

T-12976

ORIGINAL

T-12976

NOAA FORM 76-35

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

DESCRIPTIVE REPORT

Type of Survey Shoreline (Photogrammetric)
Job No. PH-6601..... Map No. T-12976
Classification No. Edition No.
Field Edited

LOCALITY

State Massachusetts
General Locality Boston to Plum Island
Locality Marblehead Harbor

1965 TO 19 68

Alfred C. Holmes, Director, AMC

REGISTRY IN ARCHIVES

DATE

DESCRIPTIVE REPORT - DATA RECORD

T -12976

PROJECT NO. (II):

PH-6601

FIELD OFFICE (III):

CHIEF OF PARTY

PHOTOGRAMMETRIC OFFICE (III):

OFFICER-IN-CHARGE

Atlantic Marine Center, Norfolk, VA

Alfred C. Holmes, Director, AMC

INSTRUCTIONS DATED (II) (III):

Field - Aug. 4, 1965
Field - Aug. 19, 1965 Provisional instructions, Aerial photography
Office-Oct. 8, 1965 Instructions, Aerotriangulation
Office-Jan. 27, 1966
Office-Feb. 2, 1966 Instructions, Aerotriangulation
Office-Apr. 28, 1966
Field-May 20, 1966 Supplement I
Office-July 11, 1966 Supplement I

METHOD OF COMPILATION (III):

Wild B-8 and Graphic

MANUSCRIPT SCALE (III):

STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):

1:5,000

1:7,5000 Pantographed

DATE RECEIVED IN WASHINGTON OFFICE (IV):

DATE REPORTED TO NAUTICAL CHART BRANCH (IV):

APPLIED TO CHART NO.

DATE:

DATE REGISTERED (IV):

SEPT 1975

GEOGRAPHIC DATUM (III):

VERTICAL DATUM (III):

MHW

MEAN SEA LEVEL EXCEPT AS FOLLOWS:

Elevations shown as (25) refer to mean high water

Elevations shown as (5) refer to sounding datum

i.e., mean low water or mean lower low water

NA 1927

REFERENCE STATION (III):

Marblehead Lighthouse 1914

LAT.:

LONG.:

42°30'19."187(592.0m)

70°50'03."052(69.7m)

☒ ADJUSTED☐ UNADJUSTED

PLANE COORDINATES (IV):

STATE

ZONE

y = 549,243.66 Ft.

x = 779,542.98 Ft.

Massachusetts

Mainland

MAN NUMERALS INDICATE WHETHER THE ITEM IS TO BE ENTERED BY (II) FIELD PARTY, (III) PHOTOGRAMMETRIC OFFICE,
(IV) WASHINGTON OFFICE.

WHEN ENTERING NAMES OF PERSONNEL ON THIS RECORD GIVE THE SURNAME AND INITIALS, NOT INITIALS ONLY.

DESCRIPTIVE REPORT - DATA RECORD

T-12976

FIELD INSPECTION BY (III):

None

DATE:

MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION):

Air Photo Compilation

Date of Photography: August 25, 1965 and August 31, 1965

PROJECTION AND GRIDS RULED BY (IV):

A.E. Roundtree

DATE

6/1/66

PROJECTION AND GRIDS CHECKED BY (IV):

R. Glaser

DATE

6/3/66

CONTROL PLOTTED BY (III):

L. Neterer

DATE

9/26/66

CONTROL CHECKED BY (III):

A. Santillan

DATE

9/26/66

RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III):

H.P. Eichert

DATE

11/1/66

STEREOSCOPIC INSTRUMENT COMPILATION (III):

Wild B-8

PLANIMETRY

A. Shands

Reviewed: L. Neterer

DATE

8/2/67

8/2/67

CONTOURS

Inapplicable

DATE

MANUSCRIPT DELINEATED BY (III):

R. White

DATE

9/15/67

SCRIBING BY (III):

DATE

PHOTOGRAMMETRIC OFFICE REVIEW BY (III):

R.E. Smith

DATE

10/3/67

REMARKS:

DESCRIPTIVE REPORT - DATA RECORD

T-12976

CAMERA (KIND OR SOURCE) (III):



Wild RC-8 "S"

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
65-S(c)7323 thru 7325	8/31/65	08:48	1:15,000	0.2 ft. below MLW*
65-S(c)7350 thru 7354	8/31/65	09:06	1:15,000	0.1 ft. below MLW*
65-S-7166R thru 7169R	8/25/65	10:03	1:15,000	9.0 ft. above MLW*
65-S-7195R thru 7199R	8/25/65	10:17	1:15,000	8.8 ft. above MLW*

TIDE (III) Predicted

	RATIO OF RANGES	MEAN RANGE	SPRING RANGE
REFERENCE STATION: Boston		9.5	11.0
SUBORDINATE STATION: Marblehead		9.1	10.6
SUBORDINATE STATION:			

WASHINGTON OFFICE REVIEW BY (IV): Bernard Kurs, AMC

DATE:
12/73

PROOF EDIT BY (IV):

DATE:

NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II): 10

RECOVERED:
7IDENTIFIED:
5

NUMBER OF BM(S) SEARCHED FOR (II): -3

RECOVERED:
-3IDENTIFIED
-0

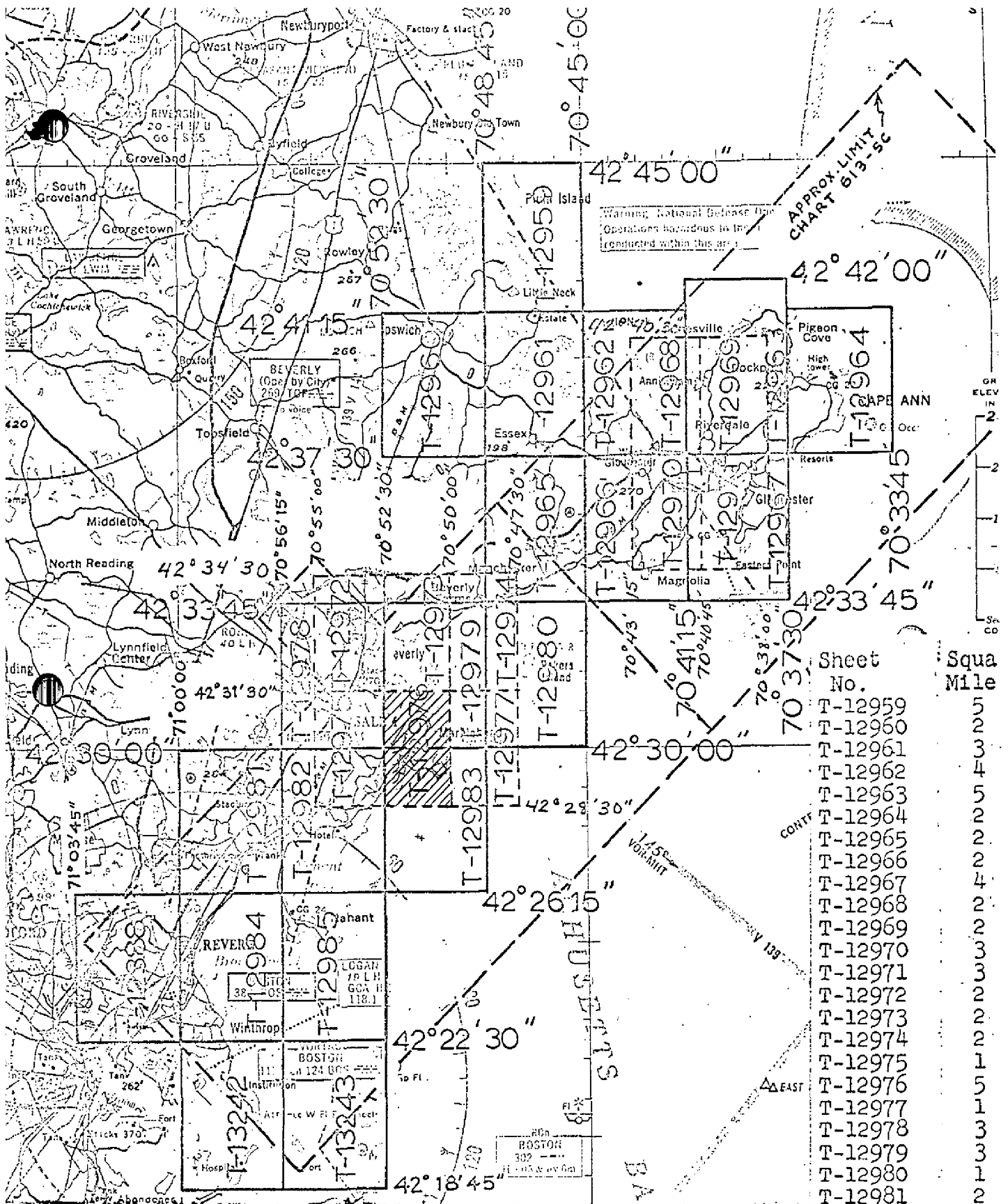
NUMBER OF RECOVERABLE PHOTO STATIONS ESTABLISHED (III): None

NUMBER OF TEMPORARY PHOTO HYDRO STATIONS ESTABLISHED (III): None

REMARKS:

*The stage of tide at the time of photography was determined by readings on a staff at Gloucester Harbor (Ten Pound Island). See instructions dated 28, April, 1966.

COMPILATION RECORD	COMPLETION DATE	REMARKS
Alongshore area for hydro	Sept. 1967	Superseded
Field Edit Applied & Interior Completed. Compilation Com- plete.	Oct. 1967	Superseded
Final Review	Dec. 1973	



Sheet No.	Square Mile
T-12959	5
T-12960	2
T-12961	3
T-12962	4
T-12963	5
T-12964	2
T-12965	2
T-12966	2
T-12967	4
T-12968	2
T-12969	2
T-12970	3
T-12971	3
T-12972	2
T-12973	2
T-12974	2
T-12975	1
T-12976	5
T-12977	1
T-12978	3
T-12979	3
T-12980	1
T-12981	2
T-12982	3
T-12983	2
T-12984	3
T-12985	2
T-12388	3
T-13242	3
T-13243	2
TOTAL	79

JOB PH-6601
BOSTON TO PLUM ISLAND
SHORELINE MAPPING AT 1:5,000 & 1:10,000 SCALE
CHART 613-SC
CHART TOPOGRAPHY AT 1:40,000 SCALE

SUMMARY TO ACCOMPANY

DESCRIPTIVE REPORTS PH-6601

This shoreline manuscript is one of thirty-one maps that make up this project. The primary purpose of the project is to provide contemporary shoreline for nautical chart construction. Maps were also used to provide photogrammetric hydro support data for the hydrographic surveys to be conducted in the same area.

The only field work prior to compilation was recovery and identification of horizontal control required for aerotriangulation.

Field edit was accomplished by a photogrammetric field party during the years 1967, 1968, 1969 and 1970. The field edit was adequate.

Cronaflex positives and ozalids of the manuscripts were furnished for the use of the field editor and the preparation of the hydrographers boat sheets. Accompanying these were specially prepared ratio photographs to aid in the location of hydrographic signals.

Final review was accomplished at the Atlantic Marine Center from September, 1973 to April, 1974.

A cronaflex positive and negative of each reviewed manuscript are being forwarded for record and registry.

FIELD INSPECTION REPORT

T-12976

Boston to Plum Island

PH-6601

There was no field inspection prior to compilation.

