LIGHTHOUSE INFORMATION FORM

NUMBER 26

MASSACHUSETTS HISTORICAL COMMISSION
80 Boylston Street, Boston, MA 02116

Determination of Eligibility
1/26/81

PHOTOGRAPH KEY

1) Minot's Ledge Light view from boat.

HISTORIC NAME: Minot's Ledge Light

TOWN: Scituate

LOCATION: approx. one mile off coast of Hull and Scituate

COUNTY: Plymouth CODE: 023

CONGRESSIONAL DISTRICT: 10

LOCATION OF LEGAL DESCRIPTION:

Plymouth County Registry of Deeds

Russell Street, Plymouth

VERBAL BOUNDARY DESCRIPTION:

The nomination is confined to the lighthouse structure itself and the underwater ledge on which it stands.

SKETCH MAP

LAT./LONG.:

UTM COORDINATE: 19/354/800/4680/800

USGS QUADRANGLE: BOSTON,MA;NH;CT;RI;ME

SCALE: 1:250,000

ACREAGE: .10 acres

OWNER(S): U. S. Coast Guard

First Coast Guard District

408 Atlantic Ave., Boston, MA 02210-2209

STATUS: unmanned/active

RECORDED BY: Lauren Boudreau; Sarah Zimmerman

ORGANIZATION: USCG: MHC

DATE: April, 1986

SITE DESCRIPTION

Minot's Ledge is a twenty-five foot wide ledge of rock located approximately one mile offshore from the Town of Cohasset. It is part of the Cohasset Rocks, a reef extending for some two miles in a southwesterly direction off Cohasset and Scituate.

MAJOR ELEMENTS DESCRIPTION
Single 102' foot tapered cylindrical tower of granite rising to a flared convex projection which supports the watchroom and lantern. An iron ladder up the side leads to an entranceway at the approximate mid-point of the tower. The entrance has a pedimented hood and a block and tackle mechanism used to hoist a boat to the entrance level. Above the entrance, the tower is punctuated by small square windows which light five interior levels of living and working space. The watchroom is encircled by a narrow walkway with a cast iron railing; this arrangement is repeated at the uppermost (lantern) level. The lantern itself is bronze with a domed roof surmounted by a lightning rod.

The tower design is shown on the attached plan. The granite masonry for the tower was cut and preassembled at the mainland site to assure proper fit at Minot's Ledge. The stone cutters alternated between the ledge and the staging area located on Gulf Island, Cohasset Harbor. The lower 22 courses consist of a precisely cut system of horizontally interlocking radial and spacer stones of gray granite. These courses are held in place by the mass of the tower, and by iron dowels and iron dogs between courses. The upper twenty courses consist of vertically interlocking wedge-shaped granite blocks. These courses form a cylindrical void, which provide six levels of living and work space. The lantern house is secured into the top collar course. The overall height of the tower is 102 feet 9 inches.

The Minot's Ledge Shore Station, consisting of the duplex keeper's dwelling, the second assistant keeper's dwelling and ancillary buildings, was also established on Gulf Island c. 1860. Following the automation of Minot's Ledge Light in 1947, the island was sold to the town of Cohasset and is now known as Government Island. The duplex keeper's dwelling with a triple gable elevation is extant and has been converted to apartments. The waterfront, including a building which was probably converted from the second assistant keeper's dwelling, is used by a local sailing club.

The American Society of Civil Engineer's National Historic Engineering Landmark Plaque commemorating the construction and staging of Minot's Ledge Light is also located there. The Shore Station is not included in this nomination.

Following is a description of the construction of the lighthouse, which was accomplished between 1855 and 1860:

> The first workmen landed on the ledge on 12 June, 1855. They loosened the wedges around the stumps of the legs from the old lighthouse and removed the mussels from the top of the ledge. The season was too far advanced to accomplish much more on the rock. Still, the small party of workers gained valuable experience and laid out work for the intense effort scheduled for the following year. The rock was worked 130 hours during 1855.
>
> The second working season began on the 1 April, 1856. Before construction of the tower could begin, the uneven ledge had to be cut into steps and two partial courses of stone had to be laid before the first complete one. Temporary cofferdams made of sandbags were built around small areas of the ledge to faciliate work on the foundation. (A permanent cofferdam was impossible due to exposure to the sea.)

