Reedy Island Range Rear Light, 1910
Highway 9 at Taylors' Bridge
Taylors' Bridge
New Castle County
Delaware

HAER DE-11

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1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, D. C. 20240

HAER DEL, 2-TAYBR, 1-

HISTORIC AMERICAN ENGINEERING RECORD

REEDY ISLAND RANGE REAR LIGHT

HAER DE-11

Location:	North side of Highway 9 at Taylors Bridge, Newcastle County, Delaware. UTM: 18.448160.4361840 Quad: Taylors Bridge
Date of Construction:	1910
Present Owner:	U.S. Government (Light serviced by U.S. Coast Guard Station at Gloucester, New Jersey.)
Present Use:	Still functioning as a range light along the Delaware River.
Significance:	Built in 1910 after plans originating at least as early as 1895, the Reedy Island Range Rear Light is a fine example of a cast-iron tower erected by the U.S. Light-House Establishment. This type of structure was resorted to because it was economical and could be easily erected. If necessary, it could also be dismantled readily, moved, and re-erected on a new site.
Historian:	Larry D. Lankton, 1976.

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At the end of the 19th century, commercial interests in Philadelphia which relied upon the Delaware River for transportation believed themselves at a disadvantage. They thought that the Delaware was choking off their trade, because the river was too shallow. They were very much concerned over the fact that Philadelphia was becoming less important as a marketplace, because the rival harbors of New York, Boston, and Baltimore could be reached by ships larger than those which the Delaware River could handle.

In an attempt to remedy this situation, Philadelphians formed an influential "Joint Committee on the Improvement of the Harbor of Philadelphia and the Delaware and Schuykill Rivers." This committee boasted a membership drawn from many commercial organizations, including the Board of Trade, the Commercial Exchange, the Maritime Exchange, the Manufacturers' Club, and the Vessel Owners' and Captains' Association. The committee's members wanted the U. S. Army Corps of Engineers to dredge a new channel in the Delaware, 30 feet deep and 600 feet wide. This channel was needed, the committee noted, because:

> The cheapest [most economical] ocean carriers already have a draft of from 27 to 32 feet, the latter draft much exceeding the depth carried over the shoal areas in the Delaware River at the present time. [1]

The committee urged that the Delaware be made navigable for larger ships, not only for the sake of Philadelphia, but for the sake of the commercial and manufacturing interests of a large region:

> The importance of this improvement to the states of Pennsylvania, New Jersey, and Delaware, and the great West, can hardly be overstated. The Delaware River is the natural maritime outlet of an area of over 54,000 square miles, with a population of nearly 7,000,000 people. This area covers the manufacturing, coal, iron, steel, oil and shipbuilding centers of the United States; and without a proper channel to the sea, the movement of these products to the markets of the world is embarrassed, and the cost of transportation is greatly increased. [2]

The Army Corps of Engineers and the U. S. Congress were both swayed by this type of argument. On 5 January 1898, Lieutenant-Colonel C. W. Raymond reported favorably on the feasibility of dredging a new 30-foot channel from Philadelphia to the deep water of Delaware Bay, and on 3 March 1899, Congress passed a river and harbor act which allowed for this improvement. [3] The Corps restudied the project; Congress appropriated funds for it; and the work was begun. At this time, the U. S. Light-House Establishment also

became involved in the channel dredging.

In 1898, the Light-House Establishment operated some 9 sets of range lights along the Delaware River from Philadelphia south to Delaware Bay. [4] These lights marked the river's then-existing channel and operated in pairs. A front light, mounted on a low tower or house, stood near the river's edge. A rear light, supported on a much taller structure, stood at an inland location, on a line representing an elongation of the axis of the river's channel. When a mariner saw the two lights--one shining directly above the other--he knew that his vessel was on the line of the river's channel and passing clear of islands and shoals. Because the new 30-foot channel did not always coincide with the old channel, shortly after 1900 the Light-House Establishment had to begin moving some of its old range lights and erecting some new ones. [5]

One of the new lights erected by the Light-House Establishment was located in the village of Taylors Bridge, Delaware. Together with a front light located near the confluence of Blackbird Creek and the Delaware River; this light marked the stretch of the Delaware passing between Reedy Island and Baker Shoal. The light in Taylors Bridge, then, became known as the Reedy Island Range Rear Light.

