

United States Department of the Interior
National Park Service



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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 National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. 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 certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).

1. Name of Property

historic name Alligator Reef Light
other names/site number Alligator Reef Light Station

2. Location

street & number Offshore of the upper Florida Keys, 3.5 mi S of Upper Matecumbe Key not for publication
city or town Islamorada vicinity
state Florida code FL county Monroe code 087 zip code 33036

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,
I hereby certify that this X 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 X meets does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:
 national statewide X local

Edward P. Delt, CHIEF-OFFICE OF ENV MGMT, 22 AUGUST 2011
Signature of certifying official/Title Date
United States Coast Guard
State or Federal agency/bureau or Tribal Government

In my opinion, the property X meets does not meet the National Register criteria.
Barbara E. Mattick 8/31/2011
Signature of commenting official Date
DSHPO for Survey & Registration, Florida Bureau of Historic Preservation
Title State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:
 entered in the National Register determined eligible for the National Register
 determined not eligible for the National Register removed from the National Register
 other (explain) _____
John 12/1/2011
Signature of the Keeper Date of Action

Alligator Reef Light
 Name of Property

Monroe County, Florida
 County and State

5. Classification

Ownership of Property
 (Check as many boxes as apply.)

Category of Property
 (Check only **one** box.)

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

- private
- public - Local
- public - State
- public - Federal

- building(s)
- District
- Site
- Structure
- Object

Contributing	Noncontributing	
0	0	buildings
0	0	district
0	0	site
1	1	structure
0	0	object
1	1	Total

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

Number of contributing resources previously listed in the National Register

Light Stations of the United States

0

6. Function or Use

Historic Functions
 (Enter categories from instructions.)

Current Functions
 (Enter categories from instructions.)

Transportation

Transportation

Water-related

Water-related

7. Description

Architectural Classification
 (Enter categories from instructions.)

Materials
 (Enter categories from instructions.)

No style

foundation: Iron

walls: Exterior: Iron

Interior: Iron, wood

roof: Copper, Iron

other: Lantern: Iron, Glass

Alligator Reef Light
Name of Property

Monroe County, Florida
County and State

Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Summary Paragraph

(see continuation sheets)

Narrative Description

(see continuation sheets)

3000 COTTON CONTROL
Seminole

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Alligator Reef Light
Name of Property Monroe County, Florida
County and State Light Stations of the United States MPDF
Name of multiple listing (if applicable)

ADDITIONAL DOCUMENTATION

Section number 7 Page 1

Narrative Description

Summary

The Alligator Reef Light, which was established as a Federal aid to navigation in 1873, marks a hazardous reef 3.5 miles south of Islamorada on Upper Matecumbe Key in Monroe County, Florida. It is situated more than three nautical miles from land and is outside Florida state waters. This property is one of the famous Florida Reef Lights, which are six skeletal tower lighthouses more than 100 feet tall that were built during the middle to late nineteenth century. The Alligator Reef Light was the fourth of the Florida Reef Lights built. The skeletal tower is supported by pilings and supports a one-story rectangular keepers' dwelling, stair cylinder, watch room, and lantern. This lighthouse is operated as an automated beacon identified as number 980 on the regional light list. It is equipped with a modern optic that signals a flashing white light visible for 16 miles in clear weather, as well as two red sectors that mark areas of hazardous water to the northeast and southwest. The lighthouse's equipment includes a RACON radar beacon. Owned by the U.S. Coast Guard, this property includes one contributing resource and one non-contributing resource. The contributing resource is an octagonal, pyramidal skeletal tower lighthouse 148 feet tall that stands in six feet of water. The non-contributing resource is a boat dock built in 1965. The boat dock features a mooring place and a walkway that connects with the lighthouse. Alligator Reef Light is accessible only by boat and is not open to public visitation.

Setting

This offshore lighthouse marks the Alligator Reef, which is a coral reef situated 3.5 miles south of Islamorada on Upper Matecumbe Key in Monroe County, Florida. The Alligator Reef is more than three nautical miles from land and is beyond the limit of Florida state waters. It is named after the *U.S.S. Alligator*, a U.S. Navy vessel which wrecked upon this reef in November 1822. The lighthouse's location is on the northern side of the Straits of Florida, near an important shipping lane for vessels navigating between the Gulf of Mexico and the Atlantic Ocean. The Florida Straits extend west to east between the Florida Keys and Cuba, and curve northward between Florida's east coast and the Bahamas. The Gulf Stream current flows eastward from the Gulf of Mexico into the Florida Straits, and along the straits northward to the Atlantic Ocean beyond.

The Alligator Reef Light is one the famous Florida Reef Lights spread along approximately 150 miles of the Florida Keys from south of Key Biscayne to near Key West. They are six skeletal tower lighthouses, all more than 100 feet tall, built during the middle to late nineteenth century. Five of these lighthouses are located offshore of Monroe County. From west to east, they are situated at Sand Key, American Shoal, Sombrero Key, Alligator Reef and Carysfort Reef. One of the Florida Reef Lights is located offshore of Dade County at Fowey Rocks, approximately six miles southeast of Key Biscayne.

The Alligator Reef Light is within the authorized boundaries of the Florida Keys National Marine Sanctuary. It stands in six feet of water and is identified as number 980 on the regional light list. This property is surrounded by water and is accessible only by boat.

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Physical Description

The 148 feet tall lighthouse at Alligator Reef began operating in 1873. It is a skeletal tower structure similar to the other Florida Reef Lights. The Alligator Reef Light includes an iron disk pile foundation and an iron octagonal pyramidal skeletal tower with seven horizontal tiers. The tower supports a keepers' dwelling, stair cylinder, watch room, and lantern (Photo # 1). The lighthouse's day mark is black top, white middle, and black base. The lantern, watch room, and pile foundation are painted black. The skeletal tower, keepers' dwelling and stair cylinder are painted white. This day mark coloration has been maintained from 1873 to the present.

