

8898

Diag. Cht. 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

HFP 745-

Field No. 10-3-66 Office No. H-8898

LOCALITY

State Massachusetts

General locality Coast of Massachusetts

Locality North River & Vicinity

1966

CHIEF OF PARTY

G. M. Ward

LIBRARY & ARCHIVES

DATE 7-20-69

USCOMM-DC 37022-P66

8898

**HYDROGRAPHIC TITLE SHEET**

H-8898

**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.

HFP745-10-3-66 (BH-10-3-66)

State MASSACHUSETTS

General locality COAST OF MASSACHUSETTS

Locality NORTH RIVER and vicinity

Scale 1:10000 Date of survey 27 July - 6 September 1966

Instructions dated 24 June 1966 Project No. SP-5-66

Vessel Hydrographic Field Party 745

Chief of party LTJG Gerald M. Ward

Surveyed by LTJG Ward and ENS R.F. Coons

Soundings taken by echo sounder, hand lead, pole Echo Sounder and Pole (as necessary)

Graphic record scaled by Party Personnel

Graphic record checked by Party Personnel

Protracted by Dorothy C. Calland, AMC Automated plot by \_\_\_\_\_

Soundings penciled by ~~XXXXXXXXXXXX~~ Dorothy C. Calland

Soundings in fathoms (feet) at (MLW) MLLW \_\_\_\_\_

REMARKS: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



A. PROJECT

Work was accomplished under Project Instructions for SP-5-66 -- North River, Massachusetts, dated 24 June 1966 and Amended Instructions SP-5-66 -- North River, Massachusetts dated 21 July 1966.

B. AREA SURVEYED

The project covered the vicinity of North River on the Massachusetts coast about 19 miles southeast of Boston Harbor. Basic hydrography extended to the head of navigation of South River, west to longitude  $70^{\circ} 45.3'W$  on North River, and seaward for approximately  $\frac{1}{2}$  mile from latitude  $42^{\circ} 09'N$  to  $42^{\circ} 11.6'N$  along the coast.

Suitable junction was made in Massachusetts Bay with H-8010 (1:5,000, 1952) to the north and H-8063 (1:10,000, 1952-53) along the northeasterly side. No contemporary surveys were in progress.

C. SOUNDING VESSEL

Launch CS-520, a 19-foot outboard powered, flat bottomed planing hull served as the prime vessel for the hydrography. A 16-foot skiff was used in rock and other location work. Vessel colors are red for the launch and green for the skiff.

D. SOUNDING EQUIPMENT

Type DE-723 RAYTHEON echo sounder (Serial No. 139) was used in project depths to 42 feet. Pole soundings or lead line soundings were taken on detached positions and face soundings. All soundings are in feet.

Echo corrections were determined by bar checks. A bar check curve was derived from a curve drawn from the average of all bar checks taken on the project. Settlement and squat corrections were from observations obtained on 28 July 1966 and were combined with the bar check correction, as the echo correction, thereby reducing the processing workload. Initial was intended to be maintained at 0.0 foot for the project. Appropriate corrections are applied for deviations.

Equipment accuracy was considered good through-out the project. Because of the shallow draft and flat-bottomed construction of the launch, it is highly susceptible to the entrance of air beneath the hull with chop or swell conditions, thereby producing an intermittent fathogram trace. Little sounding was done under these conditions.

E. SMOOTH SHEET

To be processed by the Atlantic Marine Center

F. CONTROL

bp 67093

Visual control was used entirely. Signal location was primarily by photogrammetric methods on map manuscript RS-767 (T-11169) using photographs W5241 RA through W5244 RA, in addition maximum use was made of existing landmark type triangulation stations. No hydrographic stations were used.

G. SHORELINE

Shoreline detail for the project is from RS-<sup>767</sup>~~567~~, a revision survey of T-11169. A thorough field edit was made of the sheet on 28-29 June 1966 by Photogrammetrist, W. H. Shearouse, Chief of Photo Party 60. No corrections of note to that work were found during hydrography.

An extension of project limits subsequent to photogrammetric planning necessitated extending the shoreline north from Peggoty Beach and westward on the North River. The detail points used to cut-in were from two-cut intersections along the coast, therefore position accuracy is unverified.

The low water line was adequately defined by soundings except in the narrower channels of the North and South Rivers and those areas of the outer coast which are foul with rocks. The prominent rocks are located to define these areas.

H. CROSSLINES

Crosslines were run at about 12 percent of the principal system of lines. Discrepancies at crossings were negligible.

I. JUNCTIONS

Good junction in soundings was made with H-8010 (1:5,000, 1952) and H-8063 (1:10,000, 1952-53). Verification of the rocks and boulders on H-8010 south of  $42^{\circ} 11' 30''$  in the vicinity of Second Cliff was not effected. It is thought that most of the rocks were moved by the severe spring storms in the area. Rocks and boulders located in this survey were the prominent and the defining ones. It is recommended that none of the H-8010 rocks south of  $42^{\circ} 11' 30''$  be carried forward to this survey with the exception of the rock bare 1 foot at MLW in latitude  $42^{\circ} 11.44'N$ , longitude  $70^{\circ} 42.85'W$ . This survey is deficient in that an adequate investigation of this rock was not made.

J. COMPARISON WITH PRIOR SURVEYS

Prior survey of the outer coast was made in 1854 is of little value and was not furnished for comparison. This is also before the breakthrough of New Inlet which occurred in 1898.

No C&GS prior surveys of the North or South Rivers are in existence.

The U. S. Corps of Engineers 1940 survey at 1:3,000 scale of the North and South Rivers and New Inlet was obtained from their Boston District Office. The C. of E. survey was thoroughly examined for important features. Those of note were field examined. Basic hydrographic features have remained the same since 1940. A deepening of the South River channel is noted as far as Humarock. Shoaling has taken place in the entrance to the South River as the 3-way junction moved slightly to the south. No retention of soundings from this survey is deemed necessary, however a copy is included with the survey records.