The site of the light station in Taylors Bridge was purchased in 1901, when the work of dredging the channel was just beginning. The station was first lighted in 1904, using a locomotive-type reflector headlamp hoisted to the top of a 100-foot wooden pole which carried a black, triangular slatted daymark. [6] Initially the Light-House Establishment intended to replace this temporary light with a wrought-iron light tower to be moved from the Finn's Point Range Rear Light Station in New Jersey, where it had stood since 1876. [7] However, the Establishment decided not to abandon the Finn's Point Station, so it had to erect a new iron tower at Taylors Bridge. This tower was completed and first lighted on 27 July 1910. The total cost of establishing the Reedy Island Range Rear Light Station, including the cost of the keeper's dwelling and all outbuildings, approached $35,000. The iron tower alone cost some $16,000. [8]

In a sense, the tower at Taylors Bridge was not "new." Generally, the Light-House Establishment had been building similar skeletal towers since at least 1880. [9] In particular, the 1910 tower was almost identical to an earlier range light built along the Delaware River in 1896. [10] The Light-House Establishment had often resorted to this type of iron structure for several reasons. Compared to a wooden structure, it was stronger and more durable. Compared to a masonry structure, it was less expensive. Also, an iron tower could be erected more quickly than a masonry one, because it could be pre-fabricated by the builder. Finally, if the need arose, an iron tower could be easily dismantled and moved to a new location.

The Reedy Island Range Rear Light was constructed almost entirely of cast iron. It consisted of a skeletal framework built around a central staircase shell [Photos DE-11-1,2]. The superstructure, founded on 9 concrete piers, was surmounted by a watchroom and a lantern, each encircled by a gallery. The watchroom was reached via a circular staircase [Photo DE-11-3], and entrance to the tower was gained through a decorated cast iron doorway [Photo DE-11-3]. The construction details are shown in the HAER elevation and section and the photographs taken in the summer of 1976. In particular, note the fasteners used in erecting the tower [Photos DE-11-5,6]--the bolts, wedges, cotter pins and the socket connections--which allowed for rapid assembly, and, if necessary, for an easy disassembly of the structure.

When originally constructed, the tower was illuminated by a 4th Order incandescent oil vapor lamp, set behind a 5th Order range lens. [11] It is believed that the light was manned by a keeper until the 1930's, when the light was electrified. In 1976, the light, still in operation, was serviced only once or twice a month by the U. S. Coast Guard Station in Gloucester, New Jersey. With each service, the bulbs in an automatic lamp changer were replaced. This lamp changer sat on a pedestal between the lenticular range lens and a mirrored reflector. The lamp provided a fixed white light which was shown 24 hours per day.

NOTES

[1] Board of United State Engineers, Thirty Foot Channel from Philadelphia to the Sea (Philadelphia: Joint Committee on the Improvement of the Harbor of Philadelphia and the Delaware and Schuykill Rivers, 1899), p. 4.

[2] Ibid., p. 5.

[3] Ibid., p. 3.

[4] See map, "The Delaware River," included in Thirty Foot Channel. A portion of this map was photocopied by HAER [DE-10-1] and shows the relationship between the old and new channels. (Note: the Reedy Island Light shown on the map was constructed in 1896; it is not the light which is the subject of this report.)

[5] See Larry D. Lankton, HAER report on Liston Range Rear Light, 1976. This report covers one of the Delaware River range lights which was moved as a result of the channel dredging.

[6] Department of Commerce and Labor, Light-House Establishment, "Description of Light-House Tower, Buildings and Premises at Reedy Island Range Rear Light Station, Delaware, March 10, 1908," pp. 3-4. Record Group No. 26, National Archives.

[7] Clipping file, "Reedy Island Range Rear Light Stations, Delaware," Record Group No. 26, National ARchives.

[8] "Statement Showing Cost of Establishing Reedy Island Range Rear Light Station, Delware, March 17, 1911." Found in "Costs," Fourth Light-House District, Record Group No. 26, National Archives.

The cost break-down for the tower was as follows:

Plans.....	$ 675
Metalwork.....	10,480
Foundation and erection of metalwork....	4,473
Illuminating apparatus....	465
Installation of illuminating apparatus	205
	$16,298

[9] For an example of a similar tower, See Arnold Burges Johnson, The Modern Light-House Service (Washington, G.P.O., 1889), pp. 30-31. Johnson illustrates the rear beacon of the Paris Island Range in South Carolina, erected in 1880. Although that tower was triangular at its base and had no central staircase shell, it used the same system of cast iron columns, sockets, struts, and tension rods.

