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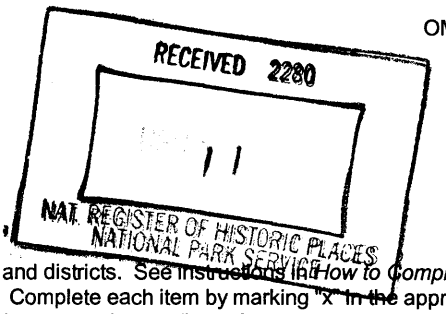
NPS Form 10-900
(Oct.1990)

OMB No. 1024-0018



United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Romer Shoal Light Station

other names/site number Romer Shoal Light

2. Location

street & number In Lower New York Bay, 3.8 miles north of Sandy Hook ☐ not for publication

city or town Highlands Borough ☒ vicinity

state NewJersey code NJ county Monmouth code 025 zip code 07732

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this ☒ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☒ meets ☐ does not meet the National Register Criteria. I recommend that this property be considered significant ☐ nationally ☐ statewide ☒ locally. (☐ See continuation sheet for additional comments.)

Signature of certifying official/Title — Date: 9 AUG 06

United States Coast Guard
State or Federal agency and bureau

In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional comments.)

Signature of commenting or other official — Date: 8/16/06

Amy Cradic, Assistant Commissioner Natural & Historic Resources/DSHPO
State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that this property is:

☒ entered in the National Register
☐ See continuation sheet.
☐ determined eligible for the National Register
☐ See continuation sheet.
☐ determined not eligible for the National Register
☐ removed from the National Register
☐ other (explain): _____

Signature of the Keeper — Date of Action: 1-24-07

5. Classification

Ownership of Property
(Check as many boxes as apply)

- ☐ private
- ☐ public-local
- ☐ public-State
- ☒ public-Federal

Category of Property
(Check only one box)

- ☐ building(s)
- ☐ district
- ☐ site
- ☒ structure
- ☐ object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
		buildings
		sites
1		structures
		objects
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

Light Stations of the United States

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

Transportation
Water-related
Lighthouse

Current Functions
(Enter categories from instructions)

Transportation
Water-related
Lighthouse

7. Description

Architectural Classification
(Enter categories from instructions)

No Style

Materials
(Enter categories from instructions)

foundation Caisson: Iron and concrete
roof Iron
walls Iron
other Lantern: Iron and glass

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

☒ A Property is associated with events that have made a significant contribution to the broad patterns of our history.

☐ B Property is associated with the lives of persons significant in our past.

☒ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

☐ D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations
(Mark "X" in all the boxes that apply.)

Property is:

☐ A owned by a religious institution or used for religious purposes.

☐ B removed from its original location.

☐ C a birthplace or a grave.

☐ D a cemetery.

☐ E a reconstructed building, object, or structure.

☐ F a commemorative property.

☐ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)
Maritime History
Transportation
Architecture
Engineering

Period of Significance
1898 to 1956

Significant Dates
1898

Significant Person
(Complete if Criterion B is marked above)

Cultural Affiliation
N/A

Architect/Builder
U.S. Lighthouse Board

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):
- ☐ preliminary determination of individual listing (36 CFR 67) has been requested.
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Primary Location of Additional Data
- ☐ State Historic Preservation Office
- ☐ Other State agency
- ☒ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other

Name of repository:

US National Archives; NPS Maritime Heritage Program; USCG Headquarters, Historian's Office, Washington, DC

10. Geographical Data

Acreage of Property: Less than one acre

UTM References:

	Zone	Easting	Northing
1	18	583555	4484925

Verbal Boundary Description: The boundary aligns with the exterior limit of the stone riprap surrounding the structure's caisson foundation, along with the riprap that extends westward and shelters the boat basin and the light station's concrete pier.

Boundary Justification: The boundary completely encompasses the light station.

11. Form Prepared By

name/title Daniel Koski-Karell, Ph.D., Environmental Management Division (CG-443)

organization U.S. Coast Guard Headquarters date 8 August 2006

street & number 2100 Second Street SW telephone 202.475.5683

city or town Washington state DC zip code 20593

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Map and plans: A **USGS map** (7.5 or 15 minute series) indicating the property's location.
Copies of **architectural drawings and plans.**

Photographs: Representative **black and white photographs** of the property.

Additional items
(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name U.S. Coast Guard Headquarters

street & number 2100 Second Street SW telephone 202.267.1587

city or town Washington state DC zip code 20593

Narrative Description

Romer Shoal Light Station is an offshore lighthouse erected in 1898 in Lower New York Bay approximately 3.8 miles north of Sandy Hook in Monmouth County, New Jersey. It sits in approximately 14 feet of water and marks an area of shallow water hazardous to vessels navigating to and from the port of New York. This property contains one contributing resource, a "sparkplug" type lighthouse structure which includes a caisson foundation and conical light tower made of cast iron. The cylindrical caisson foundation is filled with concrete and rises to 10 feet above sea level. It supports a four-story conical sparkplug-type light tower with integral keepers' quarters that is topped by a cylindrical watch room and octagonal lantern. The top of the lighthouse lantern is approximately 60 feet above sea level. Its signal light has a focal plane 54 feet above sea level. The tower's lower half is painted white. The upper half, including the watch room and lantern, are painted brown. The cylindrical caisson is painted black. Other features at this property include a concrete pier and riprap that surrounds the caisson foundation and provides a breakwater. This lighthouse's tower and lantern were originally erected at Tompkinsville Lighthouse Depot on Staten Island in 1883, and used as a platform for equipment experiments. The structure was dismantled in 1898 and brought to Romer Shoal to replace an unmanned beacon built in 1886. Romer Shoal Light Station is owned by the U.S. Coast Guard and is operated as an automated aid to navigation identified as number 35070 on the regional light list. Its optic signals two white flashes every 15 seconds, and is visible for 16 miles in clear weather. Other equipment mounted on the light tower include an emergency light for use if the main light is extinguished, an automated fog signal that sounds a 2-second blast every 15 seconds, and a solar array for recharging batteries that power the signal equipment. The only access to this property is by boat.

This description is based on an inspection visit to the property in August 2004 by Daniel Koski-Karell, Ph.D., Environmental Management Division, U.S. Coast Guard Headquarters. Background research on this property included locating copies of construction plans at the U.S. National Archives. Duplicates of these plans are provided on Continuation Sheets with this registration form.

Contributing Resource: Lighthouse

Romer Shoal Light Station sits in 14 feet of water in Lower New York Bay approximately 3.8 miles north of the tip of Sandy Hook in Monmouth County, New Jersey. It is situated some 500 feet south of the New Jersey-New York state boundary, and approximately seven miles south of the Verrazano Narrows Bridge. This property marks Romer Shoal, an offshore area of shallow water surrounded by deeper waters that have been navigated by shipping from colonial times to the present day. Romer Shoal lies north of the Swash Channel, a natural navigation route, and south side of the Ambrose Channel, the main shipping lane to and from the port of New York that was dredged circa 1912. A variety of unmanned aids to navigation were established to mark this shoal during the nineteenth century, beginning in the 1830s. The development of offshore lighthouse design and technology led to the existing light station being established in 1898.

