

FOO446

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey . HYDROGRAPHIC/SIDE SCAN SONAR .

Field No. AHP-5-3-98

Registry No. FOO446

LOCALITY

State MAINE

General Locality EASTPORT

Sublocality ESTES HEAD MARINE TERMINAL
AND APPROACHES

19 98

CHIEF OF PARTY

. BRIAN A. LINK . OIC

LIBRARY & ARCHIVES

DATE NOV 12 1999

HYDROGRAPHIC TITLE SHEET

F00446

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.

AHP-5-3-98

State Maine

General locality Eastport

Locality Estes Head Marine Terminal and Approaches

Scale 1:5000

Date of survey 09/24/98 - 09/25/98

Instructions dated 9-18-98

Project No. A-353

Vessel 0517

Chief of party Brian Link

Surveyed by Atlantic Hydrographic Field Party

Soundings taken by echo sounder, hand lead, pole Echo sounder

Graphic record scaled by Mark McMann, John Gaskin

Graphic record checked by Mark McMann, John Gaskin

Protracted by HPS

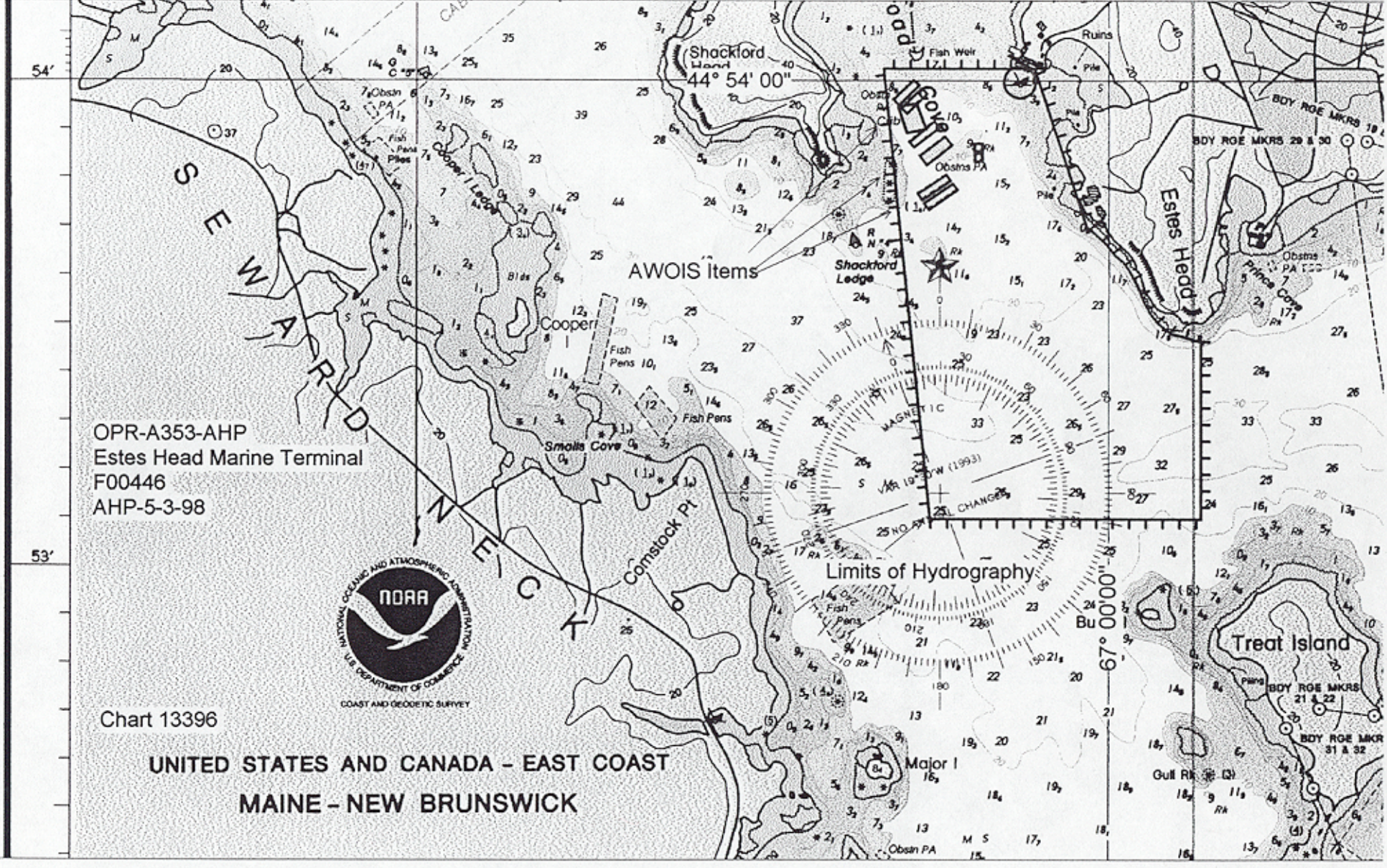
Automated plot by DesignJet 2500cp
HP Desk Jet 694C Ship