[10] See Office of the Light-House Board, "Proposed Tower—Reedy Island Range Rear Lt. Sta., Delaware, April, 1895." Found in Record Group No. 26, National Archives.

This plan was developed for the original Reedy Island Range Rear Light Station, established in 1896 in the village of Port Penn Delaware. This station was abandoned with the advent of the new 30-foot channel, and the iron tower (it is believed) was moved to the Baker Island Range Rear Light Station in c. 1905-1910.

The original 1896 Reedy Island rear light and the 1910 light were identical in their building technology, except for a possible change in the depth of the concrete piers upon which they stood. Also, the 1910 light was taller than the 1896 structure. It is interesting to note that in 1900, the original cast iron Reedy Island rear light required 20 bands or clamps placed around cracked sockets and columns. These structural failures apparently did not dissuade the Light-House Establishment from adopting the same design for the 1910 Reedy Island Rear Light.

[11] "History of Reedy Island Light Station and Reedy Island Range Lights--Delaware," p. 6. Typescript found in clipping file, Reedy Island Range Light Stations, Record Group No. 26, National Archives.

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REEDY ISLAND RANGE REAR LIGHT · 1910

TAYLORS BRIDGE, DELAWARE

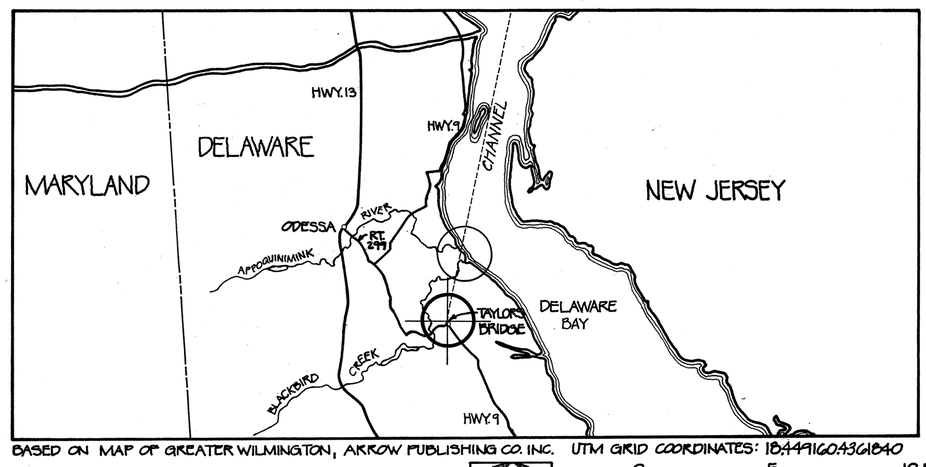
WHEN A MARINER NAVIGATES A GIVEN RANGE OR STRETCH OF THE DELAWARE BAY, HE CAN LOCATE THE BAY'S MAIN CHANNEL BY ALIGNING HIS VESSEL WITH THE APPROPRIATE RANGE LIGHTS. THESE LIGHTS OPERATE IN PAIRS. A FRONT LIGHT, MOUNTED ON A LOW TOWER OR LIGHT HOUSE, STANDS IN OR NEAR THE WATER. A REAR LIGHT, SUPPORTED ON A MUCH TALLER STRUCTURE, STANDS AT AN INLAND LOCATION, A CONSIDERABLE DISTANCE BEHIND THE FRONT LIGHT. WHEN A MARINER SEES THE TWO LIGHTS, ONE SHINING DIRECTLY ABOVE THE OTHER, HE KNOWS THAT HIS VESSEL IS ON THE LINE OF THE BAY'S CHANNEL.