This lighthouse is operated as an automated aid to navigation identified as number 35070 on the regional light list. The structure includes a cylindrical caisson foundation surrounded by protective riprap. A riprap breakwater extends westward from the foundation to form a semi-protected boat basin. A concrete pier 32 feet long by 10 feet wide by 11 feet tall extends towards southwest from the lighthouse foundation to the edge of the basin. This pier's southwest end is equipped with a ladder and pilings where boats may moor, and a metal crane is mounted on the pier deck for moving cargo. A metal stairway at the pier's northeast end leads up to the lighthouse's main gallery atop the caisson. The light tower's entrance is to the right of this stairway.

Lighthouse Exterior

The lighthouse's foundation is a cylindrical caisson 30 feet in diameter and made with cast iron plates. It is filled with concrete except for the space occupied by the structure's cisterns. Only the uppermost courses of the caisson's cast iron plates are visible. The rest is hidden by riprap or is underwater. The main gallery sits atop the caisson. The gallery deck inside the caisson's perimeter is an apron made of concrete. This apron extends 4 feet, 2 inches outward from the light tower. A modern guardrail is attached to this concrete deck's perimeter at the edge of the caisson. It is made with metal pipe stanchions supporting two horizontal metal pipe rails, and extends approximately halfway around the main gallery. A cast iron grating extends another 3.5 feet outward from the concrete apron. It is supported underneath by decorative cast iron brackets attached to the caisson at 6.5 foot intervals. The extended deck grating is deteriorated in several places and approximately one-half of it is missing. The modern pipe guardrail provides a barrier between the secure, concrete portion of the gallery deck and the deteriorated cast iron overhang. An enclosed room made of iron plates stands atop the gallery deck on the west side. Its inner side is the exterior wall of the light tower. This gallery room has a flat roof and is 6 feet, 10 inches tall by 4 feet, 1 inch wide, by 17 feet, 9 inches long.

The conical light tower is four stories tall and stands centered atop the caisson foundation surrounded by the main gallery. It is made with cast iron plates and stands four stories tall. The exterior on the first story level is heavily corroded and has been patched in several places. The tower's exterior at the second story and higher is in better condition. The tower's first and second stories are painted white. The third and fourth stories, along with the watch room and lantern, are painted brown.

A doorway pierces the tower's southwest side near where the concrete pier's stairway ends at the main gallery deck. This doorway is framed with a cast iron surround topped with a segmental arch. It is fitted with a modern metal door with rounded top.

The tower's first, second and third stories are pierced with windows framed with decorative cast iron surrounds. Each window surround includes a segmental arch topped with a triangular pediment hood, and a projecting sill. The first story has two windows, both covered with metal plates. The second and third stories are pierced with three windows each. The second story windows have sheets of Plexiglas for glazing. Two third story windows retain two-over-two, double hung wooden sash while the third window is covered. The tower's fourth story is pierced with eight circular port-lights.

The fourth story is surmounted by the lighthouse's fifth story, a cylindrical watch room surrounded by a circular gallery. The watch room and its gallery deck are made with cast iron plates. The gallery deck extends beyond the tower and is supported by decorative cast iron brackets attached to the tower's exterior. There is a doorway in the watch room wall that provides access to the gallery. It is fitted with a modern metal door. A guardrail surrounds the gallery. It includes cast iron stanchions that support two horizontal metal railings. Each stanchion is capped by a ball finial at the top. Each stanchion is positioned above one of the brackets that support the gallery's overhang. A metal ladder rises from the watch room gallery to the lantern gallery.

Two modern, automated fog signal units are stacked one atop the other on the watch room gallery's eastern side. A third fog signal unit sits on the gallery deck next to them. A solar array is mounted on the gallery's southern side. It is used for charging batteries that power the lighthouse's aid to navigation equipment.

The watch room supports the lighthouse's decagonal lantern and circular lantern gallery. The lantern includes a lower parapet wall one-quarter the height of the lantern and made with ten cast iron plates. The upper three-quarters of each side above the parapet is composed of metal mullions holding the lantern's glazing. Each side includes three rectangular glass panes arranged vertically. The lantern roof springs from a soffit above the glazing. The roof is made with ten triangular cast iron plates and capped at the apex with a round vent ball topped with a lightning rod. The lantern gallery deck is made of cast iron plates and overhangs the watch room's perimeter slightly. The gallery is enclosed by a simple railing made with metal rod stanchions and a single flat rail. This gallery is accessed by the metal ladder that rises from the watch room gallery. Another metal ladder rises vertically next to the lantern on the gallery's north side. A metal pole attached to this ladder supports an emergency light for use if the lantern's main optic fails. The ladder's upper part is supported with a brace connected to the vent ball atop the lantern.

Lighthouse Interior

The tower's interior is lined with brick up to the third story. This lining is thickest on the first story level and narrows progressively on the second and third stories where the conical tower tapers inward. A metal stairway winds counterclockwise inside the tower's perimeter wall up to the fourth story. A metal partition wall separates it from the tower's rooms. Above the fourth story, metal ship's ladders provide access to the watch room and lantern.

First Story

The first story room is circular. It is 19 feet in diameter with its ceiling 7.5 feet above the floor. The tower's brickwork lining is pierced with three openings. One is for the entrance doorway. The other two are tall, segmental-arch window openings. Both windows are covered with metal sheets. Three alcoves built into the brick lining provide storage space. A metal partition wall on the room's eastern side encloses a 2.5-foot wide stairway that winds counter-clockwise up to the second story. The entry at the stairway's base is fitted with a modern metal door. The space at the opposite end of the first story's stairway enclosure contains a closet that is missing its door. A cast iron shelf attached to the brick lining near the ceiling on the first story's southeastern side supports a brick chimney flue. This flue is pierced with a circular opening for a stovepipe. It extends upward inside the tower to the watch room gallery where it formerly vented through a metal smokestack.

Second Story

The stair flight from the first story has 10 steps and ends at the second story landing. This landing is 4 feet long by 2.5 feet wide. It is lighted with a window opening in the tower wall that is fitted with a Plexiglas cover. The entry to the second story room faces the window. It is fitted with a circa middle-twentieth century two-panel wooden door. Another flight of 10 steps leads continues upward to the third story. The stairway is separated from the second story room by a sheet iron partition wall.

The second story room is 18 feet in diameter and is similar to the first story. The tower's brick lining surrounding it is pierced with two tall window openings that are both fitted with Plexiglas. The floor is covered with green tiles laid on top of the original wood floorboards. The wooden floor is rotted in various places. The brick chimney continues up through the second story. It is pierced with a circular stovepipe opening. A locker cabinet and closet are built into spaces at either end of the stairway's partition wall. The doors are missing from both. The second story room contains two sets of wooden kitchen cabinets that appear to date circa middle twentieth century. There are two counter-top floor cabinets that are 5 feet long by 3 feet tall by 2 feet deep. Above these are two wall cabinets that are 5 feet wide by 2.5 feet tall by 1 foot deep.