Verification by Atlantic Hydrographic Branch Personnel

Soundings in fathoms Meters at MLW MLLW _____

REMARKS: Handwritten notes in the D.R. were made during
office processing.

AWDIS ✓ & SURF ✓ by MBH on 9-15-99



OPR-A353-AHP
 Estes Head Marine Terminal
 F00446
 AHP-5-3-98



Chart 13396
 UNITED STATES AND CANADA - EAST COAST
 MAINE - NEW BRUNSWICK

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY F00446
FIELD NO. AHP-5-3-98
SCALE: 1:5,000
1998
ATLANTIC HYDROGRAPHIC PARTY
CHIEF OF PARTY: Brian A. Link

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-A353-AHP, Estes Head Marine Terminal and Approaches, Eastport, Maine, dated September 18, 1998.

This project is being conducted in response to an urgent request from the PEN-BAR Pilots Association (Blue Hill, Maine) to perform a 200% Side Scan Sonar, full-bottom coverage hydrographic survey of the approaches to and the area in the vicinity of the Estes Head Marine Terminal Pier.

B. AREA SURVEYED

The area surveyed for F00446 includes the newly constructed Estes Head Marine Terminal and approaches. The approximate survey limits are:

North - 44°54'00"N
South - 44°53'02"N *52'30"*
East - 066°59'40"W *00"*
West - 067°00'35"W *01'15"*

This survey was conducted from September 24 (DN 267) to September 25, 1998 (DN 268).

C. SURVEY VESSEL

NOAA launch 0517, a 21-foot MonArk, was the vessel used to collect all survey data. There were no unusual vessel configurations nor problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING . *See also Evaluation Report*

Coastal Oceanographic's HYPACK software package, version 6.4 was used to collect all hydrographic data for this survey. HPS version 4.03 was used for data processing.

Other computer programs used were:

MapInfo	Ver. 4.5
VELOCITY	Ver. 3.1 (2/25/98)

E. SIDE SCAN SONAR EQUIPMENT

Side scan sonar (SSS) operations were conducted using an EG&G model 260 slant-range corrected SSS recorder and an EG&G 272-T dual-channel, single frequency towfish. The towfish was operated on the 100-kHz frequency and was configured with a 20° beam depression. The side scan sonar equipment used for the survey was towfish serial number 016835 and recorder serial number 016942.

The side scan sonar towfish was usually maintained at a height off the bottom of 8 to 20 percent of the range scale used. The lack of a side scan sonar cable winch and personnel to continually monitor the cable length, as well as extreme changes in depth made it impossible to maintain the 8 to 20 percent window constantly. In some cases the towfish was towed at more than 20 percent of the range scale.

Side scan sonar data was collected utilizing the 100-meter range scale in order to get full bottom coverage in the depth of water for this survey. Forty-meter line spacing was used to meet the requirements of this 1:5000 scale survey. In some areas, this resulted in coverage to as much as 400%. This excess helped assure coverage in areas where the towfish was not towed between the 8 to 20 percent range. Adequate coverage was determined by producing two separate swath plots and ensuring at least 100% coverage on each plot. Confidence checks were performed on a routine basis, primarily by noting changes in bottom texture on the outer edges of the sonagram, and on buoys and other contacts in the survey area.