IN 1904, A NEW 30-FOOT CHANNEL WAS DREDGED IN THE DELAWARE BAY FROM THE DEEP WATER ABOVE REEDY ISLAND TO A POINT OPPOSITE THE MOUTH OF APPOQUINIMINK RIVER. IN ORDER TO MARK ONE PORTION OF THIS NEW CHANNEL, THE LIGHT HOUSE BOARD ESTABLISHED THE REEDY ISLAND RANGE LIGHTS. THE BOARD LOCATED THE FRONT LIGHT ON THE EDGE OF THE MARSH BETWEEN THE MOUTHS OF APPOQUINIMINK RIVER AND BLACKBIRD CREEK. IT LOCATED THE REAR LIGHT AT THE VILLAGE OF TAYLORS BRIDGE. THE TWO LIGHTS ARE APPROXIMATELY 4900 YARDS APART.

WHEN FIRST ILLUMINATED IN 1904, THE REEDY ISLAND RANGE REAR LIGHT WAS TEMPORARILY A LOCOMOTIVE-TYPE HEADLIGHT HOISTED TO THE TOP OF A TALL WOODEN POLE. IN 1907, THE KEEPER'S HOUSE, BARN, AND OIL HOUSE WERE FINISHED, AND IN 1910 THE PERMANENT IRON TOWER WAS COMPLETED AND FIRST ILLUMINATED. THE TOTAL COST OF THE LIGHT STATION WAS $35,000, AND THE TOWER ALONE COST $16,000. NOW ELECTRIFIED, THE LAMP IN THE TOWER WAS ORIGINALLY A FIFTH ORDER RANGE LENS LIGHTED BY A FOURTH ORDER INCANDESCENT OIL VAPOR LAMP. THE FOCAL PLANE OF THE FIXED WHITE LIGHT IS 134 FEET ABOVE MEAN HIGH WATER.

THIS SURVEY IS PART OF A LONG-RANGE PROGRAM BY THE HISTORIC AMERICAN ENGINEERING RECORD (HAER) TO DOCUMENT ENGINEERING AND INDUSTRIAL WORKS IN THE UNITED STATES. THE DELAWARE SURVEY OF HISTORICALLY SIGNIFICANT INDUSTRIAL SITES WAS COSPONSORED DURING THE SUMMER OF 1976 BY HAER, A PROGRAM OF THE NATIONAL PARK SERVICE; BY THE STATE OF DELAWARE, DIVISION OF HISTORICAL AND CULTURAL AFFAIRS; AND BY THE ELEUTHERIAN MILLS-HAGLEY FOUNDATION. FIELD HEADQUARTERS WERE LOCATED AT THE ELEUTHERIAN MILLS HISTORICAL LIBRARY, GREENVILLE-WILMINGTON, DELAWARE.

