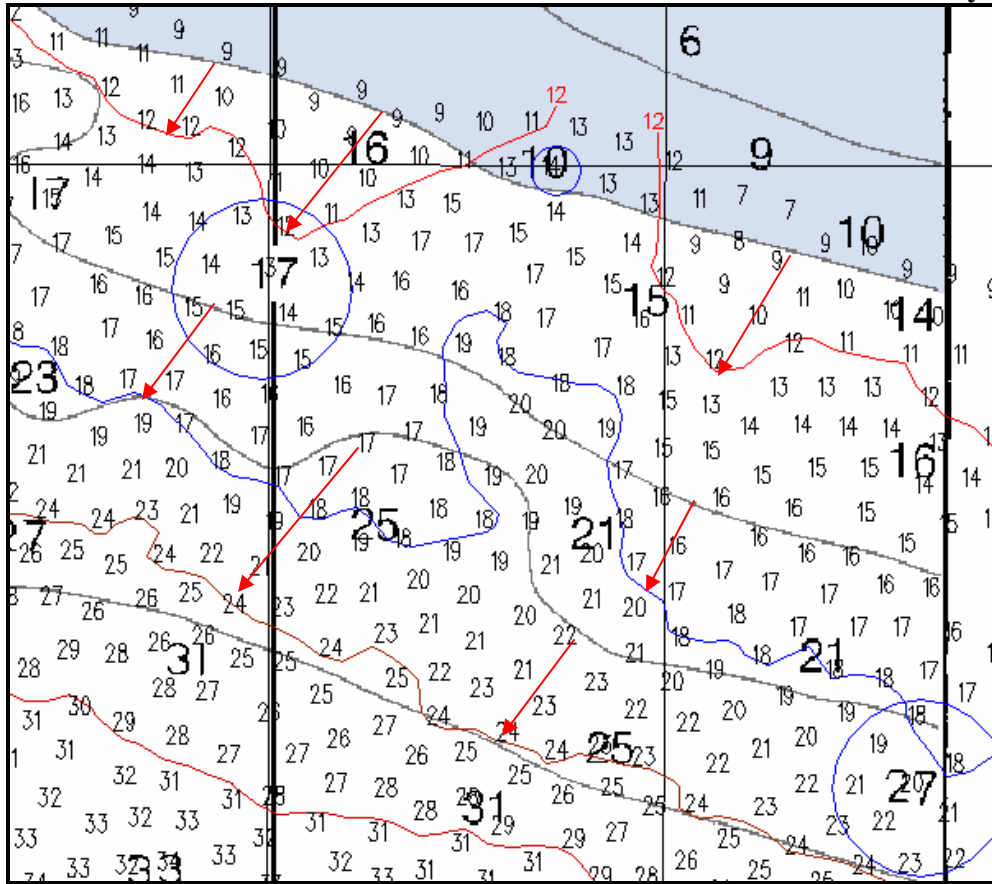
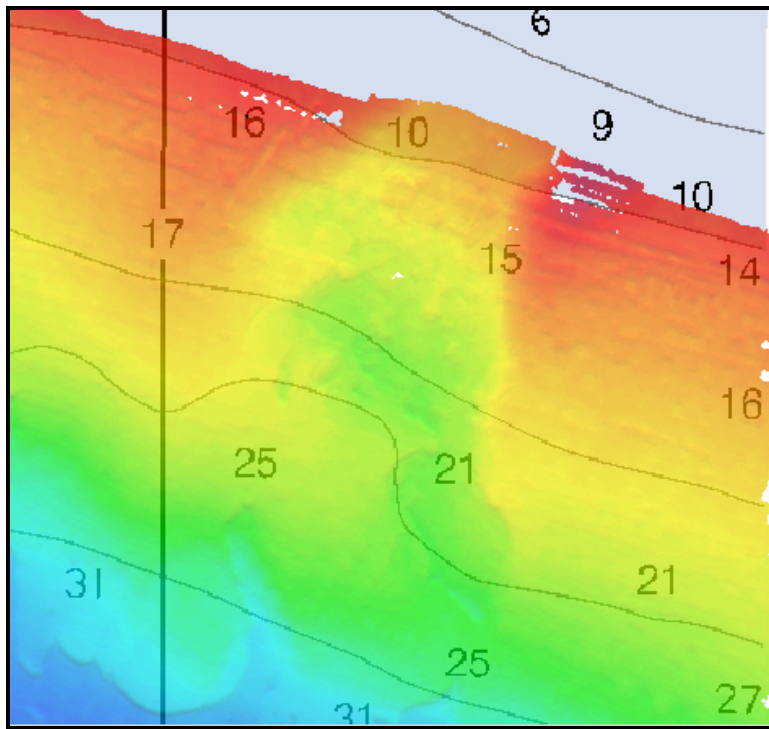


Chart 16206 7th Ed



CARIS Base Surface overlay with chart 16206 7th Ed

In the vicinity of Latitude N 64° 27' 21", Longitude W 165° 09' 45", several contours are migrating seaward. The Hydrographer recommends updating Chart 16206 with soundings and contours from H11454 Final Smooth Sheet.¹³

Area 4

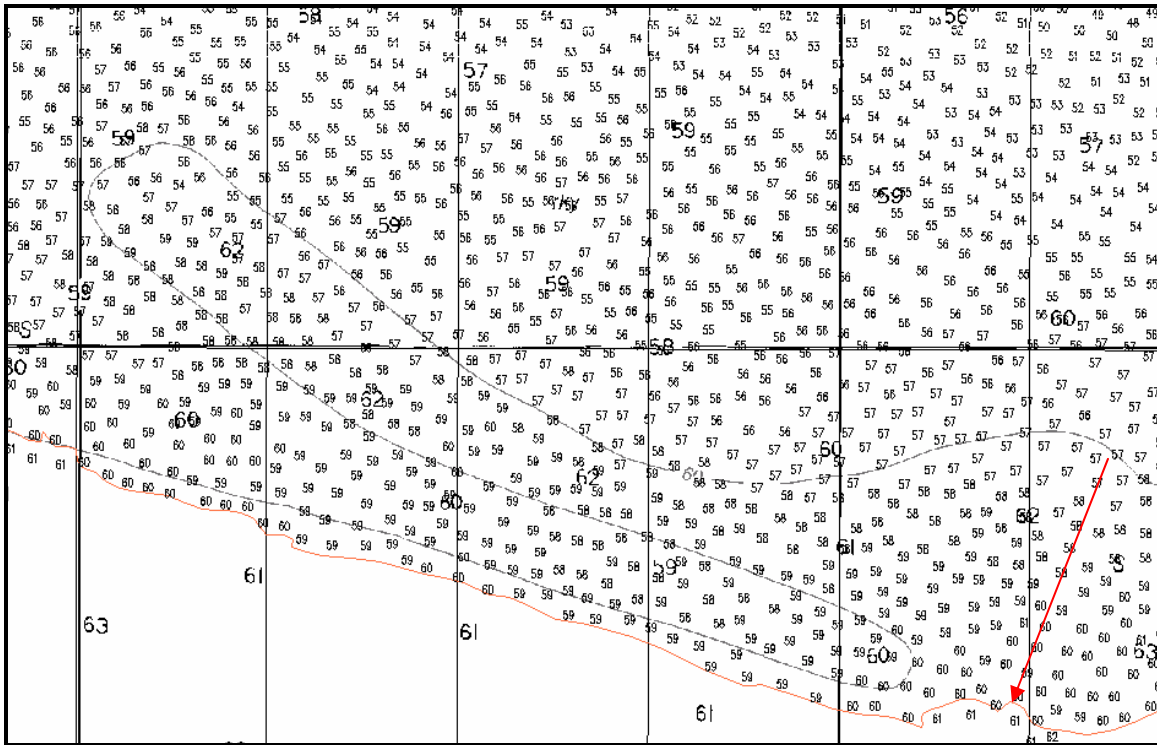
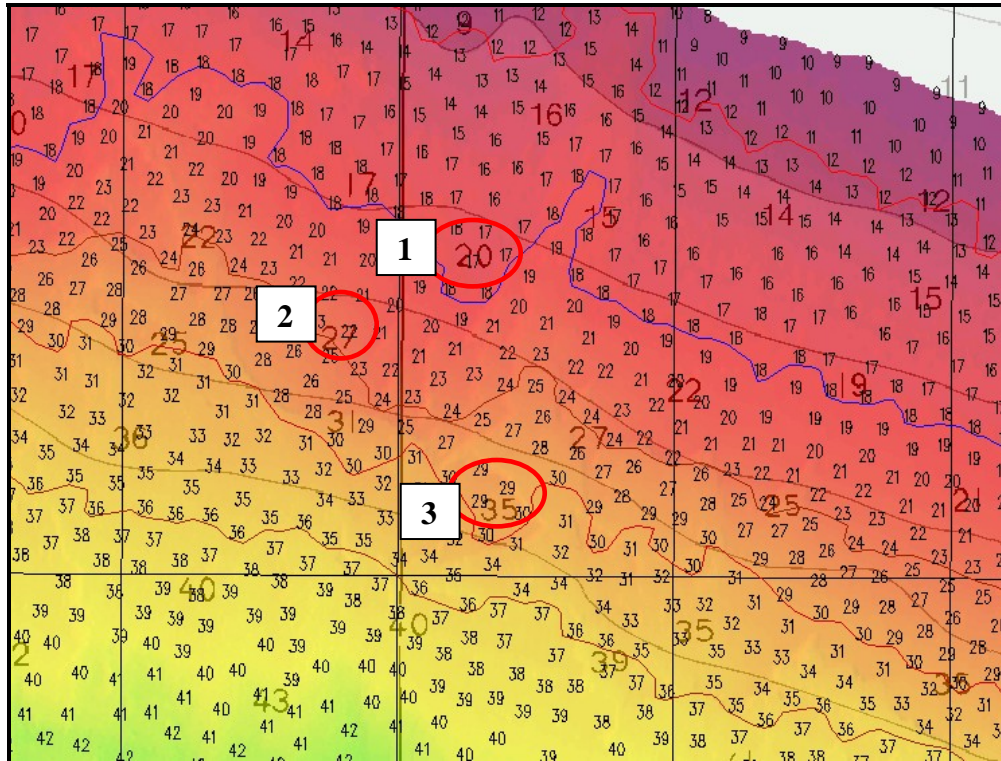


