

9063

Diag. Chart No. 1207-2.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PE 20-4-69 Office No. H-9063

LOCALITY

State MASSACHUSETTS

General locality MASSACHUSETTS BAY

Locality OUTER APPROACHES TO BOSTON
HARBOR

19 69

CHIEF OF PARTY

CDR AUSTIN YEAGER

LIBRARY & ARCHIVES

DATE AUG 16 1972

USCOMM-DC 37022-P66

9063

Chart
70
71
240
246
61350
1107
1207
1106

HYDROGRAPHIC TITLE SHEET

H-9063

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.

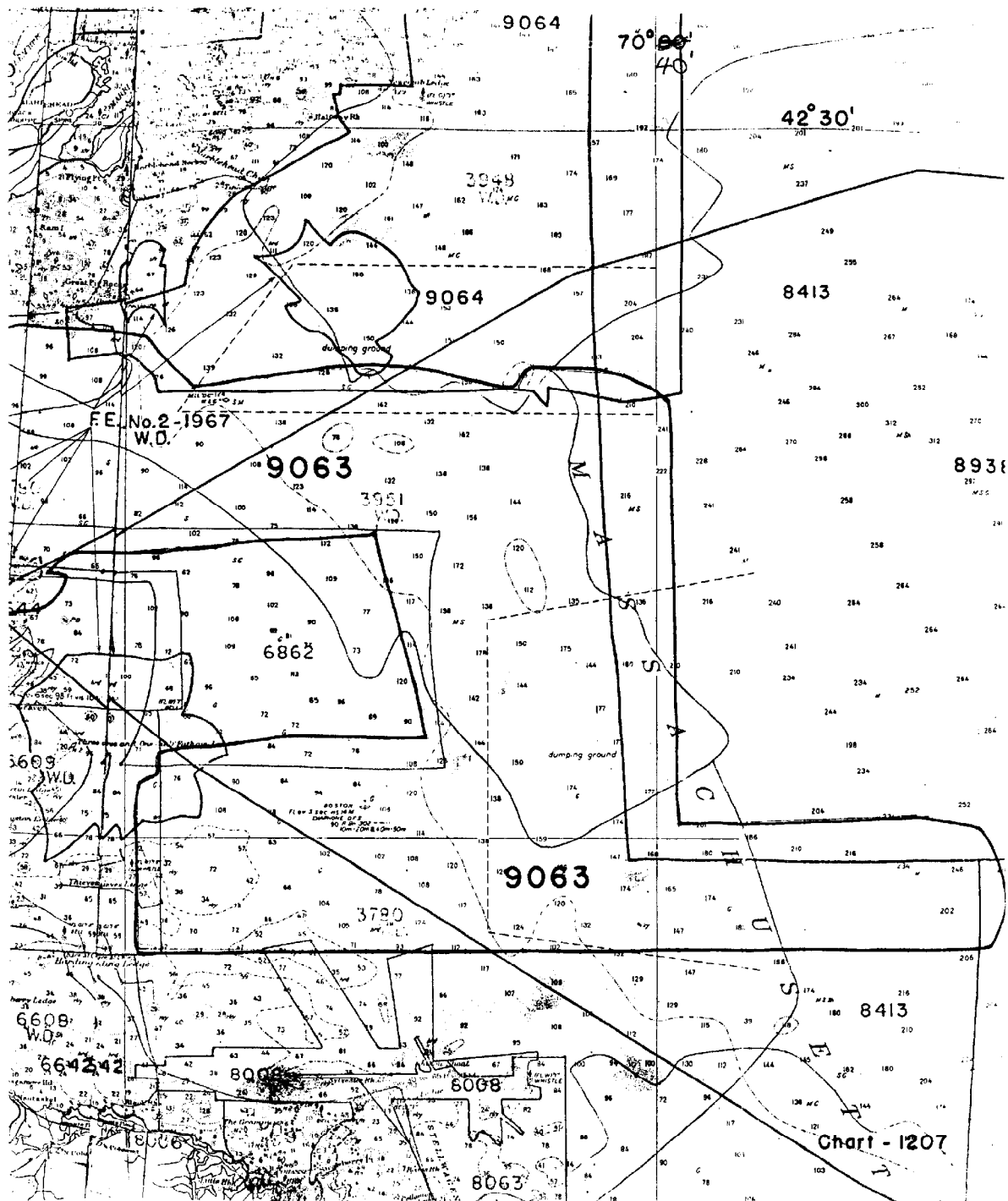
PE 20-4-69

State MASSACHUSETTSGeneral locality MASSACHUSETTS BAYLocality OUTER APPROACHES TO BOSTON HARBORScale 1:20,000 Date of survey Aug. 7 to Sept 20, 1969Instructions dated May 16, 1969 Project No. OPR-473Vessel PEIRCEChief of party J. AUSTIN YEAGER, COMDR., USESSASurveyed by SHIP'S OFFICERSSoundings taken by echo sounder, hand lead, poleGraphic record scaled by Ship's CrewGraphic record checked by Ship's OfficersProtracted by Gerber Digital Plotter Automated plot by Pacific Marine CenterSoundings penciled by Gerber Digital PlotterSoundings in fathoms feet at MLW MLLW

REMARKS:

chts
70
71
240
246
613.50
1107
1207 #27

Applied to stds 8/24/72



DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY PE 20-4-69

USC&GSS PEIRCE

SCALE 1:20,000

J. AUSTIN YEAGER, CDR USESSA

CHIEF OF PARTY

A. PROJECT:

This survey was accomplished as part of OPR-473, Cape Ann to Cape Cod, Mass. INSTRUCTIONS dated May 16, 1969, CFN2, supersede all previous instructions.

B. AREA SURVEYED:

Field work began on August 7, 1969 and was completed on September 20, 1969. General locality is Massachusetts Bay near Boston Harbor.

The survey is bounded on the north by PE 20-3-69 along $\phi 42^{\circ}26.5'N$ to $\lambda 70^{\circ}49.0'W$, then west along $\phi 42^{\circ}27.0'N$ to $\lambda 70^{\circ}53.0'W$, then south to $\phi 42^{\circ}24.5'N$ where it junctions with prior survey H-6862; east along $\phi 42^{\circ}24.5'N$, to $\lambda 70^{\circ}44.5'W$, south to $\phi 42^{\circ}21.1'N$, then west to $\lambda 70^{\circ}49.5'W$, junctioning with H-6862 along these lines; south along $\lambda 70^{\circ}49.5'W$, junctioning with prior survey H-6643. On the south, survey limits run along $\phi 42^{\circ}18.2'N$ to $\lambda 70^{\circ}33.5'W$, where it junctions with prior survey H-9013, then north along $\lambda 70^{\circ}33.5'W$, junctioning with H-9013 to $\phi 42^{\circ}20.0'N$, then west along $\phi 42^{\circ}20.0'N$, junctioning with H-8938, to $\lambda 70^{\circ}40.0'W$, then north along $\lambda 70^{\circ}40.0'W$, junctioning with H-8938 to $\phi 42^{\circ}26.5'N$.

C. SOUNDING VESSEL:

All hydrography on this survey was accomplished using the Ship PEIRCE.

D. SOUNDING EQUIPMENT:

All soundings were observed with Raytheon Fathometer, Model 723, Serial Number 246. Soundings varied from 35' to 256' and were observed in feet except for a few lines on the extreme eastern edge which was observed in fathoms due to the bottom trace being obscured by the initial. Echo sounder corrections are discussed in another section and are the result of phase and lead line comparisons.

E. SMOOTH SHEET:

The smooth sheet will be computer plotted by the processing section at Pacific Marine Center, Seattle, Washington.

F. CONTROL:

Hi-Fix electronic horizontal control was used for all positional information on this survey. Stations were located at Strawberry Point, near Cohasset, Mass. and Deer Island, near Boston Harbor entrance, on adjusted second-order triangulation stations established by the Ship PEIRCE in 1968. Calibration was by three-point sextant fixes plotted on a calibration sheet. No unusual methods of calibration or control was used.

G. SHORELINE:

There is no shore line within the limits of this survey. Shore line on the sheet will be covered by launch surveys.

H. CROSSLINES:

Crosslines were run at 8.6% of total hydrographic mileage on the sheet. Agreement was excellent.

I. JUNCTIONS:

H-9151 (1970) on the South -
H-9064 (1969) " " North
Junction with H-6862, 1946, is adequate with little or no distortion in depth curves, however in some cases H-6862 soundings are slightly deeper. Velocity corrections for this survey will improve the junction.