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PHOTOGRAMMETRIC PLOT REPORT
Job PH-6601
Boston to Plum Island, Massachusetts

November 1, 1966

21. Area Covered

This report covers aerotriangulation for 1:5,000 and 1:10,000 scale surveys in an area north of Boston, Massachusetts. The 1:5,000 scale surveys are T-12968 thru T-12977; the 1:10,000 scale surveys are T-12959 thru T-12967 and T-12978 thru T-12985.

22. Method

Four strips were bridged by the analytic method. Strip 1 was at a scale of 1:30,000 using infrared photography; Strips 2 and 3 at a scale of 1:30,000 using color film; and Strip 4 using color film at a scale of 1:15,000.

The 1:30,000 scale bridges were to be used for the 1:10,000 scale compilation. The four-model 1:15,000 scale bridge was necessary to complete coverage on surveys T-12972 and T-12978.

Common points between the 1:30,000 and 1:15,000 scale photography were selected. Plane coordinate positions from our bridges were determined so that 1:15,000 scale models could be controlled to compile the 1:5,000 scale surveys. Plane coordinates are on the Massachusetts State Grid (Mainland). The attached aerotriangulation sketch shows location of strips bridged. Closures to control have been tabulated.

23. Adequacy of Control

Field identified control was supplemented by office identified horizontal control points and was adequate.

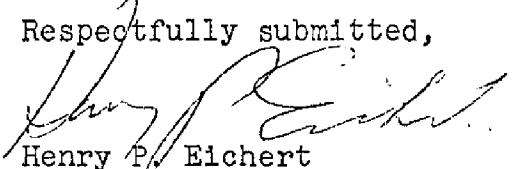
24. Supplemental Data

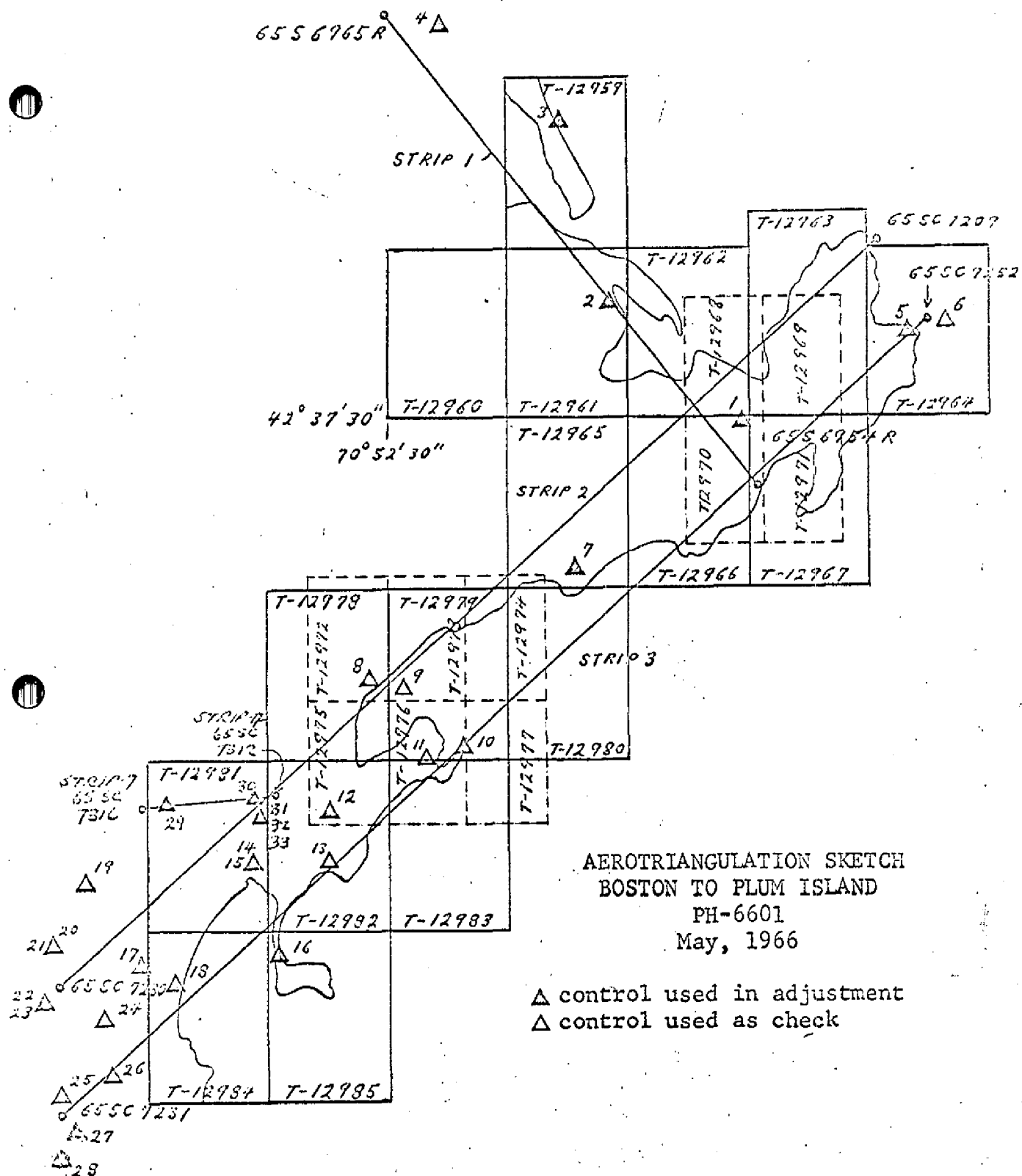
Vertical control points needed ^{as} ~~and~~ control for strip adjustments were taken from USGS quads.

25. Photography

The color photography was excellent. The infrared photography, which is not particularly suited for bridging, was adequate.