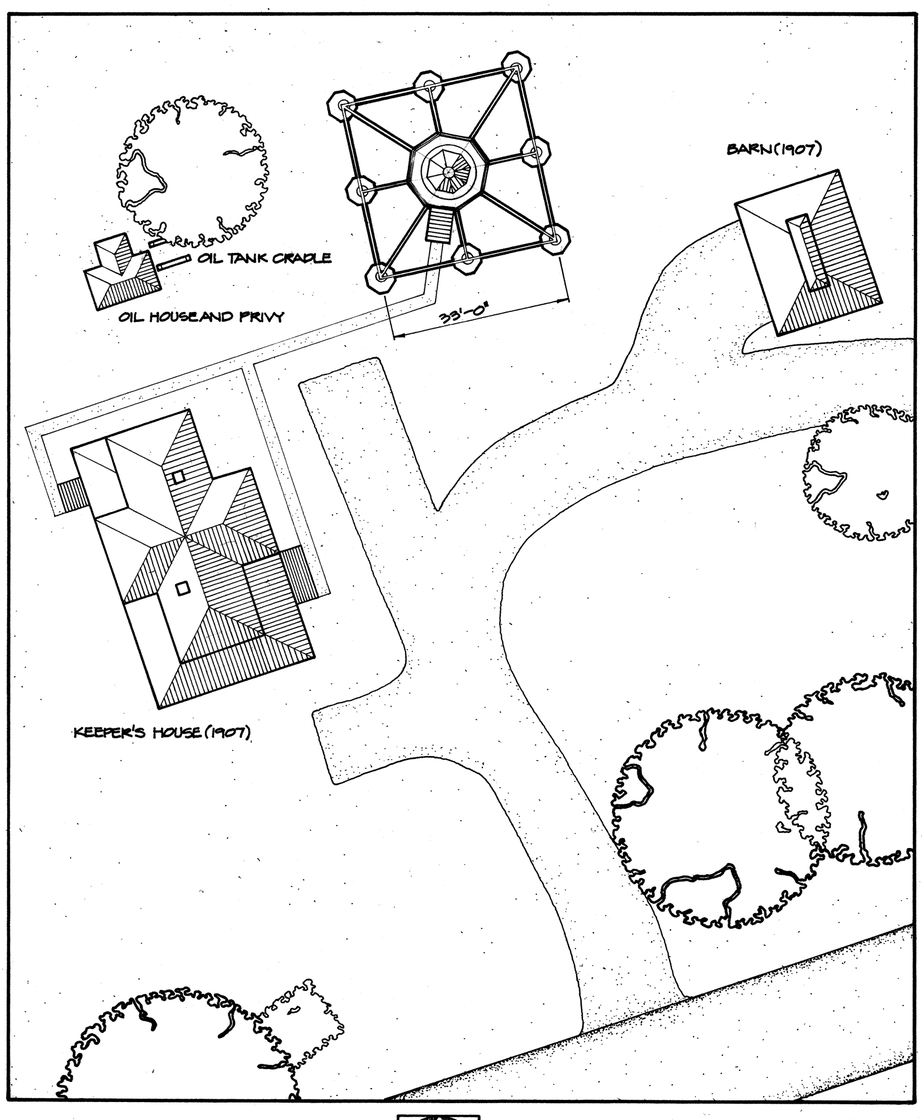
THE FIELD WORK, MEASURED DRAWINGS, HISTORICAL DATA, AND PHOTOGRAPHS WERE PREPARED UNDER THE GENERAL DIRECTION OF DOUGLAS L. GRIFFIN, CHIEF, HAER, AND T. ALLAN COMP, SENIOR HISTORIAN, HAER. THE SURVEY TEAM CONSISTED OF LARRY D. LANKTON, SUPERVISORY HISTORIAN (UNIVERSITY OF PENNSYLVANIA); DENNIS L. DAVIS, SUPERVISORY ARCHITECT (RENSSELAER POLYTECHNIC INSTITUTE); DAVID A. PACKARD, STUDENT ARCHITECT (UNIVERSITY OF NEBRASKA); NANCY R. LICKERMAN, STUDENT ARCHITECT (UNIVERSITY OF ILLINOIS); ALLAN L. NELSON, STUDENT ARCHITECT (NORTHERN VIRGINIA COMMUNITY COLLEGE); CHRISTOPHER S. DERGANC, STUDENT HISTORIAN (UNIVERSITY OF PENNSYLVANIA); AND BRUCE SEELY, STUDENT HISTORIAN (UNIVERSITY OF DELAWARE). THE FORMAL PHOTOGRAPHY WAS DONE BY CHARLES A. FOOTE AND GEORGE W. RINEER.