Disk Pile Foundation

The lighthouse's foundation, which is 50 feet in diameter, includes a set of nine iron disk piles. Eight pilings are arranged in an octagonal configuration, with the ninth positioned in the center. Each disk pile includes a 12-inch diameter wrought iron straight piling and a 7-foot diameter cast iron disk. The pilings are solid metal and 26 feet long with a pointed tip. The pilings include a shoulder that is 12 feet, 9 inches from the tip that increases the piling's diameter. Each disk includes a 12-inch diameter center hole surrounded by a 2-foot tall collar. The collar is reinforced by radial ribs extending to the disk's perimeter, ending at a 6-inch tall rim. Each disk is positioned horizontally on a leveled area of the coral rock seafloor. The process to set a disk pile in its place used a pile driver to pound a piling through the disk's center hole and into the coral rock substrate until the piling was approximately ten feet deep and the piling's shoulder rested against the disk's collar. This served to disperse the piling's structural load over a wider area and provided for greater stability. The following describes how the Alligator Reef Light's foundation was built:

A temporary platform was erected upon this site, supported on mangrove piles shod with iron, and driven five feet into the bottom in partially indurated coral rock. A small landing-wharf or jetty for receiving materials was also built in connection with this platform. The platform being completed, the nine heavy cast-iron foundation-disks were accurately placed at the centre and angles of the octagon, the surface of the coral rock being first smoothed and leveled for each disk. By an ingenious system of gauges the disks were set in their positions, with their proper relative distances—a work of great difficulty. The foundation-piles pass through the centres of the disks and rest by shoulders upon them. These piles are of solid wrought iron, 26 feet long and 12 inches in diameter, and pointed at their lower ends, the upper ends being lathe-turned and cut off square. The pile-driver used in driving them carried a hammer of 2,000 pounds, which was hoisted by a portable steam-engine. The piles were kept accurately vertical during the driving by purchases attached to their heads. The penetration into the coral at each blow of the hammer with an average fall of 18 feet, varied from ½ inch to 1½ inches, and about 120 blows brought the shoulder of the piles into contact with the disks, giving them a depth in the coral limestone rock of 10 feet. The piles being driven, their tops were cut off to a horizontal plane 11 feet above the water, and the cast-iron sockets which fit on their heads were put in their places.

(by John G. Bernard, in *Transactions of the American Society of Civil Engineers*, 1879)

After being set into position, the tops of the nine foundation piles were cut level with one another and capped with sockets. The sockets provide connection points for horizontal beams, vertical columns, and tension rods (cross-tie rods with turnbuckles). The tension rods are oriented diagonally, vertically and horizontally. They provide tension on the foundation's components and the skeletal tower's column and beam framework, pulling them together vertically, horizontally, and diagonally.

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The foundation's vertical pilings are connected with one another using horizontal beams extending to sockets at the top of neighboring pilings (Photo # 2). Tension rods tie them to sockets on neighboring pilings. The socket atop the foundation's center piling includes 16 connection points. These provide joints for a vertical column, horizontal beams extending to the peripheral pilings, and tension rods extending upward and downward in a radial fashion to the peripheral foundation pilings and to columns and beams of the tower superstructure.

Skeletal Tower

The lighthouse's skeletal tower is octagonal in plan and pyramidal in elevation. It is built with a series of seven structural tiers consisting of horizontal beams extending between the tower's peripheral columns. The first (lowest) tier includes the top of the foundation's nine vertical pilings and horizontal beams connecting them. Each of the eight perimeter pilings supports a column that inclines inward towards the center in pyramidal fashion at an approximately 60-degree angle.

The skeletal tower's eight peripheral columns are made with a series of column segments and iron sockets at each segment's upper and lower end. These sockets provide connection points for successive column segments as well as each tier's horizontal beams and diagonal tension rods. The inclined columns become narrower in diameter at higher tiers. The first tier's foundation pilings are 12 inches in diameter. The column segments rising to the second and third tiers are 10 inches in diameter, while the segments rising to the fourth and fifth tiers are 9 inches in diameter. The column segments extending from the fifth tier to the seventh tier have a diameter of 7.5 inches.

The tower's second tier includes horizontal iron beams connecting with the second tier sockets atop the central and peripheral columns. This tier supports an octagonal platform made with iron plates. The lighthouse keepers' dwelling sits atop the platform. The tower's third, fourth, fifth, and sixth tiers include diagonal tension rods and horizontal beams that extend between the peripheral columns and bands of sockets surrounding the stair cylinder. The seventh tier's horizontal beams support the watch room, which is centered atop the stair cylinder.

Second Tier Platform

The skeletal tower's octagonal second tier platform is approximately 50 feet wide. It is made with iron plates that are cast with a diamond pattern to improve traction on the second tier's deck (Photo # 3). The platform's northwest (NW) side includes two projecting 3-foot wide triangular sections that formerly supported boat davits that are no longer present. A non-historic galvanized steel ladder with 21 steps rises from the lighthouse's boat dock to provide access to the second tier deck between the two projecting sections. A galvanized steel guardrail installed in 1987 encloses the second tier platform's perimeter. It is a replacement for the original wrought iron handrail that had deteriorated.

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Keepers' Dwelling

The lighthouse keepers' dwelling is rectangular and one story in height. It sits centered atop the second tier platform and is painted white. The dwelling is approximately 10 feet tall and is 30 feet, 9 inches long on each side. It has a nearly flat, hipped metal roof that slopes slightly from the central stair cylinder to the roof's perimeter. A cast iron stylized classical cornice extends along the roof eaves. It includes a built-in gutter that channels rainwater to four downspouts inside the dwelling. One downspout is positioned at each of the dwelling's four interior corners. They formerly drained into storage tanks, but now empty into the sea.