Chart 16206 7th Ed

In the southeastern portion of the survey, the 60 foot contour has migrated seaward by as much as 500 meters and 2005 soundings are shoaler by an average of 3 to 5 feet. The Hydrographer recommends updating Chart 16206 with soundings and contours from H11454 Final Smooth Sheet.¹⁴

Soundings

The following chartlets describe areas in which individual 2005 soundings are significantly shoaler than charted soundings in the same location. During office review of H11454, a total of 56 Dangers to Navigation were submitted.¹⁵ See Appendix 1 of this report for details.

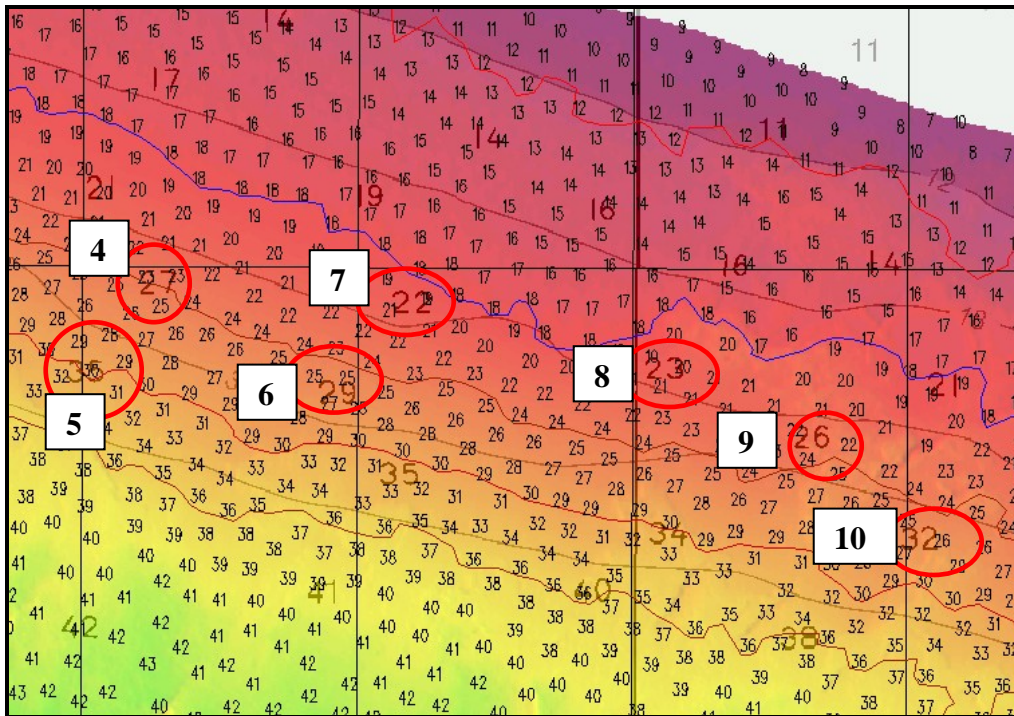


DTON Soundings (Feet) Circled in Red. Chart 16206 7th Ed

The following charted soundings have 2005 soundings which are significantly shoaler in the same location.

*ID#	Chart Sounding	Latitude (N)	Longitude (W)
1.	20	64° 28' 44.8"	165° 19' 52.0"
2.	27	64° 28' 41.5"	165° 20' 05.4"
3.	35	64° 28' 33.5"	165° 19' 51.2"

The hydrographer recommends updating Chart 16206 with soundings from H11454 final smooth sheet.¹⁶

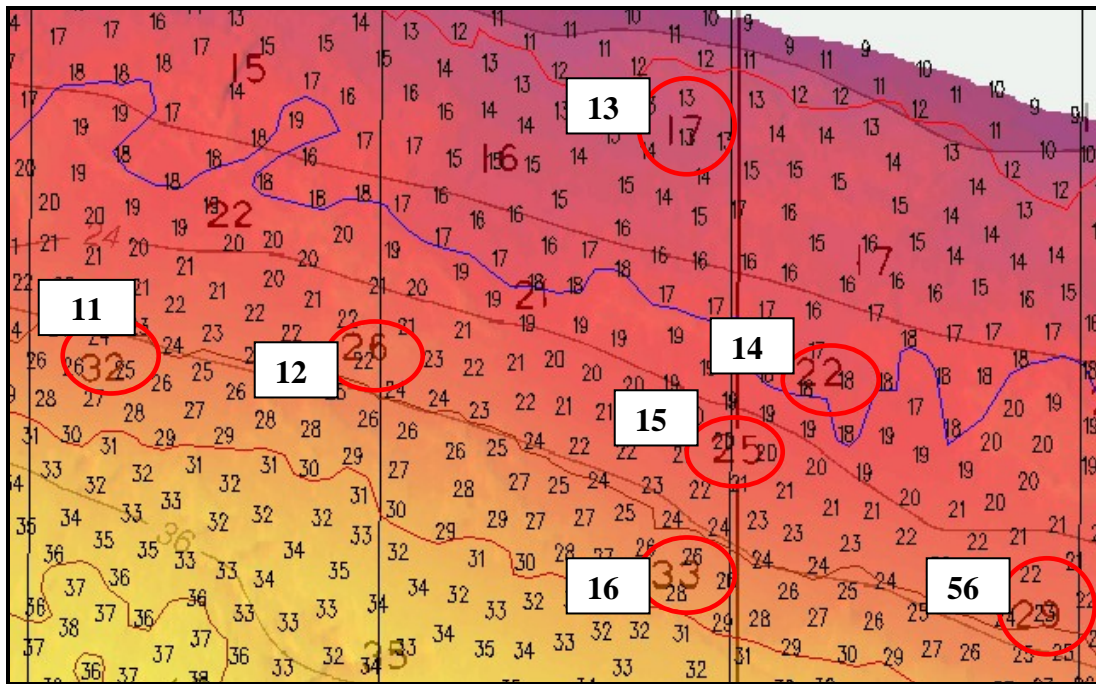


DTON Soundings (Feet) Circled in Red. Chart 16206 7th Ed

The following charted soundings have 2005 soundings which are significantly shoaler in the same location.