Third Story

The third story stairway landing is 4 feet long by 2.5 feet wide. The tower wall next to it is pierced with a segmental-arch window opening that is fitted with a solid cover. The entry to the third story room faces the window. It holds an original four-panel wooden door 6.5 feet tall by 3 feet wide. Another flight of 10 steps leads upward to the fourth story. A sheet iron partition wall partition separates the stairway from the third story room.

The third story room is 17.5 feet in diameter. Its ceiling is 7.5 feet above the floor. The room's brick lining is pierced by two segmental-arch window openings 4 feet tall by 30 inches wide. Each holds 4-light (2/2), double-hung wooden sash. The floor is covered with green tiles laid on top of the original wood floorboards. The wooden flooring is rotten in various places. The brick flue that began on the first story continues up through the third story. It is 17 inches wide by 12 inches deep, and is pierced with a circular stovepipe opening. There are closets at either end of the stairway partition wall. The closet beneath the stairs leading up to the fourth story is 6.5 feet tall by 33 inches wide by 8 feet, 10 inches deep. Its entry holds a 26-inch wide wooden door. An exposed section of the third story's original wooden floor is visible in this closet. The smaller closet at the metal partition wall's opposite end is 4 feet, 11 inches tall by 34 inches wide by 16 inches deep. Its door is missing.

Fourth Story

The stairway ends at the doorway to the fourth story. There is no landing. The doorway is fitted with an original 4-panel wooden door that is 6.5 feet tall by 30 inches wide. The room is 17 feet in diameter. Its surrounding wall and ceiling are lined with tongue-and-groove wood paneling that is painted white. The ceiling is 7.5 feet above the floor. The tower's interior is not lined with brick on this level. A battery bank providing power to the lighthouse's aid to navigation equipment sits on the floor to one side. A metal ship's ladder rises to an opening in the ceiling and provides access to the watch room. This ladder has 8 steps, two hand rails, and is built with a slight twist. The fourth story's surrounding wall is pierced with eight evenly-spaced circular openings that are 13-inches in diameter. These formerly held port-lights, but the hardware and glazing for them is missing. One opening is fitted with a circular Plexiglas light. The others are covered with plywood. The rectangular brick chimney flue that began on the first story rises from the floor to the ceiling. It is 17 inches wide by 17 inches deep and is pierced for a stovepipe. The end of the stairway partition opposite the doorway holds a 3-shelf built-in closet. It is fitted with a 4-panel wooden door.

A bathroom made with plywood partition walls has been added to the fourth story room. It is 8 feet, 10 inches deep by 6 feet, 11 inches wide and holds a sink, toilet and shower. The wooden floor is rotten. The bathroom's doorway was fitted with a 2-panel wooden door which is unhinged and sits nearby. The toilet was manufactured in 1955, suggesting the bathroom addition was built circa the middle 1950s.

Watch Room

The circular watch room is 10 feet in diameter and 6.5 feet tall. A trapdoor opening in its cast iron floor provides access from the fourth story. The trapdoor is made of wood and appears to be original. The watch room's wall and ceiling are covered with beaded tongue-and-groove paneling that is painted white. A narrow band of cornice molding is present. There is a wooden built-in closet on the room's south side. It is 38 inches wide by 20 inches deep and extends from floor to ceiling. It closes with a rectangular wooden door that secures with a hasp. The ceiling is pierced with eight, 10-inch diameter, circular glass lights providing light from the lantern room. There are no windows in the watch room's surrounding wall.

A doorway pierces the watch room wall on the west side and provides access to the outside gallery. It is 6 feet, 4 inches tall by 2 feet wide, and is fitted with a metal door secured with two metal bars. This door is convex to match the watch room's encircling wall. A metal ship's ladder rises from the floor to an opening in the ceiling. It provides access to the lantern room. This ladder has seven steps, two hand rails, and is built with a slight twist. A battery bank sits on the watch room floor and a modern electrical panel is attached to the wall.

Lantern

The decagonal lantern room is 7.5 feet in diameter. Its lower parapet wall is lined with beaded tongue-and-groove wood paneling that is painted white. This lining is pierced with five circular vent openings that are 6.5 inches in diameter and evenly spaced on every second side. The vent hardware is missing and the holes are covered with metal screening. Each of the lantern's ten-sides above the parapet is glazed with three glass panes arranged vertically and framed with metal muntins. Each pane is 25 inches tall by30 inches wide.

The lantern room floor is made with cast iron plates. It is pierced with a trapdoor opening 3.5 feet long by 22 inches wide. The trapdoor is made of wood and appears to be original. Eight, 11-inch diameter, evenly-spaced glass deck lights pierce the floor. The lantern's optic is a modern VRB-25 marine rotating beacon mounted on a pedestal attached to the center of the floor. Its focal plane is 54 feet above mean low water. The optic signals two white flashes every 15 seconds and is visible for a distance of 16 miles in clear weather. Four black cloth shades hang from the ceiling. They are arranged in a cross-pattern around the optic and are used to control the light signal.

Changes through time:

This light station's tower and lantern were first erected in 1883 at the Lighthouse Depot at Tompkinsville on Staten Island. It was built to serve as an onshore lighthouse testing platform for experiments with equipment and fuels. The onshore structure was dismantled in 1898 and rebuilt at its present-day offshore location.

The lighthouse's daymark when erected on Romer Shoal in 1898 was the same as today, but the structure included features that are no longer present. One such feature was a cast iron awning roof that covered the main gallery. The awning's inner edge was bolted to a metal ledge that encircles the tower just below the second story windows. This metal ledge remains. The awning's periphery was supported by columns attached to the gallery's perimeter. A metal vertical partition wall was built approximately halfway around the awning's periphery circa 1940. It enclosed the main gallery's northern and eastern sides and was pieced with several port-lights. The gallery's southern and western sections that faced the boat basin were left open. The partition wall sheltered an area used for placing equipment and storing supplies. During the 1940s, the light station fog signal's two resonator horns were fastened to this partition wall's eastern side. Their positioning suggests that the fog signal machinery may have been located within the gallery's enclosed space.

The main gallery's metal awning deteriorated through time. It was removed in 1997 along with its partition wall. Its former position is indicated today by the metal ledge and marks surrounding the tower below the second story windows. Part of the main gallery's enclosed area remains as a room on the northern side that is approximately 18 feet long by 4 feet wide and made with sheet metal walls and roof.

The original guardrail surrounding the main gallery was made with cast iron stanchions that supported three tiers of horizontal pipe rail and balusters. This deteriorated and has been replaced. The existing guardrail is made with welded steel pipe stanchions that support two horizontal steel pipe railings.

Another original lighthouse feature was a metal smokestack that rose vertically from the watch room gallery. It vented the brickwork chimney flue that extends up through the light tower's interior. The metal smokestack extended to a little higher than the lantern roof's vent ball. It was dismantled when the lighthouse was automated in 1966. The chimney flue was capped at that time as well.

The light station's protective riprap has also changed through time. The breakwater that extends in a curve from the caisson foundation to shelter the boat basin was higher and wider in the past than it is today. Additional riprap has been added from time to time to augment material moved out of position by wave action or that has settled into Romer Shoal's bottom sediments. The riprap protecting the lighthouse's caisson foundation was augmented with additional material in 1997.