BASED ON MAP OF GREATER WILMINGTON, ARROW PUBLISHING CO. INC. UTM GRID COORDINATES: 18.449160.4361840

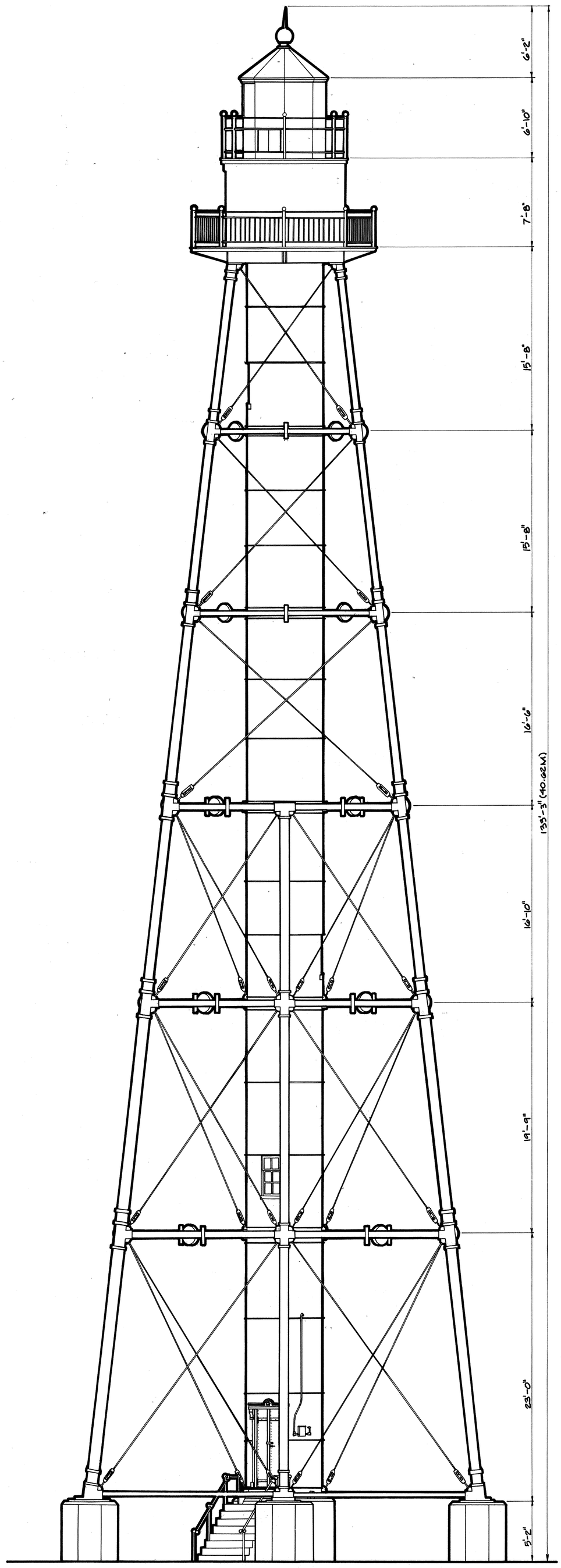
0 5 10 M
MILES
0 5 10 K
KILOMETERS

SITE LOCATION MAP



SITE PLAN

0 10 20 50 FT.
FEET
0 5 10 20M
METERS



SOUTH ELEVATION

0 5 10 15 20 FT.
FEET
0 1 2 5M.
METERS

DELINEATED BY: DAVID PACKARD, 1976

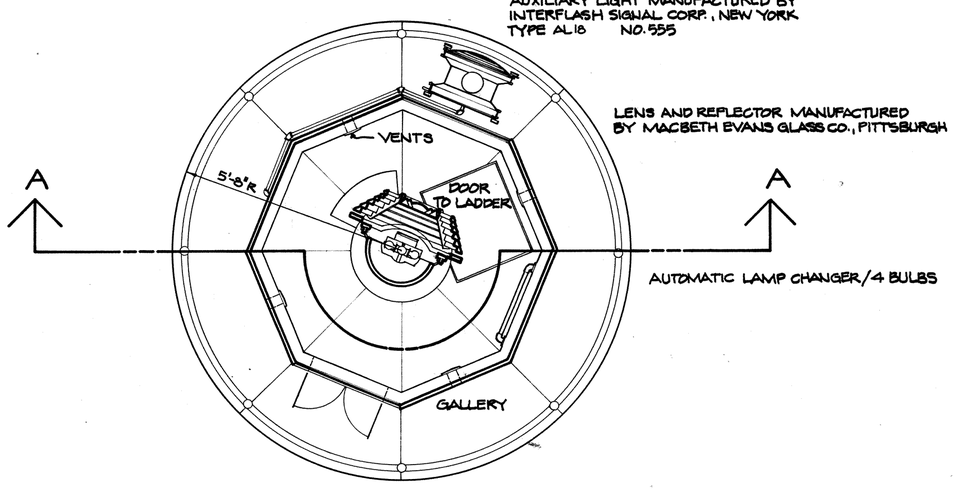
STATE OF DELAWARE SURVEY OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION NATIONAL PARK SERVICE. UNITED STATES DEPARTMENT OF THE INTERIOR	REEDY ISLAND RANGE REAR LIGHT, 1910 NORTH SIDE OF HIGHWAY 9 AS THE HIGHWAY ENTERS TAYLORS BRIDGE TAYLORS BRIDGE — NEW CASTLE COUNTY — DELAWARE	SHEET 1 OF 2	HISTORIC AMERICAN ENGINEERING RECORD DE-11	LIBRARY OF CONGRESS INDEX NUMBER