*ID#	Chart Sounding	Latitude (N)	Longitude (W)
4.	27	64° 28' 29.5"	165° 18' 53.1"
5.	35	64° 28' 25.1"	165° 18' 59.1"
6.	29	64° 28' 24.8"	165° 18' 31.1"
7.	22	64° 28' 28.5"	165° 18' 22.5"
8.	23	64° 28' 25.4"	165° 17' 54.6"
9.	26	64° 28' 22.4"	165° 17' 42.2"
10.	32	64° 28' 17.3"	165° 17' 26.2"

The hydrographer recommends updating Chart 16206 with soundings from H11454 final smooth sheet.¹⁷

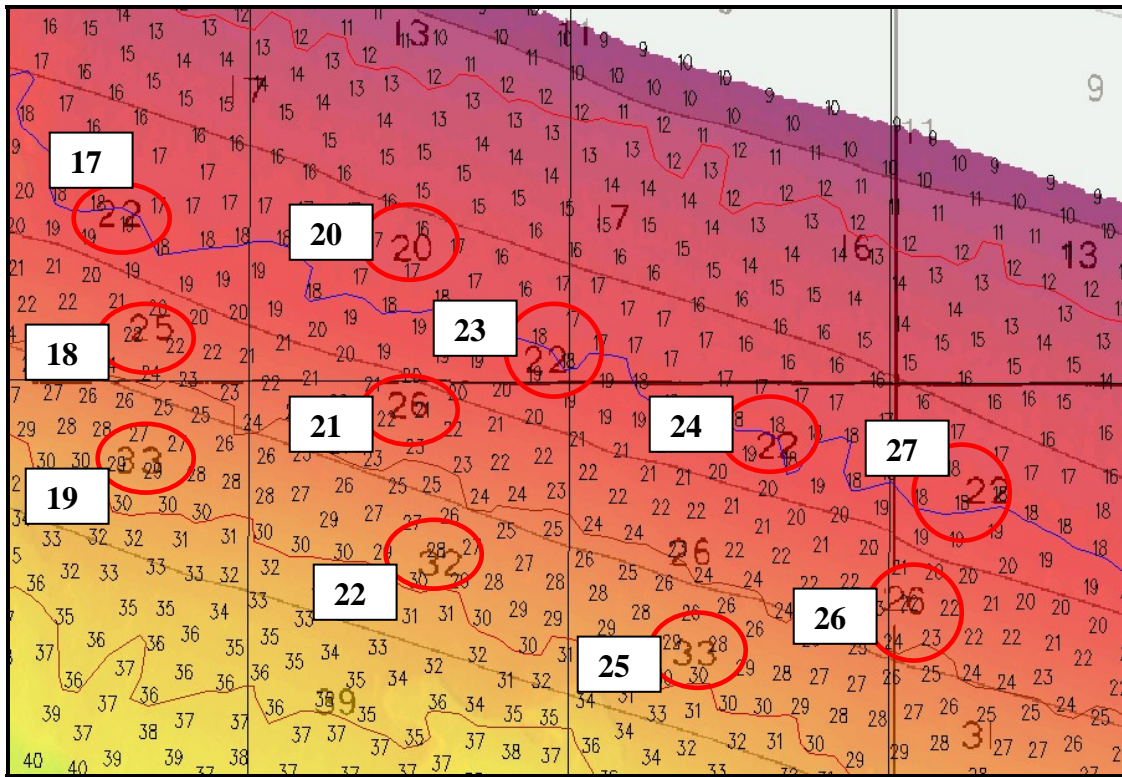


DTON Soundings (Feet) Circled in Red. Chart 16206 7th Ed

The following charted soundings have 2005 soundings which are significantly shoaler in the same location.

*ID#	Chart Sounding	Latitude (N)	Longitude (W)
11.	32	64° 28' 12.9"	165° 16' 51.9"
12.	26	64° 28' 13.3"	165° 16' 31.4"
13.	17	64° 28' 21.6"	165° 16' 03.8"
14.	22	64° 28' 12.4"	165° 15' 53.5"
15.	25	64° 28' 10.4"	165° 16' 00.5"
16.	33	64° 28' 06.2"	165° 16' 03.2"
56.	29	64° 28' 04.1"	165° 15' 33.0"

The hydrographer recommends updating Chart 16206 with soundings from H11454 final smooth sheet.¹⁸

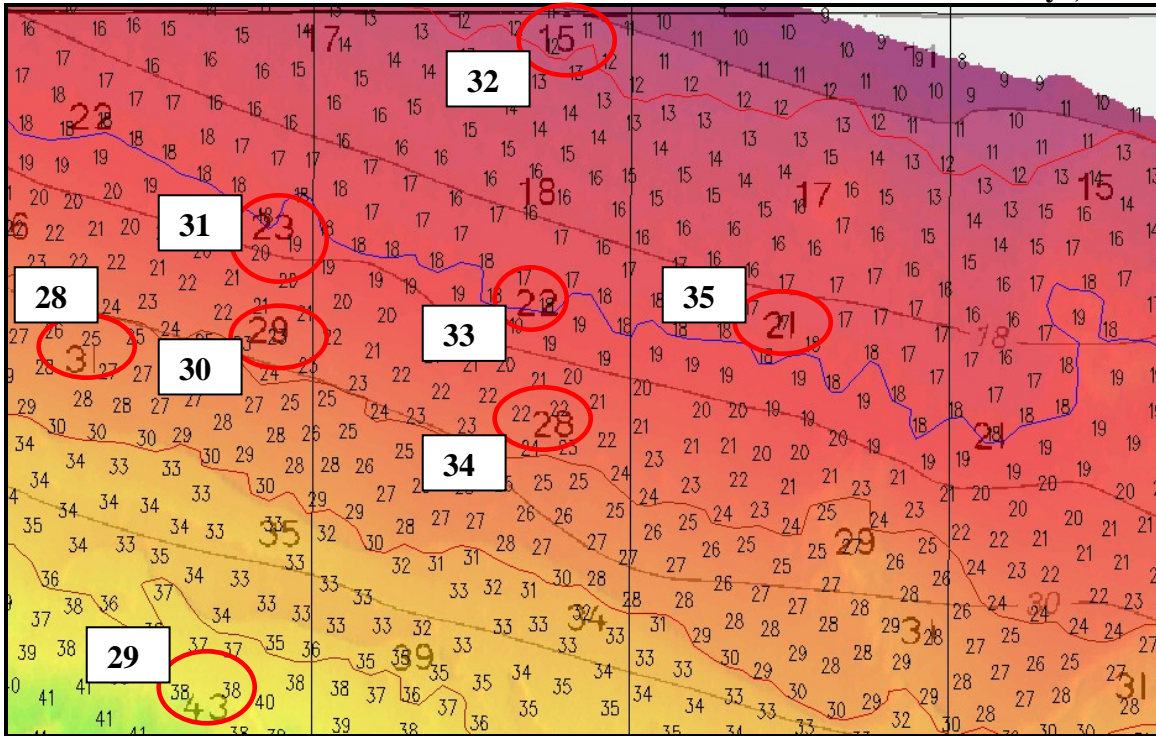


DTON Soundings (Feet) Circled in Red. Chart 16206 7th Ed

The following charted soundings have 2005 soundings which are significantly shoaler in the same location.