The dwelling's exterior walls are made of vertical iron beams with riveted cast iron plates filling the spaces between them (Photo # 3). Each beam's exterior face is a pilaster decorated with a stylized Doric order design including capital, fluted shaft, and base. These are spaced approximately five feet apart and project slightly from the adjoining undecorated wall plates. The pilasters provide classical architectural details to the otherwise plain exterior. The dwelling's four exterior corners are made with curved iron plates held between two pilasters. There are two original doorways on each side of the dwelling. Only the doorway near the west end of the north elevation is functional today. It is fitted with a two-leaf metal door. The other seven doorways are blocked with steel plates. The two east elevation doorways, one west elevation doorway, and one south elevation doorway include rectangular windows that light the dwelling's interior. These windows are covered with steel mesh on the outer side. No original window sash remains.

The dwelling's interior is a single large room (Photo # 4). The original interior partition walls, ceiling, and flooring have been removed. The base of the lighthouse's stair cylinder sits in the room's center, 11 feet, 9 inches from the surrounding walls. The room's existing ceiling is the underside of the dwelling's roof. It is supported by 16 curved beams that extend in a radial fashion from the stair cylinder to the surrounding walls. The floor is the second tier platform's iron deck. Four tension rods connected to the skeletal tower's third tier pierce the dwelling's ceiling and extend diagonally to pierce the floor near the stair cylinder. The lower ends of these rods connect with the skeletal tower's center column, which is directly beneath the stair cylinder.

Stair Cylinder

The lighthouse's central stair cylinder rises vertically from the center of the keepers' dwelling. It is approximately 90 feet in height and seven feet in diameter. The cylinder is made of curved cast iron plates that are 0.25-inch thick and fastened with rivets. The stair cylinder's lower entrance is an arched doorway on the northwest side, inside the keepers' dwelling. It is 6 feet, 8 inches tall by 2 feet, 9 inches wide. The original door is missing. The cylinder contains a cast iron spiral stairway with a central column that leads up from the dwelling to the watch room atop the skeletal tower (Photo # 5). The stairway's 119 iron treads are cast with a mesh of diamond-shaped openings. There are five landings made with cast iron plates having the same mesh as the stair treads. An iron handrail is bolted to brackets on the cylinder's interior wall. The handrail ends at each landing and resumes where the stairway continues. The stair cylinder has seven rectangular windows that are 30 inches tall by 24 inches wide. These are filled with non-historic, one-over-one, overlapping double hung steel-framed sash. The sashes are fixed with a narrow gap separating one from the other. This allows ventilation while keeping rain out. The stair cylinder's lowest window is a short distance above the dwelling's roof and faces northeast. The next five windows are located at each of the five stairway landings. The seventh window pierces the stair cylinder near its top and faces west.

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Watch Room

The lighthouse's watch room sits centered atop an octagonal platform made with iron plates that is supported by the skeletal tower's seventh tier and the stair cylinder. The stair cylinder's spiral stairway ends at an opening in the watch room floor that is partly protected by a curving wrought iron guardrail. The watch room is circular, approximately eight feet tall, and 12 feet, 6 inches in diameter (Photo # 6). It is constructed of iron plates and paneled on the interior with vertical wooden boards painted white. The watch room's western side is pierced with a rectangular 30-inch by 24-inch window fitted with non-historic double-hung, overlapping metal-framed sash identical to the stair cylinder windows. The room's eastern side is pierced with an arched doorway 6 feet, 8 inches tall by 2 feet, 9 inches wide that provides access to the outdoor watch room gallery. The door is missing. The watch room floor includes a circular walkway covered with wooden boards that surrounds a circular iron platform supporting the lighthouse beacon's original cast iron pedestal. A set of modern batteries sits on the watch room floor with associated electrical panels mounted on the wall. These provide power to the lighthouse's existing optic and RACON radar beacon.

The watch room has no ceiling. It is open at its circular top to the lantern room, above. This was necessary to accommodate the lighthouse's original optic, a first order Fresnel lens with supporting pedestal and rotation mechanism that was approximately 14 feet tall overall. The watch room's overhead opening is surrounded by the lantern room's two-foot wide circular catwalk which is constructed of sectional cast iron plates. A steep, curving iron stairway provides access from the watch room to the lantern room catwalk.

The cast iron pedestal mechanism that supported the lighthouse's original beacon sits centered on the watch room floor. It includes an original circular base approximately two feet tall with two small access doors that formerly contained the clockwork mechanism for rotating the lighthouse's Fresnel lens. The circular base supports a circular platform with radial ribs on the underside. The Fresnel lens' original circular metal drum sits atop this platform. The circular metal drum includes decorative elements on its exterior and an access opening on one side. The drum's interior includes three steps leading up to a circular platform that originally supported the lamp that lighted the lighthouse's Fresnel lens.

The watch room is surrounded by an octagonal open air gallery (Photo # 7). This gallery is four feet wide and is bounded by a non-historic steel guardrail made with steel pipe stanchions and three horizontal rails. It is a replacement for the original railing which had deteriorated. The gallery's deck is made of iron plates embossed with a pattern of raised triangles for better traction. Each of these plates includes a diamond-shaped grill with openings allowing water to drain. A double-rung iron ladder rises from the gallery's eastern side to the lantern gallery, above. A modern solar array is mounted on a steel framework attached to the southern side of the gallery deck. It recharges the batteries powering the lighthouse's electrical equipment. A modern automated RACON radar beacon is attached to the framework supporting the solar array. When triggered by a ship's radar, it transmits the letter **G** in Morse code as its identification signal.