MAJOR ELEMENTS DESCRIPTION (Continued)2

In June, an iron scaffold was erected to provide safety for workmen and a temporary haven in case of a workboat accident. The scaffold was also expected to serve as a platform for the derrick needed to lay the lower courses of masonry in the tower. Nine wrought-iron legs were inserted into the foundation holes of the old lighthouse.

These piles would serve as huge bolts to secure the lighthouse to the rock foundation. The scaffolding, rising twenty feet above the low-water, was bound together at the top by a strong wrought-iron frame. In addition to the scaffold, ropes were crisscrossed about the three feet above the ledge in order to give the workman a handhold when unexpected waves broke over the rock. The rock was worked 157 hours in 1856.

The scaffold built in the summer did not survive the winter. On 19 January, 1857, the rigging of the bark New Empire crashed against the scaffold during a storm. Though the bark survived, the scaffold legs broke off in much the same way as those of the first lighthouse, and areas of the "dressed" rock were shattered. In the spring, workmen found that much of the cutting done the previous year had to be reworked. They recut the two bottom partial courses of stone, which had to fit into the rock like teeth in a jaw. A new scaffold was prepared but never fully erected. The eight outer legs of the scaffold, however, were stepped and were eventually incorporated into the stone tower to hold it firmly in the rock. During this most unfavorable seaason, the rock was worked on for only 130 hours, but the foundation pit was nearly completed, with four stones of the foundation in place.

A nagging problem for Lt. Alexander [Barton S. Alexander, Army Corps of Engineers, the construction supervisor; General Joseph G. Totten of the Lighthouse Board designed the structure] was how to adhere the stones to that part of the rock that lay underwater. At the wharf, experiments were conducted in which stones were cemented together under water, and a solution was eventually worked out. A large piece of thin muslin was laid out and covered with a layer of mortar. The finished stone was laid on the cloth and the vertical sides of the stone were plastered. The muslin was then folded up and laid smooth around the stone. This package set in five to ten minutes, with the cloth adhering to the stone. When the stone was laid on the rock, the cloth acted as an envelope to protect the mortar from the dissolving action of the seawater.

MAJOR ELEMENTS DESCRIPTION (Continued page 3)

During the 1858 season, workmen used a derrick to lay the lower courses of stone. The iron mast of the derrick was set in the centre hole originally excavated for the old lighthouse. A lifting machine was built on a raft so that it could be floated to and from the rock daily. In the 208 hours worked during 1858, the foundation pit was finished, and the tower was completed to the sixth course. In the 377 hours worked during the 1859 season, the tower was completed to the thirty-second course, rising sixty-two feet above low tide. On 29 June, 1860, five years after Lt. Alexander first landed on Minots Ledge, the last stone was laid. The lighthouse rose ninety-seven feet into the air. The tower's first forty feet were solid granite, while the next forty feet contained living quarters, storerooms and working space. Resting on top was the lantern room, where the new lantern and lens were installed that summer. The light from the new stone tower was exhibited for the first time at sunset on 15 November 1860. ("The Seaswept Lighthouse of Minot's Ledge," Robert Scheina, reproduced in IALA Bulletin, 1983, volume 1.)

CHRONOLOGICAL HISTORY

1843 - Lighthouse Service recognizes need for lighthouse on Minot's Ledge (40 ships had been lost in the area between 1830-1840)

1847 - construction of a skeleton tower of wrought-iron commenced

1850 - first Minot's Rock Light completed; consisted of 60" high iron structure topped by three stage superstructure with storage room, keeper's quarters and lantern room with Fresnel lens (lighted January 1, 1850)

1851 - Minot's Rock Light washed away in April gale; two keepers perished

1851 - light ship placed at ledge

1855 - construction of Minot's Ledge Lighthouse commenced; preparation of the ledge to accept the base stones of the 30' diameter tower took three seasons since the ledge is exposed only at extreme low tides;

1860 - lighthouse completed and lit

1894 - light signal changed to 1-4-3 sequence; taken by local residents to mean "I Love You" and causing adoption of sobriquet "Lover's Light" to identify light