Other work accomplished in 1997 included patching and repainting the tower's exterior, repairs to the caisson foundation, and replacing boarding ladders that had been lost in a storm. In addition, the light station's submarine power cable was discontinued and the power supply for the aid to navigation equipment was solarized. Various pieces of unused equipment, including a generator and fuel tanks, were removed in 1997 as well.

The lighthouse's original optic in 1898 was a fourth order Fresnel lens. This was replaced with a modern 190-millimeter acrylic lens in 1966 when the lighthouse was automated. The acrylic lens was replaced in turn circa 1997 when the existing VRB-25 marine rotating beacon was installed. The emergency light mounted on the light tower for use if the main optic fails is a modern acrylic lens light. The light station's original fog signal has also been replaced. The fog signal equipment used today is a FA-232/02 sound unit. Three of these modern automated devices are mounted on the watch room gallery. One is a backup unit in the event the pair of primary signals fails.

Narrative Statement of Significance

Romer Shoal Light Station, established in 1898, is significant to the local history of Monmouth County, New Jersey, under National Register Criteria A and C. It is significant under Criterion A for its association with the Federal government's efforts to provide an integrated system of navigational aids throughout the United States, and to promote maritime safety in the vicinity of New York harbor. It is significant under Criterion C because it embodies the distinctive characteristics and methods of construction employed for offshore lighthouses during the late nineteenth century. This property exemplifies two major aspects of United States lighthouse design, the cylindrical caisson foundation and the cast iron, conical, sparkplug-type light tower. Romer Shoal Light Station meets the registration requirements outlined in the multiple property documentation form "Light Stations of the United States." It remains in its original location and its design, setting, materials, workmanship, feeling and association reflect its period of historical significance. This property retains most of its original integrity except for the loss of limited features such as the main gallery awning and partition wall, smokestack, fuel tanks, and original equipment. The absence of these features does not significant detract from the structure's overall integrity. Today, Romer Shoal Light continues to fulfill its original function as an operating Federal aid to navigation. It still evokes feelings that recall its historical character as an isolated offshore lighthouse manned by keepers dedicated to fulfilling their duty to promote navigational safety. This light station's period of historical significance begins when it was established in 1898 and ends in 1956, the most recent year of its operation 50 years before the present.

Lighthouse Architecture

Romer Shoal Light Station is a well-preserved example of an offshore, caisson foundation, sparkplug-type lighthouse. It exemplifies important innovations that represent significant late nineteenth century advancements in the design, architecture and engineering of United States lighthouses.

The first offshore U.S. light station constructed using a cylindrical foundation made of cast iron plates was the Duxbury Light Station in Massachusetts, completed in 1872. It was built using a cofferdam to keep out water while the area where the cylinder would be placed was excavated. The first use of a caisson to position a foundation cylinder on submerged land appears to be Craighill Channel Lower Range Front Light Station in Maryland, built in 1873. A box caisson was employed there. In box caisson construction, the bottom of the iron cylinder is enclosed in a wood grillage that provides a stable base for the cylindrical foundation on the seabed. Once in place, the water is pumped out and the cylinder is filled with rock and concrete. A subsequent engineering development was use of a pneumatic caisson. This was first used in U.S. lighthouse construction at Fourteen Foot Bank Light Station in Delaware, built in 1887. The pneumatic caisson has an airtight room at the open bottom of the cylinder. This room was usually constructed of wood and kept filled with pressurized air to keep water from leaking in. This pressurized enclosure allowed workmen to excavate into the submerged land beneath the caisson while keeping dry. The caisson sank further into the subsurface as sediments or rocks beneath it were dug out.

Yet another type of caisson construction used for lighthouses was the open caisson. In this procedure, a cast iron cylinder open at both top and bottom was lowered into position and allowed to sink into the bottom by its own weight. The perimeter of the cylinder's base was sharpened to form a cutting edge. Excavation of bottom materials within the caisson was also performed to help sink the cylinder several feet into the seabed. In any of these caisson construction methods, wooden piles might also be driven into the bottom to provide a firmer footing.[1]

During the late nineteenth century, cylindrical caissons became the preferred foundation design used for offshore lighthouses in the United States. These caissons were made of prefabricated cast iron plates bolted together in courses. They were assembled partially or entirely onshore, brought to the designated offshore location, and sunk into place with excavation if necessary. After any remaining assembly was completed, the caisson was commonly filled with concrete. The cylindrical caisson construction method was especially well-suited for offshore lights in the Northeast and Mid-Atlantic regions of the U.S. because its design resisted damage from ice floes.

Other construction methods were used to build offshore lighthouses in the U.S. before caissons were adopted. One approach was to build foundations using straight piles or screw piles. Structures built using pilings were inexpensive and relatively quick and easy to construct. However, they were not strong enough to withstand the force of moving ice floes or impacts from out-of-control vessels. Another approach was to construct stone piers. While this was well-suited to the physical stresses characteristic of offshore locations, stone pier foundations were expensive and time-consuming to build. Cylindrical caisson foundations made from cast iron plates were less costly and could be built quicker than stone piers.

The use of cast iron as the building material for caisson foundations and light towers depended on ample production and the development of efficient designs using it. The occurrence and convergence of these factors took place in the United States during the middle nineteenth century.

Cast iron was employed in Europe for architectural decorative and structural purposes from the early eighteenth century. However, it was not used extensively for architecture in the United States until after 1840. Its use prior to then was affected by limited production of pig iron, and difficulties in transporting it to urban centers where it could most readily be used. In addition, iron masters had not yet discovered how to reduce iron ore using the readily-available anthracite (hard) coal. During the 1840s, pig iron production increased and rail lines were extended to areas nearer foundries where it was cast. These developments motivated founders, businessmen, and architects to devise new uses to which the material could be applied.[2]

The early use of cast iron for U.S. lighthouses was largely limited to lanterns atop masonry or wooden towers. It was not until the 1860's that iron began to be used extensively in the design and construction of entire light towers. The first iron towers designed and constructed by Lighthouse Board engineers and architects resembled earlier ones made of stone or brick. This led to the development and adoption of a variety of designs for iron lighthouses.

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[1] "Caisson," *Britannica Concise Encyclopedia*, 2004, Encyclopædia Britannica, 13 September 2004, *http://concise.britannica.com/ebc/article?eu=384790*; "Caisson," *Columbia Encyclopedia*, Sixth Edition, 2004, 13 September 2004, <*http://www.encyclopedia.com/html/c1/caisson.asp*>; F. Ross Holland, *Lighthouses* (New York: MetroBooks, 1995), 71-72; U.S. Department of the Treasury, Lighthouse Board, *Annual Report of the Light-House Board to the Secretary of the Treasury for the Fiscal Year Ending June 30, 1873* (Washington, D.C.: GPO, 1873), 45-46; and *Annual Report of the Lighthouse Board ... 1874*, 45-46.

[2] Antoinette J. Lee, "Cast Iron in American Architecture: A Synoptic View," in *The Technology of Historic American Buildings: Studies of the Materials, Craft Processes, and the Mechanization of Building Construction*, H. Ward Jandl, Ed. (Washington, D.C.: Foundation for Preservation Technology, 1983), 100-101.