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Lantern

The lighthouse's lantern sits atop the watch room. It is cylindrical, 11.5 feet in diameter, and approximately 10 feet in height. The lantern's exterior includes glazing approximately six feet tall extending from a metal base just above the lantern room catwalk to the roof overhead (Photo # 8). The lantern consists of 48 two-foot-by-two-foot glass panes held by astragals. The glazing is arranged in three tiers of 16 panes each. There are two red lexan panels of floor-to-ceiling height held by aluminum frames mounted inside the lantern glazing, one on the east-northeast (ENE) side and the other on the west-southwest (WSW) side. These give a red color to the lighthouse's beacon when viewed from those directions, indicating hazardous areas. The lantern room base below the glazing is pierced on the inside with eight evenly-spaced ventilation openings fitted with grills. The ventilation openings allow air to enter the lower part of the lantern.

The lantern's metal roof springs from a soffit above the glazing. It is made with 16 triangular cast iron plates that rise in a slight slope to an apex topped with a vent ball and lightning rod. The lantern is surrounded by an outdoor gallery two feet wide. A non-historic flat steel handrail supported by steel rod stanchions surrounds the gallery's perimeter. It is a replacement for the original railing which had deteriorated. The lantern gallery is accessed by way of the metal ladder on the watch room gallery.

The lantern room's opening to the watch room below is occupied by the drum that formerly supported the lighthouse's original first order Fresnel lens. A pedestal in the center of this drum supports a circular iron case that formerly held a clockwork rotation mechanism. This metal case is empty. A modern steel stand affixed atop the iron case supports the lighthouse's existing optic, a modern automated VRB-25 marine beacon. It signals four white flashes every 60 seconds and is visible to the north and south for 16 miles in clear weather. Its focal plane is 136 feet above the water. The red lexan panels inside the lantern change the beacon's color to a flashing red light visible towards the ENE and WSW for 13 miles in clear weather. The eastern red sector covers an arc from 47 to 68 degrees magnetic. The western red sector covers an arc from 223 to 249 degrees magnetic. They mark areas containing hazardous reefs and shallow water.

Non-Contributing Resource: Boat Dock

The lighthouse's boat dock stands next to the skeletal tower's northwest side. It provides for vessel mooring and serves as a landing place for transferring personnel, equipment and supplies. The boat dock is rectangular, approximately 30 feet long by 30 feet wide, and is supported by four pilings. Its deck is made with wooden boards and is approximately 15 feet above water level. A steel ladder extends from the deck to the water. A walkway made with steel beams and a wooden deck extends approximately 20 feet from the dock to the lighthouse tower's first tier. This walkway has no guardrail. A non-historic 21-step, steel ladder rises at a steep angle from the walkway to the tower's second tier platform. It is approximately 25 feet tall. The lowest ten feet of this ladder is shielded with steel mesh for security purposes. This ladder was installed in 1991 and replaced a stairway that formerly led up to the second tier. The boat dock and its ladder are of late twentieth century construction and do not contribute to the property's historical significance.

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Changes in Physical Appearance and Overall Integrity

Alligator Reef Light remains very much the same as when its construction was completed in 1873. Its foundation, skeletal tower and superstructure components are largely unaltered. Changes that have been made relate principally to the lighthouse's maintenance, access, and beacon. Much of this work was performed in association with the property's automation in 1963, after which facilities to support resident keepers were no longer needed.

Maintenance

The original pile foundation remains and is largely unmodified except for repairs in 1949, along with work in 1961 and 1976 that included adding concrete below three of the foundation disks that had become undermined by erosion, and placing concrete bags around other parts of the foundation's base. Several of the skeletal tower's tension rods have been replaced after corrosion adversely affected their integrity. Also, a number of the iron sockets in the upper foundation and the tower's first tier have cracked over time and required repair and reinforcement by installing support yoke fittings.

The lighthouse was originally equipped with two rainwater storage tanks suspended below the second tier platform. These received runoff from the lighthouse dwelling's rain gutters. These tanks were replaced by two larger suspended tanks around the end of the nineteenth century. A lamp oil storage unit suspended beneath the second tier platform's northwest corner was also installed at that time. This storage unit was replaced in 1930 with a larger suspended unit that held five fuel tanks. The suspended water tanks and oil tank were no longer necessary following the lighthouse's 1963 automation. They were removed circa the 1970s to 1980s. These features were not character-defining elements of the lighthouse and their removal has not significantly changed the structure's appearance (see illustrations of appearance in 1873 and 1960 provided in additional documentation). They could be replaced using in-kind materials, if desired.

The stair cylinder's original 1870 design plans included an interior wooden lining, but this is no longer extant. Also, the cylinder's original windows were four-light wood-framed windows. The existing windows are replacement 1/1 double-hung metal sash windows. The watch room's original wood-framed window has also been replaced with a double-hung window identical to the replacement windows in the stair cylinder.

The existing guardrails surrounding the second tier deck, watch room gallery, and lantern gallery are made of galvanized steel and were installed in 1991. They are replacements for original guardrails made of wrought iron that had deteriorated.

Access

The property's changes in physical appearance include modifications affecting access to the structure. Its original configuration included a boat landing platform on the tower first tier's northwest quadrant. This was located below the two triangular projections on the second tier where boat davits were installed. The original lifting mechanism was replaced in 1929 with new davits, which were replaced in turn in 1951. The boat lifting davits were removed following the lighthouse's 1963 automation.

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An original iron stairway rose from the lighthouse's original first tier landing platform to a rectangular opening in the second tier platform, providing access to the keepers' dwelling. The original first tier landing platform included an iron ladder that extended to water level. In 1927, the first tier landing was enlarged with additional wooden decking that covered the rest of the tower's first tier. This decking was washed away during the catastrophic hurricane of 1935 and subsequently replaced. Parts of the first tier landing were removed and replaced in the 1960s.