1947 - lighthouse automated; original Fresnel lens removed

1978 - "Blizzard of "78" damaged access platforms, entrance and masonry

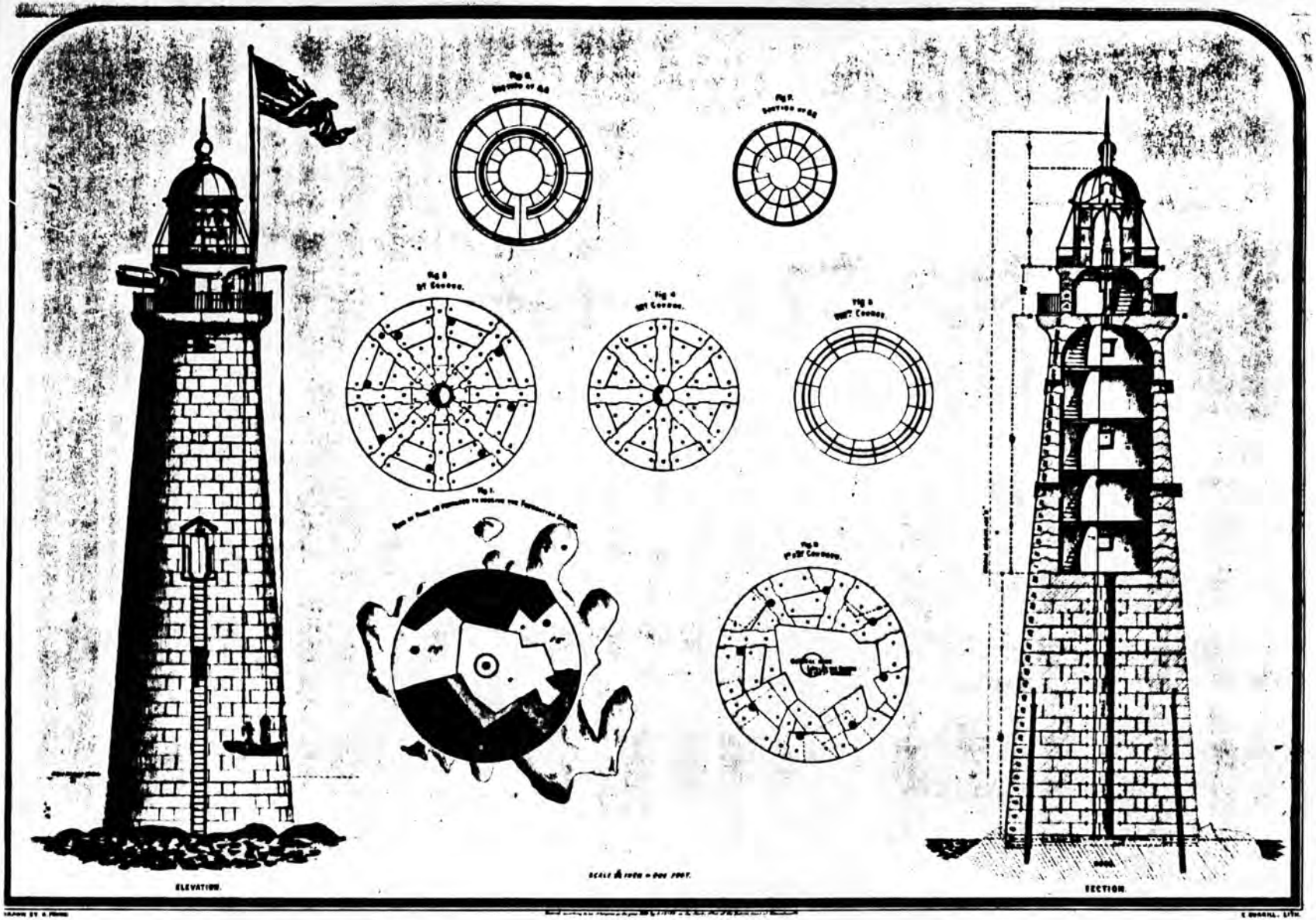
1983 - light converted to solar power; small unobtrusive solar array installed between watchroom and lantern decks

1987 - extensive rehabilitation to repair masonry cracks at watchroom level are planned by USCG

LEVEL OF SIGNIFICANCE

Minot's Ledge Lighthouse possesses integrity of location, design, setting, workmanship, materials, feeling and association as well as highly significant associations with the development of aids to navigation in Massachusetts. The construction of the light in 1860 represented a major engineering effort of national importance. Nationally, the Lighthouse is one of only a handful of lighthouses constructed directly in the sea; it is the earliest and arguably, the most famous of these. Minot's Ledge Light is a monument to the skill of the engineers and stone masons who worked on this complex and difficult construction project. The construction of the light is recognized as a National Historic Engineering Landmark by the American Society of Civil Engineers. It meets criteria A and C of the National Register as well as survey criteria 1, a; 1, d; 1, e; 2, a, and 2, on the local, state and national levels.