One design variant using cast iron employed the elegant Second Empire architectural style. Examples of this include Ship John Shoal Light Station in New Jersey and Southwest Ledge Light Station in Connecticut, both completed in 1877. Other variants included conical and cylindrical towers. Cast iron towers were often lined with brick for added stability and increased insulation. Another design type was the skeletal tower. This generally consisted of a central vertical stairway cylinder and four to eight angular, structural, and peripheral columns. Skeletal towers were designed to be built in areas with sandy or loamy soil, including offshore locations.

The Lighthouse Board employed a variety of superstructure designs during the early stages of constructing light towers atop cast iron cylindrical caisson foundations at offshore sites. However, it soon shifted to emphasizing a standardized design that was to be utilized extensively throughout the Northeast and Mid-Atlantic regions. This came to be called the "sparkplug" lighthouse because of its similarity, when seen from afar, to the profile of an inverted internal combustion engine sparkplug. The *Annual Report of the Lighthouse Board* for 1898 contains a plate showing a cross-section plan of the newly constructed New Haven Outer Breakwater Lighthouse in Connecticut. It is an example of the "sparkplug" design. New Haven Outer Breakwater Light is similar to the plans used in the construction of Romer Shoal Light Station. This same design scheme would be used as late as 1901 for the construction of the West Bank Light Station in Lower New York Bay, as well as others.

The specifications and plans for sparkplug-type lighthouses were printed in large quantities and distributed to companies interested in competing for Federal light station construction jobs. The cast iron parts used for the caissons, towers and interior floors as well as architectural details such as hoods, brackets and posts, were manufactured by companies such as Variety Iron Works of Cleveland, Ohio, and West Side Foundry of Troy, New York. The various parts were fitted together at onshore locations for preliminary approval by lighthouse engineers. After passing inspection, the components were numbered before being dismantled and then shipped to the job site or the lighthouse district that contracted the work. Caissons were commonly partially or entirely assembled onshore, and then brought to the designated offshore location. Once the foundation was in place, the lighthouse superstructure could be erected in a matter of days. Finishing work such as installing the brick lining, interior partitions, stairways, flooring, windows and doors, extended the construction time.

The Port of New York and Aids to Navigation

The port of New York has been an important center of maritime activity in America since colonial times. However, its rise to preeminence in the history of U.S. maritime transportation began in the early nineteenth century. Significant developments in the establishment and expansion of New Jersey ports in the vicinity of New York's harbor began during the same period as well.

The port of New York is characterized by an extraordinarily well-suited natural setting. It is large, virtually landlocked, and provides a safe harbor for shipping. Upper New York Bay includes a vast area for anchorage and an unusually great amount of shoreline where vessels may dock. The port's geographic location is ideally situated to take advantage of transatlantic, coastal and inland trade. New Jersey ports adjacent to Upper and Lower New York Bay, such as Newark and Perth Amboy, were also well-suited for the development of maritime trade. Perth Amboy was especially well-situated because it is located three miles nearer to the open sea than New York City. The early development of New Jersey ports was spurred by incentives to commercial shipping such as evading the port of New York's customs, quarantine and immigration regulations.

Vessels can reach the port of New York following a variety of natural routes of navigation. These include channels linking its harbor with the Atlantic Ocean, Long Island Sound, and the Hudson River and Raritan River. The present-day dredged shipping lane (Ambrose Channel) provides a direct path from the Atlantic to the Narrows between Staten Island and Long Island. It was completed circa 1912. Prior to then, sea-going maritime traffic navigating Lower New York Bay followed routes where the natural water depths were sufficient. The pre-twentieth century Main Channel for entering the lower bay was near Sandy Hook. This required ocean-going vessels to follow a circuitous route between the port of New York and the open sea. Another natural navigation route named "Swash Channel" lies on the southern side of Romer Shoal. While it is shallower than the historical Main Channel near Sandy Hook, Swash Channel was navigable by ocean-going vessels having the draft that allowed them to pass safely.

Navigation routes to the port of New York from the old Main Channel and Swash Channel lead through the Narrows, the principal entry to Upper New York Bay. While The Narrows is only two miles long and at one place only 0.75 mile wide, more than a third of the world's maritime foreign commerce during the nineteenth century passed through it.[3] Another channel in Lower New York Bay leads west from Sandy Hook to Raritan Bay and the port of Perth Amboy, New Jersey. However, the amount of shipping traffic using it was much less than that going to New York harbor.

Until the early twentieth century, the East River (a tidal strait rather than a river) was the principal scene of commercial shipping activity at New York. However, with the development of steamships the shores of the Hudson River provided better places to berth because of its broader and less turbulent waters. The Hudson River shoreline eventually became the main docking area for oceanic maritime traffic in the port area. Another route for vessels entering the port of New York was by way of the upper East River from Long Island Sound. This was the most efficient way for shipping going to or from ports along New England's southern coast. Long Island Sound also afforded a "back door" to New York harbor when weather conditions made it difficult to navigate past Sandy Hook.[4] Long Island Sound generally offered sheltered waters, although it could become rough when weather conditions deteriorated.

Although the port of New York's beneficial natural features and characteristics made it especially well-suited for maritime activity, there were limitations because of shallow-water areas and circuitous channels. These were improved through human ingenuity. In the early 1760's, New York conducted a lottery to raise funds for a light station at Sandy Hook. This led to the completion of a tall masonry lighthouse there in 1764. Today, it is the oldest extant lighthouse in the United States. More lights were added following the establishment of federal government functions subsequent to the American Revolution. Federal adoption of responsibility for aids to navigation led to several lighthouses being constructed by the U.S. government in the New York area from the late eighteenth to the middle nineteenth century. The earlier ones were mostly land-based masonry towers. As the technology and engineering of lighthouse design advanced, light towers began to be built offshore on top of or nearby such hazards to navigation as shoals and rocks. The first offshore lighthouse in New York harbor waters was Robbins Reef Light Station in Hudson County, New Jersey. It was constructed in 1839 on a pier built of granite blocks set atop a rocky ledge in Upper New York Bay. By the mid-1870s, the U.S. Lighthouse Board was constructing offshore light stations in the New York area that sat atop iron foundation cylinders resting on the seabed. One example of these is Great Beds Light Station in Raritan Bay off South Amboy, New Jersey.

[3] Robert Greenhalgh Albion, *The Rise of New York Port [1815-1860]* (New York: Charles Scribner's Sons, 1939), 16-19.
[4] Ibid, 20-21.

In 1922 the Lighthouse Service reported on its facilities in the port of New York and immediate waters. This area includes approximately 200 nautical miles of shoreline and about 170 square miles of water area. The Board stated that the harbor and its vicinity were marked using 387 aids to navigation. These included lighthouses, lighted beacons, lightships, and unlighted beacons and buoys. This was an increase of nearly 80 percent from 1905 when nautical charts of the area showed only 217 aids.[5]

History of Romer Shoal Light Station

Romer Shoal was a well-known hazard to navigation several decades before the existing lighthouse was built. Its location on the north side of the Swash Channel, a natural navigation route, meant that a significant amount of maritime traffic passed nearby. It is unclear how this submerged land feature got its name. However, its appellation clearly predates 1837 when the U.S. Congress considered a proposal to erect an aid to navigation on "Romer Shoal."