All significant contacts were measured off the sonagrams and entered into an HPS contact table. Field Party personnel determined contact heights, positions, and cross reference correlations using the HPS contact Utility program. Contacts were investigated using echo sounder development.

F. SOUNDING EQUIPMENT

An Innerspace model 448 depth sounder, serial number 241, was used to collect all soundings.

A standard lead line calibrated in meters, serial number 0517, was used during this survey for comparison readings with the echo sounder.

G. CORRECTIONS TO SOUNDINGS

Soundings were recorded using the Innerspace model 448 depth sounder. It was adjusted for an assumed speed of sound through water of 1500 meters/second. Changes to the gain and/or chart speed were noted on the echogram. Digitized soundings agreed with the analog trace within 0.2 meters.

Corrections for the speed of sound through water were computed from data obtained with Sea-Bird Electronics Inc. SEACAT electronic profiler, serial number 192276-287. Data quality assurance tests were performed in accordance with Field Procedures Manual (FPM) 2.1.3.2. Program VELOCITY was used to compute speed of sound through water corrections. *Copies of the velocity tables and cast data are in the Survey Separates.

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

<u>Velocity</u> <u>Table No.</u>	<u>Cast</u> <u>No.</u>	<u>Deepest</u> <u>Depth (m)</u>	<u>Applicable DN</u>	<u>Cast</u> <u>Position</u>	<u>Day</u>
1	1	37.0	267-268	44°53'12"N 066°59'48"W	267

Correctors were applied to the sounding data prior to plotting.

Weather permitting, lead line comparisons were conducted each day in accordance with FPM 2.1.3.1. No instrument error was detected from these comparisons. *The lead line comparison form is in the Survey Separates.

A static draft of 0.3 meter was applied to the on-line data. The draft was measured by subtracting the difference from a punch mark on the side of launch 0517, 0.6 meter above the transducer, to the water surface. Settlement and squat measurements were performed on September 15, 1997 (DN 258), at Pasadena, Maryland, using Lietz level S/N 08754. Settlement and squat correctors and the static draft corrector were applied on-line through the offset table. *Copies of the field data, the graphs of the settlement and squat correctors vs. speed in meters/second, and the offset table are included in the Survey Separates.

The Eastport, ME tide station No. 841-0140 served as control for datum determination. Unverified actual water level heights from this gauge were downloaded from the NOAA web site (<http://www.opsd.nos.noaa.gov/ftp/pwldata.html>) and used for correcting the soundings for this survey. This station is also the reference station for the predicted tides. This survey required two tide zones. A time corrector of zero minutes and a range corrector ratio of x1.00 in zone ME 10, and a time corrector of +6 minutes and a range corrector ratio of x1.01 in zone ME 11 were applied to the actual tides for the reference station.

* Data filed with original field records.

Approved tides were requested from the Requirements and Engineering Branch, N/CS41, in a letter dated January 5, 1999. *A copy of the letter is appended to this report.

Approved tides and zoning have been applied during office processing.

H. CONTROL STATIONS - See also Evaluation Report

The horizontal control datum for this project is the North American Datum of 1983. The Canadian Differential GPS (DGPS) Beacon at Partridge Island, New Brunswick was used to control this survey. The position for the reference station antenna is 45° 14' 12.8"N, 66° 03' 13.8"W.

I. HYDROGRAPHIC POSITION CONTROL

DGPS was used as the method of positioning for all hydrographic data on this survey. The Canadian Differential GPS Beacon at Partridge Island, New Brunswick was used as the reference station in conjunction with beacon receiver serial number X-1086 and antenna serial number MBA-M1039 on launch 0517. A Starlink sensor, serial number 700417A1065, was used as the remote station on vessel 0517. This equipment met the accuracy standards for this 1:5,000 scale survey.