It is recommended that Minot's Ledge Light be considered for National Historic Landmark status.



Taking its name from the rock formation on which it was built, the Minot's Ledge Light was the second such structure to stand on the same foundation. The Cohasset Rocks, of which Minot's Ledge is one, were responsible for scores of shipwrecks and drownings. It was determined to place a light there, and construction began in 1847. Lighted on January 1, 1850, the first structure caused its keeper, Isaac Dunham, such concern that he wrote to Washington demanding that it be strengthened. When no reply was received, he resigned, and was vindicated when, on April 17, 1851, a great storm toppled the structure into the sea, taking the lives of two men.

The second and present structure, begun on July 9, 1857, rests on seven massive granite blocks cemented to the ledge more than two feet below low water. The granite construction, reinforced by eight twenty foot high shafts of iron, rises 97 feet. Designed by Joseph G. Totten, it has successfully withstood the severest storms since opened in 1860, and represents an outstanding triumph over the tremendous power of open sea wave forces. The 4500 candlepower light, installe in 1897, is visible for 15 miles.

NPS Form 10-900-a
(3-82)

OMB No. 1024-0018
Exp. 10-31-84

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received MAY 4 1987
date entered

Continuation sheet | Item number | Page 2 of 4

Multiple Resource Area
Thematic Group

Name Lighthouses of Massachusetts TR
State MASSACHUSETTS

Nomination/Type of Review			Date/Signature
11. Minot's Ledge Light	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
12. Nauset Beach Light	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
13. Ned Point Light	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
14. Newburyport Harbor Light	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
15. Newburyport Harbor Front Range Light	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
16. Nobska Point Light Station	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
17. Race Point Light Station	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
18. Sankaty Head Light	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
19. Scituate Light	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	
20. Straightsmouth Island Light	Entered in the National Register	for Keeper	Delores Byers 6/15/87
		Attest	

87001489

WASO Form - 177
("R" June 1984)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

Minot's Ledge Light (Lighthouses of Massachusetts TR)
Plymouth County
MASSACHUSETTS

Working No. 4/28/82
Fed. Reg. Date: 2/2/88
Date Due: 6/18/87
Action: ✓ ACCEPT 6-15-87
___ RETURN
___ REJECT
Federal Agency: USCG

Entered in the National Register

☒ resubmission
☐ nomination by person or local government
☐ owner objection
☐ appeal

Substantive Review: ☒ sample ☐ request ☐ appeal ☐ NR decision

Reviewer's comments:

Recom./Criteria ___
Reviewer ___
Discipline ___
Date ___
_____ see continuation sheet

Nomination returned for: _____ technical corrections cited below
_____ substantive reasons discussed below

1. Name

2. Location

3. Classification

Category	Ownership	Status	Present Use
	Public Acquisition	Accessible	

4. Owner of Property

5. Location of Legal Description

6. Representation in Existing Surveys

Has this property been determined eligible? ☐ yes ☐ no

7. Description

Condition		Check one	Check one
☐ excellent	☐ deteriorated	☐ unaltered	☐ original site
☐ good	☐ ruins	☐ altered	☐ moved date ___
☐ fair	☐ unexposed		

Describe the present and original (if known) physical appearance

☐ summary paragraph
☐ completeness
☐ clarity
☐ alterations/integrity
☐ dates
☐ boundary selection

8. Significance

Period Areas of Significance—Check and justify below

Specific dates Builder/Architect

Statement of Significance *(in one paragraph)*

☐ summary paragraph
☐ completeness
☐ clarity
☐ applicable criteria
☐ justification of areas checked
☐ relating significance to the resource
☐ context
☐ relationship of integrity to significance
☐ justification of exception
☐ other