A separate rectangular boat dock adjacent to the lighthouse's northwestern side was constructed in 1965. This dock is supported by four pilings and connected by a walkway to the lighthouse's first tier platform. Subsequent work included removing the first tier landing platform, the first tier platform's stairway to the second tier platform, and the second tier's boat davits. The existing steel ladder extending from the boat dock to the second tier platform was installed in 1991.

Automation

The departure of the lighthouse's resident keepers in 1963 due to automation led to a number of changes. These included modifications to secure the property from unauthorized entry and vandalism. The keepers' dwelling has been extensively modified. All of its original doors have been removed. One door on the dwelling's northern side was replaced with an operable two-leaf door made of steel plates. The other seven doorways have been covered with steel plates, several of which are fitted with louvers for ventilation. The dwelling's interior was originally divided into four rooms with partition walls extending to the stair cylinder in the center. The partition walls, ceiling, and flooring for these rooms were removed following the lighthouse's 1963 automation. The interior is now a single large room with the stair cylinder in the center. Inside this room, the dwelling's iron plate perimeter walls, metal roof underside, and floor are bare metal. The cylindrical iron stair cylinder and its spiral stairway are original and unchanged, except that the cylinder's lower entry door and original wooden lining have been removed and original windows replaced with non-historic ones.

Beacon

The lighthouse's aid to navigation equipment has been replaced and upgraded over time. The original first order Fresnel lens was lighted with an oil lamp. Improvements in technology led to this being replaced with an incandescent oil vapor lamp. An underwater electrical cable extending from Upper Matecumbe Key to the lighthouse was installed in the 1960s. This provided reliable electricity without using an onsite generator. This underwater power cable was turned off in 1982 when a solar array was installed on the lighthouse's watch room gallery. The solar array charges a set of batteries that power the electrical lamp in the lighthouse's beacon. Alligator Reef Light's original first order Fresnel lens was removed in 1985 and replaced with a modern 190-millimeter acrylic lens. The 190-mm lens was replaced in turn in 1997 with the existing VRB-25 marine rotating beacon. A RACON radar beacon was installed on the lighthouse's watch room gallery in 1997. It transmits a signal when energized by a commercial vessel's onboard radar.

Alligator Reef Light
Name of Property

Monroe County, Florida
County and State

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.

Areas of Significance

(Enter categories from instructions.)

- Maritime History
- Transportation
- Engineering

Period of Significance

1873 to 1963

Significant Dates

1873

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 grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years old or achieving significance within the past 50 years.

Significant Person

(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation

N/A

Architect/Builder

Architect: Office of the Lighthouse Board

Builder: Parts manufactured by Paulding & Kemble of Cold Spring, NY

Period of Significance (justification)

The property's period of significance begins with the establishment of Alligator Reef Light as a Federal aid to navigation in 1873 and continues to 1963, the year this lighthouse was automated.

Criteria Considerations (explanation, if necessary)

N/A

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Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance and applicable criteria.)

(see continuation sheets)

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

(see continuation sheets)

Developmental history/additional historic context information (if appropriate)

(see continuation sheets)

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Narrative Statement of Significance

Summary

The Alligator Reef Light is eligible for listing in the National Register of Historic Places (NRHP) under Criteria A and C at the local level. It is significant in terms of Criterion A for its association with Federal efforts to provide for safe maritime transport in Florida waters, though it is located more than three nautical miles from land and is outside the limit of Florida state submerged lands. Alligator Reef Light is one of the six Florida Reef Lights, a group of offshore tall skeletal tower lighthouses constructed along the Florida Keys during the middle to late nineteenth century. It was the fourth of these lighthouses to be built. This property is significant in the local history of Monroe County, Florida, because it embodies the county's nineteenth and twentieth century maritime heritage while continuing to serve as an important navigational aid. Alligator Reef Light's period of historic significance begins in 1873 when it was established as a Federal lighthouse and ends in 1963 when it was automated and its resident keepers departed. This property exemplifies how the U.S. government's long-term program for establishing an integrated system of navigational aids throughout the United States was manifested in the Monroe County area. It has been an operating lighthouse for more than 135 years and is widely recognized as a local landmark for mariners.

The Alligator Reef Light is significant under Criterion C as a surviving example of late nineteenth century lighthouse architecture and engineering. It exemplifies design and construction methods characteristic of offshore skeletal tower lighthouses during that time period, and retains a high level of integrity in terms of its location, setting, design, workmanship, materials, feeling, and association. This lighthouse continues to occupy its original offshore position atop Alligator Reef, which is a hazard to navigation more than three miles offshore from the Florida Keys. The significant character-defining features and appearance of Alligator Reef Light remain largely unaltered from its period of historical significance. These include the basic structure of its skeletal tower, keepers' dwelling exterior, stair cylinder, watch room, and lantern. The lighthouse's distinctive octagonal skeletal tower structure and its day mark coloration with a black base, white tower and dwelling, and black watch room and lantern, are the same as in 1873 when it was originally established as a Federal aid to navigation. The existing condition of Alligator Reef Light attests to the lasting value of its design, as well as the high quality of its materials and construction. The property's integrity has been impacted by the removal of all interior finishes from the keepers' dwelling, the replacement of all doors and windows, various repairs, and changes in lighthouse technology over time. However, these changes have not significantly altered the lighthouse's overall external appearance and are largely reversible.

This NRHP registration form is submitted as an individual listing under the overarching *Light Stations of the United States* multiple property documentation form (MPDF). The specific historic contexts that apply are *Establishment of the U.S. Lighthouse Board (1852-1910)*, *Bureau of Lighthouses and the U.S. Lighthouse Service (1910-1939)*, and *Lighthouses under the U.S. Coast Guard (1939-present)*. The property type sections of the MPDF relating to this NRHP registration are *U.S. Lighthouse Construction Type – Skeletal Tower*, and *Foundation Type – Straightpile Skeletal Type*. Information and historic contexts presented in the *Light Stations of the United States* MPDF are not repeated. This submission emphasizes facts and details supporting the historical significance of Alligator Reef Light as an individual property.