Respectfully submitted,


Henry P. Eichert



Flt To control
(feet)

STRIP #1

1 MEAD 2 (MGS), 1934

target (+0.1, +0.1)

sub. pt. (-0.9, +1.7)

2 CHOATE, 1849

target (-0.4, -0.2)

3 PLUM ISLAND COAST GUARD CUPOLA, 1943

target (+0.5, +0.3)

sub. pt. (-2.8, +4.5)

4 OLD TOWN, 1850

target (-0.2, -0.2)

RM #1 (-0.2, +0.3)

STRIP #2

5 STONEHAVEN (ROCKPORT TOWN (MGS)), 1939

target (+1.2, -2.6)

sub. pt. A (-0.7, -1.6)

sub. pt. B (+1.3, -3.0)

- 1 MEAD 2 (MGS), 1934

target (0.0, +3.3)

sub. pt. (+0.7, +3.6)

7 MANCHESTER CHURCH DARK SPIRE, 1848

target $(-6.0, +0.8)$

sub pt. A $(-7.1, +3.1)$

~~sub pt. B~~

8 SALEM, NEW ENGLAND POWER CO. SOUTH STACK, 1954

office identified $(+4.8, +1.9)$

9 FORT PICKERING LIGHTHOUSE, 1877

office identified $(+6.0, +1.0)$

14 HIGH ROCK 2 (MGS)

sub pt. A $(+3.2, -4.4)$

sub pt. B $(+2.0, -2.8)$

15 HIGH ROCK 3, 1943

office identified $(+1.8, -3.7)$

17 REVERE CATHOLIC CHURCH TOWER, 1934

office identified $(-4.0, -4.0)$

19 BOOTH (MGS), 1934

sub pt. A $(+3.4, -1.4)$

24 CHELSEA QUIGLEY MEM. HOSPITAL W.T., 1958

office identified $(-1.5, +2.2)$

20 MEDFORD RADIO STATION WEEI-FM TOWER, 1958

~~sub pt. A~~ office identified $(+2.1, -1.0)$

21 MEDFORD TV STATION WNAC TOWER, 1958

office identified $(+5.3, -1.0)$

22 MEDFORD RADIO STATION WEEI NE TOWER, 1958

office identified (+1.4, +3.0)

23 MEDFORD RADIO STATION WEEI SW TOWER, 1958

office identified (+1.7, +3.1)

STRIP #3

28 BOSTON STATE HOUSE, 1934

office identified (+2.6, +5.5)

27 BOSTON CUSTOM HOUSE TOWER, 1916

office identified (+3.7, +4.7)

25 CHARLESTOWN BUNKER HILL MON., 1846

office identified (+2.2, +0.1)

26 EAST BOSTON, BOSTON AND ALBANY R.R. TANK, 1916

office identified (+1.6, +5.5)

24 CHESLEA QUIGLEY MEM. HOSPITAL W.T., 1958

office identified (+7.3, -2.0)

17 REVERE CATHOLIC CHURCH TOWER, 1934

office identified (-4.0, -5.0)

18 REVERE BEACH STACK, 1919

office identified (-4.1, -2.2)

14 HIGH ROCK #2

sub ~~to~~ pt. B (+2.9, +3.9)

16 NAHANT COAST GUARD CUPOLA, 1919

office identified (+3.6, +6.4)

13 SWAMPSCOTT HIGH SCHOOL FINIAL, 1940

office identified $(+0.7, +3.4)$

12 SWAMPSCOTT LARGER STANDPIPE, 1934

office identified $(+0.7, +1.8)$

11 MARBLEHEAD, ABBOT TOWER, 1919

office identified $(-0.6, +4.4)$

10 MARBLEHEAD LIGHTHOUSE, 1914

office identified $(+2.0, +5.1)$

7 MANCHESTER CHURCH PARK SPIRE, 1848

target $(-3.5, -5.8)$

sub pt A $(-4.1, -5.2)$

1 MEAD 2 (MGS), 1934

target $(+3.8, -0.7)$

sub.pt. $(+6.2, -1.2)$

5 STONEHAVEN (ROCKPORT TOWN (MGS)), 1939

target $(-2.1, +0.3)$

sub pt A $(-1.3, +1.6)$

sub pt B $(-2.0, +1.2)$

6 STRAITS MOUTH LIGHTHOUSE, 1902

office identified $(-3.1, -5.2)$

STRIP #4

29 DANVERS, COOKE & KRAUSE CO. CHIMNEY, 1919

HOME STA (-0.78 +0.79)

SS "A" (-0.01 -0.01)

SS "B" (-1.83 +1.74)

30 BEVERLY, UNITED SHOE MFG. CO. STK., 1934

(-0.01 -0.01)

31 BEVERLY, ODD FELLOWS CUPOLA, 1934

(-1.29 +1.55)

32 BEVERLY, ST. MARY'S CHURCH SPIRE, 1934

(-1.32 -1.09)

33 BEVERLY, 1ST BAPTIST CHURCH, 1914

(+1.35 +1.10)

TIE POINTS

12601 (-0.28 -6.78)

12602 (-3.79 -3.20)

13601 (-2.56 -3.47)

14601 (-3.15 -1.53)