*ID#	Chart Sounding	Latitude (N)	Longitude (W)
17.	22	64° 28' 07.2"	165° 15' 14.2"
18.	25	64° 28' 01.9"	165° 15' 11.0"
19.	33	64° 27' 56.4"	165° 15' 09.0"
20.	20	64° 28' 06.2"	165° 14' 43.9"
21.	26	64° 27' 58.9"	165° 14' 43.8"
22.	32	64° 27' 53.2"	165° 14' 42.4"
23.	22	64° 28' 00.1"	165° 14' 30.1"
24.	22	64° 27' 56.9"	165° 14' 09.3"
25.	33	64° 27' 49.5"	165° 14' 16.0"
26.	26	64° 27' 51.1"	165° 13' 58.1"
27.	22	64° 27' 55.6"	165° 13' 49.6"

The hydrographer recommends updating Chart 16206 with soundings from H11454 final smooth sheet.¹⁹

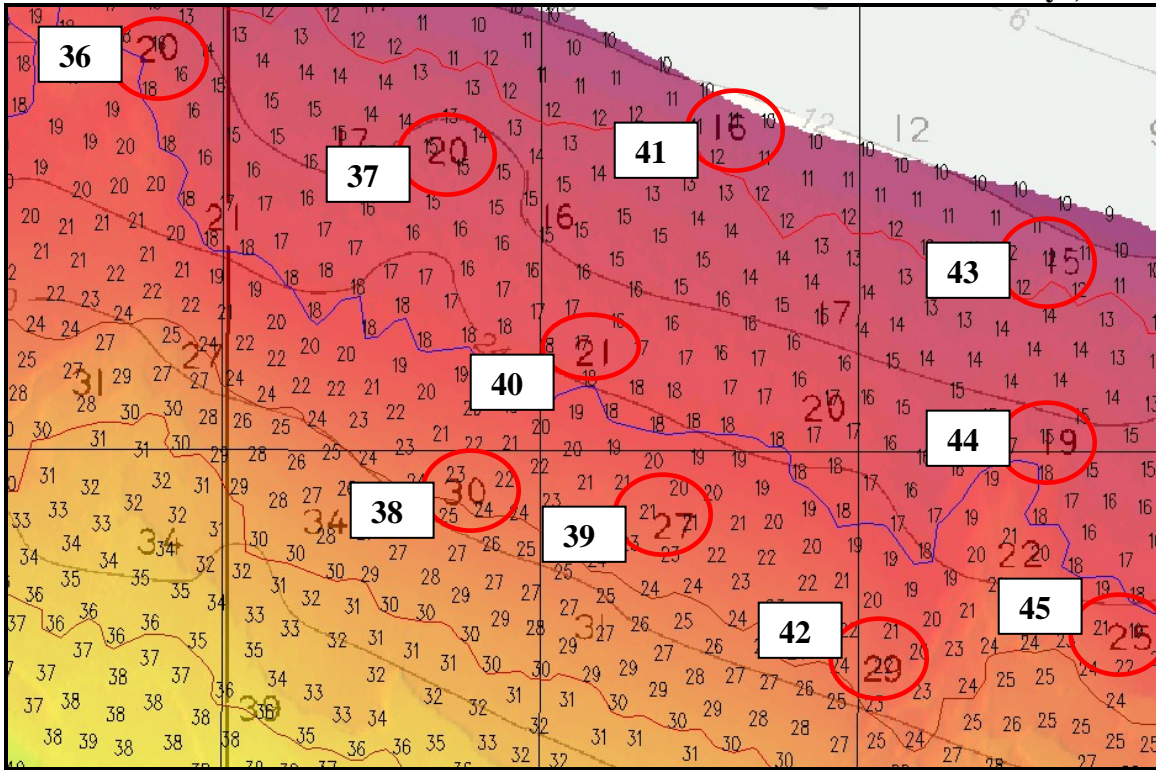


DTON Soundings (Feet) Circled in Red. Chart 16206 7th Ed

The following charted soundings have 2005 soundings which are significantly shoaler in the same location.

*ID#	Chart Sounding	Latitude (N)	Longitude (W)
28.	31	64° 27' 46.7"	165° 13' 50.8"
29.	43	64° 27' 32.3"	165° 13' 42.3"
30.	29	64° 27' 46.8"	165° 13' 33.3"
31.	23	64° 27' 51.7"	165° 13' 34.5"
32.	15	64° 27' 58.6"	165° 13' 07.5"
33.	22	64° 27' 48.1"	165° 13' 07.9"
34.	28	64° 27' 43.9"	165° 13' 06.7"
35.	21	64° 27' 47.4"	165° 12' 45.7"

The hydrographer recommends updating Chart 16206 with soundings from H11454 final smooth sheet.²⁰

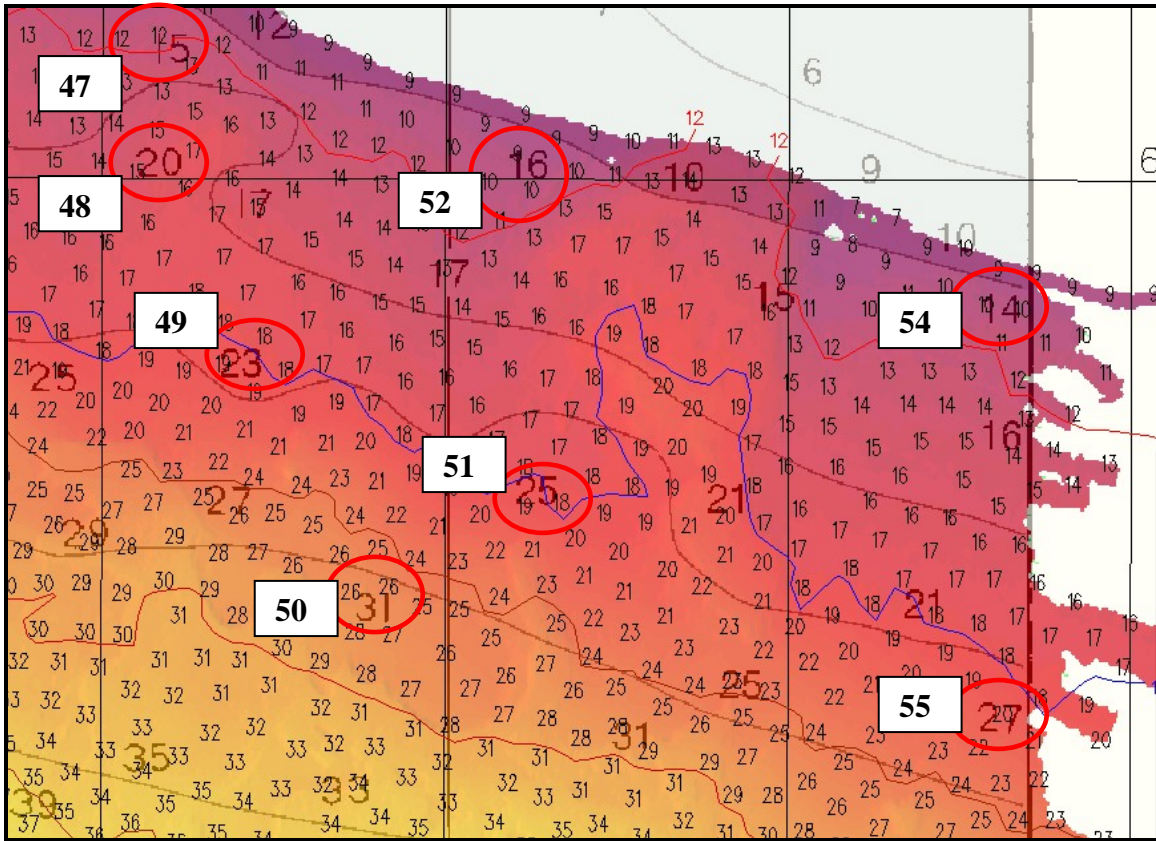


DTON Soundings (Feet) Circled in Red. Chart 16206 7th Ed

The following charted soundings have 2005 soundings which are significantly shoaler in the same location.

*ID#	Chart Sounding	Latitude (N)	Longitude (W)
36.	20	64° 27' 46.5"	165° 12' 06.1"
37.	20	64° 27' 42.4"	165° 11' 40.4"
38.	30	64° 27' 29.0"	165° 11' 38.0"
39.	27	64° 27' 27.1"	165° 11' 15.9"
40.	21	64° 27' 34.4"	165° 11' 26.1"
41.	16	64° 27' 43.5"	165° 11' 11.9"
42.	29	64° 27' 21.3"	165° 10' 57.6"
43.	15	64° 27' 35.4"	165° 10' 25.1" ²¹
44.	19	64° 27' 30.7"	165° 10' 42.3"
45.	25	64° 27' 22.7"	165° 10' 33.8"

The hydrographer recommends updating Chart 16206 with soundings from H11454 final smooth sheet.²²



DTON Soundings (Feet) Circled in Red. Chart 16206 7th Ed

The following charted soundings have 2005 soundings which are significantly shoaler in the same location.