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The following discussion focuses on the nominated property and is organized as follows: (1) historical context, (2) historic significance, (3) significance under Criterion A, (4) architectural context, and (5) significance under Criterion C.

Historical Context

The Straits of Florida have been an important corridor for maritime transportation since colonial times. The Florida Keys, which border the straits, are characterized by dangerous reefs, shallow waters and powerful storms, especially hurricanes. They have made this area especially hazardous to vessels and the scene of thousands of wrecks and other maritime accidents.

Florida was claimed and partly settled by Spain during the sixteenth century, but by the early nineteenth century Spain's New World Empire was in decline. During the early 1800s, the newly independent United States of America was more vigorous than any other nation in undertaking territorial expansion into western and southeastern North America. New territories added during this period included the vast Louisiana Purchase in 1803 and Spanish Florida, ceded to the U.S. in 1819. Population expansion and economic development of these areas followed shortly afterwards. New Orleans, Louisiana, and other Gulf of Mexico ports became important centers for maritime commerce. This led to substantial increases in shipping traffic navigating the Florida Straits between the Keys and Cuba's north coast during the period between the War of 1812 and the early 1820s. At the same time, a regional decline in maritime security led to a rise in pirate activity. The resulting losses to American maritime commerce spurred the U.S. government to dispatch several naval vessels during the 1820s to suppress the pirates.

One of the U.S. Navy warships sent to the region was the *USS Alligator*, a topsail schooner sailing vessel armed with 12 cannon. After arriving in 1822, the *Alligator* became actively engaged in anti-pirate operations. Following a successful mission in Cuba, the *USS Alligator* went aground on November 19, 1822, atop a shallow reef off the Florida Keys. The vessel could not be refloated and was abandoned and destroyed by its crew. Its wrecking place was named Alligator Reef as a result of this incident.

From the second quarter of the nineteenth century onwards, the Florida Straits remained a busy corridor for ships navigating between the Gulf of Mexico and Caribbean Sea region and ports in the eastern United States and Europe. As the volume of maritime traffic increased, the number and frequency of shipping losses along the Keys and Florida's east coast rose as well. This provided ample justification for the U.S. government to undertake improvements to navigational safety.

The first group of lighthouses constructed in the Florida Keys region consisted of masonry towers built onshore at strategic locations during the mid-1820s. These included the Cape Florida Light (1825), the Key West Light (1825), the Garden Key Light in the Dry Tortugas (1825), and the Sand Key Light near Key West (1826). In addition, a lightship was stationed offshore of Key Largo at Carysfort Reef in 1825.

In 1846, the U.S. Coast Survey conducted a detailed offshore survey of the Florida Keys, identifying and mapping the area's numerous reefs and shoals. This information was important to the Federal government for the production of nautical charts as well as for determining where and how to mark the many hazards to navigation.

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Based on results of the 1846 survey, managers of the Federal lighthouse program determined that the lightship marking Carysfort Reef should be replaced with an onsite lighthouse. The proposed structure was designed as a tall skeletal tower supporting a lantern 100 feet above sea level. The proposed lighthouse's substantial height was intended to allow its optic and day mark to be visible to mariners 10 miles away. In 1848, Congress appropriated funds to build this lighthouse. A contractor was soon selected and the structure was fabricated in Philadelphia and shipped to Florida in 1849.

The task of supervising Carysfort Reef Light's construction was assigned to Captain Howard Stansbury of the U.S. Army Corps of Topographical Engineers. The work proceeded, but the appropriated funds to build the lighthouse proved insufficient and were depleted in 1851. While additional funds were being obtained, Captain Stansbury was reassigned to another post. His replacement was Major Thomas P. Linnard, who died shortly after arriving in the Keys. Lieutenant George G. Meade replaced Linnard and supervised the remaining work at Carysfort Reef Light. Completed in 1852, this structure was 112 feet tall. Carysfort Reef Light was initially equipped with a lamp and reflector array, which was the standard optical equipment for U.S. lighthouses at the time. Shortly after this, Federal lighthouse managers recognized the superiority of Fresnel lens optics for use as state-of-the-art lighthouse beacons. They adopted a policy to replace all the previously installed lamp and reflector equipment, which was less effective. A first order Fresnel lens was subsequently installed at Caryfort Reef Light and remained in use through the mid-twentieth century. Today, Carysfort Reef Light is equipped with a modern automated optic and continues to serve as an active Federal lighthouse. It is listed on the National Register of Historic Places (NRHP listing number 84000199).

Lieutenant Meade's 1850s tour of duty in the Florida Keys included being in charge of constructing a new lighthouse at Sand Key. It was designed as a skeletal tower structure with an optic 109 feet above sea level. Work on the Sand Key Light began in 1852 and was completed in 1853. It is 132 feet tall and was equipped with a first order Fresnel lens as its original beacon. Sand Key Light is still an active Federal aid to navigation and is presently equipped with a modern automated optic. It is also listed on the National Register (NRHP listing number 73000589). Meade completed his service in the Keys by supervising the construction of the Sombrero Key Light, a skeletal tower structure 156 feet tall. Work began in 1857 and was completed in 1858. The Sombrero Key Light is the tallest lighthouse in the Florida Keys. It remains an active Federal lighthouse today, and is equipped with a modern automated beacon.

In addition to lighthouses, other Federal aids to navigation were established along the Florida Keys during the 1850s. This included installing day beacon visual markers at several locations, such as Alligator Reef. These day beacons typically consisted of a 36-foot tall screw piling with a black barrel on top, replaced later by an iron hoop lattice cylinder. Differing color schemes helped distinguish one day beacon from another. The one built atop Alligator Reef in 1852 had a black shaft, white cylinder, and was marked with the letter "C." These markers were meant to be visible from miles away during daylight, but were not so helpful during stormy weather or at night.