This hazard to shipping was marked by a series of unmanned aids to navigation for several decades prior to 1898 when the existing lighthouse was built. In 1837 the U.S. Congress appropriated $15,000 for building a day beacon marker. This was augmented with a second appropriation of $10,000 in 1838. The day beacon on Romer Shoal was built as a frustum constructed of granite blocks. A frustum is a truncated cone that tapers to a flat top. A wooden mast surmounted with a rectangular wooden case was affixed atop the stone masonry. This day beacon remained an important navigational aid in Lower New York Bay for almost 50 years. Congress appropriated additional funds in 1850 ($30,000), 1854 ($25,000), and 1867 (45,000) to provide for the marker's maintenance and improvement. However, erosion caused the granite structure to settle unevenly through time, and by the early 1880s it became clear a replacement was needed.

In 1886, an iron skeletal tower was built atop the day beacon's granite foundation. This tower was topped with a lighted beacon fueled by compressed gas. Its optic was a fifth order Fresnel lens that signaled a fixed red light.

During the 1890s, a navigation project was conceived to improve the port's shipping channels by dredging a new main shipping lane that would reduce the distance between the Atlantic Ocean and New York harbor by six miles. It was designed by a prominent engineer named John Wolfe Ambrose (1838-1899). Finally completed around 1912, it was named "Ambrose Channel" in his honor.

The proposed channel's alignment extended along the north side of Romer Shoal and would bring vessels into close proximity to that dangerous navigational hazard. This led to a decision in May 1898 by the U.S. Lighthouse Board to replace the gas-fueled beacon that marked the shoal with a manned light station.

The Lighthouse Board decided to reuse an existing light tower for the proposed light station. The one selected was located onshore at the Lighthouse Depot at Tompkinsville on Staten Island. This tower had been erected at the depot in 1883 to serve as a testing platform for lighthouse equipment and alternative lamp fuels.

[5] U.S. Department of Commerce, Bureau of Lighthouses, *Lighthouse Service Bulletin*, Vol. II, No. 61, 2 January 1923 (Washington, D.C.: GPO, 1923), 261-262. At the beginning of 1923, the *Lighthouse Service Bulletin* printed an article entitled "New York Harbor and its Lights and Buoys." An editor's note states that the material was taken from an address given by George Putnam, Commissioner of Lighthouses, at the November 1922 Marine Show in New York at which the Lighthouse Service exhibited lenses, fog signals, lanterns and charts of New York Harbor.

The depot's experimental tower was dismantled for relocation to Romer Shoal. Work to prepare for its arrival included emplacing a cast iron cylindrical caisson to serve as the lighthouse's foundation. When the foundation was ready, the disassembled tower was transported to the site and erected. Construction of the new light station on Romer Shoal was completed on 14 September 1898. The tower's daymark was the same as today. The tower's lower half was painted white. The upper half, including the watch room and lantern, was painted brown and the cylindrical caisson was painted black.

The lighthouse beacon was a fourth order Fresnel lens that signaled a flashing white light. It began operating on 1 October. The first Fresnel lens mounted in an American lighthouse was installed in 1841 at Navesink Light Station, New Jersey. This lens type came into widespread use during the early 1850s. The fourth order lens was two feet, four inches in height with an inside diameter of nineteen and eleven-sixteenths inches. It was generally used for lights marking shoals, reefs, harbor lights, and islands in rivers and harbors. A 1,300-pound bell was also installed to serve as the light station's fog signal.

During World War I, the U.S. Navy assigned a patrol vessel to monitor shipping traffic going to and from the port of New York. Following the war, the Navy arranged to take over Romer Shoal Light Station and staff it with three quartermasters who would both operate the lighthouse and report on shipping traffic. On 13 November 1920, one of three naval personnel drowned while attempting to transfer provisions to the lightouse from the Navy's Submarine Chaser No. 137. In October 1921, control of the light station was transferred back to the U.S. Lighthouse Service.

The light station's fog bell was replaced by 1939 with a diaphone fog horn. The new fog signal's characteristic was a two-second blast followed by 13 seconds of silence. The station's light signal equipment was also updated in 1939. The fourth order Fresnel lens's wick lamp was replaced with an incandescent oil vapor (I.O.V.) lamp. This increased the intensity of its white signal light from 15,000 to 37,000 candlepower. The I.O.V. lamp was replaced later with an electric one which further increased the light's intensity.

The U.S. Lighthouse Service was abolished as a separate federal agency in 1939. Its duties were subsumed by the U.S. Coast Guard which took over responsibility for Romer Shoal Light Station. A crew of three Coast Guard personnel manned the lighthouse until it was automated in 1966. The work to automate the lighthouse included removing its fourth order Fresnel lens and replacing it with a modern 190-millimeter acrylic beacon. The acrylic optic was subsequently replaced circa 1997 when the existing modern VRB-25 marine rotating beacon was installed.

Today, this property remains an active aid to navigation identified as number 35070 in the Regional Light List. Its optic signals two white flashes every 15 seconds. This signal light is visible for 16 miles in clear weather. The lighthouse's fog signal sounds a 2-second blast every 15 seconds.

Romer Shoal Light Station was determined to be eligible for listing on the National Register in a notice published in the *Federal Register* on 10 August 1973. The New Jersey State Historic Preservation Office lists this lighthouse under identification number 3713 on its statewide National Register property inventory.