Junction with H-6643, 1940, is good with no distortion in depth curves. Isolated soundings in some cases disagree but this is due to the extremely rugged bottom topography.

Junction with H-9013, 1968, is good. In this area soundings were observed in fathoms and converted to feet for logging and plotting on the best sheet. This was due to the bottom trace being obscured by the initial on the foot scale.

Junction with H-8938, 1967, is good to within 1/2 fathom. Soundings on H-8938 were observed in fathoms.

J. COMPARISON WITH PRIOR SURVEYS:

Two pre-survey review items in the project are located on this survey.

Item # 64 is a 51' sounding to be developed for an obstruction. A complete development was run over this area and no indication of an obstruction could be found. It is reported to be in an area of 95' - 100' depths. A regular system of sounding lines at 85 meters spacing and crosslines at 85 meters was run. Crosslines were plotted on the mylar overlay accompanying the boat sheet.

It is recommended this sounding be removed from the chart.

Item # 73 is five soundings to be verified or disproved.

- 73A - A 66' sounding reported at ϕ 42°24.56'N, λ 70°52.15'W: This sounding could not be found at the reported location. However, about 0.1 mi. east at ϕ 24°42.55'N, λ 70°52.00'W a sounding of 59' was found. Several development lines not inked on the boat sheet failed to produce a shoaler sounding.
- 73B - A 66' sounding charted at ϕ 42°24.40', λ 70°50.60'W. No indication of this sounding was found and it is recommended that it not be charted. Some of the development line soundings were not inked on the boat sheet since they did not add any information. The 86' shoal 0.15 mi. south was verified. *with 85'*
- 73C - A 65' sounding charted at ϕ 42°24.00'N, λ 70°51.25'W. A 69' sounding was found at this location. It is recommended this sounding be retained on the chart. *71'*
- 73D & E - 42' and 46' soundings located near ϕ 42°23.40'N, λ 70°51.55'W: A 49' sounding was found at the above location. Development lines (45 meter spacing) were run in perpendicular directions and a shoaler sounding could not be found. It is recommended they be removed from the chart. *45'*

QUESTIONABLE SOUNDINGS

<u>Questionable Sounding</u>	<u>Charted Location</u>	<u>Search/Recommendation</u>
65'	ϕ 42°24.10'N λ 70°52.86'W	65' sounding found 0.05 mi. SW of charted sounding. Development lines failed to produce any shoaler sounding.

<u>Questionable Sounding</u>	<u>Charted Location</u>	<u>Search/Recommendation</u>
64'	ϕ 42°25.90'N λ 70°52.65'W	The ^{65'} 64' sounding at this location was verified, however it is part of a shoal. Least depth is 60' 0.07 mi. SW of charted sounding.
88'	ϕ 42°25.65'N λ 70°51.65'W	Development of this area produced an ⁸⁶ 84' sounding as the least depth.
84'/82'/87'	ϕ 42°24.7'N λ 70°49.7'W	Development of these soundings failed to produce the charted soundings although the shoals are indicated and the soundings are probably there as sharp peaks. Shoalest depth found was ^{83'} 83'.85'
114'	ϕ 42°26.30'N λ 70°47.75'W <i>See AMC Plotter Note dated May 4, 1971</i>	Extensive development failed to verify the sounding at this ^{117'} location. However, a 113' sounding was located 0.5 mi. east of the 114' charted sounding.
82'/75' 78'/90'	ϕ 42°24.5'N λ 70°47.0'W	The area surrounding these soundings was developed verifying a shoal less than 90'. Least depth found was ^{69'} 67' at ϕ 42°24.45'N, λ 70°46.91'W.
112'	ϕ 42°23.55'N λ 70°42.40'W	This area charted as a 112/120' shoal was fully developed and no indication of it could be found. Recommend these soundings be removed from the chart.
84'	ϕ 42°18.22'N λ 70°42.45'W	This area ^{89'} was developed indicating a shoal less than 90'. Least depth found was ^{87'} 87'. The 84' sounding probably exists as a sharp peak and should be retained on the chart.
89'	ϕ 42°18.40'N λ 70°44.50'W	This area was developed verifying the 89' shoal. No shoaler depths could be found.
79'/78'/78'	²⁰ ϕ 42°18.7'N λ 70°45.3'W	The area around these soundings was developed verifying the soundings and that this shoal extends to the northwest. Least depths found in the immediate area was ^{72'} 71'.

<u>Questionable Sounding</u>	<u>Charted Location</u>	<u>Search/Recommendation</u>
80'	φ 42°19.05'N λ 70°45.10'W	Development produced a large shoal with a least depth of 76' about 0.15 mi. west of the charted 80' sounding.
34'/43'	φ 42°19.15'N λ 70°48.30'W	Development of these soundings failed to produce a depth shoaler than 37'. Recommend these soundings be retained on the chart as they probably exist as very sharp peaks and could only be verified by wire drag.
56'	φ 42°19.50'N λ 70°48.10'W	Development of this area verified the sounding. Least depth found was 55'. 57'
43'	φ 42°18.70'N λ 70°49.25'W	The shoalest sounding found in developing the immediate area was 48' 47'. However, 0.1 mi. to the north, 45' 43' was found and 0.15 mi. to the east, 46' was found. Due to the extremely rugged bottom topography the 43' sounding probably exists and it should be retained on the chart.

The numerous wire drag soundings in the southwest portion of the survey area were not searched for although some were verified by the regular system of sounding lines.

K. COMPARISON WITH EXISTING CHARTS:

Chart C&GS 246: - Several changes were noted in comparison with this chart:

1. The 80' shoal near φ 42°20.7'N, λ 70°44.9'W is part of the larger shoal; 1 mile to the northwest shoaler soundings (71') were found.
72
2. The 72' soundings along φ 42°19.9'N near λ 70°46.7'W were not indicated by this survey.
3. 35' soundings were found near the 42' wire drag sounding at φ 42°47.6'N, λ 70°19.6'W.
19 47

Probable strays were noted
Near sdgs. Nos. 217002 } N.P.
217503
217804 }

Shoalest depth found this area was 42'

4. The numerous 30' - 45' shoals charted in the area of $\phi 42^{\circ}18.19'N$, and $\lambda 70^{\circ}46.49'W$ were verified and no significant differences were found. Least depths on many of the wire drag peaks were not verified and could only be accomplished by wire dragging.
5. 43' and 45' soundings were found along $\phi 42^{\circ}18.3'N$ and between $\lambda 70^{\circ}45'-46'W$. *These edgs. behaved strange - see pgs. 1611-1612 2019-2020*
6. The 85' shoal near $\phi 42^{\circ}19'N$ and $\lambda 70^{\circ}45'W$ was developed and a least depth of 76' found.

Chart C&GS 1207

1. In the area east of $\lambda 70^{\circ}40'W$ and between $\phi 42^{\circ}18'-20'$ no significant differences were found.
2. A shoal, least depth of 85' was found at $\phi 42^{\circ}18.5'N$, $\lambda 70^{\circ}41.9'W$. This is not indicated on the chart. *84' charted slightly S.W.*
3. Survey soundings were shoaler near $\phi 42^{\circ}21'N$ and $\lambda 70^{\circ}43'W$ (edge of dumping ground) with a large difference in the charted 120' depth curve.
4. 150' and shoaler soundings east of $\lambda 70^{\circ}43'W$ and between $\phi 42^{\circ}22'-23'N$ were not indicated by this survey.
5. No indication of the 112' - 120' shoal near $\phi 42^{\circ}23.7'N$, $\lambda 70^{\circ}42.5'W$ could be found.
6. East of $\lambda 70^{\circ}44'W$ and between $42^{\circ}24', 26'$ charted soundings agree with the survey.

Chart C&GS 240: - Several changes in charted depth curve shapes were found:

1. The 111' sounding near $\phi 42^{\circ}25.7'N$ and $\lambda 70^{\circ}44.4'W$ was not found although it probably exists.
2. A shoal (least depth found, ^{115'}113') was found near $\phi 42^{\circ}24.4'N$, $\lambda 70^{\circ}45.0'W$.
3. ⁷105' found at $\phi 42^{\circ}25.2'N$, $\lambda 70^{\circ}45.6'W$.
4. ⁷115' shoal found at $\phi 42^{\circ}26.0'N$, $\lambda 70^{\circ}45.8'W$.
5. 80' shoals near $\phi 42^{\circ}24.4'N$, $\lambda 70^{\circ}47.0'W$ are connected, least depth found, ^{67'}67'.

