T-12970

FORM 604
U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey  Shoreline (Photogrammetric

Field No. Office No. T-12970

LOCALITY
State  Massachusetts
General locality  Boston to Plum Island
Locality  Little River

1965-1968

CHIEF OF PARTY
Allen L. Powell, Director, Atlantic
  Marine Center

LIBRARY & ARCHIVES

DATE
**DESCRIPTIVE REPORT - DATA RECORD**

**PROJECT NO. (III):**
Job Ph-6601

**FIELD OFFICE (III):**

**PHOTOGRAMMETRIC OFFICE (III):**
Atlantic Marine Center

**INSTRUCTIONS DATED (II) (III):**
- Field - August 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 Plotter

**MANUSCRIPT SCALE (III):**
1:5,000

**STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):**
1:7,500 pantographed to 1:5,000

**DATE RECEIVED IN WASHINGTON OFFICE (IV):**

**DATE REPORTED TO NAUTICAL CHART BRANCH (IV):**
SEPT. 1975

**APPLIED TO CHART NO.:**

**DATE:**

**DATE REGISTERED (IV):**

**GEOMETRIC DATUM (III):**
N. A. 1927

**VERTICAL DATUM (III):**
MHW

**REFERENCE STATION (III):**
MEAD 2 1934

**LAT.:**
42° 37' 17.798"(549.2m)

**LONG.:**
70° 41' 03.097"(70.6m)

**PLANE COORDINATES (IV):**

**STATE:**
Massachusetts

**ZONE:**
Mainland

**ADJUSTED**

**UNADJUSTED**
### DESCRIPTIVE REPORT - DATA RECORD

**FIELD INSPECTION BY (II):**
None

**DATE:**

**MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION):**
Air Photo Compilation
Date of Photography: August 25 & 31, 1965

**DATE**

**PROJECTION AND GRIDS RULED BY (IV):**
- **A. E. Roundtree**
  - **DATE:** 4-26-66

**PROJECTION AND GRIDS CHECKED BY (IV):**
- **R. Glaser**
  - **DATE:** 4-28-66

**CONTROL PLOTTED BY (III):**

**DATE**

- **L. Neterer**
  - **DATE:** 9/22/66

**CONTROL CHECKED BY (III):**

**DATE**

- **Blood**
  - **DATE:** 9/22/66

**RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III):**
- **Henry P. Eichert** (Washington Science Center)
  - **DATE:** 11/1/66

**STEREOSCOPIC INSTRUMENT COMPILATION (III):**

<table>
<thead>
<tr>
<th>PLANIMETRY</th>
<th>DATE</th>
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<tr>
<td>L. O. Neterer</td>
<td>6-6-67</td>
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<tr>
<td>Rev. by: A. L. Shands</td>
<td>6-6-67</td>
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<table>
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<tr>
<th>CONTOURS</th>
<th>DATE</th>
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<tbody>
<tr>
<td>Inapplicable</td>
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**MANUSCRIPT Delineated BY (III):**
- **C. H. Bishop - Shoreline**
  - **DATE:** 6-9-67
- **R. R. White**
  - **DATE:** |

**SCRIBING BY (III):**
- **B. Wilson**
  - **DATE:** 5-19-69

**PHOTOGRAMMETRIC OFFICE REVIEW BY (III):**
- **Compilation:** K. J. Faye
  - **DATE:** 2-5-68
- **Field Edit:** R. E. Smith
  - **DATE:** 1-14-68
- **Scribing and stickup:** R. E. Smith
  - **DATE:** 7-23-69

**REMARKS:**
Field Edit by: E. W. Hartford
Date: 10-13-68
**DESCRIPTIVE REPORT - DATA RECORD**

**CAMERA (KIND OR SOURCE) (III):**
Wild RC-8 "S"

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<th>PHOTOS (III)</th>
<th>NUMBER</th>
<th>DATE</th>
<th>TIME</th>
<th>SCALE</th>
<th>STAGE OF TIDE</th>
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<td>65S 7285 through 65S 7288</td>
<td>8-31-65</td>
<td>0822</td>
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<td>65S 7124R through 65S 7127R</td>
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<td>65S 7108R</td>
<td>8-25-65</td>
<td>0937</td>
<td>1:15,000</td>
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**TIDE (III):**