K. COMPARISON WITH THE CHART

Present charting is at <sup>1:29,000 *and*</sup> 1:80,000 on Chart 1207. Charted soundings and shoreline are representative of existing features, however uncharted rocky areas along the coast should be charted at first opportunity, as should a few representative soundings within the 18 foot curve.

L. ADEQUACY OF SURVEY

Survey is considered adequate for charting.

M. AIDS TO NAVIGATION

New Inlet Channel Buoy positions were found to be south of the charted positions. The shift most probably due to the natural shift of the channel towards the south. The black and white bell sea buoy has been maintained in its charted position. Although it maintainance at its present position creates no appreciable navigation hazard, it probably should be moved south to the channel centerline or its color changed.

Major turns and hazardous features are marked during the summer by stakes maintained by Scituate in North River and Marshfield in the South River.

A private Red and Yellow daybeacon, Number "2" exists above the HWL at the entrance to First Herring Brook. (Lat. 42° 10.01'N, Long 70° 43.28'W) It was installed by Simms Yacht Yard - Greenbush, Massachusetts 02040.

#### M. AIDS TO NAVIGATION (COND)

Acceptable navigation of both North and South Rivers at all tide stages without some local knowledge will require establishment of standard daybeacons. Presently with tides in excess of 9 feet, the marshes ("meadows") alongside the channels flood, and thereby obscure channel location.

The alongshore areas, especially the rocky areas, both north and south of New Inlet are heavily fished with lobster pots.

#### Bridge Clearances:

Abandoned railroad bridge abutments remain in  $42^{\circ}09.63'N$ ,  $70^{\circ}44.0'W$ . Horizontal clearance is 85 feet. Horizontal and vertical clearances of the main span of the Highway 3A bridge at  $42^{\circ}09.65'N$ ,  $70^{\circ}44.59'W$  are 30 feet and 11 feet, respectively. A bridge exists at  $42^{\circ}07.88'N$ ,  $70^{\circ}41.31'W$  with main span horizontal and vertical clearances of 14 feet and 6 feet respectively and is not presently charted. The Humarock Bridge,  $42^{\circ}08.3'N$ ,  $70^{\circ}41.65'W$  has horizontal and vertical clearances of 30 feet and 10 feet, respectively.

#### N. STATISTICS

Number of Positions.....	808
Nautical Miles of Sounding.....	73.5
Square Nautical Miles of Sounding.....	3.27
Bottom Samples.....	20

#### O. MISCELLANEOUS

Chart maintenance of the River area will be average to low. Development will be restricted because of Conservation Regulations preventing destruction of the marshes ("meadows") along the channels. Some maintenance dredging of ~~First Herring Brook~~ *Herring River* is expected.

Although the inlet apparently has a definite shift to the south, it is not highly changeable. The most changeable area is the junction of the South River with the North River. South River's entrance is known to deepen to as much as 6 feet or to shoal, depending upon storm and normal current action.

A centerline survey was made at the request of the Rockville Projects Office, west on the North River, for the Marine Chart Division files in case future charting of that area is required. Survey is at 1:24,000 scale, controlled by topographic details, and is filed as Chart Letter 1493/66.

#### P. RECOMMENDATIONS

None

Q. REFERENCE TO REPORTS

Tidal records for portable automatic tide stations maintained at: ✓

Damons Point, North River, Massachusetts  
Scituate Harbor, Massachusetts

for period 14 July 1966 to 6 September 1966

24 - Form 526, Recovery Notes Triangulation Stations (Rec'd by  
Geodesy 24 October 1966) ✓

1 - Page of Coast Pilot Notes -- Filed as 1-175/66 ✓

**APPENDIX**

TIDE NOTE FOR HYDROGRAPHIC SHEET

April 8, 1969

~~XXXXXXXXXXXXXXXXXXXX~~ Atlantic Marine Center

Plane of reference approved in  
5 volumes of sounding records for

HYDROGRAPHIC SHEET 8898

Locality: North River, Massachusetts

Chief of Party: G. M. Ward, 1966

Plane of reference is mean low water

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

Boston, Mass.  
Damons Point, North River, Mass.

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

Boston	9.5 feet
Damons Point	8.5 "

Remarks Tide reducers for the following positions have been revised in red and verified:

<u>Vol.</u>	<u>Pos.</u>
2	e1-e88
3	e89-e104
3	f1-f24
5	d1-d48

*J. M. Symons*  
Chief, Tides and Currents Branch

NORFOLK HYDROGRAPHIC PROCESSING BRANCH  
TIDE NOTE  
H-8898 (745-10-3-66)

NORTH RIVER, MASS.

A descriptive report and tide note were not furnished for this survey by the field party.

It is apparent from the boat sheet and sounding volumes that two reference gages were used and the tide zones are marked in the sounding volumes in blue pencil as follows:

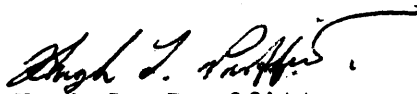
<u>LOCATION</u>	<u>TIDE GAGE</u>	<u>TIDE ZONE</u>
Lat. 42-09.62' Long. 70-44.00	Damons Point	Zone 2
- -	Standard Gage Boston, Mass.	Zone 1

It is assumed that Damons Point gage was used without time or range corrections.

Applicable corrections should be considered for the standard gage at Boston.

The division line between the zones crosses the entrance to North River at Long. 70-42.70'.

Hydrography in Zone 1 is alongshore and extends from Lat. 42-09.0' to 42-11.5'.



Hugh L. Proffitt  
Chief, Hydro Processing Br., AMC



I

TIDE NOTE

HYDROGRAPHIC SHEET HFP745-10-3-66

Portable automatic tide stations were maintained at Damon's Point, North River ( $42^{\circ}09.62'N$ ,  $70^{\circ}43.51'W$ ) and Scituate Harbor, Massachusetts ( $42^{\circ}11.88'N$ ,  $70^{\circ}43.51'W$ ) during the Party's stay in the area.