6. West of λ $70^{\circ}50''$ W and between ϕ $42^{\circ}24'-27'$ N agreement with the chart was good except for questionable soundings..

Probably refers to Preliminary Review items

L. ADEQUACY OF SURVEY:

This survey is adequate to supercede prior surveys with the exceptions and recommendations noted in sections, J, K, & P.

M. AIDS TO NAVIGATION:

Two floating aids to navigation were located within the limits of the survey.

1. Buoy: W Or Bell "DG" was located at its charted position of ϕ $42^{\circ}26.18'$ N, λ $70^{\circ}48.23'$ W. Detached Position #788, Day 225.
2. BOSTON LIGHTSHIP STATION BUOY: Red Nun "LS", located at ϕ $42^{\circ}20.58'$ N, λ $70^{\circ}45.28'$ W. Detached Position #1948, Day 238.

N. STATISTICS:

Total number of positions	2204
Total nautical miles of sounding lines	735.3
Total square nautical miles	60.0
Nansen casts	4
Bottom samples	44

O. MISCELLANEOUS:

None

P. RECOMMENDATIONS:

No recommendations are made other than those in sections J & K.

Q. REFERENCES TO REPORTS:

1. Seasons Report, USC&GSS PEIRCE, 1969.
2. Electronic Control Calibration Report, OPR-473, USC&GSS PEIRCE, 1969.
3. Report on Corrections to Echo Sounders, USC&GSS PEIRCE, OPR-473, 1969.

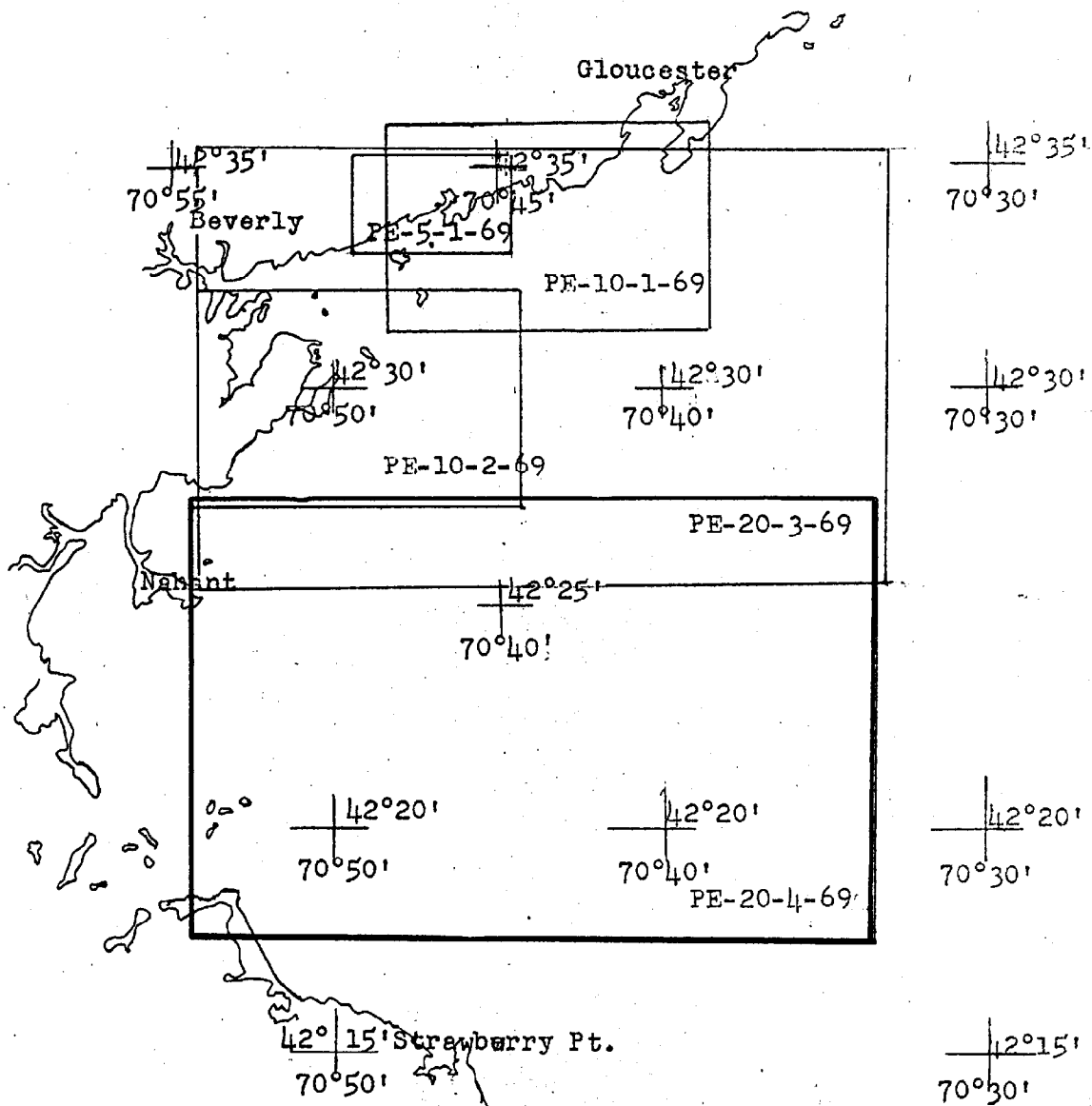
APPROVAL SHEET

FIELD NUMBER PE - 20 - 4 - 69

Field work and data processing on this survey was under my immediate daily supervision. The Boat Sheet and all records have been reviewed and approved by me. It is believed this survey is complete and adequate to surpass prior surveys with the recommendations in Sections J and K.