A performance check was conducted on day 267 by resting the launch alongside third-order control station EAST at 44°54'16.27157"N, 066°59'00.71006"W. The check revealed a 13 meter difference in easting and a 2 meter difference in northing. *A copy of this check is included in the Survey Separates. Prior to this survey, performance checks had been conducted in Belfast, ME with no error, and a copy of these are also included in the Survey Separates. Despite the disagreement between the performance check and the established mark no position discrepancies were noted in the survey data. The DP taken on AWOIS Item 10041 was on the charted position and the survey soundings along the pier face appear to be in the correct location. For these reasons and prior successful performance checks the hydrographer concluded that the positioning system was working properly. The hydrographer believes there is an unresolved problem with the control station position or datum adjustment.

Occasionally a good position misplotted on the raw track plot. This problem was attributed to good DGPS data following a period of questionable DGPS data. These positions were reviewed, then edited or rejected as necessary.

J. SHORELINE - See also Evaluation Report

Shoreline shown on the final sounding plot is from the raster image of chart 13396, 3rd edition, September 4, 1993. The MapInfo program was used for plotting. There were no shoreline changes noted from the chart. The location of the newly constructed Estes Head Pier is discussed in section O.

*Data filed with original field records.

K. CROSSLINES

A total of 1.2 miles of crosslines were run, representing approximately 10% of the main scheme hydrography. Most crossline soundings agreed within 0.2 meter with the main scheme soundings. In extreme cases, a few differences of 0.6 meter were noted.

L. JUNCTIONS

This survey does not junction with any contemporary surveys.

M. COMPARISON WITH PRIOR SURVEYS. *See also Evaluation Report*

The prior survey comparison will be performed by AHB. The prior survey covering this project is Canadian Hydrographic Service survey FS-9147, 1:10,000 scale, 1986-87.

N. ITEM INVESTIGATION REPORTS

Ten AWOIS items, numbers 10040 - 10049 were assigned to this survey. Item investigation reports follow in section N.1. - N.2.

N.1.- AWOIS 10041

Item Description: Wreck (Unknown)

Source: C.H.S. Field Sheet # 9147 (1986)

AWOIS Position: Lat - 44° 53' 59.78"N, Lon - 67° 00' 15.72"W

Required Investigation: VS, BD, ES, SD

Charts Affected: 13396

INVESTIGATION

Date(s)/DN(s): 9-25-98/ DN268 (OPR-A353-AHP, F00446)

Position Numbers: 540 **Launch Number:** 0517

Investigation Used: Visual Search

Position Determined By: DGPS

Investigation Summary: A visual search was conducted and the remains of a wooden wreck were discovered. The offshore end of the wreck was exposed 1.5 meters at the time the detached position was taken. The inshore end was in very shallow water and inaccessible with the survey launch. The wreck consists of decaying wooden ribs.

CHARTING RECOMMENDATION

The hydrographer recommends that the charted wreck be removed and a visible wreck be charted at the following location: LAT. 44° 53' 59.47"N, LON. 67° 00' 16.20"W. *Concur*

Chart a visible wk, bearing 2m at MLLW, in the present Survey location.

Delete presently charted visible wk.

N.2. - AWOIS NOS: 10040, 10042-10049

Item Description: OBSTRUCTIONS

Source: BP141442

AWOIS Position: Lat - 44° 53' 53.30"N, Lon - 67° 00' 32.20"W

Required Investigation: VS, SD, ##

Charts Affected: 13396

INVESTIGATION

Date(s)/DN(s): 9-25-98/ DN268 (OPR-H353-AHP, F00446)

Position Numbers: 641, 643, 644, 646, 647

Launch Number: 0517

Investigation Used: VS

Position Determined By: DGPS

Investigation Summary: A visual search of the area was conducted and the nine obstructions were found to be commercial, floating fish pens. Three detached position were taken along the eastern perimeter and two were taken along the southern perimeter of the fish pens. The western and northern perimeters could not be located because of numerous buoys along these areas, which were strung together. These appeared to be anchors for additional pens.

CHARTING RECOMMENDATION

The hydrographer recommends removing the charted "Obstm PA Crib" and replacing with "Fish Pens" in the area delineated by the five detached positions taken during the investigation. *Concur with conditions. Remove obstm PA cribs and obstm PA labels. Revise to obstm. Retain on chart as "Obstm PA".*

*EFH
10/26/99*

O. COMPARISON WITH THE CHART - See also Evaluation Report

Comparisons were made with chart 13396, 3rd Edition, Sept. 4, 1993. The majority of soundings from the current survey agree very well with the chart, with differences of less than 0.5 meter. In general survey soundings were slightly deeper than charted depths. There were no dangers to navigation identified on this survey.