The Washington Office supplied MLW Planes of Reference, tidal constants, Boston Standard Tide Gage Hourly Heights, and recommended zoning in their memo C3311-13-MCFOB of 27 January 1967, a copy of which follows.

TIDE ZONE I, equivalent to the Scituate Harbor gage, covers the Massachusetts Bay area from a point seaward of the narrowest point in the New Inlet entrance channel.

TIDE ZONE II, covers North and South Rivers west and southward from the above point in New Inlet channel and is controlled by the Damon's Point, North River tide gage.

Inferred tides were used for Tide Zone I by modifying the Boston Hourly heights with a 0.926 height ratio and no time difference.

Marigram tides were used for Tide Zone II (Damon's Point gage) with the exception of 29 August when the tide was inferred from Boston by a 0.895 height ratio and + 25 minutes time correction.

Tide Zoning appears to be adequate, however a difference of 1.4 feet in tide heights exists on one sounding line of "f" day. Investigation indicates zone tides are correct as entered. Tide conditions occurring at that time are full flood of a Spring (10 foot) tide. With such conditions, tide rate of rise is almost 0.1 foot every 2 minutes. The difference noted is essentially this. Bottom conditions are irregular, therefore no substantial sounding irregularities can be noted.

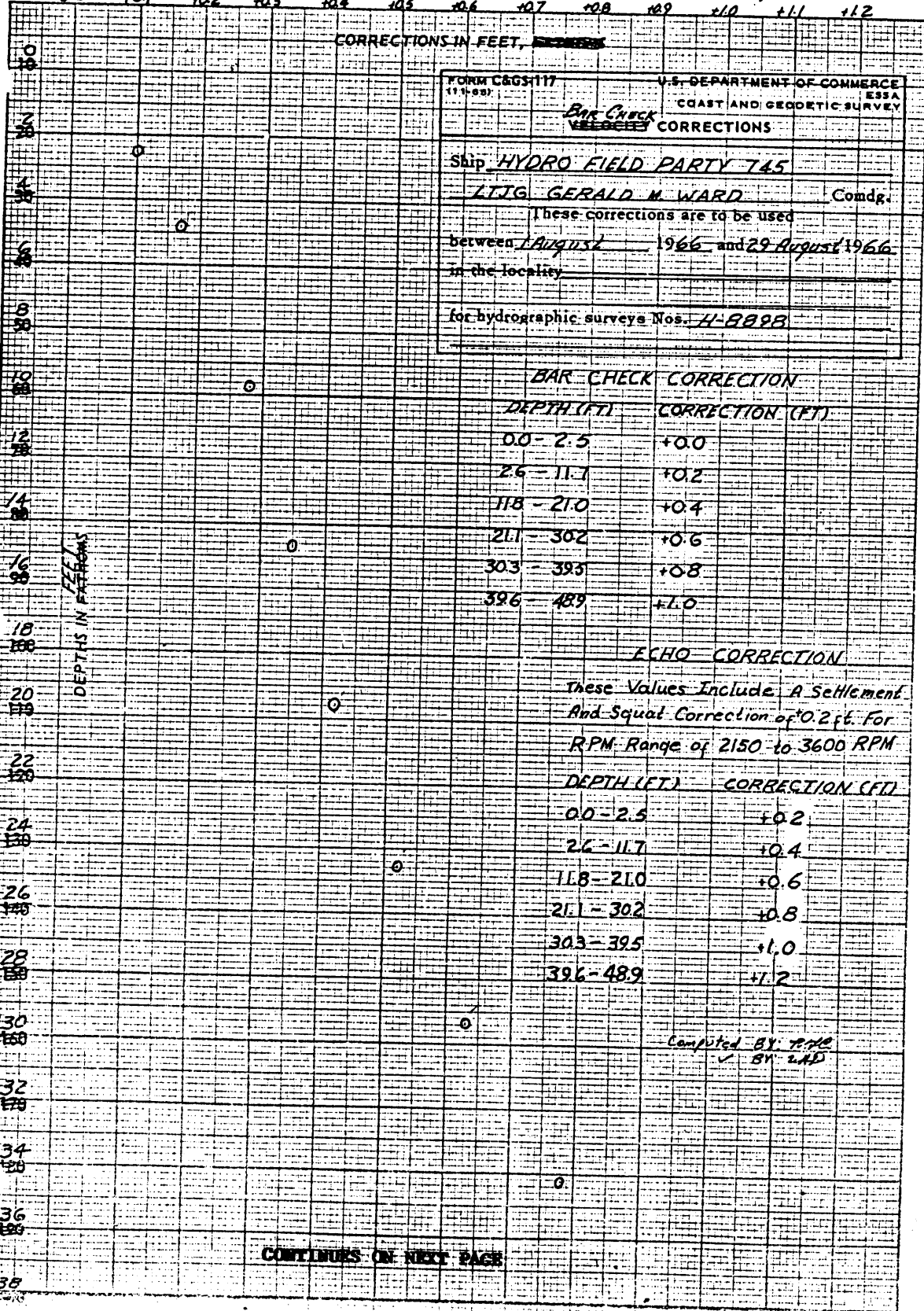
All other tide zone crossings are normal.

A time meridian of  $60^{\circ}W$  (EDT) was maintained for hydrography and tide stations. The Boston gage was being maintained on  $75^{\circ}W$  (EST).

00 101 (Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.) 102 103 104 105 106 107 108 109 110 111 112

III

0 to these figures  
(For deep water)



FORM C&GS-117  
11-1-60

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

**BAR CHECK CORRECTIONS**

Ship HYDRO FIELD PARTY 745

Ltjg GERALD M. WARD Comdg.