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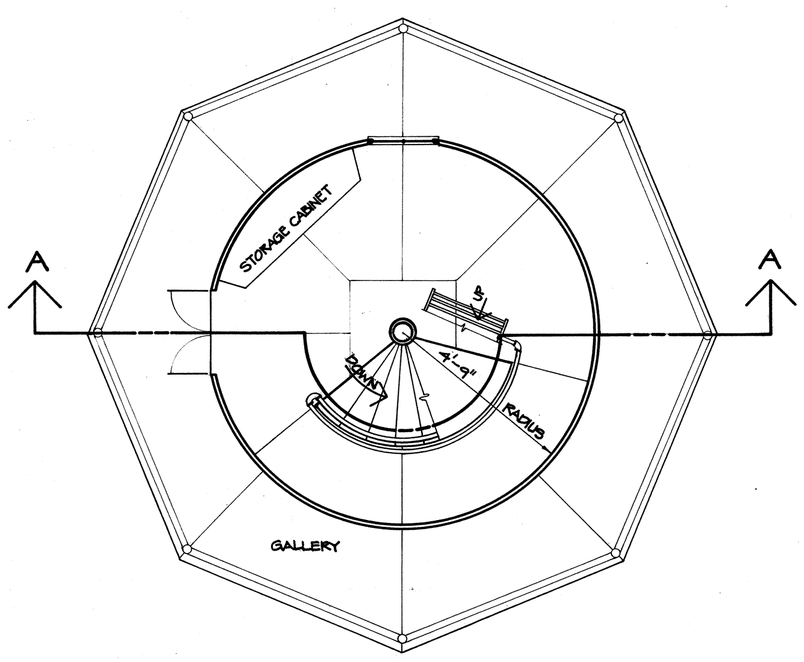
AUXILIARY LIGHT MANUFACTURED BY
INTERFLASH SIGNAL CORP., NEW YORK
TYPE AL18 NO. 555