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<th>REFERENCE STATION:</th>
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<th>RATIO OF RANGES</th>
<th>MEAN RANGE</th>
<th>SPRING RANGE</th>
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<tr>
<td>ORDINATE STATION:</td>
<td>GLOUCESTER HARBOR</td>
<td>9.5</td>
<td>11.0</td>
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<tr>
<td>SUBORDINATE STATION:</td>
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<td>8.7</td>
<td>10.1</td>
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**WASHINGTON OFFICE REVIEW BY (IV):** Bernard Kurs

**DATE:**
March, 1974

**NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II):** 9

**NUMBER OF BM(S) SEARCHED FOR (III):** None

**NUMBER OF RECOVERABLE PHOTO STATIONS ESTABLISHED (III):** None

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

**REMARKS:**
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<th>Completion Date</th>
<th>Remarks</th>
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<td>Alongshore area for hydro</td>
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<td>superseded</td>
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<tr>
<td>Field edit applied compilation</td>
<td>12-19-68</td>
<td>superseded</td>
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<tr>
<td>complete</td>
<td></td>
<td></td>
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<td>Streets and inshore detail</td>
<td>December 1968</td>
<td>Superseded</td>
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<tr>
<td>corrected</td>
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<tr>
<td>Final Review</td>
<td>March, 1974</td>
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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-12970
BOSTON TO PIAM ISLAND
PH-6601

There was no field inspection prior to compilation.
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 for 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
AEROTRIANGULATION SKETCH
BOSTON TO PLUM ISLAND
PH-6601
May, 1966

△ control used in adjustment
△ control used as check
STRIP #1

1. MEAD 2 (MGS), 1934
   target (+0.1, +0.1)
   sub. pt. (-0.9, +1.2)

2. CHORE, 1849
   target (-0.4, -0.2)

3. PLUM ISLAND COAST GUARD SUP. 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 (ROCKFORT TOWN (MGS)), 1934
   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)
1. Manchester Church Dark Spire, 1849
   target (6.0, +0.8)
   sub pt. A (-7.1, +3.1)

   office identified (+4.8, -1.9)

3. Fort Pickering Lighthouse, 1877
   office identified (+6.0, +1.0)

4. High Rock 2 (MGS)
   sub pt. A (+3.2, -4.4)
   sub pt. B (+2.0, -2.8)

5. High Rock 3, 1943
   office identified (+1.8, -3.7)

6. Revere Catholic Church Tower, 1924
   office identified (-4.0, -4.0)

7. Booth (MGS), 1934
   sub pt. A (+3.4, -1.4)

8. Chelsea Quigley Mem Hospital W.T. 1955
   office identified (-1.5, +2.2)

9. Medford Radio Station WEEI-FM Tower, 1953
   office identified (+2.1, -1.0)

10. Medford TV Station WNAG Tower, 1958
    office identified (+5.3, -1.0)
22. MEDFORD RADIO STATION, NE. TOWER, 1935
   office identified (+1.4, +3.0)

23. MEDFORD RADIO STATION, SW. TOWER, 1935
   office identified (+1.2, +3.1)

STRIP #3

23. BOSTON STATE HOUSE, 1934
   office identified (+2.6, +5.5)

27. BOSTON CUSTOM HOUSE TOWER, 1916
   office identified (+3.2, +4.2)

25. CHARLESTOWN BUNKER HILL MON. 1846
   office identified (+2.2, +0.1)

26. EAST BOSTON BUNKER HILL TANK, 1916
   office identified (+1.6, +5.5)

24. CHELSEA CITY HOSPITAL TOWER, 1932
   office identified (+2.3, -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 pt. B (+2.9, +3.9)

16. NAHANT COAST GUARD CUPOLA, 1919
   office identified (+3.6, +6.4)
13. Swampscott High School Final, 1940
   Office identified (+0.7, +3.4)