These corrections are to be used  
between 1 August 1966 and 29 August 1966  
in the locality \_\_\_\_\_

for hydrographic surveys Nos. 11-8898

**BAR CHECK CORRECTION**

DEPTH (FT)	CORRECTION (FT)
0.0 - 2.5	+0.0
2.6 - 11.7	+0.2
11.8 - 21.0	+0.4
21.1 - 30.2	+0.6
30.3 - 39.5	+0.8
39.6 - 48.9	+1.0

**ECHO CORRECTION**

These Values Include A Settlement  
And Squat Correction of 0.2 ft. For  
RPM Range of 2150 to 3600 RPM

DEPTH (FT)	CORRECTION (FT)
0.0 - 2.5	+0.2
2.6 - 11.7	+0.4
11.8 - 21.0	+0.6
21.1 - 30.2	+0.8
30.3 - 39.5	+1.0
39.6 - 48.9	+1.2

Computed BY PMO  
✓ BY 2AD

CONTINUES ON NEXT PAGE

III A

(For deep water add a 0 to these

DEPTHS IN FEET

DEPTH (FT)	CORRECTION (FT)
0.0 - 2.5	+0.0
2.6 - 11.7	+0.2
11.8 - 21.0	+0.4
21.1 - 30.2	+0.6
30.3 - 39.5	+0.8
39.6 - 48.9	+1.0
ECHO CORRECTION	
These Values Include A Settlement And Squat Correction of 0.2 ft. For RPM Range of 2150 to 3600 RPM	
DEPTH (FT)	CORRECTION (FT)
0.0 - 2.5	+0.2
2.6 - 11.7	+0.4
11.8 - 21.0	+0.6
21.1 - 30.2	+0.8
30.3 - 39.5	+1.0
39.6 - 48.9	+1.2
Computed BY: T.M.C. ✓ BY: WAD	
Dotted BY: WAD ✓ BY:	

KEUFFEL & ESSER CO.

Bar Check Corrections  
 10-3-66  
 Launch CS 520  
 Sheet  
 HFP745-10-3-66

Vol	Page	Day	Date	5	10	15	20	25	30	35	40	45
I	5	a	AUG. 1 1966	0.0	0.2	0.1	0.0	0.4	0.5	0.8	1.0	1.1
I	25	a	AUG. 1 1966	0.1	0.2	0.4	0.4	0.7	0.7	0.9	1.0	1.0
I	43	b	AUG. 2 1966	0.3	0.5	0.5	0.6	0.6	0.7	0.7	0.8	1.0
I	43	b	AUG. 2 1966	0.0	0.1	0.2	0.2	0.2	0.5	0.6	0.9	1.1
I	43	b	AUG. 2 1966	0.1	0.2	0.3	0.3	0.3	0.7	0.8	1.0	1.0
II	3	c	AUG. 3 1966	0.2	0.4	0.3	0.8	0.8	0.8	1.0	1.1	1.3
II	31	c	AUG. 3 1966	0.2	0.3	0.4	0.7	0.8	0.9	0.9	1.0	1.2
II	31	c	AUG. 3 1966	0.2	0.3	0.3	0.3	0.4	0.9	1.2	1.4	1.0
II	44	d	AUG. 12 1966	0.1	0.2	0.4	0.1	0.6	0.8	1.0	1.0	1.0
II	44	d	AUG. 12 1966	0.2	0.3	0.4	0.4	0.6	0.6	0.9	1.0	1.0
II	45	e	AUG. 17 1966	0.3	0.3	0.4	0.4	0.5	0.7	0.8	1.0	1.0
II	45	e	AUG. 17 1966	0.2	0.0	0.0	0.0	0.0	-0.2	0.0	-0.2	0.0
II	47	e	AUG. 17 1966	0.2	0.2	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2
II	67	e	AUG. 17 1966	0.1	0.2	0.0	0.2	0.6	0.4	0.6	0.9	1.0
III	9	e	AUG. 17 1966	0.0	0.4	0.6	0.6	0.6	0.7	0.8	1.0	1.0
III	9	e	AUG. 17 1966	0.0	0.2	0.2	0.5	0.5	0.7	1.0		
III	10	f	AUG. 18 1966	0.4	0.3	0.5	0.4	0.5	0.8	0.7		
III	10	f	AUG. 18 1966	0.4	0.3	0.4	0.3	0.5	0.4	0.5	0.6	0.7
III	10	f	AUG. 18 1966	0.2	0.3	0.3	0.3	0.3	0.4	0.6	0.6	0.8
III	32	g	AUG. 19 1966	0.4	0.4	0.5	0.5	0.5	0.5	0.6		
III	32	g	AUG. 19 1966	0.3	0.4	0.4	0.5	0.4	0.5	0.7		
IV	24	h	AUG. 26 1966	0.2	0.5	0.6	0.8	1.0	1.2	1.2	1.6	
IV	24	h	AUG. 26 1966	0.1	0.4	0.6	1.0	1.0	1.4	1.6	1.8	
Z	33	i	AUG. 29 1966	0.0	0.2	0.4	0.6	0.6	0.6	0.8	1.0	1.0
Z	33	i	AUG. 29 1966	0.0	0.0	0.4	0.4	0.5	0.5	0.8	1.0	1.0

Handwritten notes and calculations at the bottom of the page, including values like 4.0, 9.72, 14.0, 19.5, 24.37, 29.32, 34.32, 39.00, 44.00.

LIST OF STATIONS ON H-8898 (745-10-3-66)

<u>Station Name</u>	<u>Origin of Station</u>
ACE	RS767
ANN	RS767
BOG	RS767
BOW	RS767
BUS	RS767
CAB	RS767
CON	RS767
CUP	Stoddards Barn Cupola, 1885
CUT	RS767
DAY	RS767
EGO	RS767
EMO	RS767
END	RS767
FAR	RS767
FOR	RS767
FOX	RS767
GAD	RS767
GAS	RS767
GET	RS767
HIM	RS767
HOT	RS767
ICE	RS767
IKE	RS767
INK	RS767
JAR	RS767
JET	RS767
KEN	RS767
KID	RS767
KIT	RS767
LAY	RS767
LAW	Scituate, Lawson Tower, 1915
LEG	RS767
LIG	Cedar Point Breakwater Light, 1943
LIP	RS767
MAW	RS767
MOO	RS767
NIG	RS767
NOR	RS767
NUN	RS767
OIL	RS767
OOP	RS767
OWL	RS767