9. Major Bibliographical References

10. Geographical Data

Acreage of nominated property _____

Quadrangle name _____

UTM References

Verbal boundary description and justification

11. Form Prepared By

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

____ national ____ state ____ local

State Historic Preservation Officer signature

title date

13. Other

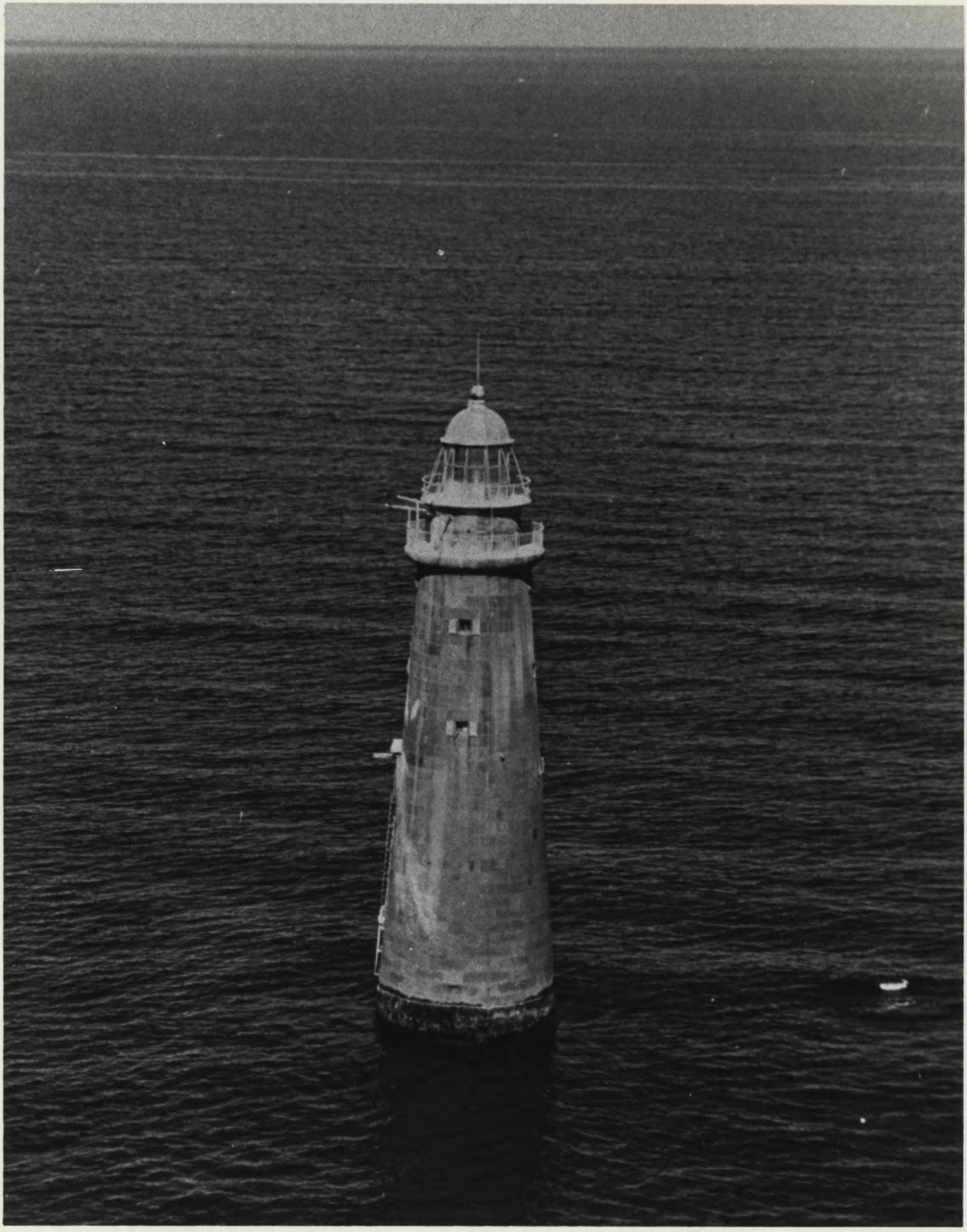
☐ Maps
☐ Photographs
☐ Other

Questions concerning this nomination may be directed to _____

Signed _____ Date _____ Phone: _____

GPO 918-450

Comments for any item may be continued on an attached sheet



Minot's Ledge
Light, from boat
Photo: 1985

MINOTS LIGHT

LIGHTHOUSES OF MASSACHUSETTS
THEMATIC GROUP NOMINATION

MINOT'S LEDGE

LIGHT STATION,

MASS.