12. Swampscott Larger Standpipe, 1934
   Office identified (+0.7, +1.8)

11. Marblehead, Abbott Tower, 1719
   Office identified (-0.6, +4.4)

10. Marblehead Lighthouse, 1914
    Office identified (+2.0, +5.1)

  7. Manchester Church Park Spire, 1878
     Target (-3.5, -5.8)
     Sub pt A (-4.1, -5.2)

  1. Head 2 (M65), 1934
     Target (+3.8, -0.7)
     Sub pt. (+6.2, -1.2)

  5. Stonehaven (Rockport Town (M65)), 1939
     Target (-2.1, +0.3)
     Sub pt A (-1.3, +1.6)
     Sub pt B (-2.0, +1.2)

  6. Straitsmouth Lighthouse, 1902
     Office identified (-3.1, -5.2)
Strip #4

24. DAWNE'S COKE CO. (KRAUSE CO. CHIMNEY, 1819)
   HOME STA (-0.78 +0.79)
   SS "A" (-0.61 -0.61)
   SS "B" (-1.83 +1.74)

30. BEVERLY UNITED SHOE MFG. CO. STM, 1933
    (-0.61 -0.61)

31. BEVERLY ODD FELLOWS CUPOLA, 1934
    (-1.27 +1.15)

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 (-2.57 -3.47)
14601 (-3.13 -1.53)
<table>
<thead>
<tr>
<th>STATION</th>
<th>SOURCE OF INFORMATION (INDEX)</th>
<th>LATITUDE OR y-COORDINATE LONGITUDE OR x-COORDINATE</th>
<th>DISTANCE FROM GRID IN FEET OR PROJECTION LINE IN METERS</th>
<th>N.A. 1927-DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS</th>
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<tbody>
<tr>
<td>MEAD 1934</td>
<td>Vol. 1 P-277</td>
<td>42.37 17.798</td>
<td>549.2 (1302.2)</td>
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<td>LEE (GLOUCESTER) FACTORY 1934</td>
<td>Vol. 1 P-880</td>
<td>42.36 56.755</td>
<td>751.3 (100.1)</td>
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<td>NECK, FRONT 1943</td>
<td>Vol. 1 P-374</td>
<td>42.35 37.261</td>
<td>149.8 (701.6)</td>
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<td>NECK, REAR 1943</td>
<td>Vol. 1 P-374</td>
<td>42.35 38.014</td>
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<td>WOE 1943</td>
<td>Vol. 1 P-374</td>
<td>42.34 46.153</td>
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<td>RANGE 1943</td>
<td>Vol. 1 P-374</td>
<td>42.35 37.631</td>
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<td>42.35 36.606</td>
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<td>42.35 17.396</td>
<td>536.8 (1314.6)</td>
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<td>Vol. 1 P-276</td>
<td>42.37 03.865</td>
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1 FT. = 0.3048006 METER

COMPUTED BY: LLG DATE: 12/13/66
CHECKED BY: ALS DATE: 10/17/66
31. **DELINEATION**

The B-8 Plotter was used to establish substitute control including shoreline passpoints, to compile planimetry and low water features. Graphic method was used to delineate the shoreline and roads.

Photographic coverage was adequate.

32. **CONTROL**

See Photogrammetric Plot Report.

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**

The shoreline was delineated by office interpretation of photographs based on tide staff observations at MLW. Low water line, ledges, reef areas and rocks were compiled from photographs based on tide staff observations at MLW.

Corrections and completion was achieved by use of the field editors notes.

36. **OFFSHORE DETAILS**

No statement.

37. **LANDMARKS AND AIDS**

Appropriate copies of Form 567's for landmarks and aids have been forwarded to the Washington Office under date January 9, 1969.
38. CONTROL FOR FUTURE SURVEYS
   None.

39. JUNCTIONS
   Junctions are satisfactory with T-12969, 1:5,000 scale, T-12962 1:10,000 to the north, T-12971, 1:5,000 and T-12967 to the east, T-12966 to the south and west.

40. HORIZONTAL AND VERTICAL ACCURACY
   No statement.

46. COMPARISON WITH EXISTING MAPS
   A comparison was made with U.S.G.S. Quadrangle GLOUCESTER, Mass., scale 1:24,000 dated 1960.

47. COMPARISON WITH NAUTICAL CHARTS
   A comparison was made with Coast and Geodetic Survey Chart 233, Scale 1:10,000 dated September 23, 1942, revised May 27, 1963, Chart 243, Scale 1:20,000, dated September 14, 1964, Chart 1206, Scale 1:80,000, dated November 23, 1964 and Chart 1207, Scale 1:80,000 dated May 14, 1962.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY
   None.