DESCRIPTIVE REPORT CONTROL RECORD

MAP T. 12976 PROJECT NO. PH-6601 SCALE OF MAP 1:5,000 SCALE FACTOR None

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR Y COORDINATE LONGITUDE OR X COORDINATE	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS (1 Ft. = 3048006 meter) FORWARD (BACK)
MARBLEHEAD LIGHTHOUSE 1914	Vol. I Pg. 33	NA 1927	42° 30' 19.187" 70° 50' 03.052"	592.0 (1259.4) 69.7 (1300.2)
MARBLEHEAD ABBOT TOWER 1919	Vol. I Pg. 54	"	42° 30' 08.862" 70° 51' 11.081"	273.4 (1578.0) 235.0 (1117.0)
MARBLEHEAD YELLOW STANDPIPE 1934	Vol. I Pg. 53	"	42° 30' 02.555" 70° 51' 54.770"	78.8 (1772.6) 1250.6 (119.4)
KETTLE BOTTOMS BEACON 1914	Vol. I Pg. 508	"	42° 31' 08.510" 70° 50' 12.823"	262.6 (1588.8) 292.7 (1077.0)
MARBLEHEAD WEATHER SERVICE DISPLAY TOWER 1914	Vol. I Pg. 510	"	42° 30' 31.72" 70° 50' 30.28"	978.8 (872.6) 691.3 (678.5)
MARBLEHEAD FIRST CONGREGATIONAL CHURCH 1919	Vol. I Pg. 871	"	42° 30' 25.081" 70° 50' 54.145"	773.9 (1077.5) 1236.2 (133.7)
ROARING BULL LEDGE BEACON 1916	Vol. I Pg. 285	"	42° 29' 46.466" 70° 50' 14.633"	1433.8 (417.6) 334.2 (1036.2)
MARBLEHEAD NECK 1940	Vol. I Pg. 287	"	42° 30' 17.472" 70° 50' 00.625"	539.1 (1312.3) 14.3 (1355.6)
COMPUTED BY	DATE	CHECKED BY	DATE	
L.L. Graves	10/13/66	A.L.S & J.S.P.	10/17/66	

COMPILATION REPORT

T-12976

31. DELINEATION

Compilation of all features, with the exception of the mean high water line, were compiled by the Wild B-8 method using the color photography taken at mean low water. The mean high water line was compiled by the graphic method from the infrared photography taken at mean high water.

There was no field inspection.

Photography was satisfactory.

32. CONTROL

See Photogrammetric Plot Report dated 11/1/66.

33. SUPPLEMENTAL DATA

None.

34. CONTOURS AND DRAINAGE

Contours are inapplicable.

Drainage was delineated from office interpretation of the photographs.

35. SHORELINE AND ALONGSHORE DETAILS

See Item 31.

The mean low water line, shallow lines, foreshore, etc. were delineated from office interpretation of the photographs.

There was no shoreline inspection.

36. OFFSHORE DETAILS

No statement.

37. LANDMARKS AND AIDS

Appropriate copies of Form 567 for Landmarks and Aids have been submitted to the Washington Office under date of January 14, 1969.

38. CONTROL FOR FUTURE SURVEYS

There are no recoverable topographic stations. A sufficient number of shoreline pass points have been located to facilitate the location of photo-hydro stations.

39. JUNCTIONS

Junctions are in agreement with: T-12973 (scale 1:5,000) and T-12979 (scale 1:10,000) to the north; T-12983 (scale 1:10,000) to the south; T-12975 (scale 1:5,000) and T-12978 (scale 1:10,000) and T-12982 (scale 1:10,000) to the west; T-12977 (scale 1:5,000) and T-12979 (scale 1:10,000) and T-12983 (scale 1:10,000) to the east.

40. HORIZONTAL AND VERTICAL ACCURACY

No statement.

46. COMPARISON WITH EXISTING MAPS

Comparison has been made with USGS Quadrangles MARBLEHEAD NORTH, MASS., scale 1:24,000 dated 1956 and MARBLEHEAD SOUTH, MASS., scale 1:24,000, dated 1956.

47. COMPARISON WITH NAUTICAL CHARTS

Comparison has been made with Chart 241, scale 1:10,000, 3rd edition, dated September 30, 1963.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.

ITEMS TO BE CARRIED FORWARD

None.

Submitted by:

Bernard Kurofor

R.E. Smith
Cartographer
10/6/69

Approved:

Albert C. Rauck, Jr.

Albert C. Rauck, Jr.
Chief, Coastal Mapping Section, AMC

Sept. 24, 1973

GEOGRAPHIC NAMES

FINAL NAME SHEETS

Ph-6601 (Boston to Plum Island, Mass.)

T-12976

Back Beach/Black Joe Pond
Boden Point
Brown Island
Castle Rock
Cloutman Point
Devereux
Devereux Beach
Dolliber Cove
Dolliber Point
Fluen Point
Flying Point
Fort Sewall
Gerry Island
Jack Point
Ladys Cove
Little Pig Rocks
Marblehead
Marblehead Channel
Marblehead Harbor
Marblehead Neck (locality)
Marblehead Neck
Massachusetts Bay
Naugus Head
Peach Point
Ram Island
Reds Pond
Roaring Bull
Salem Harbor
Skinner Head
Tinkers Island

Prepared by:

C. E. Harrington
C. E. Harrington
Staff Geographer

T - 1297C

49. NOTES FOR THE HYDROGRAPHER AND FIELD EDITOR

Separate edit ozalids have been prepared for your respective uses. These are intended to simplify your efforts and eliminate the possibility of any duplication of edit procedures.

On each are noted pertinent remarks concerning doubtful interpretations or items of compilation requiring additional clarification and/or verification.

For the field editor, notes include all items inshore from the approximate M.L.W.L. All offshore items are noted for the Hydrographer's attention.

Among these items requiring edit by both parties, are "Landmarks and Aids". These are indicated by a numeral. The following key is an explanation of the attention they may require:

1. Object not visible on photos. Verify by edit.
2. Object visible, position verified.(by compiler)
3. Object visible, position re-determined. Verify by edit.
4. Object which may be a landmark or new aid. Verify by edit.

Forms 567 should be submitted for all "Landmarks and Aids".