<u>Station Name</u>	<u>Origin of Station</u>
PAD	RS767
PEG	RS767
PEN	RS767
POI	Cedar Point Tower, Scituate Lighthouse, 1940
PUT	RS767
QUE	RS767
QUO	RS767
RIG	RS767
RUM	RS767
SAN	RS767
SET	RS767
SIM	RS767
SKY	RS767
TAX	RS767
TOW	Scituate, 2nd Cliff Tower, 1908
TRY	RS767
TUX	RS767
UNK	RS767
VAN	RS767
VIC	RS767
WAG	RS767
WIN	RS767
YEA	RS767
ZIG	RS767
ZOO	RS767

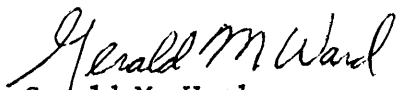
APPROVAL SHEET

HFP745-10-3-66 -- North River, Massachusetts

The survey of North and South Rivers is considered adequate for charting. No further investigation work is believed necessary within the projects limits at this time, however hindsight indicates that denser development southeasterly of Second Cliff would have been warranted.

Supervision of the field work was constant as I acted in charge of the survey vessel.

Processed field records are being transferred to the Atlantic Marine Center for smooth plotting.



Gerald M. Ward  
LTJG - USESSA  
Officer in Charge  
Hydrographic Field Party 745





NEW INLET (FOURTH CLIFF ON LEFT)



NORTH RIVER  
( EAST FROM ABANDONED RR ABUTMENTS - FOURTH CLIFF IN BACKGROUND )



NORTH RIVER  
( NORTHEAST FROM ABANDONED  
RR ABUTMENTS )



NORTH RIVER  
( NORTHWEST FROM ABANDONED  
RR ABUTMENTS )



**GEOGRAPHIC NAMES**

Survey No. H-8898

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	K			
Branch Creek												1
Broad Creek												2
First Herring Brook												3
Fourth Cliff												4
Herring River												5
Humarock												6
Humarock Beach												7
Littles Creek												8
Maccombers Creek												9
Massachusetts Bay												10
New Inlet												11
North River												12
Rivermoor												13
Second cliff												14
South River												15
Third cliff												16
Ferry Hill												17
Trouant Island												18
Peggotty Beach												19
Coleman Hills												20
												21
												22
												23
												24
												25
												26
												27

PREPARED BY

*Frank W. Pickett*  
GEOGRAPHIC TECHNICIAN

APPROVED BY

*A. J. Wright*  
CHIEF GEOGRAPHER

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8898...

Records accompanying survey: Smooth sheets *.1*....;  
 boat sheets *.1*....; sounding vols. *5*....; wire drag vols. ....;  
 Descriptive Reports *.1*....; graphic recorder ~~envelopes~~ *1-Cahier* *.2*....;  
 special reports, etc. .... *none*.....  
 ..... *1-Control Compilation R-767 & 4-Infrared Ratio Photographs..*

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

Number of positions on sheet	808..
Number of positions checked	140..
Number of positions revised	.1..
Number of positions revised (refers to depth only)	.....
Number of soundings/erroneously spaced	Neg..
Number of signals erroneously plotted or transferred	.....
Topographic details	Time .6 hrs
Junctions	Time .0....
Verification of soundings from graphic record	Time 12 hrs
Special adjustments	Time none..

Verification by *Fred Bean*..... Total time *114 hrs* Date *6/26/69*

Reviewed by ..... *George Myers* Time *80 hrs* Date *7-10-70*

NORFOLK HYDROGRAPHIC PROCESSING BRANCH

ADDENDUM  
To Accompany

HYDROGRAPHIC SURVEY H-8898 (745-10-3-66)

GENERAL


This appears to be an excellent basic survey. Soundings are in good agreement considering the irregularities in the bottom, especially in North River and its tributaries where there are numerous channels, sloughs and shoals.

FIELD RECORDS

The fathograms and descriptive report for this survey were received in this office approximately 2 years after the other records, and also after the smooth plot had been completed. Due to this fact and because it was suspected that these records had been lost, a tide note was written by this office which was used for tide verification rather than the one finally received from the field. Both tide notes are included in this report.

SHORELINE

Shoreline, on the outer coast North of the limits of RS-767, was extended on the control compilation by Photogrammetric Branch, AMC.

  
Hugh L. Proffitt  
Chief, Hydro Br., AMC

Norfolk, Va.  
July 9, 1969

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8898

FIELD NO. HFP-745-10-3-66

Massachusetts -- Coast of Massachusetts -- North River and  
Vicinity

SURVEYED: July 27, 1966, through September 6, 1966

SCALE: 1:10,000

PROJECT NO.: SP-5-66

SOUNDINGS: DE-723 Depth  
Recorder, Pole  
and lead line  
soundings

CONTROL: Sextant angles  
on shore signals

Chief of Party.....	G. M. Ward
Surveyed by.....	G. M. Ward
.....	R. F. Coons
.....	F. Brown
.....	B. Wilson
Protracted by.....	D. C. Calland (Norfolk)
Soundings Plotted by.....	D. C. Calland (Norfolk)
Verified and Inked by.....	F. Bean
Reviewed by.....	G. K. Myers
.....	Date: July 10, 1970
Inspected by.....	R. H. Carstens

1. Description of the Area

This is an inshore survey of New Inlet, part of the North and South Rivers, and their tributaries. Hydrography also extends about  $\frac{1}{2}$  mile seaward between latitudes  $42^{\circ}09.0'$  and  $42^{\circ}11.6'$ .

The natural channel at New Inlet presently has controlling depths of 7-8 feet. It has been reported that minor changes occur in this channel. The river areas of the survey are relatively shoal and the channel is bordered by mud flats which are exposed at half tides. The grounded barge located at lat.  $42^{\circ}09.85'$ , long.  $70^{\circ}43.80'$  marks a changing shoal which is hazardous to navigation in the North River, without local knowledge.