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The 1861 outbreak of the Civil War caused a hiatus in Federal lighthouse construction in Florida and elsewhere. It also led to many talented military officers such as George G. Meade experiencing rapid advancements in rank and responsibility. Five years after the 1858 completion of Sombrero Key Light, Meade was a Major General and commander of the Union's Army of the Potomac. He is renowned for leading the Union forces that defeated Confederate General Robert E. Lee's Army of Northern Virginia at the Battle of Gettysburg. Following the Civil War's end in 1865, the government's lighthouse establishment undertook a re-energized program to improve existing navigational aids and construct additional lighthouses.

The U.S. Lighthouse Board undertook construction of additional lighthouses along the Florida Reef following the Civil War. The Alligator Reef Light was built in 1872 to 1873, using a skeletal tower design based on the Sombrero Key Light. The next location selected for a Florida Reef Light was Fowey Rocks, six miles south of Key Biscayne in Dade County. The earlier lighthouse at Cape Florida on Key Biscayne had proven inadequate to warn mariners of dangerous waters in the Fowey Rocks area. The U.S. Lighthouse Board determined that Fowey Rocks would best be marked by an offshore light. Work on a tall skeletal tower lighthouse there began in 1875 and was completed in 1878. The Fowey Rocks Light is 125 feet tall. Its original beacon was a first order Fresnel lens. This lighthouse differs from the Sombrero Key and Alligator Reef lighthouses in three major aspects: its tower is not as tall or steeply sloped, the keepers' dwelling is two stories tall, and there is an added service room below the watch room and lantern. Today, the Fowey Rocks Light is still an active Federal aid to navigation and is equipped with a modern automated optic. It is a National Register listed resource (NRHP listing number 10001181).

The five tall skeletal tower lighthouses built by the Federal government along the Florida Keys between the early 1850s and 1878 provided a nearly overlapping series of beacons where the next in line could be seen around the time that the one passed earlier was lost to view. By 1878, there was just one major gap left, a stretch approximately 51 miles long between the Sand Key Light and the Sombrero Key Light. The Sand Key Light could be seen from approximately 12 miles away. From there, vessels needed to navigate approximately 25 miles farther before the Sombrero Key Light became visible. This gap contained a number of hazards to navigation including the Sambo Reefs, Maryland Shoal, American Shoal, and Looe Key.

To solve the problem of this 25-mile gap, the U.S. Lighthouse Board recommended to Congress in 1875 that a lighthouse be constructed at Looe Key, but Congress took no action. The following year, the Lighthouse Board resubmitted its recommendation for a lighthouse in the area between Sand Key Light and Sombrero Key Light. This time, the Board proposed that American Shoal was better than Looe Key for building the proposed lighthouse. On June 10, 1878, Congress finally approved funds to build a tall skeletal tower lighthouse at American Shoal. Onsite work there began in late 1879 and was completed the following year. The lighthouse's optic was officially lighted for the first time on July 15, 1880.

The American Shoal Light is virtually identical to the Fowey Rocks Light except for its lantern. The skeletal tower is not as tall or steeply sloped as the Sombrero Key and Alligator Reef lighthouses, the keepers' dwelling is two stories tall, and there is a service room below the watch room and lantern. The American Shoal Light remains an active Federal aid to navigation today and is presently equipped with a modern automated optic. It has been listed on the National Register of Historic Places (NRHP listing number 10001189).

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Following the end of World War I, the U.S. Bureau of Lighthouses (successor to the Lighthouse Board) determined that additional lighted aids were needed in the Florida Keys. This led to the construction from 1921 to 1936 of a group of seven unmanned reef lights to mark local hazards. These lights were designed to be operated automatically from the outset. The first two were built at Molasses Reef and Pacific Reef in 1921. They were pyramidal skeletal towers having three tiers of horizontal supporting members, and were topped with a lantern equipped with an automated optic. Another pyramidal skeletal tower automated light was built at Hen and Chicken Shoals in 1929. Its design was a modification of the type used earlier at Molasses Reef and Pacific Reef.

A different skeletal tower design was developed for the four other offshore automated lights. They included the Smith Shoal Light and the Tennessee Reef Light (both built in 1933), the Cosgrove Shoal Light (built in 1935), and the Pulaski Shoal Light (built in 1936). Today, the Tennessee Reef Light is the only one of these seven skeletal tower automated lights that still has its original lantern. Two of this group (the Smith Shoal Light and the Pulaski Shoal Light) have been demolished.

Keepers working for the U.S. Lighthouse Service (part of the Bureau of Lighthouses) manned the six Florida Reef Lights until 1939. In that year President Franklin D. Roosevelt ordered the Bureau of Lighthouses to be subsumed into the U.S. Coast Guard (USCG). Following this consolidation, USCG personnel were assigned as lighthouse keepers. A typical complement was four men with each serving three weeks at the lighthouse followed by one week ashore. Their schedules were staggered so that three men were always at the lighthouse. This system continued until 1963, when the six Florida Reef Lights were automated and resident keepers were no longer required.

In January 1997, the container ship *Houston* ran aground approximately two miles west of the American Shoal Light, within the limits of the Florida Keys National Marine Sanctuary. The ship was eventually refloated, but the incident left an extensive area of coral reef damaged and the ship's owners liable. As part of the resulting legal settlement the owners paid for the purchase of eight modern RACON radar beacons and their installation atop several light towers in the Florida Keys, including the Alligator Reef Light.

The six Florida Reef Lights have proved to be important aids to navigation from their initial establishment to the present. Each one remains in service today providing a valuable guide to mariners, both during the day and at night.