*ID#	Chart Sounding	Latitude (N)	Longitude (W)
47.	15	64° 27' 35.4"	165° 10' 25.1"
48.	20	64° 27' 30.3"	165° 10' 27.0"
49.	23	64° 27' 23.0"	165° 10' 19.5"
50.	31	64° 27' 14.4"	165° 10' 08.2"
51.	25	64° 27' 17.7"	165° 09' 53.0"
52.	16	64° 27' 31.0"	165° 09' 53.7"
54.	14	64° 27' 25.1"	165° 09' 09.5"
55.	27	64° 27' 09.8"	165° 09' 11.2"

The hydrographer recommends updating Chart 16206 with soundings from H11454 final smooth sheet.²³

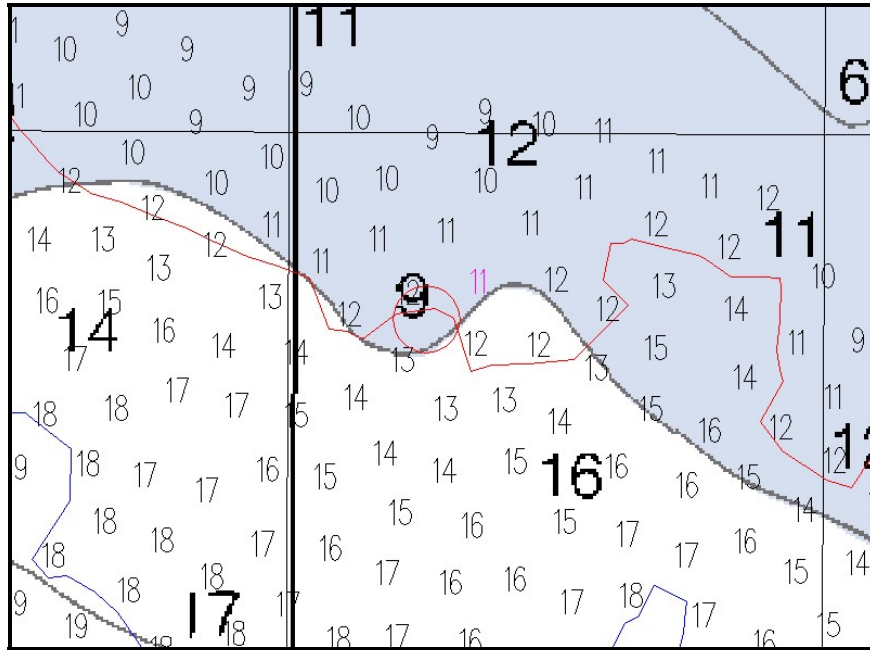


Chart 16206 7th Ed

In the vicinity of Latitude N 64° 28' 56", Longitude W 165° 19' 53", the charted 9 foot sounding has 12 foot soundings in the same location. The hydrographer recommends updating Chart 16206 with soundings from H11454 Final Smooth Sheet.²⁴

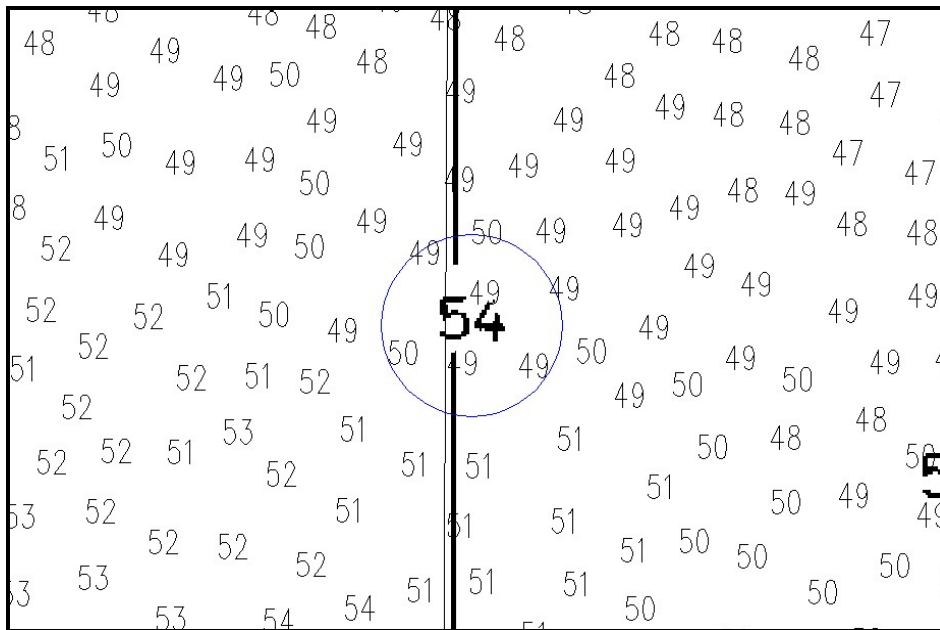


Chart 16206 7th Ed.

In the vicinity of N 64° 27' 52", Longitude W 165° 19' 58", the charted 54 foot sounding has 49 foot soundings in the same location. The hydrographer recommends updating the next chart edition with soundings from H11454 Final Smooth Sheet.²⁵

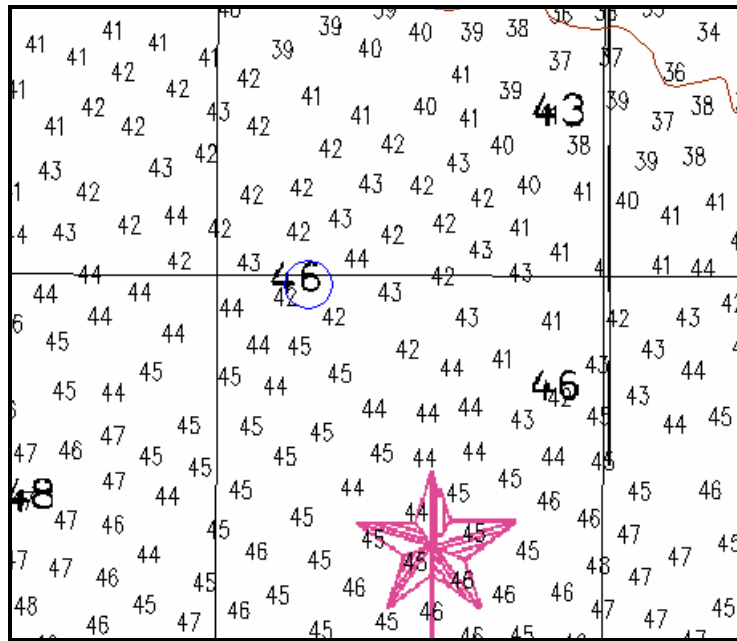


Chart 16206 7th Ed

In the vicinity of Latitude N 64° 27' 29", Longitude W 165° 14' 25", the charted 46 foot sounding has 42 foot soundings in the same location. The hydrographer recommends updating Chart 16206 with soundings from H11454 Final Smooth Sheet.²⁶

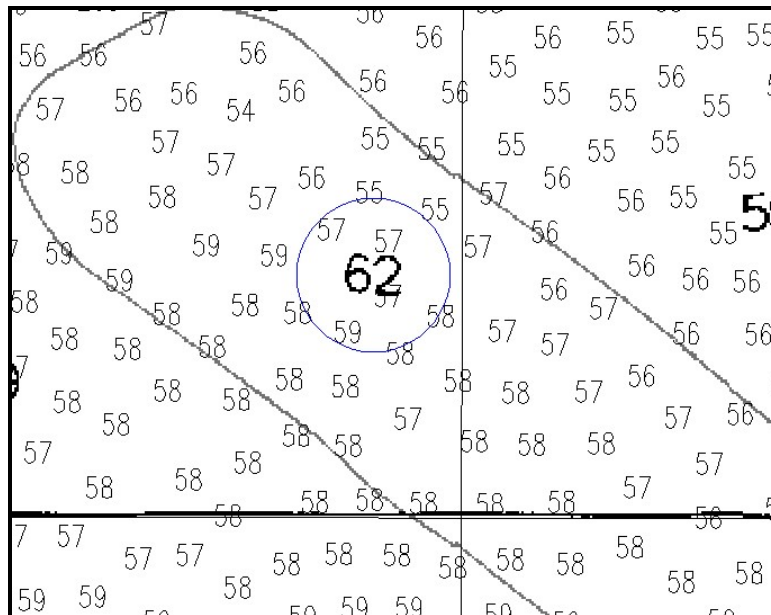


Chart 16206 7th Ed

In the vicinity of Latitude N 64° 26' 06", Longitude W 165° 11' 35", the charted 62 foot sounding has 57 foot soundings in the same location. The hydrographer recommends updating Chart 16206 with soundings from H11454 Final Smooth Sheet.²⁷