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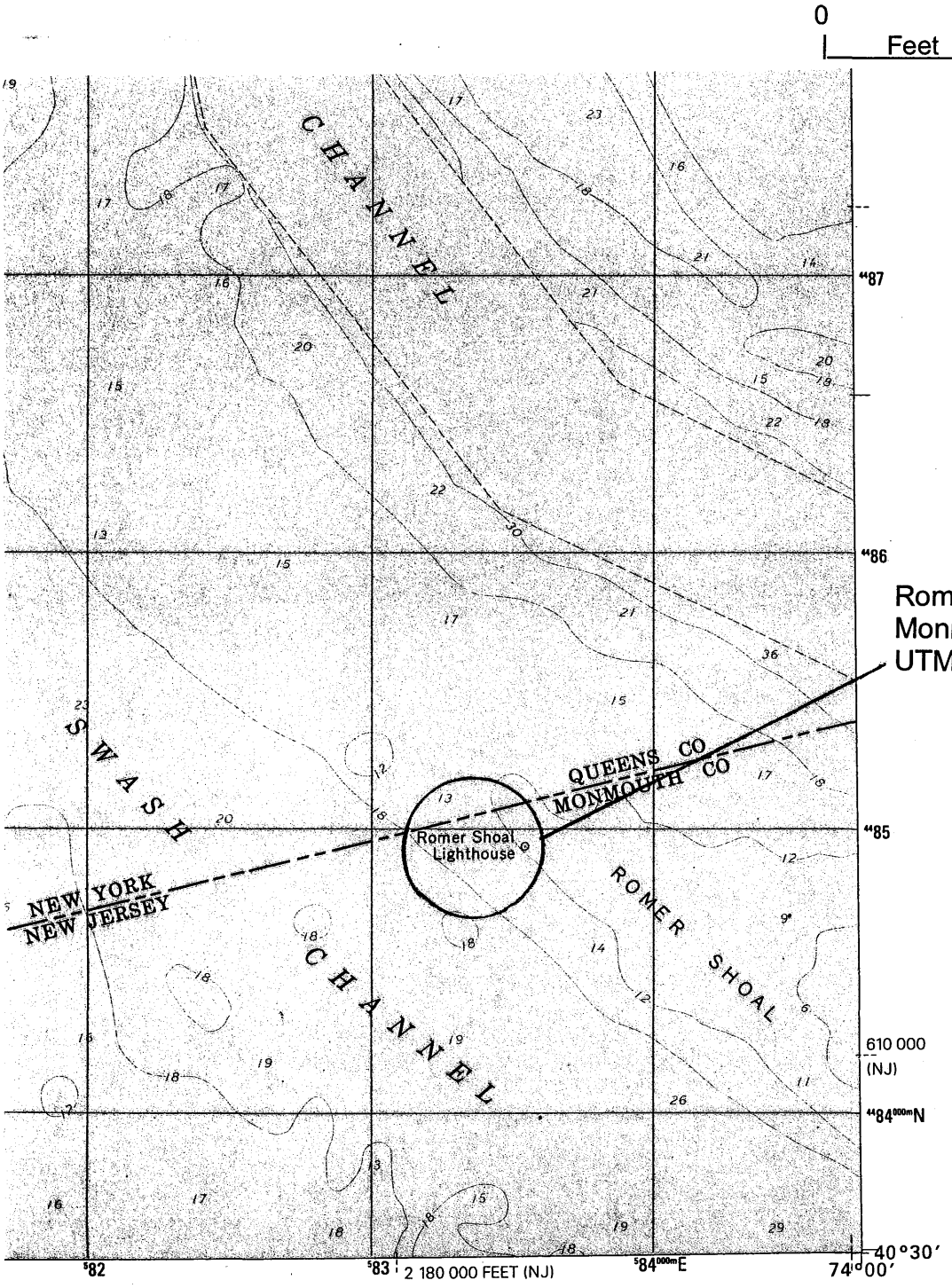
LOCATION MAP

This is a portion of "The Narrows, NY-NJ" 7.5 minute quadrangle topographic map, scale 1:24,000 (United States Geological Survey 1998).



Romer Shoal Light Station
Monmouth County, NJ
UTM: 18 / 583555 / 4484925

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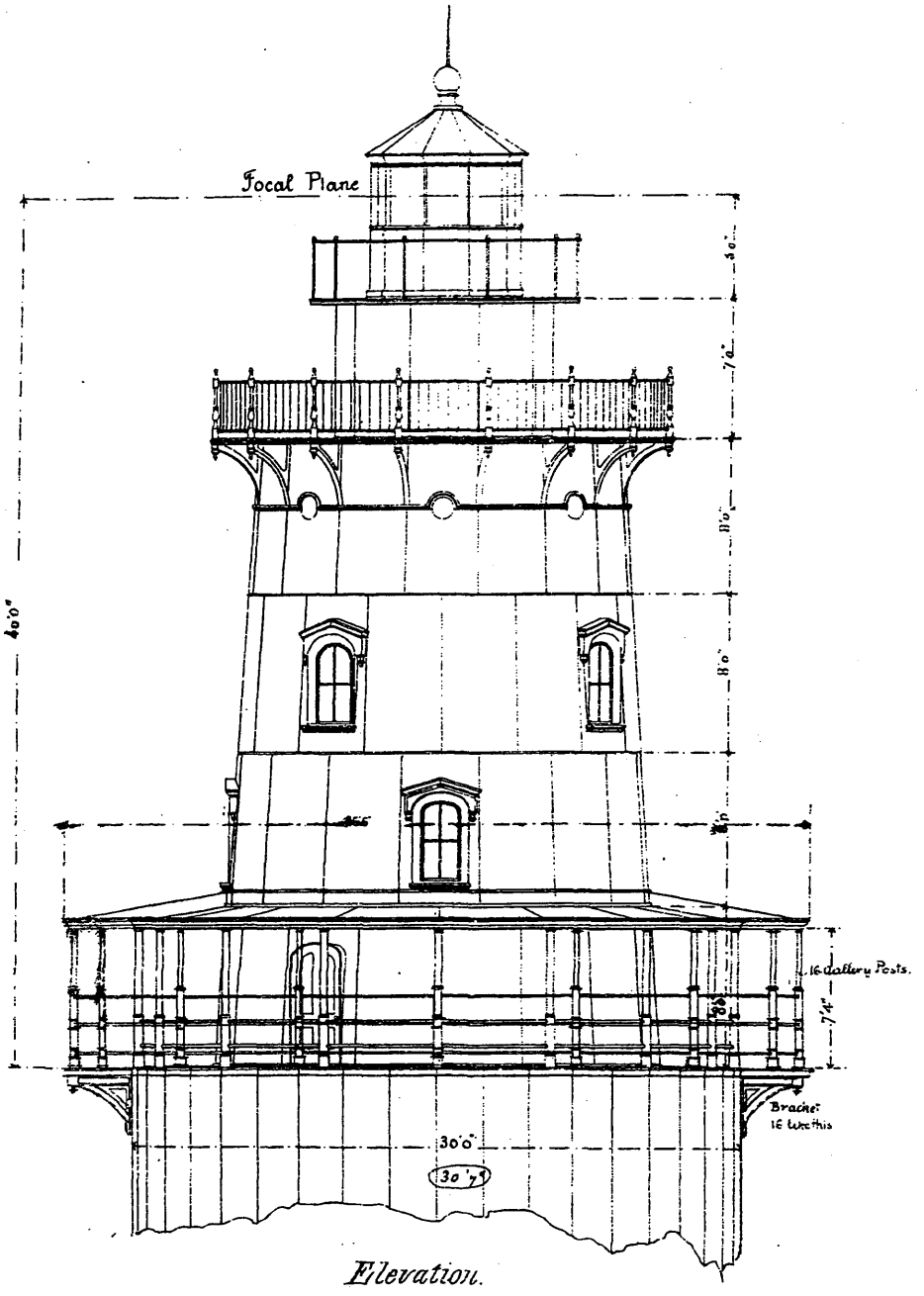
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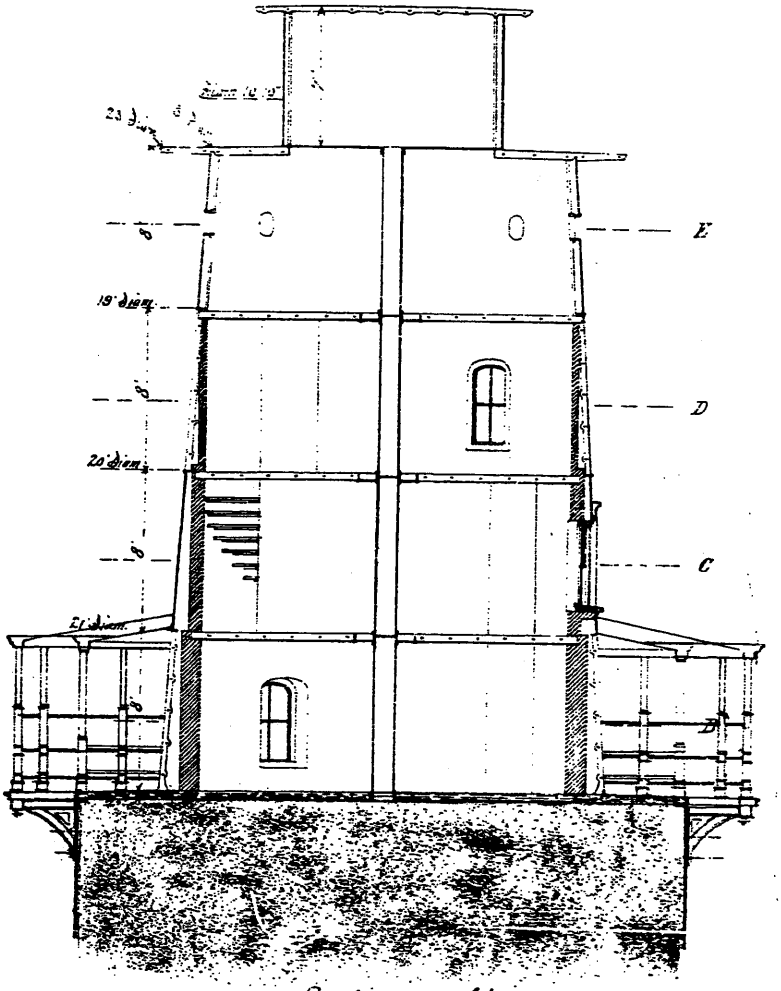