FORM C&GS-1002
(9-66)U.S. DEPARTMENT OF COMMERCE
ESSA
COAST AND GEODETIC SURVEYPHOTOGRAMMETRIC OFFICE REVIEW
T. 12976

1. PROJECTION AND GRIDS RES	2. TITLE RES	3. MANUSCRIPT NUMBERS RES	4. MANUSCRIPT SIZE RES
CONTROL STATIONS			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY RES	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations) RES		7. PHOTO HYDRO STATIONS XX
8. BENCH MARKS XX	9. PLOTTING OF SEXTANT FIXES XX	10. PHOTOGRAMMETRIC PLOT REPORT Bridge (W.O.)	11. DETAIL POINTS Wild B-8
ALONGSHORE AREAS (Nautical Chart Data)			
12. SHORELINE RES	13. LOW-WATER LINE RES	14. ROCKS, SHOALS, ETC. RES	15. BRIDGES XX
16. AIDS TO NAVIGATION	17. LANDMARKS	18. OTHER ALONGSHORE PHYSICAL FEATURES RES	19. OTHER ALONGSHORE CULTURAL FEATURES RES
PHYSICAL FEATURES			
20. WATER FEATURES RES		21. NATURAL GROUND COVER RES	22. PLANETABLE CONTOURS XX
23. STEREOSCOPIC INSTRUMENT CONTOURS XX	24. CONTOURS IN GENERAL XX	25. SPOT ELEVATIONS XX	26. OTHER PHYSICAL FEATURES RES
CULTURAL FEATURES			
27. ROADS LG	28. BUILDINGS RES	29. RAILROADS RES	30. OTHER CULTURAL FEATURES RES
BOUNDARIES			
31. BOUNDARY LINES XX		32. PUBLIC LAND LINES XX	
MISCELLANEOUS			
33. GEOGRAPHIC NAMES RES		34. JUNCTIONS RES	35. LEGIBILITY OF THE MANUSCRIPT RES
36. DISCREPANCY OVERLAY RES	37. DESCRIPTIVE REPORT CHB	38. FIELD INSPECTION PHOTOGRAPHS XX	39. FORMS RES
40. REVIEWER R.E. Smith		SUPERVISOR, REVIEW SECTION OR UNIT Albert C. Rauck, Jr. <i>Albert C. Rauck, Jr.</i>	
41. REMARKS (See attached sheet)			
FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT			
42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.			
COMPILER L.O. Neterer Reviewed by: C.H. Bishop		SUPERVISOR <i>Albert C. Rauck, Jr.</i> Albert C. Rauck, Jr.	
43. REMARKS Field Edit Applied From: Field Edit Ozalid Ship's Cronaflex (Signed Copy), and Field Photos Nos. 65-S-7324 thru 7325; 65-S-7350 thru 7353.			

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FIELD EDIT REPORT

PH-6601

Boston to Plum Island

T-12959 T-12975 T-12976 T-12978 T-12980

GENERAL NOTES

This report is submitted for four T-sheets, field edited May and June 1968 one sheet T-12980 was field edited June 1967 and is being returned.

Most discrepancies on sheet T-12978 are referenced to sheet T-12975 because of duplication. A few in the northwest corner of sheet T-12978 are noted directly on the sheet or referenced to photo 65-S-7315.

All notations on T-sheet and Photographs are made in violet ink. The notations were made either directly on the discrepancy sheet or referenced to photos.

51 METHODS

Field edit was accomplished by the following methods, by skiff and truck travel and by walking sections of the shoreline.

All rock and ledge areas were inspected at or near low-water. The rock and ledge heights were obtained by hand leveling from mean high-water or mean low-water lines, or by using hourly tide heights obtained from the ship Pierce.

All discrepancies on the field edit sheets have been verified directly on the sheets or referenced to a photograph.

Notations on photographs by sheet numbers are as follows.

T-12975	T-12976	T-12978	T-12959
65-S-7340	65-S-7324	65-S-7315	65-S-7263
7349	7325		
7351	7350		
	7351		
	7352		
	7353		

52 ADEQUACY OF COMPILATION

The compilation of MHWL and MLWL around ledge areas as a whole appeared to be good, several ledge areas were inspected at low water, these are noted on the discrepancy print and referenced to a photograph. Compilation of piers, streets, and buildings was found to be good.

54 RECOMMENDATIONS:

None

56 ROCKS

Very few rocks were verified directly on the field edit sheets. However areas of rocks in question and rocks recommended for charting, are noted on the field edit sheet and referenced to

photos.

These are inked on the following photos.

T-12976	T-12975
65-S-7324	65-S-7340
7325	7351
7350	
7351	
7352	
7353	

NAUTICAL LANDMARKS AND FIXED AIDS

All nautical landmarks and fixed aids were inspected and submitted on form 567.

58 LANDMARK BUILDINGS AND BLUFFS

Three landmark buildings are recommended for deletion, one each on the following: T-sheets, T-12975, T-12976, and T-12978. All landmark buildings recommended for charting are circled and labeled as such on the following photos.

65-S-7324, 7350, 7352

All bluffs were investigated off shore and bluffs recommended for charting are inked on the following photos.

65-S-7324 7350 7352

All Public Buildings are circled on the following photos,

65-S-7340 ~~7349~~ 7349 7352

59 STREETS

All street additions and classifications for T-sheets T-12975 and T-12976 are noted on the field edit sheet and referenced to the photos.

Submitted by

E. W. Hartford
E. W. Hartford

2 June 1968

MASSACHUSETTS LANDMARKS FOR CHARTS

TO BE CHARTED
TO BE CHARTED
TO BE CHARTED

STRIKE OUT TWO

Jan. 10, 1969

Atlantic Marine Center

I recommend that the following objects which have been inspected from seaward to determine their value as landmarks be charted on the charts indicated.

The positions given have been checked after listing by

Lovell O. Neterer, Jr.