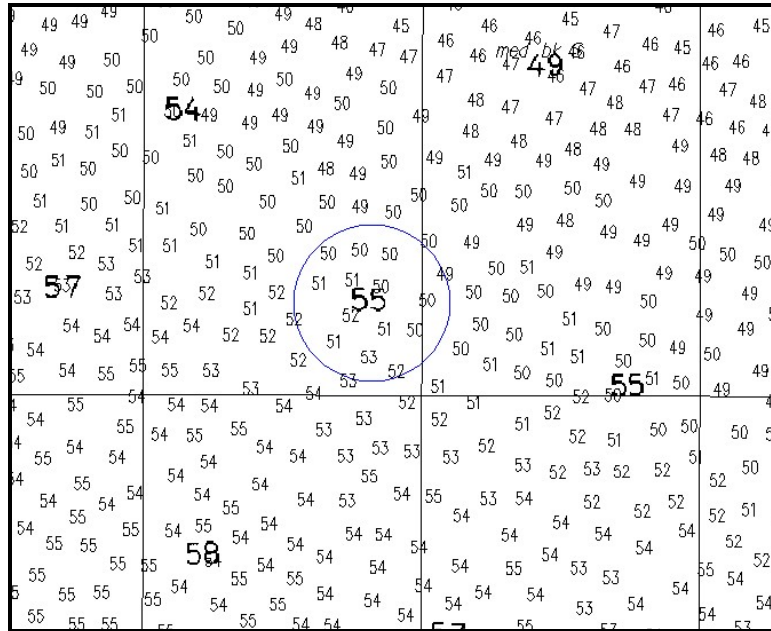


Chart 16206 7th Ed

In the vicinity of Latitude N 64° 26' 35", Longitude W 165° 11'04", the charted 55 foot sounding has 50 foot soundings in the same location. The hydrographer recommends updating Chart 16206 with soundings from H11454 Final Smooth Sheet.²⁸

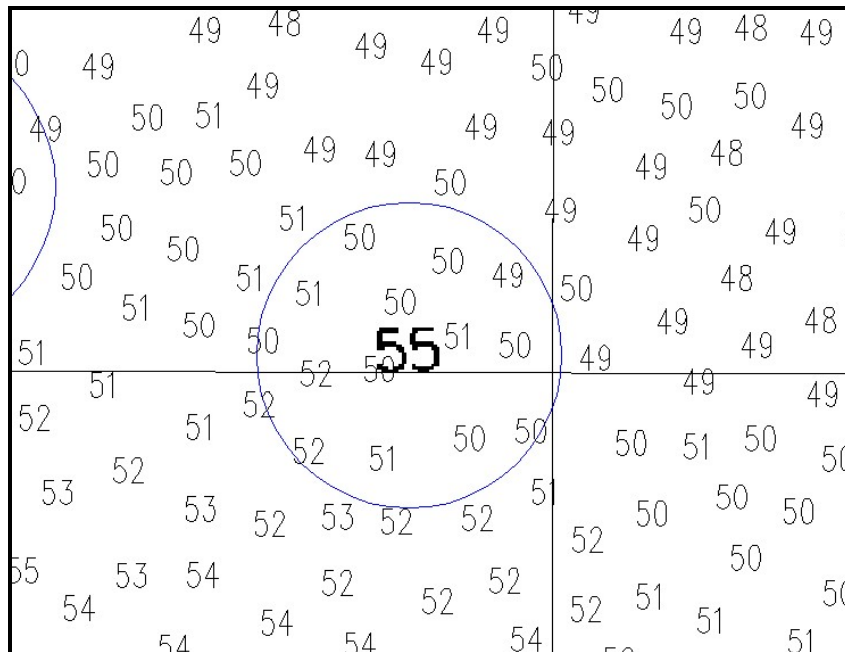


Chart 16206 7th Ed

In the vicinity of Latitude N 64° 26' 30", Longitude W 165° 10'39", the charted 55 foot sounding has 50 foot soundings in the same location. The hydrographer recommends updating Chart 16206 with soundings from H11454 Final Smooth Sheet.²⁹

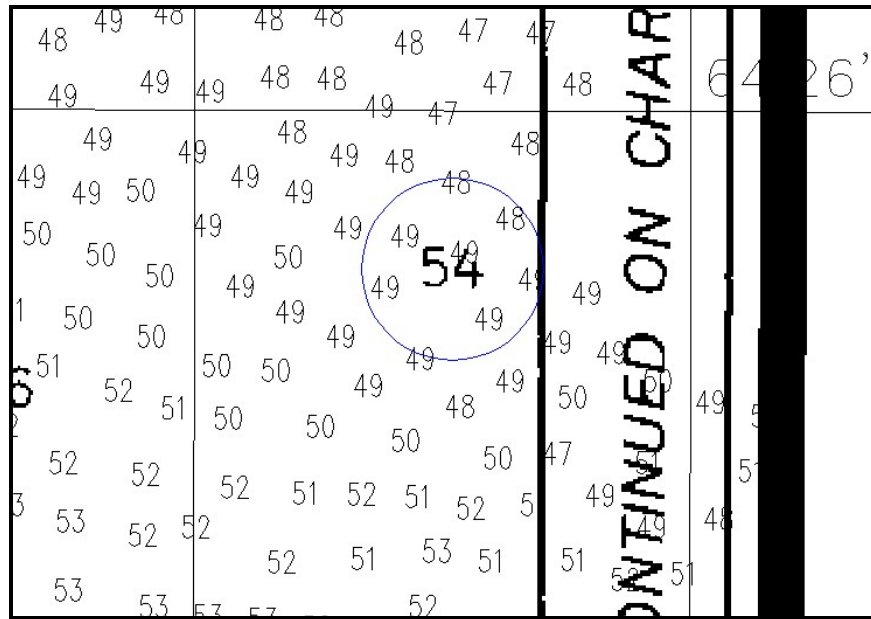
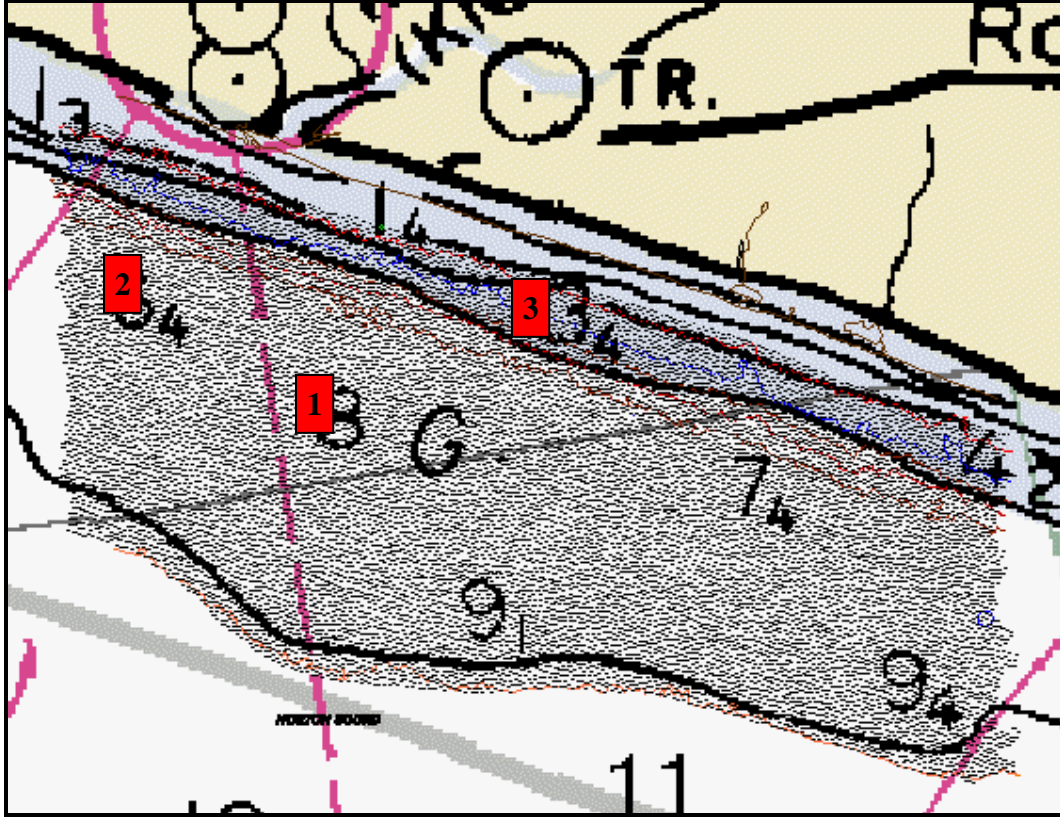