The 20-meter contour charted at LAT. 44° 53' 29"N, LONG. 67° 00' 24"W was developed with 10-meter line spacing. Survey soundings in this area were 1 to 3 meters deeper than charted soundings. The hydrographer recommends replacing charted soundings with survey soundings.

The area at LAT. 44° 53' 35", LONG. 67° 00' 26", because of irregularities, was developed with 10-meter line spacing. The hydrographer recommends charting soundings from this development.

The Estes Head Marine Terminal Pier was positioned with two detached positions on the northwest and southeast ends of the t-section of the pier (PN 636 and 638). Two detached positions were also taken on the dolphins on either end of the t-section (PN 635 and 640).

The following contacts were identified during the course of this survey:

Position Number	Investigation Position	Least Depth	Latitude	Longitude	Recommendation
106.2	595- 634	none	44°53'07.43"N	66°59'52.14"W	Chart survey soundings
363.1	595- 634	none	44°53'06.08"N	66°59'53.47"W	Chart survey soundings

The contacts in the table above were determined to be borderline significant. An echosounder investigation was conducted using 10-meter line spacing, however neither contact was located during these investigations. This area has a very dramatic change in depth which may have distorted the scaled heights of the contacts. The hydrographer recommends that sounding data from the investigations be used to update the chart.

P. ADEQUACY OF SURVEY - See also Evaluation Report

This survey is complete and adequate to supersede all prior surveys within the common area.

Q. AIDS TO NAVIGATION . See also Evaluation Report

No aids to navigation were located during the course of this survey - DO NOT CONCERN

There were no bridges, ferry routes, pipelines or overhead power cables within the survey area.

R. STATISTICS

<u>Description</u>	<u>Quantity</u>
Total Number of Positions	6950
Total Linear Nautical Miles of Hydrography	16.76
Square Nautical Miles of Hydrography	0.25
Days of Production	2
Detached Positions	10
Bottom Samples	0
Tide Stations	1
Velocity Casts	1

S. MISCELLANEOUS - *See also Evaluation Report*

Bottom samples were required but could not be obtained on this survey. The 5 pound sampler normally used by AHP personnel was too light for the strong currents and depth of water in this area. As a result it was not possible to take bottom samples in the area of the survey.

No anomalous tides were observed during this survey.

T. RECOMMENDATIONS

No additional field work was identified after field office processing was completed. Specific recommendations are made in sections J., N. and O., and of this report.

U. REFERRAL TO REPORTS

There are no reports referred to in this report that are not submitted with this report.

Submitted by:

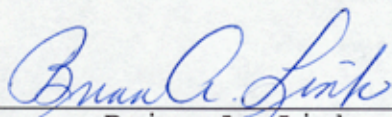
John B. Gaskin

John B. Gaskin

APPROVAL SHEET
Field Examination Survey
OPR-A353-AHP
AHP-5-3-98
F00446
1998

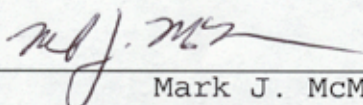
This field examination survey was conducted in accordance with the project instructions for OPR-A353-AHP, the Hydrographic Manual, the Hydrographic Survey Guidelines, and the Field Procedures Manual. All reports, records, and survey sheets were reviewed by the Launch Hydrographer-in-charge. The descriptive report was reviewed and approved by the Chief of Party. The Chief of Party did not directly supervise any part of this survey

This survey is a complete field examination survey for the area described in Section B of this report.