Allen L. Powell

Director, AMC

Chief of Party

STATE	MASSACHUSETTS		SIGNAL NAME	POSITION				METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
	CHARTING NAME	DESCRIPTION		LATITUDE		LONGITUDE							
				D. M. METERS	D. P. METERS	D. M. METERS	D. P. METERS						
		SALEM HARBOR APPROACHES											
		MARBLEHEAD HARBOR											
CHURCH TOWER		Church Tower Wood White Dark Top Ht. = 85(135) ft.	42 30	17.05	70 51	04.38	N.A. 1927	6/7/68	X	X			241, 240 1207
STANDPIPE		Standpipe steel grey Ht. = 100(180) ft.	"	36.59	"	27.38	"	"	X	X			241, 240 1207
STACK		Stack Brick, yellow Ht. = 70(135) ft.	"	11.29	"	30.88	"	"	X				241, 240
TOWER		Radio Tower Steel Ht. = 187(227)	42 31	18.4	"	94.8	"	"	X	X			241, 240 1207
OBS. TOWER		Obs. Tower Concrete, green Ht. = 55(95) ft.	42 29	87.1	70 50	33.5	"	6/13/68	X	X			241, 240 1207
FLAGPOLE		Flagpole wood white, gold ball atop Ht. = 35(45) ft.	"	16.33	"	31.70	"	"	X				241, 240
		SALEM HARBOR APPROACHES											
FLAG TOWER		(Marblehead Weather Service Display Tower 1911) Skeleton Steel ht=75(105) ft.	42 30	31.72	70 50	30.28	N.A. 1927	6/1/68	X	X			241, 240 1207
TANDPIPE		(Marblehead Yellow Standpipe, 1934) Steel ht=100(175) ft.	"	02.555	70 51	54.770	"	6/13/68	X	X			241, 240 1207
TOWER		(Marblehead Abbot Tower, 1919) Brick ht. = 155(215) ft.	"	08.862	"	11.081	"	6/7/68	X	X			241, 240 1207
CHURCH TOWER		(Marblehead First Congregational Church, 1919) Wood ht=95(135) ft.	"	25.081	70 50	54.145	"	"	X	X			241, 240 1207

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS

TO BE CHARTED
~~NON-REVIEWED~~
~~NO-REVIEWED~~

STRIKE OUT TWO

NONFLOATING AIDS OR MARKERS FOR CHARTS

Atlantic Marine Center

Jan. 10 19 69

I recommend that the following objects which have ~~been~~ been inspected from seaward to determine their value as landmarks be charted on ~~(charts)~~ the charts indicated.

The positions given have been checked after listing by Lovell O. Neterer, Jr.

Allen L. Powell

Director, AMC

Chief of Party

STATE	MASSACHUSETTS		SIGNAL NAME	POSITION						METHOD OF LOCATION AND SURVEY NO.	DATE OF XXXXXX Verifi.	MARCON CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED	
	CHARTING NAME	DESCRIPTION		LATITUDE #		LONGITUDE #		DATUM								
				° /	"	° /	"									
		SALEM HARBOR APPROACHES														
		MARBLEHEAD HARBOR														
	LIGHT	Marblehead Light (Marblehead Lighthouse, 1914) Ht. = 108 (137) ft.		42 30	19.187 592.0	70 50	03.052 69.7	N.A. 1927	Triang T-12976	x	x				241, 240 1207	
		SALEM SOUTH CHANNEL														
	DAYBEACON	Kettlebottom Daybeacon (Kettle Bottoms Beacon, 1914)		42 31	08.510 262.6	"	12.823 292.7	"	"	x	x				241, 240 1207	
		NAHANT BAY APPROACH														
	DAYBEACON	Roaring Bull Daybeacon (Roaring Bull Ledge Beacon, 1916)		42 28	46.466 1433.8	"	14.633 334.2	"	"	x	x				241, 240 1207	

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS



NO RECORD
NO RECORD
TO BE DELETED

STRIKE OUT TWO

HOW TO FIND YOUR LANDMARKS FOR CHARTS

Atlantic Marine Center

Jan. 10, 1969

I recommend that the following objects which have ~~(survived)~~ been inspected, from seaward to determine their value as landmarks be ~~re-examined (deleted from)~~ the charts indicated.

The positions given have been checked after listing by

Lowell O. Neter, Jr. Allen L. Powell

Director, AMC

Chief of Party.

[illegible]