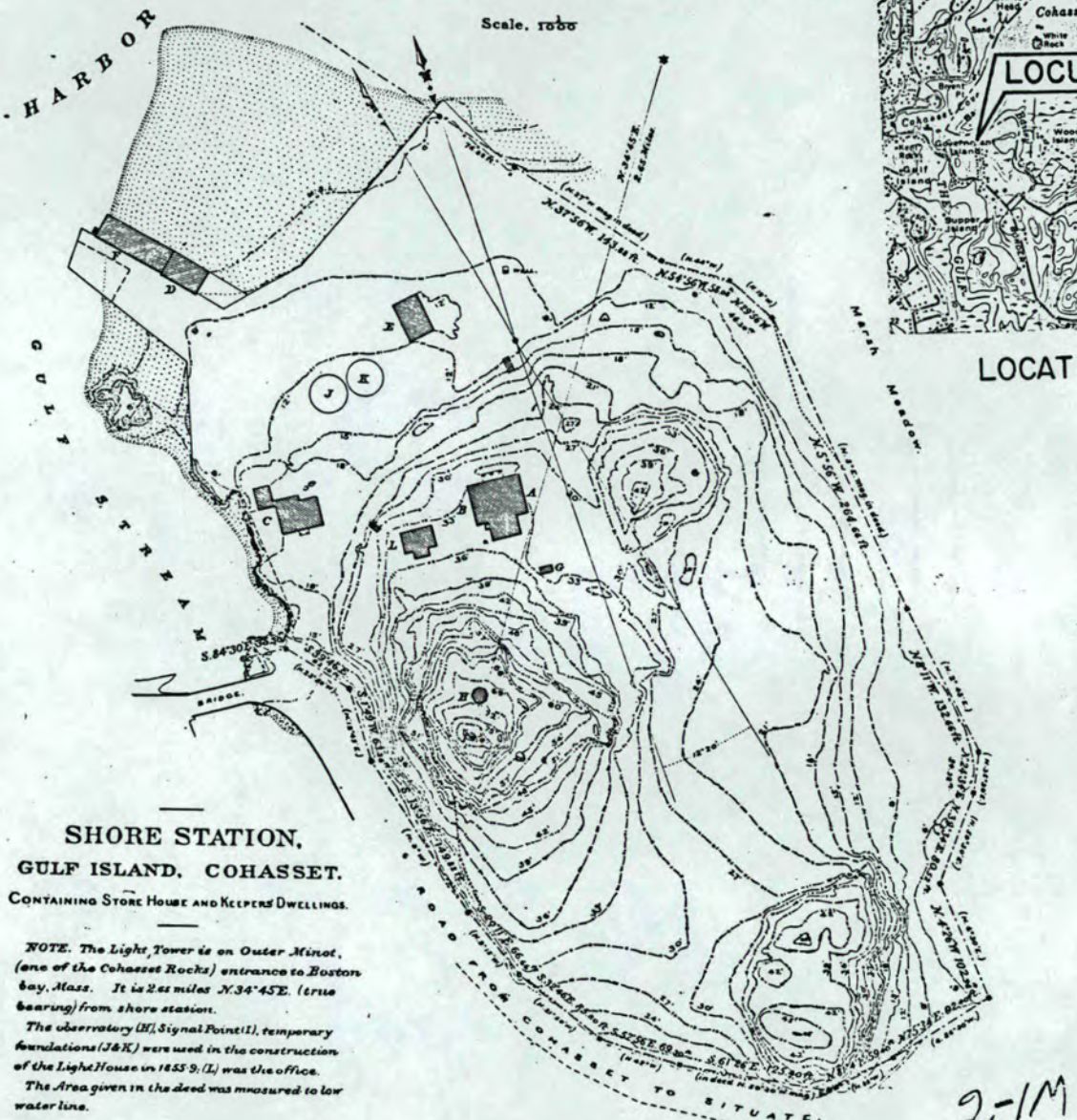
Lat. 42°16'10" N.
Long. 70°45' 35" W.

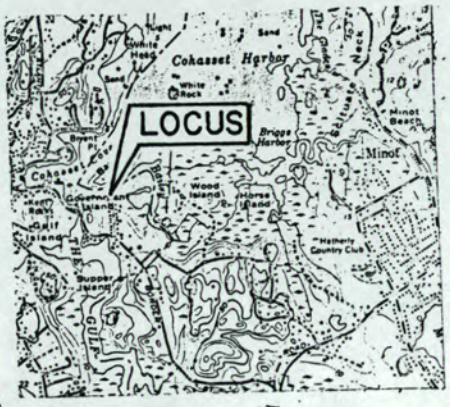
Kind of Light.....Secondary Sea Coast.
Order of Light.....2nd.
Characteristic of Light.....Fixed White.
Base of Tower above water level.....— 8 ft.
Focal Plane.....100. ft.
Kind of Fog Signal Bell struck by machinery, 30 sec.