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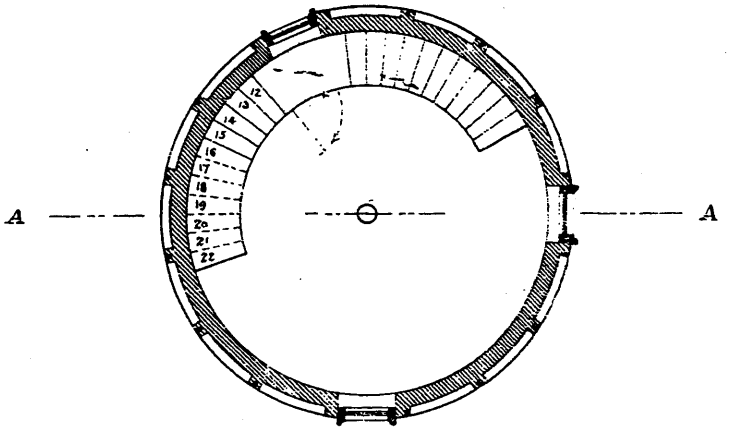

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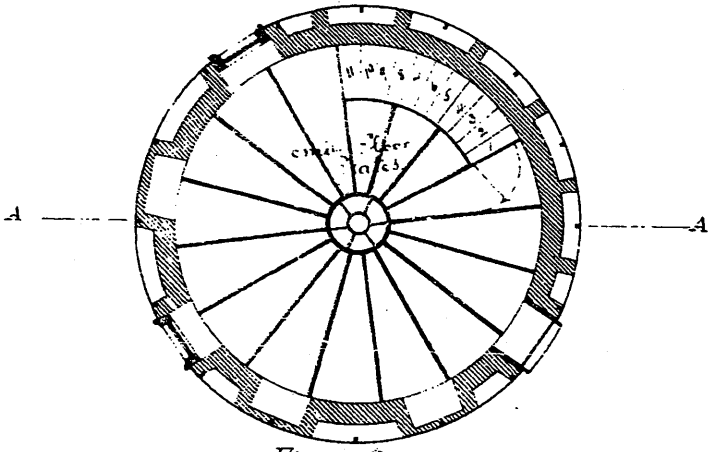

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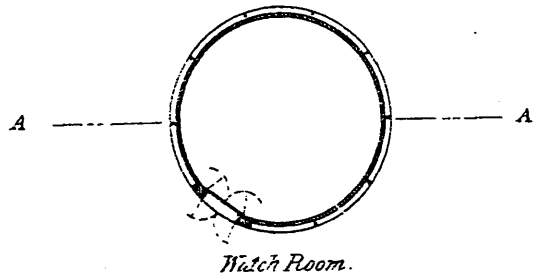
WATCH ROOM



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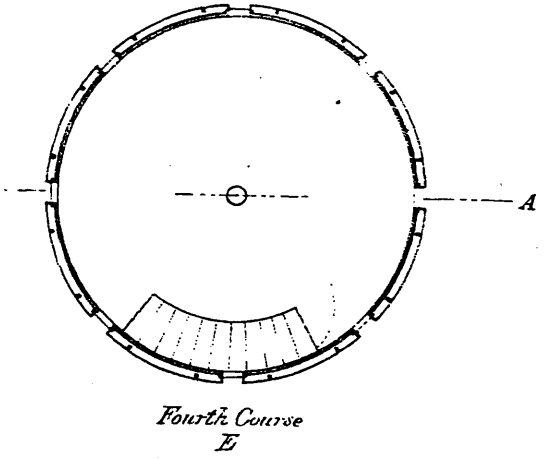

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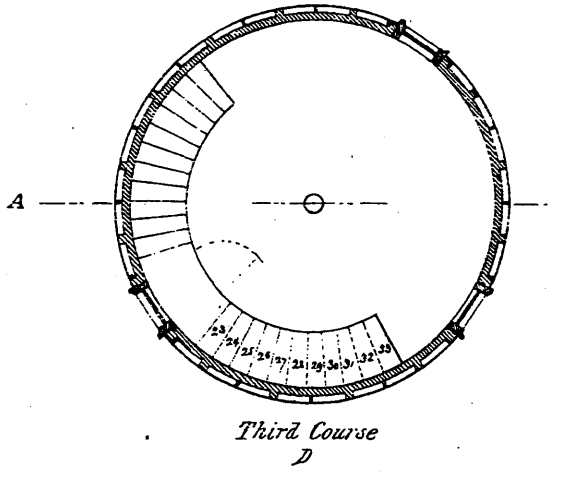

PHOTOGRAPHS

Name of property: Romer Shoal Light Station
County and state: Monmouth County, New Jersey
Name of photographer: Daniel Koski-Karell
Date of photographs: 3 August 2004
Location of original negatives: U.S. Coast Guard Historian's Office
U.S. Coast Guard Headquarters, Washington, DC

1. Exterior view, looking west.
2. Exterior view, looking northeast.
3. Second story window exterior, looking north.
4. First story interior, entrance and alcove, looking south.
5. Third story interior, window and closet door, looking west.
6. Watch room interior, showing ceiling lights, doorway and ladder, looking west.
7. Lantern room trapdoor, looking north.