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and *floating aids* to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and noted by individual field survey sheets. Information under each column heading should be appropriate to the column heading. The data should be given in the following order: 1-22, 23-24, 25-26, 27-28, 29-30, 31-32, 33-34, 35-36, 37-38, 39-40, 41-42, 43-44, 45-46, 47-48, 49-50, 51-52, 53-54, 55-56, 57-58, 59-60, 61-62, 63-64, 65-66, 67-68, 69-70, 71-72, 73-74, 75-76, 77-78, 79-80, 81-82, 83-84, 85-86, 87-88, 89-90, 91-92, 93-94, 95-96, 97-98, 99-100, 101-102, 103-104, 105-106, 107-108, 109-110, 111-112, 113-114, 115-116, 117-118, 119-120, 121-122, 123-124, 125-126, 127-128, 129-130, 131-132, 133-134, 135-136, 137-138, 139-140, 141-142, 143-144, 145-146, 147-148, 149-150, 151-152, 153-154, 155-156, 157-158, 159-160, 161-162, 163-164, 165-166, 167-168, 169-170, 171-172, 173-174, 175-176, 177-178, 179-180, 181-182, 183-184, 185-186, 187-188, 189-190, 191-192, 193-194, 195-196, 197-198, 199-200, 201-202, 203-204, 205-206, 207-208, 209-210, 211-212, 213-214, 215-216, 217-218, 219-220, 221-222, 223-224, 225-226, 227-228, 229-230, 231-232, 233-234, 235-236, 237-238, 239-240, 241-242, 243-244, 245-246, 247-248, 249-250, 251-252, 253-254, 255-256, 257-258, 259-260, 261-262, 263-264, 265-266, 267-268, 269-270, 271-272, 273-274, 275-276, 277-278, 279-280, 281-282, 283-284, 285-286, 287-288, 289-290, 291-292, 293-294, 295-296, 297-298, 299-300, 301-302, 303-304, 305-306, 307-308, 309-310, 311-312, 313-314, 315-316, 317-318, 319-320, 321-322, 323-324, 325-326, 327-328, 329-330, 331-332, 333-334, 335-336, 337-338, 339-340, 341-342, 343-344, 345-346, 347-348, 349-350, 351-352, 353-354, 355-356, 357-358, 359-360, 361-362, 363-364, 365-366, 367-368, 369-370, 371-372, 373-374, 375-376, 377-378, 379-380, 381-382, 383-384, 385-386, 387-388, 389-390, 391-392, 393-394, 395-396, 397-398, 399-400, 401-402, 403-404, 405-406, 407-408, 409-410, 411-412, 413-414, 415-416, 417-418, 419-420, 421-422, 423-424, 425-426, 427-428, 429-430, 431-432, 433-434, 435-436, 437-438, 439-440, 441-442, 443-444, 445-446, 447-448, 449-450, 451-452, 453-454, 455-456, 457-458, 459-460, 461-462, 463-464, 465-466, 467-468, 469-470, 471-472, 473-474, 475-476, 477-478, 479-480, 481-482, 483-484, 485-486, 487-488, 489-490, 491-492, 493-494, 495-496, 497-498, 499-500, 501-502, 503-504, 505-506, 507-508, 509-510, 511-512, 513-514, 515-516, 517-518, 519-520, 521-522, 523-524, 525-526, 527-528, 529-530, 531-532, 533-534, 535-536, 537-538, 539-540, 541-542, 543-544, 545-546, 547-548, 549-550, 551-552, 553-554, 555-556, 557-558, 559-560, 561-562, 563-564, 565-566, 567-568, 569-570, 571-572, 573-574, 575-576, 577-578, 579-580, 581-582, 583-584, 585-586, 587-588, 589-590, 591-592, 593-594, 595-596, 597-598, 599-600, 601-602, 603-604, 605-606, 607-608, 609-610, 611-612, 613-614, 615-616, 617-618, 619-620, 621-622, 623-624, 625-626, 627-628, 629-630, 631-632, 633-634, 635-636, 637-638, 639-640, 641-642, 643-644, 645-646, 647-648, 649-650, 651-652, 653-654, 655-656, 657-658, 659-660, 661-662, 663-664, 665-666, 667-668, 669-670, 671-672, 673-674, 675-676, 677-678, 679-680, 681-682, 683-684, 685-686, 687-688, 689-690, 691-692, 693-694, 695-696, 697-698, 699-700, 701-702, 703-704, 705-706, 707-708, 709-710, 711-712, 713-714, 715-716, 717-718, 719-720, 721-722, 723-724, 725-726, 727-728, 729-730, 731-732, 733-734, 735-736, 737-738, 739-740, 741-742, 743-744, 745-746, 747-748, 749-750, 751-752, 753-754, 755-756, 757-758, 759-760, 761-762, 763-764, 765-766, 767-768, 769-770, 771-772, 773-774, 775-776, 777-778, 779-780, 781-782, 783-784, 785-786, 787-788, 789-790, 791-792, 793-794, 795-796, 797-798, 799-800, 801-802, 803-804, 805-806, 807-808, 809-810, 811-812, 813-814, 815-816, 817-818, 819-820, 821-822, 823-824, 825-826, 827-828, 829-830, 831-832, 833-834, 835-836, 837-838, 839-840, 841-842, 843-844, 845-846, 847-848, 849-850, 851-852, 853-854, 855-856, 857-858, 859-860, 861-862, 863-864, 865-866, 867-868, 869-870, 871-872, 873-874, 875-876, 877-878, 879-880, 881-882, 883-884, 885-886, 887-888, 889-890, 891-892, 893-894, 895-896, 897-898, 899-900, 901-902, 903-904, 905-906, 907-908, 909-910, 911-912, 913-914, 915-916, 917-

* TABULATE SECONDS AND METERS

TO TABULATE RECORDS AND MEMBERS

USCOMM-DC 10234-1001

REVIEW REPORT T-12976

SHORELINE

December, 1973

61. GENERAL STATEMENT:

See summary which is page 6 of the Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

Comparison was made with Registered Survey 3766 at 1:10,000 scale, ~~and~~ dated 1919. There is only general agreement of the two surveys because of the date difference and the difference of datum.

This survey supersedes the prior listed survey for nautical chart construction purposes.

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

Comparison was made with USGS Quads Marblehead North and Marblehead South, Mass. dated 1956 at 1:24,000, scale. There is good general agreement. Because of the difference in scale only a visual comparison could be made.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

Comparison was made with Boat Sheets H-9010 and H-9012 at 1:5,000 scale dated 1968. Also, with Boat Sheet H-9094 at 1:10,000 scale dated 1969. There was very good agreement.

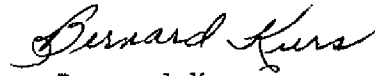
65. COMPARISON WITH NAUTICAL CHARTS:

Comparison was made with Chart 241 at 1:10,000, scale dated July 29, 1972. There was very good agreement between the two. The only significant difference is the location of a long pier at Cloutman Pt. This is shown on the discrepancy print in red.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

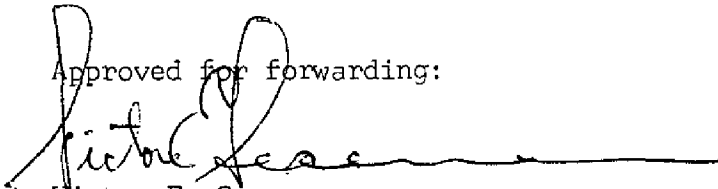
This survey complies with project instruction and meets the National Standards of Map Accuracy.

Reviewed by:



Bernard Kurs
Cartographer

Approved for forwarding:



Victor E. Serena
Chief, Photogrammetric Branch, AMC

Approved:

Chief, Photogrammetric Branch


 Chief, Coastal Mapping Division

51'45"

x=772 000 FT

51'30"

x=774 000 FT

51'15"

51'00"

~~South~~

Channel

Naugus Head

Cloutman Pt

Fluen Pt

Dollib

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T-12976

- chart 241 1:10,000



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