J. Austin Yeager
J. Austin Yeager
CDR, USESSA
Chief of Party

SHEET LAYOUT
 OPR 473
 USC&GSS PEIRCE
 1969 Field Season



COAST & GEODETIC SURVEY-DON A. JONES DIRECTOR

MONTHLY PROGRESS SKETCH-OPR-473

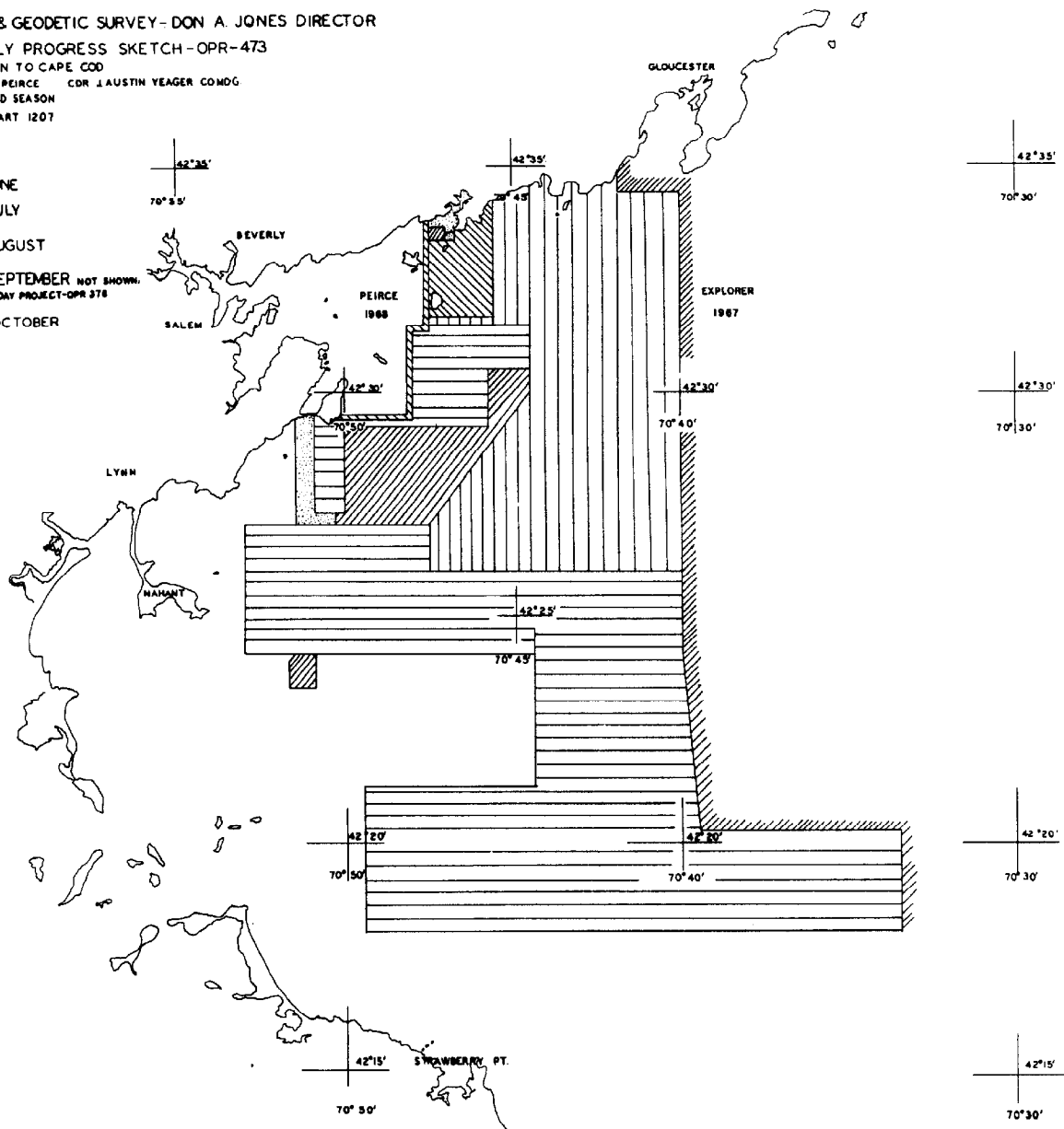
CAPE ANN TO CAPE COD

USC&GSS PEIRCE CDR J. AUSTIN YEAGER COMDG

1989 FIELD SEASON

SCALE CHART 1207

-  JUNE
-  JULY
-  AUGUST
-  SEPTEMBER NOT SHOWN.
2 DAY PROJECT-OPR 378
-  OCTOBER



CAN22 47-72-102

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

August 13, 1972

NUMBER OF PACKAGES

Two (2)

TO:

Chief, Hydrographic Data Section
C1233
Marine Surveys and Map Division
National Ocean Survey, NOAA
6001 Executive Boulevard
Rockville, Maryland 20852

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.

OPR 473 - MASSACHUSETTS BAY
H-9063 (VE-20-4-69)

Package #1 (Tube):

1 Smooth Sheet
1 Smooth Position Overlay, Mylar
1 Descriptive Report

Package #2 (Box):

1 Smooth Position Printout
1 Smooth Sounding Printout

FROM: (Signature) Dorothy C. Calland
Data Coordinator, Processing Div.

Dorothy C. Calland

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Director, Atlantic Marine Center
National Ocean Survey, NOAA
439 West York Street
Norfolk, Virginia 23519
Attention: CAN22

L

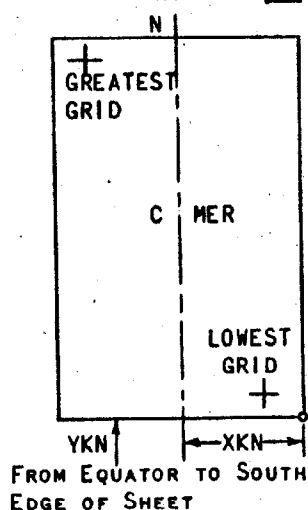
J

FORM # 1

FIG. 15

**PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION**

- (1) PROJECT No. OPR 473 (4) REQUESTED BY SHIP PEIRCE
 (2) H No. H-9063 (5) SHIP OR OFFICE _____
 (3) FIELD No. PE-20-4-69 (6) DATE REQUIRED ASAP
 (7) VISUAL ☐ (8) ELECTRONIC ☒ (FILL OUT FORM #3)
 (10) XKN (SP 5) DISTANCE FROM CMER TO EAST EDGE (NYX = 1)
 OR WEST EDGE (NYX = 0). 14,347.03 METERS
 (11) YKN (SP 241) DISTANCE FROM EQUATOR TO SOUTH EDGE
 OF SHEET. 4,683,727.45 METERS
 (12) CENTRAL MERIDIAN 70° 44' 00"
 (13) SURVEY SCALE 1:20,000
 (14) SIZE OF SHEET (CHECK ONE) 36X54 ☐ 42X60 ☐ OTHER 36X60 ☒
 (15) NYX, ORIENTATION OF SHEET (CHECK ONE)
 NYX = 1 ☐ NYX = 0 ☒



(9) PLOTTER ORIGIN
(CORNER OF SHEET)

LATITUDE 42° 17' 27"
 LONGITUDE 70° 54' 26"

GRID LIMITS

- (16) GREATEST LATITUDE 42° 27' 00" (PROJECTION LINE
 (17) LOWEST LATITUDE 42° 18' 00" INTERVAL, PAGE 4
 (18) DIFFERENCE 0° 09' 00" HYDRO MANUAL)
 (19) 1' 00"
 (20) 9 YSN
 (21) GREATEST LONGITUDE 70° 54' 00"
 (22) LOWEST LONGITUDE 70° 35' 00"
 (23) DIFFERENCE 0° 19' 00"
 (24) 1' 00"
 (25) 19 XSN

LIST G.P. OF ALL
STATIONS TO BE
PLOTTED ON THIS
PROJECTION ON THE
BACK OF THIS FORM.
(DEG., MIN., METERS)

FORM # 3

FIG. 7

COMPUTER PARAMETERS FOR ELECTRONICALLY CONTROLLED SURVEYS

(RANGE - RANGE)

- (1) PROJECT No. OPR 473 (2) H- No. 9063 (3) FIELD No. PE-20-4-69
- (4) TYPE OF CONTROL: SHORAN, RAYDIST, X HI-FIX, RADAR
 FREQUENCY (FOR CONVERSION OF RAYDIST OR HI-FIX LANES TO METERS) 1718.59 kc
- (5) RANGE ONE (R1)
 STATION NAME DEER IS. LATITUDE 42° 20' 59.32"
 LONGITUDE 70° 57' 17.99"
- (6) RANGE TWO (R2)
 STATION NAME STRAWBERRY PT. LATITUDE 42° 15' 12.05"
 LONGITUDE 70° 46' 07.22"
- (7) AZIMUTH FROM R1 TO R2 304° 49' 42.01"
- (8) BASELINE LENGTH IN METERS 18,731.91 m.
- (9) LOCATION OF SURVEY WITH RESPECT TO ELECTRONIC BASELINE: CHECK ONE
 (TO DETERMINE: IMAGINE AN OBSERVER STANDING AT R1 AND LOOKING DIRECTLY
 AT R2 — IF THE SURVEY AREA IS TO THE OBSERVER'S LEFT THEN A IS
NEGATIVE; IF THE SURVEY AREA IS TO THE OBSERVER'S RIGHT THEN A IS
POSITIVE.)
- X -A (MINUS) +A (PLUS)
- (10) IF SHORAN CORRECTIONS ARE APPLIED BY THE EQUATION, $K(X) + C = D$,
 WHERE X IS SHORAN DISTANCE AND D IS TRUE DISTANCE, ENTER THE CONSTANT
 COEFFICIENTS OF THE EQUATIONS HERE:
 K(R1) , C(R1) , K(R2) , C(R2)
- (11) NUMBER OF VELOCITY TABLES TO BE USED:
 NONE, ONE, X MORE THAN ONE.
- (12) THIS FORM IS SUBMITTED ONLY AS AN AID IN PREPARING A BOAT
 SHEET PROJECTION.
X THIS FORM APPLIES TO ALL DATA ON THIS SURVEY.
 THIS FORM APPLIES TO PART OF THE DATA ON THIS SURVEY -
 TIME AND DATE LIMITATIONS: FROM TO
 POSITION NUMBER LIMITATIONS: FROM TO
 THIS IS FORM #3 SHEET # 1 OF 1 SHEETS FOR THIS SURVEY.
- (13) OTHER REMARKS:

SEPARATES FOLLOWING TEXT:

APPENDIX

- A. TIDAL NOTE
 - B. ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS
 - C. ABSTRACT OF CORRECTIONS TO DISTANCE MEASUREMENTS
 - D. ABSTRACT OF TRA CORRECTIONS
 - E. ABSTRACT OF DAILY CONSECUTIVE POSITION NUMBERS
 - F. ABSTRACT OF STANDARD FORMAT COLUMN HEADINGS
 - G. ABSTRACT OF HYDROGRAPHIC DATA LOCATED ON THE SURVEY
-

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

January 30, 1970

~~National Ocean Service~~ Atlantic Marine Center

Plane of reference approved in ~~XXXXXX~~ for Tide tape printouts

HYDROGRAPHIC SHEET 9090, 9094, 9095, (9063), and 9064

Locality: Salem Harbor, Mass.