ITEMS TO BE CARRIED FORWARD
   None.

Submitted:

L.L. Graves
Cartographic Technician

Approved and Forwarded:

Allen L. Powell
Director, Atlantic Marine Center
GEOGRAPHIC NAMES

FINAL NAME SHEETS

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

T-12970

Annisquam River
Biskie Head
Bond Hill
Boston and Maine (RR)
Buswell Pond
Cressy Beach
Doliver Neck
Field Rocks
Fernwood Lake
Freshwater Cove
Gloucester Harbor
Gray Beach
Little River
Magnolia
Magnolia Harbor
Massachusetts Bay
Mussel Point
Normans Woe
Normans Woe Cove
Normans Woe Rock
Old House Cove
Presson Point
Rafes Chasm
Stanwood Point
Susan Point
Wallace Pond
West Gloucester
West Pond
Wolf Hill

Prepared by:

C. E. Harrington
Staff Geographer

Sept. 24, 1973
49. NOTES FOR THE HYDROGRAPHER

Due to the urgency of your need of these two sheets, they are temporarily classified as "Preliminary".

Your customary copy of "Notes for the Hydrographer" and your individual "Hydro Edit Ozalid" have been temporarily suspended until such a time as these sheets can be further completed. These copies will then be forwarded to you.

These two sheets are "Preliminary" only insofar as interior details are concerned.

The MHWL has been compiled from infrared photography taken at or about MHW and much of the obvious foreshore has been compiled. These should serve your needs concerning Hydro Signal Sites, but should not be construed as finished "Incomplete" surveys.

They will be further completed on your return to the Atlantic Marine Center of all processed cronapaque ratio photos in these areas.
## PHOTOGRAHMETRIC OFFICE REVIEW

### T- 12970

<table>
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<tr>
<th>1. PROJECTION AND GRIDS</th>
<th>2. TITLE</th>
<th>3. MANUSCRIPT NUMBERS</th>
<th>4. MANUSCRIPT SIZE</th>
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#### CONTROL STATIONS

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<th>5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY</th>
<th>6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations)</th>
<th>7. PHOTO HYDRO STATIONS</th>
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#### BENCHMARKS

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<th>8. BENCHMARKS</th>
<th>9. PLOTTING OF SEXTANT FIXES</th>
<th>10. PHOTOGRAPHIC PLOT REPORT</th>
<th>11. DETAIL POINTS</th>
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<tr>
<td>None</td>
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<td>HPE (WSE)</td>
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#### ALONGSHORE AREAS (Nautical Chart Data)

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<th>12. SHORELINE</th>
<th>13. LOW WATER LINE</th>
<th>14. ROCKS, SHOALS, ETC.</th>
<th>15. BRIDGES</th>
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#### AID TO NAVIGATION

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<th>16. AID TO NAVIGATION</th>
<th>17. LANDMARKS</th>
<th>18. OTHER ALONGSHORE PHYSICAL FEATURES</th>
<th>19. OTHER ALONGSHORE CULTURAL FEATURES</th>
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<td>RJP</td>
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#### PHYSICAL FEATURES

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<th>21. NATURAL GROUND COVER</th>
<th>22. PLANETARY CONTOURS</th>
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#### Stereoscopic Instrument Contours

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<th>24. CONTOURS IN GENERAL</th>
<th>25. SPOT ELEVATIONS</th>
<th>26. OTHER PHYSICAL FEATURES</th>
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#### CULTURAL FEATURES

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<th>28. BUILDINGS</th>
<th>29. RAILROADS</th>
<th>30. OTHER CULTURAL FEATURES</th>
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#### Boundaries

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<th>32. PUBLIC LAND LINES</th>
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#### MISCELLANEOUS

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<th>34. JUNCTIONS</th>
<th>35. LEGIBILITY OF THE MANUSCRIPT</th>
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#### DISCREPANCY OVERLAY

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<th>37. DESCRIPTIVE REPORT</th>
<th>38. FIELD INSPECTION PHOTOGRAPHS</th>
<th>39. FORMS</th>
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<td>LLG</td>
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<td>LLG</td>
</tr>
</tbody>
</table>

#### REVIEWER

R. J. Pate 2/5/68
L. L. Graves 1/7/69

**SUPERVISOR**

Albert C. Rauck, Jr.