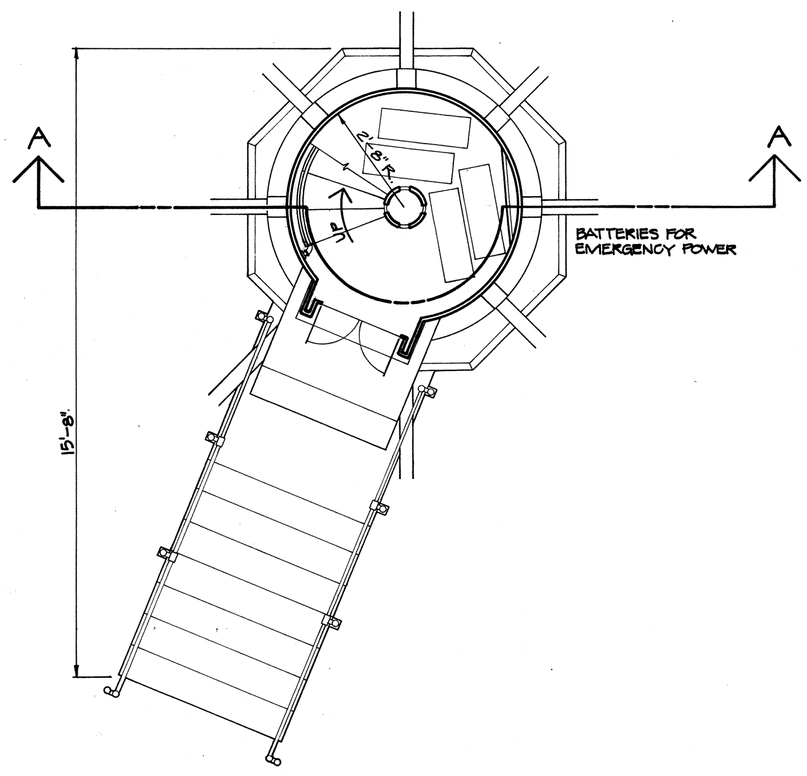
LENS AND REFLECTOR MANUFACTURED BY MACBETH EVANS GLASS CO., PITTSBURGH

AUTOMATIC LAMP CHANGER/4 BULBS

LANTERN ROOM PLAN

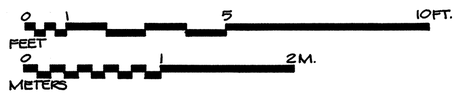


WATCHROOM PLAN



ENTRANCE PLAN





VENTILATOR BALL

LENS AND REFLECTOR
MANUFACTURED BY MACBETH EVANS
GLASS CO., PITTSBURGH

LANTERN ROOM

WATCHROOM

CAST IRON RING WITH SOCKETS

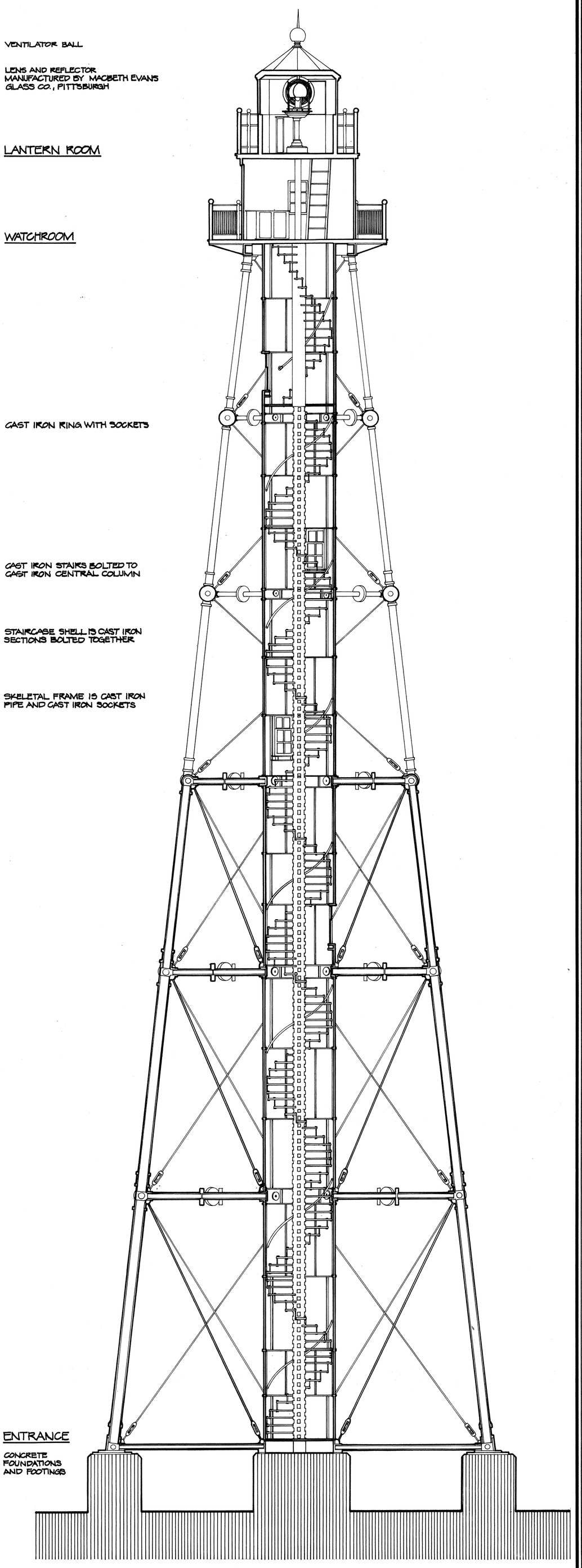
CAST IRON STAIRS BOLTED TO
CAST IRON CENTRAL COLUMN

STAIRCASE SHELL IS CAST IRON
SECTIONS BOLTED TOGETHER

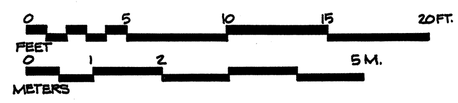
SKELETAL FRAME IS CAST IRON
PIPE AND CAST IRON SOCKETS

ENTRANCE

CONCRETE
FOUNDATIONS
AND FOOTINGS



SECTION A-A



DELINEATED BY: DAVID PACKARD, 1976

STATE OF DELAWARE SURVEY OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION NATIONAL PARK SERVICE. UNITED STATES DEPARTMENT OF THE INTERIOR	REEDY ISLAND RANGE REAR LIGHT, 1910 NORTH SIDE OF HIGHWAY 9 AS THE HIGHWAY ENTERS TAYLORS BRIDGE TAYLORS BRIDGE NEW CASTLE COUNTY DELAWARE	SHEET 2 OF 2	HISTORIC AMERICAN ENGINEERING RECORD DE-11	LIBRARY OF CONGRESS INDEX NUMBER

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