~~XXXXXX~~ Year: 1969

Plane of reference is mean low water

Tide Station Used (Form C&GS-681):

Salem

Height of Mean High Water above Plane of Reference is as follows:

8.8 feet

Remarks Tide reducers for day 195 (08:00-08:15) have been revised and verified.

N.B. Day 195 is included on surveys H-9090, 9064 only.
JHS

J. M. Symons
Chief, Tides and Currents Branch

APPENDIX A

TIDAL NOTE

Tidal heights for this survey were obtained from marigrams at the portable tide gage the USC&GS Ship PEIRCE established at Salem Massachusetts harbor ($42^{\circ} 31' 18''\text{N}$, $70^{\circ} 52' 46''\text{W}$). Tides for the periods of time when hydrography was run but no marigrams obtained were supplied directly by the Tides & Currents Branch, Oceanography Division.

As per telephone conversation with Tides Division, L.C. Wharton, there are no zonal tide corrections.

All times for the station and times for hydrography were smooth logged on the 60°W time zone.

The staff reading on the Salem, Mass. gage for MLW was 3.7 feet.

An abstract of Tides follows as a copy of the Tide Tape Printout. It is printed according to the standard Tide Tape format as detailed in Appendix F - Standard Format Column Headings.

Tide Tape Printout

USC&GS Ship PEIRCE

Field No. PE-20-4-69

Reg. No. H-9063

Time Mer. 60°W

Tide Station Salem, Mass.

Tide Data For 1969

Corrections in Ft.

080000 0 1070 0000 219 000000 000000
080800 0 1068
082600 0 1066
084100 0 1064
085400 0 1062
090500 0 1060
091500 0 1058
092400 0 1056
093300 0 1054
094200 0 1052
095100 0 1050
100000 0 1048
100800 0 1046
101800 0 1044
102700 0 1042
103500 0 1040
104300 0 1038
105300 0 1036
110100 0 1034
111100 0 1032
112000 0 1030
112900 0 1028
113800 0 1026
114900 0 1024
120000 0 1022
121200 0 1020
122400 0 1018
124300 0 1016
140000 0 1018
141400 0 1020
142600 0 1022
143700 0 1024
144700 0 1026
145500 0 1028
150500 0 1030
151300 0 1032
152100 0 1034
153000 0 1036
153800 0 1038
154600 0 1040
155500 0 1042
080000 0 1074 0000 220 000000 000000
083000 0 1072
090000 0 1070
091900 0 1068
093500 0 1066
094800 0 1064
100000 0 1062

*File tide corr. in
cabinet*

TC/TI TAPE PRINTOUT
PE-204-69, OPR 473
SHIP PEIRCE

123200 0 0004 0001 219 000000 000000
123800 0 0008
124930 0 0004
100700 0 0004 0001 220 000000 000000
102630 0 0006
105200 0 0004
132330 0 0010
134300 0 0004
094700 0 0004 0001 221 000000 000000
132900 0 1001
140730 0 0004
095000 0 0004 0001 222 000000 000000
100600 0 0009
102130 0 0004
105230 0 0002
112200 0 0010
112600 0 0004
115900 0 1001
122000 0 0004
134000 0 0001

135530 0 0004
130700 0 0002 0001 223 000000 000000
150415 0 1002
091000 0 0002 0001 224 000000 000000
092300 0 0004
095230 0 0002
100400 0 0004
101600 0 0002
102000 0 1004
102400 0 0002
121115 0 0008
122330 0 0002
091300 0 0002 0001 225 000000 000000
092700 0 0001
093600 0 0002
101400 0 1001
103430 0 0002
103945 0 0000
110630 0 0002
111400 0 0004
113900 0 0002
115600 0 0000
120500 0 1001
121815 0 1002
125430 0 0002
130400 0 0000
135400 0 0002
111730 0 0002 0001 226 000000 000000
111300 0 0000 0001 232 000000 000000
112530 0 1004

115500 0 1002
124215 0 1005
132200 0 0000
145800 0 1002
153500 0 0000
092300 0 0000 0001 233 000000 000000
094600 0 1004
100100 0 0000
121530 0 0003
122415 0 0000
102200 0 0000 0001 234 000000 000000
103400 0 0002
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135200 0 1080
140000 0 1082
140600 0 1084
141600 0 1086
142500 0 1088
143700 0 1090
150000 0 1092
080000 0 1030 0000 261 000000 000000
080600 0 1028
081200 0 1026
081900 0 1024
082600 0 1022
083500 0 1020
084400 0 1018
085400 0 1016
090600 0 1014
092400 0 1012
100000 0 1010
102500 0 1012
104800 0 1014
110400 0 1016
111600 0 1018
112500 0 1020
113500 0 1022
114300 0 1024
115000 0 1026
115700 0 1028
120400 0 1030
121100 0 1032
121800 0 1034
122500 0 1036
123200 0 1038
123900 0 1040
124600 0 1042
125200 0 1044
125900 0 1046
130500 0 1048
131100 0 1050
131600 0 1052
132100 0 1054
132600 0 1056
133100 0 1058
133700 0 1060
134300 0 1062
134900 0 1064
135500 0 1066

140000 0 1068
140700 0 1070
141300 0 1072
142000 0 1074
142700 0 1076
143400 0 1078
144200 0 1080
145000 0 1082
150000 0 1084
150800 0 1086
151600 0 1088
152500 0 1090
153500 0 1092
154600 0 1094
080000 0 1062 0000 263 000000 000000
080800 0 1060
081600 0 1058
082300 0 1056
083100 0 1054
083900 0 1052
084600 0 1050
085300 0 1048
090000 0 1046
090300 0 1044
091600 0 1042
092400 0 1040
093100 0 1038
093800 0 1036
094600 0 1034
095300 0 1032
100100 0 1030
100900 0 1028
101600 0 1026
102400 0 1024
103200 0 1022
104000 0 1020
104800 0 1018
105700 0 1016
110600 0 1014
111700 0 1012
112900 0 1010
114500 0 1008
130000 0 1010
131500 0 1012
132500 0 1014
133600 0 1016
134500 0 1018
135300 0 1020
140000 0 1022
140300 0 1024
141500 0 1026
142300 0 1028
142900 0 1030
143600 0 1032
144500 0 1034
145100 0 1036
145900 0 1038
150500 0 1040
151200 0 1042
151800 0 1044
152400 0 1046
153000 0 1048
153600 0 1050
154100 0 1052
154900 0 1054
155700 0 1056 (END OF TAPE)

ABSTRACT OF DRAFT CORRECTIONS

SHIP PEIRCE OPR-473, 1969

SURVEY: PE 20-4-69

<u>DAY</u>	<u>TIME FROM</u>	<u>CORRECTIONS (FT)</u>
219	123200	+ 0.4
220	100700	+ 0.4
221	094700	+ 0.4
222	095000	+ 0.4
223	130730	+ 0.2
224	091000	+ 0.2
225	091300	+ 0.2
226	111730	+ 0.2
232	111300	0.0
233	092800	0.0
234	102200	0.0
235	092100	0.0
236	091630	0.0
237	094100	0.0
238	091800	0.0
239	091530	- 0.2
247	091300	+ 0.4
248	130600	+ 0.4
251	111800	+ 0.4
260	114600	+ 0.6
261	095800	+ 0.6
263	111500	+ 0.4

ABSTRACT OF HI-FIX CORRECTIONS

PE 20-4-69

NOTE: These corrections apply to all positions on this survey. No equipment changes were made during the survey.