Along the outer coasts foul areas exist in depths of 6 feet of water. Isolated rocks also rise from the bottom in 10-12 feet depths and inshore off the cliffs there are numerous rocks awash.

Predominant bottom characteristics in the area are mud and sand.

## 2. Control and Shoreline

The source of the control is adequately described in the Descriptive Report.

The shoreline is from RS-767 (Bp 67093) (1966), a revision survey of T-11169 (1952-53) and 1964 air photographs, north of  $42^{\circ}11'15''$ . Shoreline shown in red on the smooth sheet is from hydrographic information.

A. Shoreline in the vicinity of Second Cliff and the western portion of North River was compiled from 1964 photographs on sections of RS-767 and is inserted in the Descriptive Report.

## 3. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves are adequately delineated, with the exception of the low water depth curve along portions of the rocky outer coast. The 3-foot depth curve was added to accentuate the shoal features.

C. The investigation of least depths and development of bottom configuration is adequate, except for the unsupported 3-foot sounding in lat.  $42^{\circ}09.1'$ , long.  $70^{\circ}41.8'$  which rises as much as 8 feet from the bottom.

## 4. Condition of the Survey

The plotting, sounding records, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual.

It was necessary for the reviewer to rescan the fathograms in areas of questionable soundings. In cases where recorded traces on the fathogram were not identified with considerable certainty as reflections from the bottom, it would have been

desirable for the hydrographer to investigate a number of representative strays with a hand lead. This information would have provided tangible evidence on which to base an interpretation of the echo.

## 5. Junctions

Satisfactory junctions, in accordance with Project Instructions, dated June 24, 1966, were made with H-8010 (1952) on the north and H-8063 (1952-53) on the east.

A. Present survey rocks awash off Second Cliff differ substantially in general with those determined on H-8010 possibly because of changes resulting from severe storms as mentioned by the hydrographer or in part because of weak fixes on the adjoining survey. The present survey determination was much more detailed than was made on H-8010 and should supersede the delineation shown on that survey south of lat.  $42^{\circ}11'30''$ .

## 6. Comparisons with Prior Surveys

### A. H-516 (1854-55) 1:80,000

The small scale of this early survey and the sparsity of soundings make a comparison with the present survey meaningless. The present survey supersedes the prior survey in the common area.

### B. H-4370 (1924) 1:5,000

This prior survey covers such a small common area off Second Cliff that a comparison is considered to be of little cartographic value. The present survey is adequate to supersede the prior survey in the common area.

## 7. Comparison with Chart 1207 (latest print date 7/7/69)

(1:20,000 insert)

Chart 244 (latest print date 9/16/68)

### A. Hydrography

The charted hydrography originates with the boat sheet of the present survey (Bp's 70914; 72784) supplemented by depths from the adjoining survey H-8063 (1952-53) which needs no further consideration.

The present survey is adequate to supersede the charted hydrography in the common area.

B. Aids to Navigation

The charted aids to navigation adequately mark the features intended except that a more appropriate position for the bell sea buoy would be southward closer to the entrance channel.


8. Compliance with Instructions

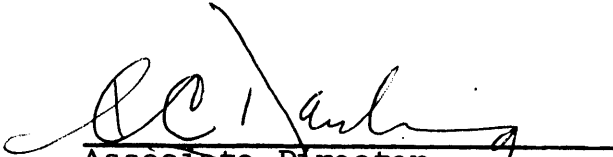
This survey adequately complies with the project instructions.

9. Additional Field Work

This is a very good basic survey and no additional work is recommended.

Examined and Approved:

  
\_\_\_\_\_  
Chief  
Marine Chart Division

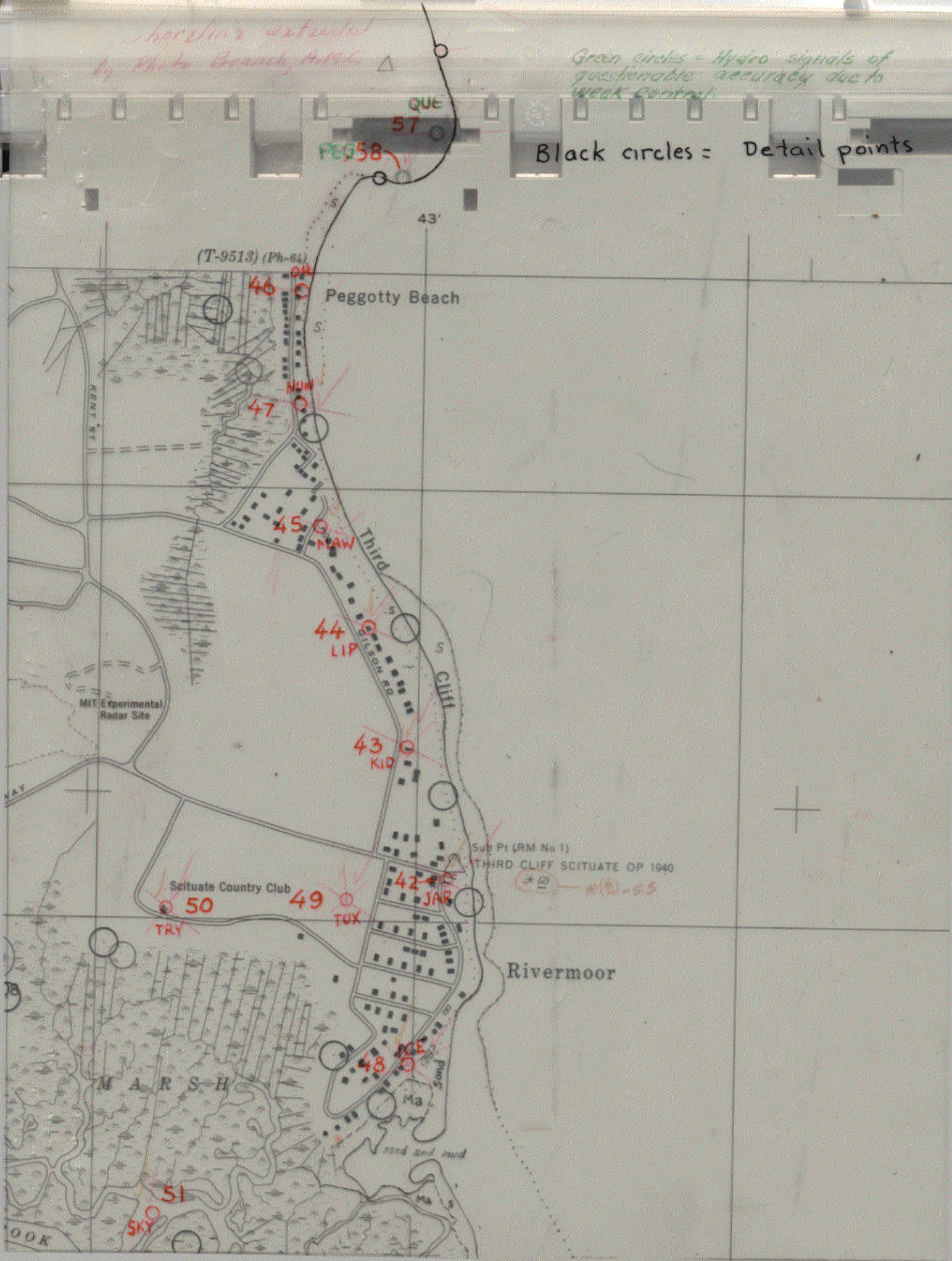
  
\_\_\_\_\_  
Associate Director  
Office of Hydrography  
and Oceanography



*horizon extended  
by Photo Branch, A.M.C.*

*Green circles = Hydro signals of  
questionable accuracy due to  
weak contact*

**Black circles = Detail points**





*Shoreline extracted  
by Phil Brady, M.A.C.*

42°10'

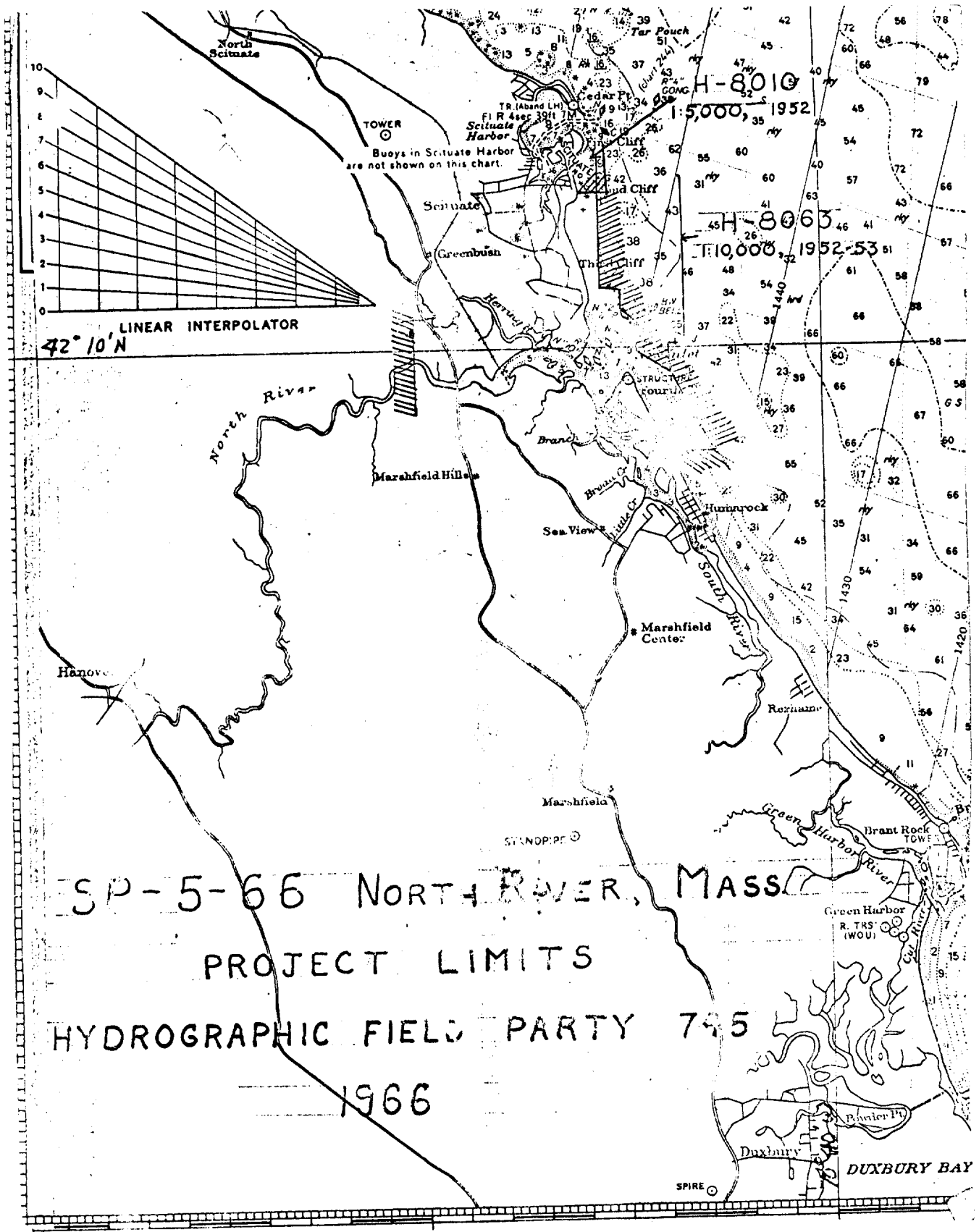


Black O circles are detail points

(No Contemporary Survey)