Chart 16206 7th Ed

In the vicinity of Latitude N 64° 26' 26", Longitude W 165° 09' 14", the charted 54 foot sounding has 49 foot soundings in the same location. The hydrographer recommends updating Chart 16206 with soundings from H11454 Final Smooth Sheet.³⁰

Chart 16200 13th Edition



Due to the small scale of this chart, it compares relatively well with the 2005 survey. The hydrographer recommends updating the next edition of the chart with the most current contours and soundings.³¹ The vicinity chart above is referenced to three areas in which significant differences were found in the comparison. The following pages highlight the interested area and note applicable comments.

Area 1

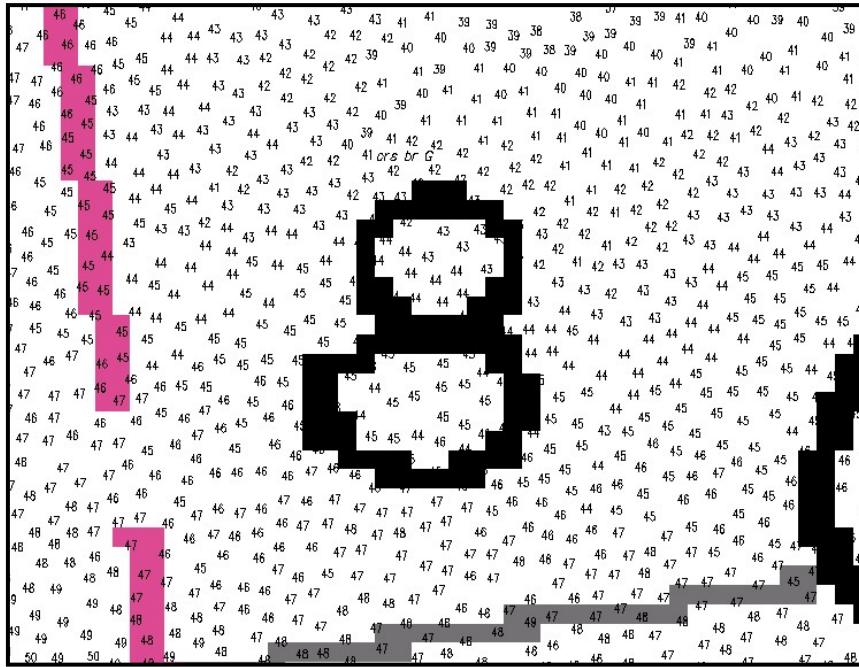


Chart 16200 13th Ed

In the vicinity of Latitude N 64° 27' 29", Longitude W 165° 17' 18", the charted 8 fathom sounding has 42 foot soundings in the same location. The hydrographer recommends updating Chart 16200 with soundings and contours from H11454 Final Smooth Sheet.³²

Area 2

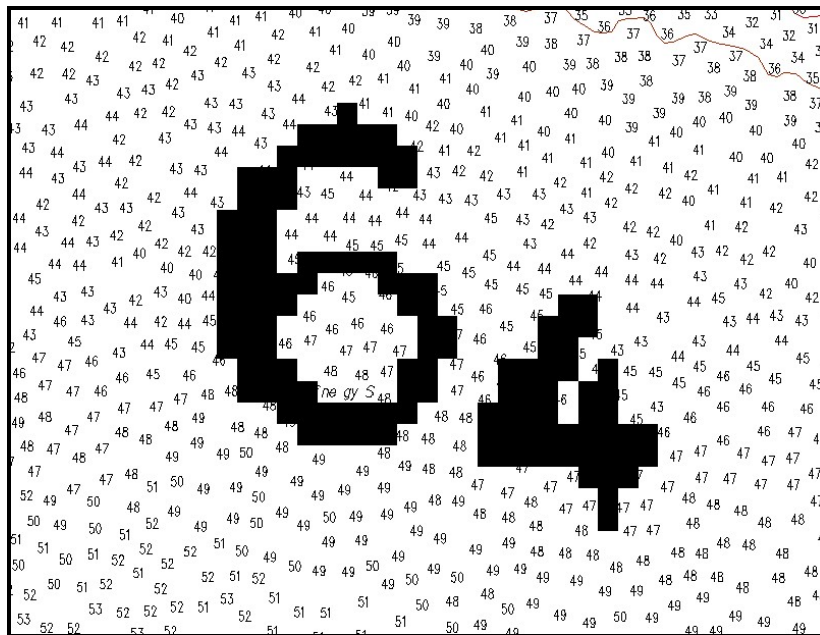


Chart 16200 13th Ed

In the vicinity of Latitude N 64° 28' 06", Longitude W 165° 19' 54", the charted 6 fathom, 4 foot sounding has 48 foot soundings in the same location. The hydrographer recommends updating Chart 16200 with soundings and contours from H11454 Final Smooth Sheet.³³

Area 3

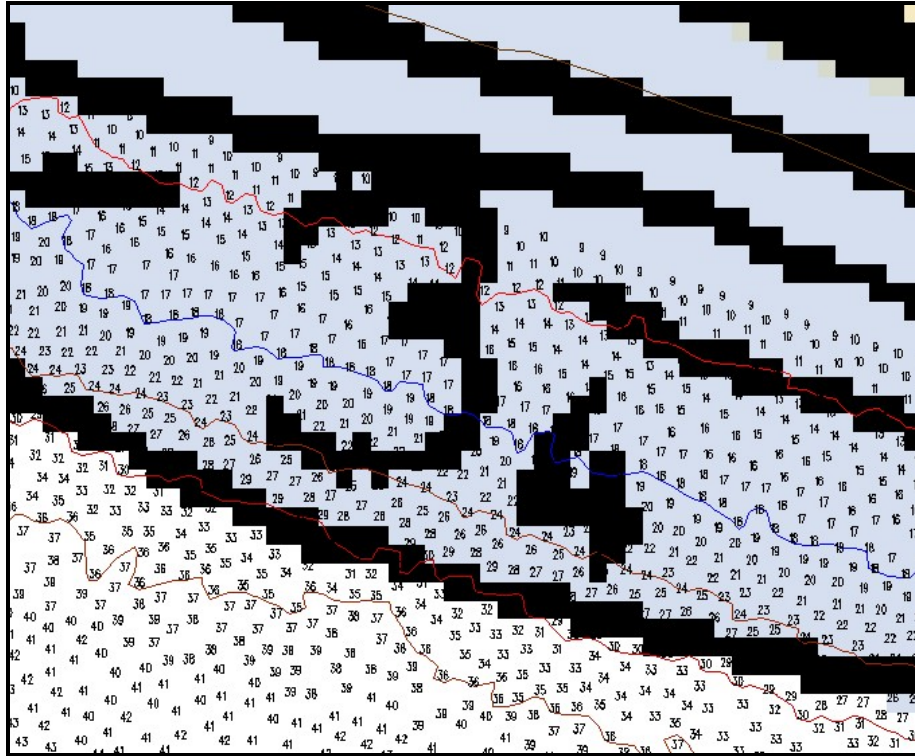


Chart 16200 13th Ed

In the vicinity of Latitude N 64° 28' 04", Longitude W 165° 14' 14", the charted 3 fathom, 4 foot sounding has 15-16 foot soundings in the same location. The hydrographer recommends updating Chart 16200 with soundings and contours from H11454 Final Smooth Sheet.³⁴

AWOIS Items Summary

There are no AWOIS items within the survey area H11454 to report.³⁵

D2. Additional Results

2004 Bering Sea Storm

On October 19, 2004, a severe storm hit the Nome coast. Hurricane strength winds created a storm surge of 10.45 feet, causing a great deal of damage to coastal communities in the area. It is likely this storm contributed to the significant shoaling indicated by this survey.