<u>DAY</u>	<u>TIME (FROM)</u>	<u>CORR 'N PAT. 1</u>	<u>CORR 'N PAT. 2</u>	<u>REMARKS</u>
219	123200	+ 0.01	- 0.27	
220	100700	+ 0.01	- 0.27	
221	094700	+ 0.01	- 0.27	Days 219 -226 are average of calibration on Days 219, 221 and 226
222	095000	+ 0.01	- 0.27	
223	130730	+ 0.01	- 0.27	
224	091000	+ 0.01	- 0.27	
225	091300	+ 0.01	- 0.27	
226	111730	+ 0.01	- 0.27	
232	111300	+ 0.06	- 0.24	
233	092800	+ 0.06	- 0.24	
234	102200	+ 0.06	- 0.24	Calibration on Day 232
235	092100	+ 0.06	- 0.24	
236	091630	+ 0.06	- 0.24	
237	094100	+ 0.08	- 0.25	
238	091800	+ 0.08	- 0.25	Calibration on Day 240
239	091530	+ 0.08	- 0.25	
247	091300	+ 0.04	- 0.31	
248	130600	+ 0.04	- 0.31	Calibration on Day 251
251	111800	+ 0.04	- 0.31	
260	114600	- 0.30	- 0.33	Calibration on Day 260
261	095800	- 0.27	- 0.33	Calibration on Day 261
263	111500	-0.34	- 0.32	Calibration on Day 263

APPENDIX B

ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS FIELD
NUMBER PE - 20 - 4 - 69

Velocity corrections for this survey were determined from temperature and salinity observations (Nansen Casts) made throughout the survey period. Reference is made to the Special Report on corrections to Echo Soundings, OPR-473, 1969 Field Season, Ship PEIRCE, which describes the methods and computations.

VELOCITY TABLES (PE - 20 - 4 - 69)

DAYS APPLICABLE

TABLE NUMBER

219 through 251
260, 261, 263

1
2

TABLE # 1

<u>DEPTH FROM</u>	<u>TO</u>	<u>CORRECTOR</u>
0.0	13.4	+ 0.0
13.5	21.0	+ 0.2
21.1	29.0	+ 0.4
29.1	38.0	+ 0.6
38.1	47.5	+ 0.8
47.6	60.0	+ 1.0
60.1	75.0	+ 1.2
75.1	91.5	+ 1.4
91.6	110.0	+ 1.6
110.1	129.3	+ 1.8
129.4	150.0	+ 2.0
150.1	171.8	+ 2.2
171.8	999.9	2.4

TABLE # 2

<u>DEPTH FROM</u>	<u>TO</u>	<u>CORRECTOR</u>
0.0	13.0	+ 0.0
13.1	21.0	+ 0.2
21.1	28.5	+ 0.4
28.6	36.0	+ 0.6
36.1	43.2	+ 0.8
43.3	50.6	+ 1.0

APPENDIX B

VELOCITY TABLES, TABLE # 2 (CON'T)

<u>DEPTH FROM</u>	<u>TO</u>	<u>CORRECTOR</u>
50.7	58.5	+ 1.2
58.6	67.0	+ 1.4
67.1	76.1	+ 1.6
76.2	85.7	+ 1.8
85.8	95.5	+ 2.0
95.6	105.8	+ 2.2
105.9	116.5	+ 2.4
116.6	128.4	+ 2.6
128.5	140.0	+ 2.8
141.1	152.0	+ 3.0
152.1	164.0	+ 3.2
164.1	999.9	+ 3.4

APPENDIX C

ABSTRACT OF CORRECTIONS TO ELECTRONIC DISTANCE MEASUREMENTS

HIFIX electronic positional control was used throughout the survey. No new or unusual methods of calibration were used. Reference is made to the Special Report on Calibration of Electronic Control, OPR-473, 1969 Field Season, Ship PEIRCE, for a discussion of methods and computations.

APPENDIX D

INITIAL CORRECTIONS

<u>DAY #</u>	<u>TIME FROM</u>	<u>CORRECTOR</u>	<u>DAY #</u>	<u>TIME FROM</u>	<u>CORRECTOR</u>
219	123200	+ 0.0	225	115600	- 0.2
	123800	+ 0.4		120500	- 0.3
	124930	+ 0.0		121815	- 0.4
220	100700	+ 0.0		125430	+ 0.0
	102630	+ 0.2		130400	- 0.2
	105200	+ 0.0		135400	+ 0.0
	132230	+ 0.6	226	111730	+ 0.0
	134300	+ 0.0	232	111300	+ 0.0
221	094700	+ 0.0		112530	- 0.4
	132900	- 0.5		115500	- 0.2
	140730	+ 0.0		124215	- 0.5
222	095000	+ 0.0		132200	+ 0.0
	100600	+ 0.5		145800	- 0.2
	102130	+ 0.0		153500	+ 0.0
	105230	- 0.2	233	092800	+ 0.0
	112200	+ 0.6		094600	- 0.4
	112600	+ 0.0		100100	+ 0.0
	115900	- 0.5		121530	+ 0.3
	122000	+ 0.0		122415	+ 0.0
	134000	- 0.3	234	102200	+ 0.0
	135530	+ 0.0		103400	+ 0.2
223	130700	+ 0.0		111215	+ 0.0
	150415	- 0.4		112200	- 0.2
224	091000	+ 0.0		114330	+ 0.0
	092300	+ 0.2		132700	- 0.2
	095230	+ 0.0		134700	+ 0.0
	100400	+ 0.2		141500	- 0.3
	101600	+ 0.0		143800	- 0.2
	102000	- 0.6		150430	- 0.4
	102400	+ 0.0	235	092100	+ 0.0
	121115	+ 0.6		094100	- 0.2
	122330	+ 0.0		101930	- 0.1
225	091300	+ 0.0		105100	+ 0.7
	092700	- 0.1		110900	+ 0.0
	093600	+ 0.0		123400	- 0.2
	101400	- 0.3		134600	+ 0.6
	103430	+ 0.0		140900	+ 0.0
	103945	- 0.2	236	091630	+ 0.0
	110630	+ 0.0		105700	- 0.2
	111400	+ 0.2		112800	+ 0.0
	113900	+ 0.0		123500	- 0.3

APPENDIX D

INITIAL CORRECTIONS

<u>DAY #</u>	<u>TIME FROM</u>	<u>CORRECTOR</u>	<u>DAY #</u>	<u>TIME FROM</u>	<u>CORRECTOR</u>
236	125500	+ 0.0	247	091300	+ 0.0
	133500	- 0.2	248	130600	+ 0.0
	135300	+ 0.0	251	111800	+ 5.0
	143800	- 0.4		115600	+ 0.0
	144700	- 0.2		122700	- 0.2
237	094100	+ 0.0		123130	+ 0.0
	104000	- 0.2		123500	- 0.2
	104430	+ 0.0		123900	+ 0.0
	105400	- 0.2		142000	- 0.2
	110200	+ 0.0		142700	+ 0.0
	112500	- 0.2	260	114600	+ 0.0
	114230	+ 0.0		114800	- 0.2
	122900	- 0.2		115600	+ 0.0
	123730	+ 0.0	261	095800	+ 0.0
	145900	- 0.2		105100	- 0.2
	150800	+ 0.0		105830	+ 0.0
	091800	+ 0.0	263	111500	+ 0.0
	110800	- 0.2		115300	- 0.2
	112400	+ 0.0		120030	+ 0.0
	115000	- 0.2			
238	115930	+ 0.0			
	120800	- 0.2			
	121730	+ 0.0			
	133300	- 0.2			
	134030	+ 0.0			
	143900	+ 0.2			
	144800	+ 0.0			
	091530	+ 0.0			
	115300	+ 0.2			
	115930	+ 0.0			
	123715	- 0.2			
	124100	+ 0.0			
	124330	- 0.2			
	125030	+ 0.0			
	130130	- 0.2			
239	130900	+ 0.0			
	134500	- 0.2			
	135130	+ 0.0			

APPENDIX D

ABSTRACT OF TRA CORRECTORS

The TRA Corrector is a combination of various correctors applied to soundings obtained by electronic means and is comprised by the following:

Transducer draft corrections	Initial corrections
Phase corrections	Fathometer speed error
Settlement and Squat corrections	Instrument error

For this survey only Transducer Draft and Initial corrections are necessary. All others were nonexistent or were kept below the level to be applied.

Reference is made to the Special Report on corrections to Echo Soundings, 1969 Field Season, OPR-473, Ship PEIRCE, for a discussion of the methods and computations.