64 W (C) 4991A



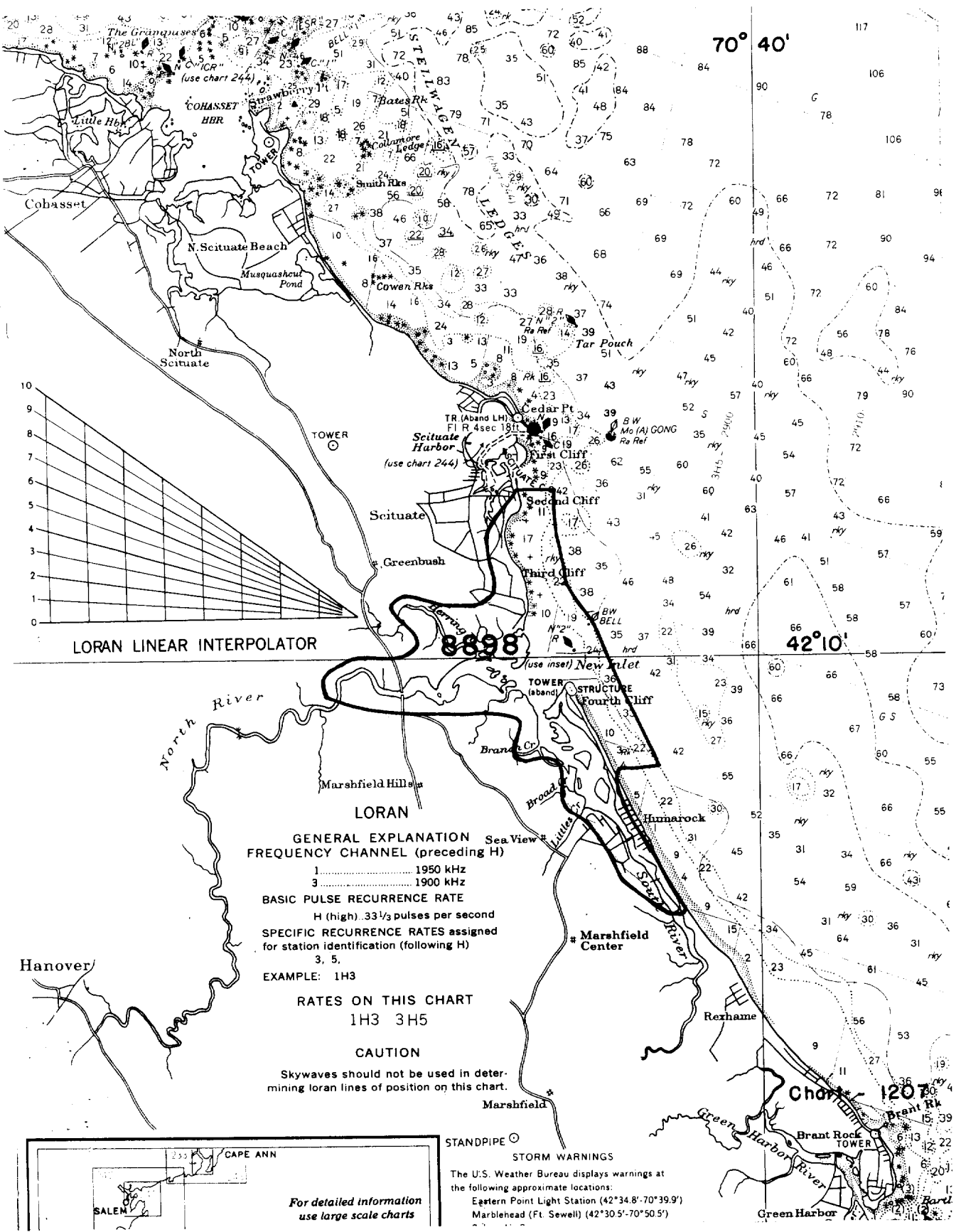


SP-5-66 NORTH RIVER, MASS

PROJECT LIMITS

HYDROGRAPHIC FIELD PARTY 745

1966



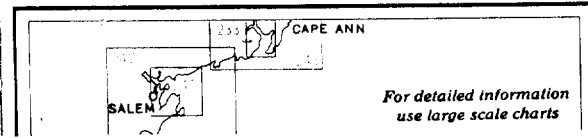
LORAN LINEAR INTERPOLATOR

**GENERAL EXPLANATION**  
**FREQUENCY CHANNEL (preceding H)**  
 1 ..... 1950 kHz  
 3 ..... 1900 kHz  
**BASIC PULSE RECURRENCE RATE**  
 H (high) .33 1/3 pulses per second  
**SPECIFIC RECURRENCE RATES assigned**  
 for station identification (following H)  
 3, 5.  
**EXAMPLE: 1H3**

**RATES ON THIS CHART**  
 1H3 3H5

**CAUTION**  
 Skywaves should not be used in determining loran lines of position on this chart.

**STANDPIPE** ○  
**STORM WARNINGS**  
 The U.S. Weather Bureau displays warnings at the following approximate locations:  
 Eastern Point Light Station (42°34.8'-70°39.9')  
 Marblehead (Ft. Sewell) (42°30.5'-70°50.5')



For detailed information use large scale charts

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8898

INSTRUCTIONS

- A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
  2. In "Remarks" column cross out words that do not apply.
  3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
1207	4-20-70	E. M. Fry	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>critical corrections only. (low water curve &amp; 2 sdgs)</i>
1208	7-21-70	D. Sverdrsen	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 29 <i>No antitidal corr. Revised 1 rock sym.</i>
1207	2-24-71	O. Chapman	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. 31. <i>part. thru. 244 Consider hydro fully appl'd</i>
244	2-24-71	O. Chapman	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. 10
71	Feb. 25, 1971	R. D. Sanocki	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>applied thru dwg # 31 chrt 1207 to dwg # 25 chrt 71. Consider fully applied at this scale.</i>
1208	Feb. 26, 1971	Joe Esterreicher	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>applied thru dwg # 31 chrt 1207 to dwg # 30 chrt 1208. No Corrections.</i>
1208	3-20-73	D. B. & P. L. Lore	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. 32 <i>No Correction</i>
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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