Brian A. Link

Chief, Atlantic Hydrographic Party (acting)



Mark J. McMann

Launch Hydrographer-in-charge



TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: April 13, 1999

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-A353-AHP-98

HYDROGRAPHIC SHEET: F00446

LOCALITY: Eastport, ME - Atlantic Ocean
Estes Head Marine Terminal

TIME PERIOD: September 24 - September 25, 1998

TIDE STATION USED: 841-0140 Eastport, ME
Lat. 44° 54.2'N Lon. 66° 59.1'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

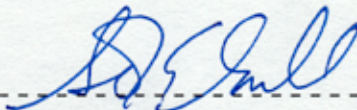
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 5.889 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: ME10 & ME11

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.

For 

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



Final tide zone node point locations for OPR A353-AHP-98,
 Sheet F00446.

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 ME10			
-66.986671 44.903358	841-0140	0	1.00
-66.9484 44.887038			
-66.957355 44.877727			
-66.991604 44.882447			
-67.017655 44.879806			
-67.018691 44.883752			
-66.997454 44.892624			
-66.994104 44.897173			
-66.986671 44.903358			
Zone ME11			
-67.018691 44.883752	841-0140	+6	1.01
-67.038215 44.887801			
-67.040782 44.891311			
-67.035516 44.895663			
-67.020967 44.900295			
-67.009832 44.907365			
-66.998759 44.906475			
-66.997454 44.892624			
-67.018691 44.883752			

GEOGRAPHIC NAMES

F00446

Name on Survey	CHART NO. 15586 ON PREVIOUS SURVEY CON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION ON LOCAL MAPS P.O. GUIDE OR MAP RAND McNALLY ATLAS U.S. LIGHT LIST										
	A	B	C	D	E	F	G	H	K		
BROAD COVE	X		X							1	
BUCKMAN HEAD	X		X							2	
BURIAL ISLAND	X		X							3	
COMSTOCK POINT	X		X							4	
EASTPORT (title)	X		X							5	
ESTES HEAD	X		X							6	
MAINE (title)	X		X							7	
MAJOR ISLAND	X		X							8	
PRINCE COVE	X		X							9	
SHACKFORD HEAD	X		X							10	
SHACKFORD LEDGE	X		X							11	
TREAT ISLAND	X		X							12	
										13	
										14	
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										24	
										25	

Demetrius J. Rowland
JUN - 8 1999

N/CS33-70-99

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY
(Check):

ORDINARY MAIL AIR MAIL

REGISTERED MAIL EXPRESS

GBL (Give number) _____

DATE FORWARDED

SEPT 9, 1999

NUMBER OF PACKAGES

ONE TUBE

TO:

CHIEF, DATA CONTROL GROUP, N/CS3x1
NOAA/NATIONAL OCEAN SERVICE
STATION 6815, SSMC3
1315 EAST-WEST HIGHWAY
SILVER SPRING, MARYLAND 20910-3282

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

F00446

MAINE, EASTPORT, ESTES HEAD MARINE TERMINAL AND APPROACHES

(ONE) 1 TUBE CONTAINING THE FOLLOWING:

- 1 ORIGINAL DESCRIPTIVE REPORT
- 1 SMOOTH SHEET FOR F00446
- 1 DRAWING HISTORY FORM (NOAA FORM #76-71) FOR NOS CHART 13396
- 1 RECORD OF APPLICATION TO CHART FORM (NOAA FORM #75-96) FOR SURVEY F00446
- 1 H-DRAWING FOR NOS CHART 13396
- 1 COMPOSITE DRAWING FOR NOS CHART 13396

FROM: (Signature)

Deborah A. Bland

RECEIVED THE ABOVE

(Name, Division, Date)

Return receipted copy to:

ATLANTIC HYDROGRAPHIC BRANCH
N/CS33
439 WEST YORK STREET
NORFOLK, VA 23510-1114

09/09/99

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: F00446

NUMBER OF CONTROL STATIONS		2
NUMBER OF POSITIONS		3603
NUMBER OF SOUNDINGS		3603
	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	45.0	06/08/99
VERIFICATION OF FIELD DATA	115.5	08/24/99
QUALITY CONTROL CHECKS	13.0	
EVALUATION AND ANALYSIS	8.0	
FINAL INSPECTION	11.0	08/31/99
COMPILATION	20.0	09/08/99
TOTAL TIME	212.5	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		08/31/99

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR FOO446 (1998)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System (HPS)
NADCON, version 2.10
SITEWORKS 02.01
MicroStation 95, version 5.05
I/RAS B, version 5.01

The smooth sheet was plotted using an HEWLETT-PACKARD 2500CP plotter.