APPENDIX E

ABSTRACT OF
DAILY CONSECUTIVE POSITION NUMBERS
SHIP PEIRCE SHEET PE 20-4-69

<u>DATE-1969</u>	<u>DAY</u>	<u>POSITION NUMBERS</u>
08/07	219	001 - 068
08/08	220	069 - 181
08/09	221	182 - 318
08/10	222	319 - 442
08/11	223	534 - 549
		575 - 598
08/12	224	599 - 779
08/13	225	780 - 898
08/14	226	899 - 911
08/20	232	912 - 1029
08/21	233	1030 - 1188
08/22	234	1189 - 1304
08/23	235	1305 - 1460
08/24	236	1461 - 1619
08/25	237	1620 - 1786
08/26	238	1787 - 1961
08/27	239	1962 - 2061
09/04	247	2062 - 2089
09/05	248	2090 - 2101
09/08	251	2102 - 2198
09/17	260	2199 - 2253
09/18	261	2254 - 2293
09/20	263	2294 - 2321

APPENDIX F

ABSTRACT OF STANDARD FORMAT COLUMN HEADINGS

RAW DATA TAPES

<u>TIME</u>	<u>IND.</u>	<u>SDG</u>	<u>POS.#</u>	<u>DAY</u>	<u>R-1</u>	<u>R-2</u>
143500	1	1232	0001	129	069954	078467

CORRECTOR TAPE

<u>TIME</u>	<u>IND.</u>	<u>SDG</u>	<u>POS#</u>	<u>DAY</u>	<u>R-1</u> <u>CALIB</u>	<u>R-2</u> <u>CALIB</u>	<u>TIDE</u>	<u>TRA</u>
143500	0	1254	0001	129	100050	000150	1012	005000

TRA CORRECTION/TABLE INDICATOR (TC/TI) TAPE

<u>TIME</u>		<u>TRA</u>	<u>VEL</u> <u>TAB</u> <u>IND.</u>	<u>DAY</u>		
105200	0	1002	0002	198	000000	000000

TIDE TAPE

<u>TIME</u>		<u>TIDE</u>		<u>DAY</u>		
090000	0	0060	0000	187	000000	000000

VELOCITY TABLE TAPE

<u>DEPTH</u>		<u>(**)</u>	<u>(*)</u>			
000100	0	0004	0001	000	000000	000000

(**) = Velocity correction
(*) = Velocity table

ABSTRACT OF HYDROGRAPHIC DATA
LOCATED ON SHEET PE 20-4-69

<u>POS. NO.</u>	<u>DAY</u>	<u>DATA LOCATED</u>
788	225	BUOY: W Or Bell "DG" located in its charted position of ϕ $42^{\circ}26.18'N$ λ $70^{\circ}48.23'W$.
1948	238	BUOY: RED NUN STATION BUOY FOR LIGHT- SHIP, BOSTON, WHITE LETTERS, LS, not charted but located at ϕ $42^{\circ}20.58'N$, λ $70^{\circ}45.28'W$.
2062	247	crs brn S, G
2063	"	rky
2064	"	bk M
2065	"	fne br S, rk
2066	"	rk
2067	"	crs br S, rk
2068	"	G
2069	"	rk
2070	"	fne br S, M
2071	"	fne br S, M
2072	"	rk
2073	"	fne br S, M
2074	"	rk
2075	"	fne brn S & brk Sh
2076	"	rky
2077	"	rk
2078	"	rk, M
2079	"	fne brn S
2080	"	rk
2081	"	rk
2082	"	rk
2083	"	M
2084	"	rk
2085	"	M
2086	"	rk
2087	"	M
2088	"	fne brn S & Sh
2089	"	rk
2090	248	M

GEOGRAPHIC NAMES

Survey No. H-9063

Name on Survey	On Chart No. On previous survey No. On 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		
Massachusetts Bay										1	
The Graves										2	
										3	
										4	
										5	
										6	
										7	
										8	
										9	
										10	
										11	
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										19	
										20	
										21	
										22	
										23	
										24	
										25	
										26	
										27	

APPROVED BY

[Signature]

CHIEF GEOGRAPHER

PREPARED BY

C. E. Harrington

CARTOGRAPHER

FORM C&GS-946
(REV. 11-65)
(PRESC. BY
HYDROGRAPHIC
MANUAL 20-2,
6-94, 7-13)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
NAUTICAL CHART DIVISION

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9063

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

RECORDS ACCOMPANYING SURVEY: TO & COMPLETION						
RECORD DESCRIPTION			AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET & PNO			/	BOAT SHEETS		/
DESCRIPTIVE REPORT			/	OVERLAYS		XX 3
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS / SOURCE DOCUMENTS
ENVELOPES	*		XX			
CAHIERS	1					
VOLUMES						
BOXES			1			

T-SHEET PRINTS (LIST)

NONE

SPECIAL REPORTS (LIST)

see par. 9 of the Descriptive Report

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				2204
POSITIONS CHECKED		200		
POSITIONS REVISED		25		
DEPTH SOUNDINGS REVISED		50		
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		0		
JUNCTIONS		4		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		20		
SPECIAL ADJUSTMENTS		0		
ALL OTHER WORK		141		
TOTALS		165		
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY	BEGINNING DATE		ENDING DATE	
REVIEW BY	BEGINNING DATE		ENDING DATE	

G. E. Trefethen, B. T. Davis, B. J. Stephenson

4-25-71

8-7-72

FORM C&GS-946A
(REV. 11-65)
(PRES. BY HYDROGRAPHIC
MANUAL, 6-94)

U.S. DEPARTMENT OF COMMERCE
ESSA
COAST AND GEODETIC SURVEY

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H 9063

INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
Note: The verifier should first read the Descriptive Report for general information and problems. 1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None	✓		10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED .	✓	
2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None	✓		Part IV - VOLUMES 11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None	✓	
3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None	✓		12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following: (a) rocks (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features		
Part II - SHORELINE AND SIGNALS 4. Source of shoreline signals Remarks Required: -- List all surveys a. Give earliest and latest dates of photographs b. Field inspection date c. Field Edit date d. Reviewed-Unreviewed	✓		Part V - PROTRACTING 13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None	✓	
5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences	✓		14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None	✓	
6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None	✓		15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None	✓	
7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still under	✓				
Part III - JUNCTIONS Note: Make a cursory comparison preliminary to inking soundings in area of overlap. 8. All junction of contemporary or overlapping sheets were transferred in colored ink and original curves were made identical. Remarks Required: -- None	✓				
9. The notation in slanted lettering "JOINS H---- (19 7)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None	✓				

Fig. 20 (cont'd.)
Form 946 A (back of form)

Part V - PROTRACTING (Continued)	CL	R	Part VIII - AIDS TO NAVIGATION	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refer to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	✓		26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	✓	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	✓		27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	✓	
Part VI - SOUNDINGS			Part IX - BOATSHEET		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	✓		28. The boat sheet was constantly compared with the smooth sheet with reference to note, position of sounding lines and supplemental information. Remarks Required: -- None	✓	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	✓		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note extensive conflicts with topographic information.	✓	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	✓		Part X - GENERAL		
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	✓		30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	✓	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	✓		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	✓	
Part VII - CURVES			32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	✓	
23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the pencil curves inspected. <i>HLP</i>	✓		33. The bottom characteristics are adequately shown. Remarks Required: -- None	✓	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None	✓		Part XI - NOTES TO THE REVIEWER		
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas, no soundings were obtained.	✓		34. Unresolved discrepancies and questionable soundings.	✓	
			35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.		
			36. Supplemental information.		
Verified by <i>G. F. Trelethen</i>			Date <i>8-7-72</i>		

FIG. 18.

DESCRIPTIVE REPORT DATA RECORD			
PART I SMOOTH SHEET PREPARATION		PREPARED BY/OPERATOR	DATE
A. PLOTTER OPERATOR		EDAT PMU	
B. DISTORTION MARKS PLOTTED		EDAT PMU	
C. PROJECTION INTERSECTIONS PLOTTED		EDAT PMU	
D. POINTS OF ELECTRONIC CONTROL ARCS PLOTTED			
E. OVERLAYS PREPARED BY			
1. POSITION NUMBER		EDAT PMU	
2. EXCESS SOUNDINGS		EDAT PMU	
3. PRELIMINARY SMOOTH PLOT		EDAT PMU	
4. LIST OTHERS			
A.			
B.			
F. SOUNDING SELECTION BY		EDAT-PMU	
G. PLOTTER INPUT	PREPARED	EDAT-PMU	
H.	CHECKED		
I. DESCRIPTIVE REPORT ADDENDUMS			
PART II SMOOTH SHEET COMPLETION		CARTOGRAPHER	DATE
A. DISTORTION SCALE TICKS IDENTIFIED BY NOTE		G. F. Trefethen	7-28-72
B. PROJECTION INTERSECTIONS VERIFIED BY		G. F. Trefethen	7-6-72
C. PROJECTION LINES RULED BY		G. F. Trefethen	7-6-72
D. ELECTRONIC CONTROL ARCS RULED AND LOCATION VERIFIED		G. F. Trefethen	8-2-72
E. OVERLAYS COMPLETED BY			
1. POSITION NUMBER LEADERS ADDED		G. F. Trefethen	8-4-72
2. EXCESS SOUNDING OVERLAY COMPARED		G. F. Trefethen	7-10-72
3. PRELIMINARY SMOOTH PLOTS COMPARED		G. F. Trefethen	7-10-72
4. OTHERS UTILIZED			
A.			
B.			
F. DESCRIPTIVE REPORT ADDENDUM		G. F. Trefethen	8-2-72
G. CONTROL STATIONS VERIFIED		G. F. Trefethen	7-28-72
H. POSITIONS MANUALLY PLOTTED		B. T. DAVIS	5-4-71
I. MANUAL PLOT VERIFIED		B. J. STEPHANSON	4-7-72
J. SHORELINE APPLIED		NONE	
K. BOTTOM CHARACTERISTICS ADDED		G. F. Trefethen	7-27-72
L. NOTES AND DEPTH CURVES ADDED		G. F. Trefethen	8-1-72