#### REMARKS (See attached sheet)

**FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT**

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. L. Graves 12/19/68

**SUPERVISOR**

Albert C. Rauck, Jr.

**REMARKS**

Field edit applied from Field Edit ozalid
Field photos nos. 6557285
6557288
6557292
6557293
6557294
FIELD EDIT REPORT

PH-6601
Boston to Plum Isla;
T-12966 67-1 0,000 T-12970 71 5000

GENERAL NOTES

This report is submitted for four T-sheets, field edited July thru September 13, 1968.
All notations on discrepancy sheets and photographs are made in violet ink. The notations were made either directly on the discrepancy print or referenced to Photos.

51 METHODS

Field edit was accomplished by the following methods, by skiff and truck travel and by walking section of the shoreline.
All rock and ledge areas were inspected at or near low-water, and found to be compiled adequate. The rock and ledge heights were obtained by hand leveling from mean high-water line or from mean low-water.
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.

<table>
<thead>
<tr>
<th>T-12966</th>
<th>T-12967</th>
<th>T-12970 T-12971</th>
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</thead>
<tbody>
<tr>
<td>65-S-7245 65-S-7049 65-S-7285 65-S-7049</td>
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<tr>
<td>7294 7294</td>
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<td>7294 7294</td>
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</tr>
</tbody>
</table>

52 ADEQUACY OF COMPILATION

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

54 RECOMMENDATIONS

None.

56 ROCKS

Several rocks were verified directly on the field edit sheets. All other rocks, rock areas, and additional rocks recommended for charting are noted on the field edit ozalids and referenced to photos.
57 NAUTICAL LANDMARKS AND FIXED AIDS

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

58 SUBMERGED PIPE LINES AND CABLES

All submerged pipe lines and cable areas are noted on the field edit ozalid and referenced to a photograph. These areas being verified either by Gloucester City engineers and by the electric light and power company.

59 LANDMARK BUILDINGS AND BLUFFS

Landmark building recommended for deletion and charting are noted directly on the discrepancy sheet. All addition landmark and water-front buildings recommended for charting are circled on the following photos: 65-S-7049, 50, 72, 45, 85, 88, 92, 93, and 94.

There are four new water-front buildings in Gloucester Harbor shown directly on the field edit ozalid.

All bluffs were investigated of shore and bluff recommended for charting are inked on the following photos: 65-S-7049, 50, 7245, 88, and 93.

Three public buildings are circled on photos 65-S-7050, and 7293.

60 STREETS

All street additions and classification are not on the field edit sheet and referenced to the photos.

Submitted by

E. W. Hartford

28 oct. 1968
U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY  

NONFLOATING AIDS OR LANDMARKS FOR CHARTS  

Atlantic Marine Center  
Jan. 8  
1969

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

The positions given have been checked after listing by

L. L. Graves  
Allen L. Powell  
Director, ANC  
Chief of Party

<table>
<thead>
<tr>
<th>STATE</th>
<th>MASSACHUSETTS</th>
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<tbody>
<tr>
<td>CHARTING NAME</td>
<td>DESCRIPTION</td>
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<tr>
<td>MARKER</td>
<td>GLOUCESTER HARBOR</td>
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<tr>
<td>HOUSE CHIMNEY</td>
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<tr>
<td><strong>FLAGPOLE</strong></td>
<td>Ham 1928 (Glochester Hammond Tower Flagpole)</td>
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<table>
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<th>POSITION</th>
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<tr>
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<tr>
<td>1927</td>
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<tr>
<td>42</td>
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<td>1927</td>
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<table>
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<th>CHARTS AFFECTED</th>
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<tr>
<td>243</td>
</tr>
<tr>
<td>243, 233</td>
</tr>
<tr>
<td>1206, 1207</td>
</tr>
<tr>
<td>1206, 1207</td>
</tr>
</tbody>
</table>

* Round Tower (Stone) is on the same tower as listed above and appears at nearly the same position on the chart.