**LETTER OF APPROVAL
REGISTRY NO. H-11454**

This Report and the accompanying smooth sheet are respectfully submitted.

Field operations contributing to the accomplishment of survey H-11454 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report, smooth sheet, digital data, and accompanying records have been closely reviewed and are considered complete and adequate as per the Statement of Work. Other reports submitted with this survey include Data Acquisition and Processing Report, Vertical and Horizontal Report, and the Shoreline Verification Field Notes.

I believe this survey is complete and adequate for its intended purpose.



Lamar Gates, Hydrographer
Terra Surveys, LLC

Date 5/9/06

-
- ¹ Filed with the project records.
 - ² Concur with the hydrographer's comments.
 - ³ Concur
 - ⁴ Concur
 - ⁵ Filed with the hydrographic records.
 - ⁶ Filed with the project records.
 - ⁷ PHB comparisons were completed using chart 16206, 8th Ed. Nov 05 corrected through Nov. 2005.
 - ⁸ Concur. The survey is adequate to supersede all soundings, contours and features within the common area.
 - ⁹ Concur
 - ¹⁰ Concur
 - ¹¹ Concur
 - ¹² Concur
 - ¹³ Concur
 - ¹⁴ Concur
 - ¹⁵ Do not concur. One Danger to Navigation Report was submitted to MCD describing general shoaling in the area. See Appendix I of this report.
 - ¹⁶ Concur
 - ¹⁷ Concur
 - ¹⁸ Concur
 - ¹⁹ Concur
 - ²⁰ Concur
 - ²¹ Strike ~~64° 27' 35.4"~~ and insert 64° 27' 38.0". Strike ~~165° 10' 25.1"~~ and insert 165° 10' 40".
 - ²² Concur
 - ²³ Concur
 - ²⁴ Concur
 - ²⁵ Concur
 - ²⁶ Concur
 - ²⁷ Concur
 - ²⁸ Concur
 - ²⁹ Concur
 - ³⁰ Concur
 - ³¹ Concur
 - ³² Concur
 - ³³ Concur
 - ³⁴ Concur
 - ³⁵ Concur

APPENDIX I

Danger to Navigation Report

Danger to Navigation Report**Hydrographic Survey Registry Number: H11454****State: Alaska****Locality: Norton Sound****Sub-locality: Southeast Approaches to Nome****Project Number: OPR-R394-KR-05****Survey Dates: June-August 2005**

Depths are reduced to Mean Lower Low Water using verified tides. Positions are based on the NAD83 horizontal datum.

CHARTS AFFECTED:

Chart	Scale	Edition	Date
16206	1:20,000	10 th	01/17/98
16200	1:400,000	11 th	10/01/04

DANGERS:

In the area bounded by 64/28/44.8 N, 64/27/49.5 N and 165/20/05.4 W, 165/14/09.3 W; significant shoaling has occurred. In this area shoaling between 3 feet and 7 feet to Charted depths has occurred between the 12 foot and 36 foot depth curves.

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

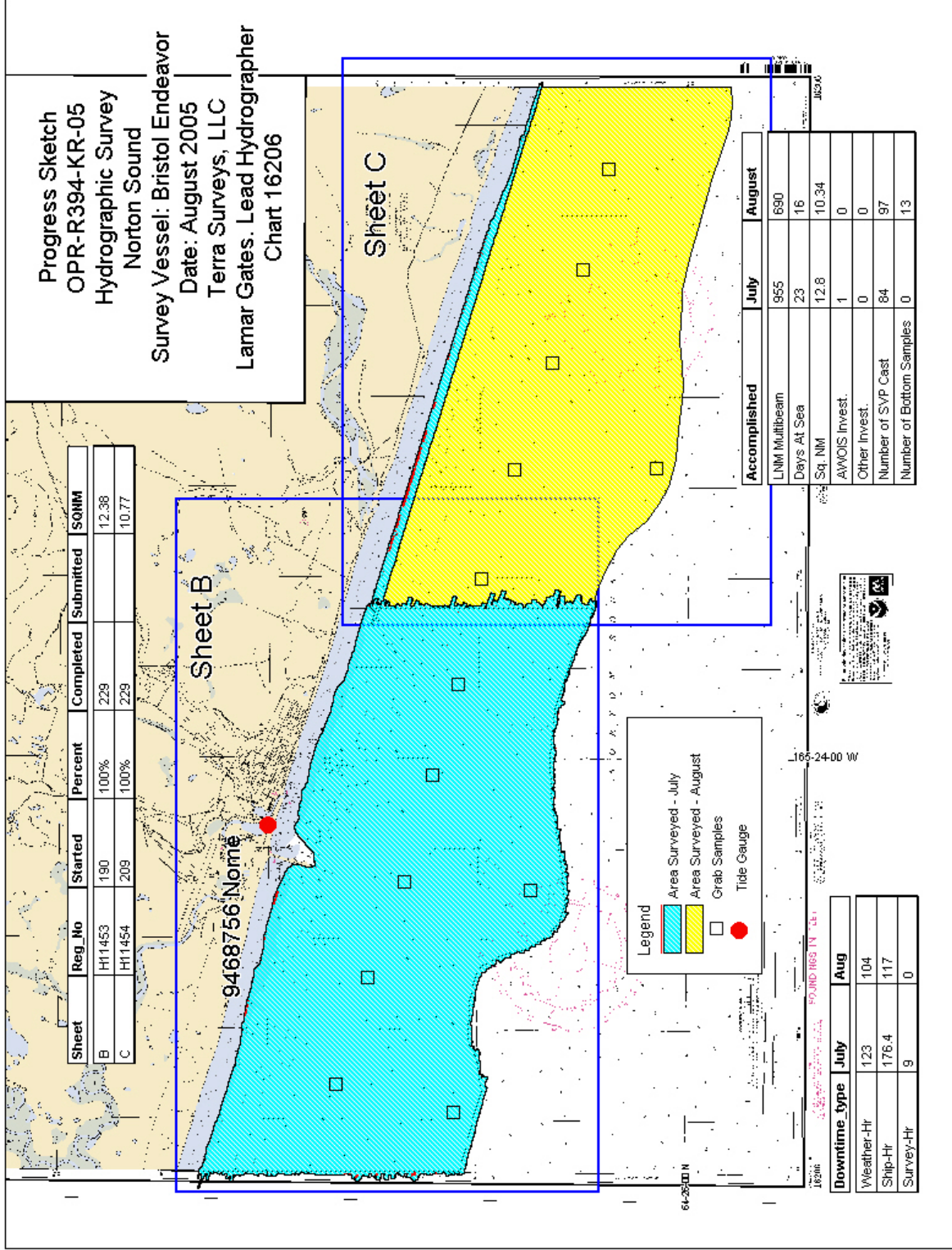
APPENDIX II

List of Geographic Names

There were no corrections made to the geographical names within survey area H11454.

APPENDIX III

Progress Sketch



APPENDIX IV

Tides and Water Levels

Abstract of Times of Hydrography for Smooth Tides

Project: OPR-R394-KR-05

Registry No.: H11454

Sheet: C

Inclusive Dates: July 28, 2005 – August 15, 2005

START		END	
Day (Julian)	Time (UTC)	Day (Julian)	Time (UTC)
209	10:28	209	19:55
213	09:11	214	00:02
214	00:28	215	00:01
215	00:30	216	00:11
216	00:37	216	07:03
224	07:59	224	23:53
225	00:30	225	23:41
226	00:05	226	23:32
227	00:03	227	06:31

APPENDIX V


AWOIS

There are no AWOIS items within the survey area H11454 to report.

APPROVAL SHEET
H11454

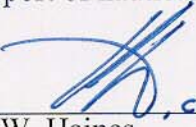
Initial Approvals:

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.



Russ Davies
Cartographic Team
Pacific Hydrographic Branch
Date: 10-12-06

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.



Donald W. Haines
CDR, NOAA
Chief, Pacific Hydrographic Branch
Date: 16 Oct. 2006

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H11454

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
16206	10/6/06	GARY NELSON	Full Part Before After Marine Center Approval Signed Via APPLICATION OF Drawing No. SOUNDINGS, FEATURES + CURVES 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.
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