H-9063

A. Additions and corrections have been furnished the plotter
center by the verification unit. ~~Except those marked in final~~
~~printouts.~~
Signed Thy L. Ruffin
Date August 11, 1972 Title Chief, Verification Br., AMC

B. Additions and corrections have been added to the survey
records and the final smooth sheet forwarded to the ~~xxxxxx~~
~~xxxx~~ ^{Review} verification unit.

Signed Thy L. Ruffin
Date August 11, 1972 Title Chief, Verification Br., AMC

C. The smooth sheet has been inspected, is complete, and
meets the requirements of the General Instructions for
automated surveys and the Hydrographic Manual. (Note:
All exceptions are listed in the verifier's report).

Signed _____
Date _____ Title _____

D. Smooth sheet and records forwarded to Rockville, Maryland
Office.

Date August 12, 1972

Verifier: B.J. Stephenson

Norfolk, Va.
March 7, 1972

AMC PLOTTER NOTE TO EDAT
H-9063 (PE-20-4-69)

During verification of the sounding overlay of this survey it was found that the sounding corrections listed on the raw data corrector tape printout using indicator 6 were not applied unless it was on a position.

To correct this condition all changes listed on, but not applied by the corrector tape were deleted on the corrector tape printout and entered on the sounding card printout. These and other routine changes were made in red pencil.

The tide correctors for day 220 were in error, and ~~was~~ corrected on the sounding card printout.

The soundings for previously destroyed positions 85, 270, 962 and 2071 were not destroyed.

There are approximately 8 corrections to be applied to the position card printout.

Assort sounding cards in proper sequence and make all changes shown in red pencil on the sounding and position printouts.

We are sending a tabulated list of needed changes compiled from the sounding card printout to assist in logging.

The soundings on this survey plot are too close to the north edge of the sheet. Please plot this sheet on 42 inch paper or move the point of origin 150 meters south on 36 inch paper.

After all needed changes have been made please furnish this office with a smooth sheet.

WLJ

Hugh L. Proffitt
Chief, Verification Branch

VERIFIER: Bernie T. Davis

Norfolk, Va.
May 4, 1971

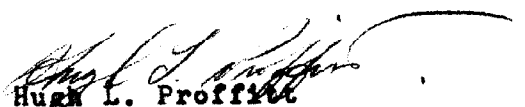
AMC PLOTTER NOTE TO EDAT

SURVEY H-9063

This office has completed verification of the preliminary position overlay for this survey. During this process a discrepancy was found between the boat sheet and the machine plots of positions 780 thru 787. After checking available information, including the Brush Recorder tapes, all indications pointed to a plotting error of 10 lanes on the boat sheet. The machine plot appears to be correct altho the positions do not fall near the charted 114 foot spot the ship was supposed to investigate. This development falls in the vicinity of Lat. 42-26.3' and Long. 70-47.7'.

Only a few errors were marked for correction on the position card printout. The major changes will be found between positions 2308 to 2321 where the Hi-Fix corrections were omitted. These and other needed changes are marked in red pencil on the printout.

When the above changes have been made, please furnish a sounding overlay.


Hugh L. Proffitt
Chief, Verification Br., AMC

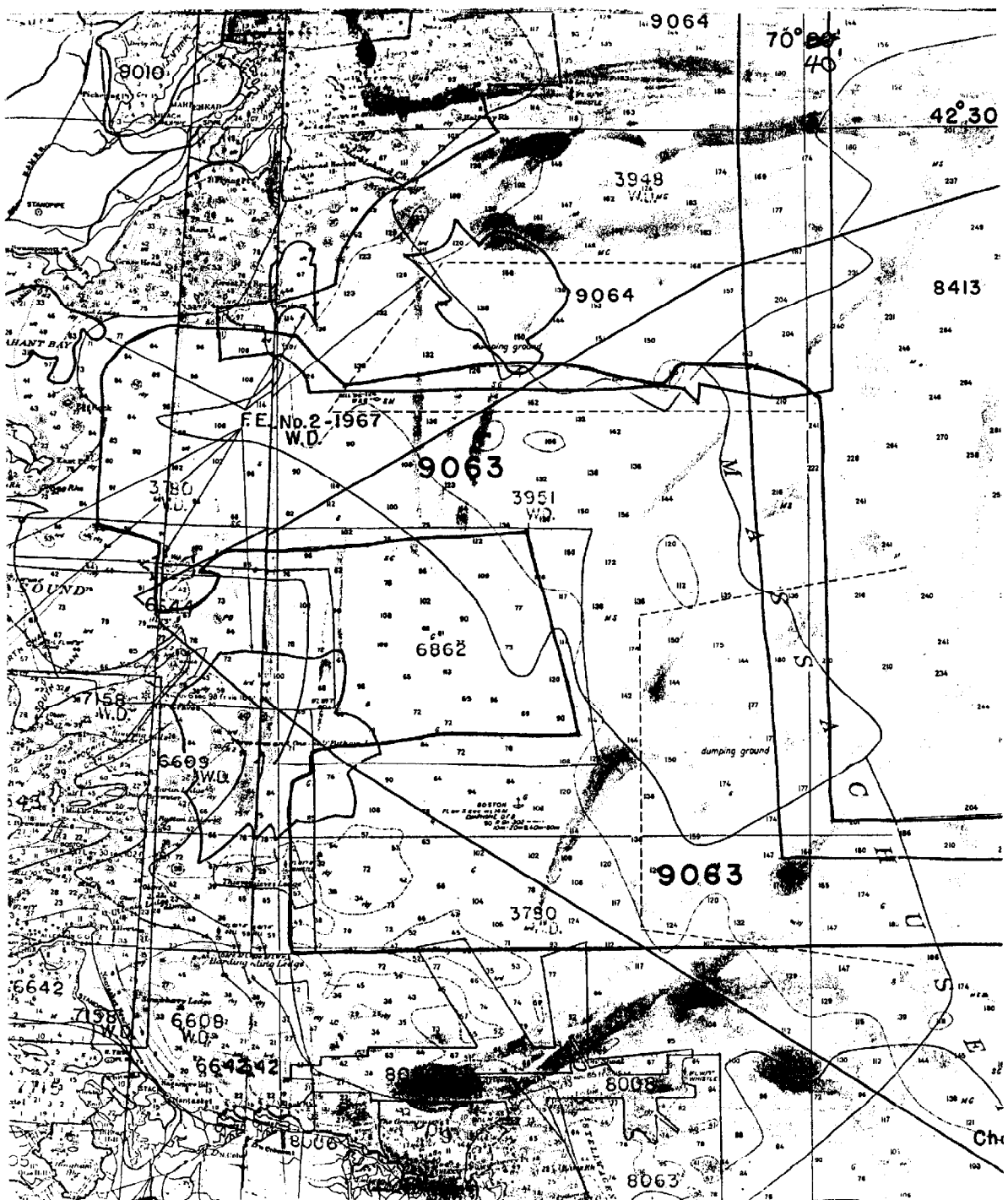
VERIFICATION NOTE
H-9063

GENERAL

This appears to be an excellent basic survey in an area of very irregular bottom. Some of the minor problems experienced during verification are listed in the enclosed "AMC Plotter Notes to EDAT".


Hugh L. Proffitt
Chief, Verification Br., AMC

Norfolk, Va.
Aug. 11, 1972



FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9063

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.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-976.