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 chartered landmarks and nonfloating aids to navigation, if redeetermined, 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

USCOHOOL 18234-P51 22
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

**L. L. Graves**
Director, ANC

| STATE     | CHARTING NAME | DESCRIPTION                  | SIGNAL NAME | LATITUDE | LONGITUDE | DATUM  | METHOD OF LOCATION AND SURVEY NO | DATE OF OBSERVATION | CHARTS | CHARTS AFFECTED |
|-----------|---------------|------------------------------|-------------|----------|-----------|--------|-----------------------------------|---------------------|--------|----------------|       |
| MASSACHUSETTS |               | **TWIN TOWER**               |             | 142 35   | 05.96    | 34.47  | N.A. T-12970                      | 7/23/68             | x      | 233            |       |
|            |               | Stone Ht = 80 (130)          |             | 142 35   | 53.64    | 03.47  | N.A. T-12970                      | 7/23/68             | x      | 233            |       |
|            |               | **Round Tower**              |             | 142 35   | 1655     | 101     | N.A. T-12970                      | 7/23/68             | x      | 233            |       |
|            |               | Range Rear, Wood Lattice    |             | 142 34   | 49.91    | 50.12  | N.A. T-12970                      | 10/11/68            | x      | 233            |       |
|            |               | **CHIMNEY**                  | (Lee 1928)  | Gloucester Lepage | White Triangle, 8 ft. above ground |             | 142 34   | 49.15    | 50.12  | N.A. T-12970                      | 10/11/68            | x      | 233            |       |
|            |               | Glue Factory Chimney, Round |             | 142 34   | 56.755   | 28.109 | N.A. T-12970                      | 7/23/68             | x      | 233            |       |
|            |               | Red Brick Ht = 155 (165)     |             | 142 36   | 1751.3   | 640.6  | N.A. T-12970                      | 7/23/68             | x      | 233            |       |

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* Tabulate Seconds and Meters

\[ \sqrt{ } \]
TO BE CHARTED

NONFLOATING AIDS OR LANDMARKS

Atlantic Marine Center
Jan. 8, 1969

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

L. L. Graves
Director, AMC

Allen L. Powell
Chief of Party

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<th>SIGNAL NAME</th>
<th>LATITUDES</th>
<th>LONGITUDES</th>
<th>METHOD OF LOCATION AND SURVEY NO.</th>
<th>DATE OF VERIFI.</th>
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<td>Channel Light 35</td>
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* TABULATE SECONDS AND METERS

by L. L. Graves

USCGC ALC 19234-P81
REVIEW REPORT T-12970
SHORELINE
MARCH, 1974

61. GENERAL STATEMENT:

See Summary which is p. six (6) of the Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

Comparison was made with T-9079 at 1:10,000 scale with 1952
photography and field edited 1953. There was very good agreement
except in areas where natural changes are to be expected. These
areas are grass in water, marshy shoreline and sandy beaches. There
are no significant differences.

This survey supersedes any prior listed surveys for nautical
chart construction purposes.

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

A visual comparison was made with USGS Quadrangle Gloucester,
MA, dated 1960 at 1:24,000 scale. The visual comparison indicates
general agreement with some minor changes of grass in water and marsh
mean high water line.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

Comparison was made with final Boat Sheet H-8942 at 1:5,000
1969, with excellent agreement, two (2) boat sheets from the
explorer (no H-number) dated 1967 at 1:5,000 scale. Comparison
is good except for minor changes made during the 1968 field edits.

65. COMPARISON WITH NAUTICAL CHARTS:

Comparison was made with Chart 233 at 1:10,000 scale dated
Jan. 6, 1973. There was good agreement except for items as
mentioned under Par. 62. The only significant difference is an
extensive marina at the bend in the Blyman Canal at Lat. 42°36' 45"
on the eastern edge of the sheet. The area west of "Normans Woe,"
was visually compared with Chart 243 at 1:20,000 scale dated Oct.
6, 1973 and appears to be in good agreement.
66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

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

Reviewed by:

Bernard Kurs
Cartographer

Approved for forwarding:

Victor E. Serena
Chief, Photogrammetric Branch, AMC

Approved:

Randel C. Youngblood
Chief, Photogrammetric Branch

for

Chief, Coastal Mapping Division