H. CONTROL STATIONS

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27 datum move the projection lines 0.286 seconds (8.844 meters or 1.77 mm at the scale of the survey) north in latitude, and 2.074 seconds (45.522 meters or 9.1 mm at the scale of the survey) east in longitude.

J. SHORELINE

Brown shoreline originates with National Ocean Service (NOS) chart 13396 (3rd Edition, September 4, 1993) and is for orientation purposes only.

M. COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not performed. This is in accordance with Section 4. of the memorandum titled, "Changes to Hydrographic Survey Processing," dated May 24, 1995.

O. COMPARISON WITH CHART 13396 (3rd Edition, SEP 4/93)**Hydrography**

The charted hydrography originates with prior survey and miscellaneous sources. The hydrographer makes adequate chart comparisons in Sections N. and O. of the Descriptive Report. The following should be noted:

1. Charted dolphins in Latitude 44°53'41.3"N, Longitude 67°00'04.7"W and Latitude 44°53'34.6"N, Longitude 66°59'57.2"W originate with an unknown source and were neither verified nor disproved by the present survey. It is recommended that the charted notations be revised from dol to dols.

2. Two uncharted dolphins in Latitude 44°53'40.873"N, Longitude 67°00'05.200"W and Latitude 44°53'34.182"N, Longitude 66°59'57.891"W were found on the present survey. It is recommended that these two dolphins be charted in their present survey locations.

Except as mentioned above, the present survey is adequate to supercede the charted hydrography within the common area.

P. ADEQUACY OF SURVEY

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

Q. AIDS TO NAVIGATION

No aids to navigation were located during the course of this survey.

S. MISCELLANEOUS

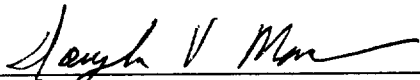
The hydrographer located five privately maintained floating aids to navigation within the limits of the present survey, two of which are lighted. These private aids mark the south and eastern limits of the aquaculture facilities. See the UNITED STATES COAST GUARD LIGHT LIST VOLUME ONE (1998) for more information on these aids. No changes in charting are recommended for the following:

<u>FEATURES</u>	<u>LATITUDE (N)</u>	<u>LONGITUDE (W)</u>
priv marker (lighted)	44°53'41.46"	67°00'29.35"
priv marker	44°53'43.99"	67°00'16.55"
priv marker (lighted)	44°53'47.49"	67°00'14.69"
priv marker	44°53'51.50"	67°00'16.14"
priv marker	44°53'53.74"	67°00'17.48"

Chart compilation using the present survey was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data has been forwarded to Marine Chart Division, Silver Spring, Maryland.

The following NOS charts were used for compilation of the present survey:

13396 (3rd Ed., September 04/93) 1:20,000



Douglas V. Mason
Cartographic Technician
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
F00446

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Deborah A. Bland

Date: 31 Aug 99

Deborah A. Bland
Cartographer,
Atlantic Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Andrew L. Beaver

Date: 8/31/99

Andrew L. Beaver
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

Final Approval:

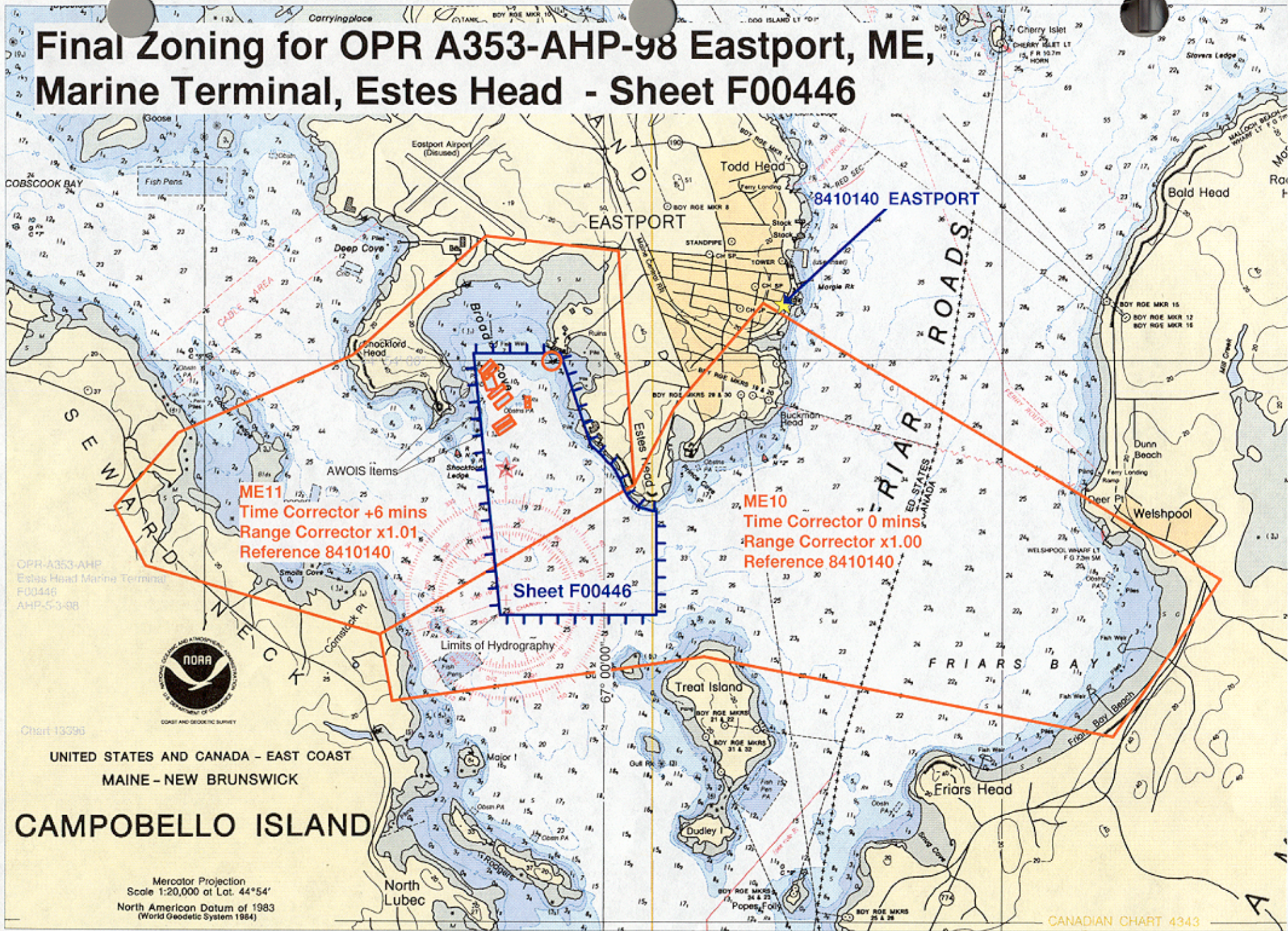
Approved:

Samuel P. De Bow

Date: 11-12-99

Samuel P. De Bow, Jr.
Commander, NOAA
Chief, Hydrographic Surveys Division

Final Zoning for OPR A353-AHP-98 Eastport, ME, Marine Terminal, Estes Head - Sheet F00446



ME11
Time Corrector +6 mins
Range Corrector x1.01
Reference 8410140

ME10
Time Corrector 0 mins
Range Corrector x1.00
Reference 8410140

Sheet F00446

OPR-A353-AHP
Estes Head Marine Terminal
F00446
AHP-53-98



Chart 13396

UNITED STATES AND CANADA - EAST COAST
MAINE - NEW BRUNSWICK

CAMPOBELLO ISLAND

Mercator Projection
Scale 1:20,000 at Lat. 44°54'
North American Datum of 1983
(World Geodetic System 1984)

CANADIAN CHART 4343

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. F00446

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
13396	9-1-99	D.A. Blane	Full Part Before After Marine Center Approval Signed Via Drawing No.
13394	2-15-00	Craythorn	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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