Site Purchased.....July 15, 1858.
Deed Recorded in Norfolk Co. Reg. Bk. 267, p. 201.
First Buildings, when built.....1849.
When rebuilt or renovated.....Rebuilt 1859.
Area of Reservation to M.H.W. line.....7.57 Acres.
Area enclosed.....

Reservation, Surveyed May 27 to June 18, 1886, by E.P. ADAMS, C.E., L.H. Surveyor.

Scale, 1/1000





LOCATION MAP

SHORE STATION,

GULF ISLAND, COHASSET.

CONTAINING STORE HOUSE AND KEEPERS' DWELLINGS.

NOTE. The Light Tower is on Outer Minot, (one of the Cohasset Rocks) entrance to Boston bay, Mass. It is 2.25 miles N.34°45E. (true bearing) from shore station.

The observatory (H), Signal Point (I), temporary foundations (J & K) were used in the construction of the Light House in 1858-9. (L) was the office.

The Area given in the deed was measured to low water line.

2-1M

— EXPLANATIONS. —

The Magnetic Declination in 1858 was estimated in 1886, by comparison of authorities, to have been 10°56; the declination at time of survey was determined, by observation of Polaris to be 12°20'. Courses given on plan are True bearings. Contours 3 ft apart.

* Light Tower. A.B.C. Keepers' Dwellings. D. Store House. E. Barn. F. Boat House. G. Privy.
—·—·— Boundary of Reservation. ---- Fence. ····· Stone Wall. o Stake set for true M.
——— M.H.W. Line. ..... M.L.W. Line. ▪ Stone Bound, 3 ft. long, 6"×6" top cut thus:—
• Copper Bolt 1" diam., 5" long.

Feet.

E. P. Adams, L.H. Surveyor 1st & 2d Dists.

W. A. Stanton, Maj of Engrs. Engr. 1st & 2d L.H. Dists.

U.S. L.H.E.

8 M.
2d Dist

OFFICE OF L.H. ENGR., P.O. BLDG., BOSTON, MASS. ——— MAY 31, 1886

Form No. 10-301
(Rev. 10-74)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES PROPERTY MAP FORM

FOR NPS USE ONLY
RECEIVED
DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- ENCLOSE WITH MAP

1 NAME

HISTORIC
Minots Ledge Light

AND/OR COMMON
Lovers Light

2 LOCATION

CITY, TOWN
Scituate

___VICINITY OF

COUNTY

STATE
Massachusetts

3 MAP REFERENCE

SOURCE Geological Survey

SCALE 1:25 000

DATE 1974

4 REQUIREMENTS (property located on Nantasket Beach quadrangle)

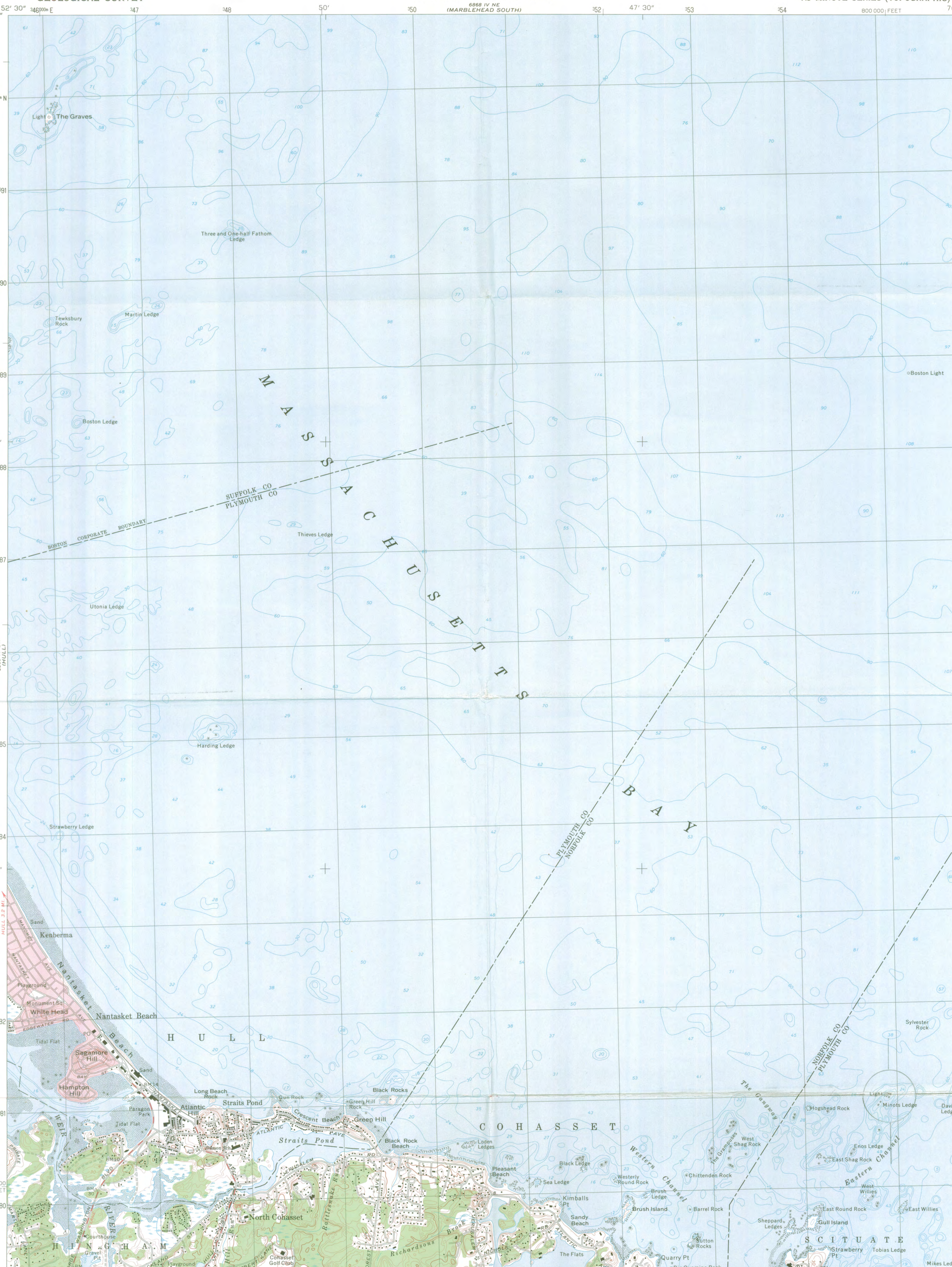
TO BE INCLUDED ON ALL MAPS

1. PROPERTY BOUNDARIES
2. NORTH ARROW all quadrangle sheets are oriented north
3. UTM REFERENCES 19/354,880/4,681,000

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

NANTASKET BEACH QUADRANGLE
MASSACHUSETTS
7.5 MINUTE SERIES (TOPOGRAPHIC)



CONVERSION SCALES

To convert feet to meters multiply by .3048

To convert meters to feet multiply by 3.2808

Feet	Meters
1	.3048
2	.6096
3	.9144
4	1.2192
5	1.5240
6	1.8288
7	2.1336
8	2.4384
9	2.7432
10	3.0480

Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, and Massachusetts Geodetic Survey

Planimetry by photogrammetric methods from aerial photographs taken 1939. Topography by planetable surveys 1936. Revised from aerial photographs taken 1973. Field checked 1974

Selected hydrographic data compiled from USC&GS Chart 246 (1974). This information is not intended for navigational purposes

Polyconic projection. 1927 North American datum
10,000-foot grid based on Massachusetts coordinate system, mainland zone
1000-meter Universal Transverse Mercator grid, zone 19

Boundaries in tidewater areas from information supplied by Massachusetts Department of Public Works

Red tint indicates area in which only landmark buildings are shown

UTM GRID AND 1974 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:25 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 8.4 FEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

ROAD CLASSIFICATION

Primary highway, hard surface	Light-duty road, hard or improved surface
Secondary highway, hard surface	Unimproved road
Interstate Route	U. S. Route
State Route	

NANTASKET BEACH, MASS.
(FORMERLY NANTASKET)
N4215—W7045/7.5

1974

AMS 6868 IV SE—SERIES V814

Please refer to the map in the Multiple Property Cover Sheet for this property

Multiple Property Cover Sheet Reference Number: 64000282