Historic Significance

Alligator Reef is located approximately midway between the Sombrero Key Light (34 miles to the west) and the Carysfort Reef Light (37 miles to the east), and is near deep waters navigated by shipping. These circumstances led to an 1857 recommendation by the U.S. Lighthouse Board that a lighthouse be constructed there. Its setting was deemed appropriate for another tall skeletal tower structure. After the Civil War ended, the Lighthouse Board requested funding from Congress in 1868 for a lighthouse on Alligator Reef. However, no funds were appropriated that year. This request was repeated in 1869 with the same result. After a third request was submitted, Congress finally approved an appropriation in July 1870 to build the Alligator Reef Light.

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The proposed lighthouse's design incorporated aspects used in the previous Florida Reef Lights and was very similar to the Sombrero Key Light (completed in 1858). This included the engineering, configuration and height of the Alligator Reef Light's skeletal tower, as well as its one-story keepers' dwelling. The Alligator Reef Light's watch room is similar to the one at Sombrero Key Light, but its lantern includes a different glazing pattern. The lanterns of the three Florida Reef Lights built before the Civil War included triangular window panes held by mullions arranged in a helical pattern. The three reef lights constructed after the Civil War (at Alligator Reef, Fowey Rocks, and American Shoal) all have rectangular windowpanes arranged in three tiers of 16 panes each. In addition, the Sombrero Key Light's lantern roof is made of iron plates and rafters while the lantern roofs of the three post-Civil War reef lights are made with plates held together by radial tie rods.

Construction of the Alligator Reef Light began in 1872 near the reef's northeast end, about 200 yards north of where the sea floor at the reef drops off into deeper water. A temporary boat landing and work platform were constructed at the site. Underwater work was accomplished to level the area where the lighthouse was to be built. Nine large cast iron disks with center holes were placed in position and 12-inch diameter iron piles were driven through each disk. These seven-foot diameter disk piles provided the foundation upon which the superstructure's columns, beams and crossies were erected. Construction was completed in late 1873 at a total cost of \$185,000. The lighthouse's first day of active service was November 25, 1873. Its optic was a first order Fresnel lens made by Henri Lepaute of Paris. This beacon had a focal plane 136 feet above sea level, flashed a white light every five seconds, and was visible for 18 miles in clear weather.

Over time, the exposure of the Alligator Reef Light's iron skeletal tower to corrosive saltwater led to the deterioration of various parts. Repair work was undertaken in 1910 to replace several tension rods, turnbuckles, and clamps.

A number of technological improvements were made to the Alligator Reef Light during the 1920s and early 1930s. The oil lamp illuminating its beacon was replaced with an electric light and an improved apparatus was installed for rotating the massive Fresnel lens. The lighthouse's electrification included conversion of one of the dwelling's rooms into an engine room where generators were installed. To provide for fuel storage, a new oil room with storage tanks was suspended beneath the second tier platform. Other improvements included new decking on the boat landing and a replacement stairway leading up to the second tier platform. Repairs were also made to the windlass that lifted supplies up to the keepers' dwelling level.

On Labor Day, September 2, 1935, one of the most powerful hurricanes in Florida history struck the middle Florida Keys. It brought winds over 200 miles per hour and a 20-foot storm surge topped with powerful waves. This hurricane caused tremendous property losses and over 400 deaths. The Alligator Reef Light was directly in the storm's path and the damage caused by the hurricane was extensive. Following the storm, Keeper Jones A. Pervis reported that the first tier platform was washed away along with the lighthouse's motor launch, and the dwelling's doors were ripped off or pushed in. In addition, all the lantern glass and every window in the dwelling were broken, and the Fresnel lens was destroyed. In the storm's aftermath, the U.S. Coast Guard deployed some 18 vessels and several aircraft to the Keys in a major rescue and relief effort. Within a few weeks, a vessel chartered by the U.S. Bureau of Lighthouses to transport supplies and equipment for the repair of the Alligator Reef Light was dispatched from Key West. Additional repair and maintenance work was accomplished at the lighthouse in 1936 and 1937.

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Hurricane Donna struck the middle Florida Keys in 1960. This powerful storm caused extensive damage to the Alligator Reef Light. Subsequent repairs to the lighthouse included replacing several tie rods, struts, and yokes on the foundation pilings. In 1961, a new boat hoist was installed and part of the first tier platform's decking was removed.

The Alligator Reef Light was automated in 1963, when its keepers departed and equipment was installed for automatic operation. Power was provided using an underwater electrical cable extending from the Upper Matecumbe Key to the lighthouse. Other work on the lighthouse was accomplished in 1965. This included construction of the existing boat landing platform, installing a ladder from the new landing to the second tier platform, and removing platform decking from the skeletal tower's first tier.

The lighthouse's beacon was solarized in 1982. This work included installing a solar array on the watch room gallery and a set of batteries in the watch room to power the beacon. In 1985, the lantern room's first order Fresnel lens was replaced with a 190-millimeter acrylic lens. The 190-mm lens was removed in 1997 and replaced with the existing VRB-25 marine rotating beacon. An automated RACON radar beacon was installed in 1997. Maintenance to the lighthouse accomplished in 1999 included painting, repairs and reinforcing for the skeletal tower, and installing replacement guardrails for the second tier deck and watch room gallery.

Today, the Alligator Reef Light continues to fulfill its original role of providing a guide for mariners traversing a potentially hazardous area along the Florida Reef. It is visible from shore and widely recognized in Monroe County as a prominent offshore landmark. In addition to serving as a navigational aid for vessels in the middle Florida Keys vicinity, Alligator Reef Light is a lasting reminder of the Florida Straits' important historical role as a route for commercial shipping. It evokes feelings that recall the eventful maritime heritage of the Florida Keys, and is reminder of the dedication to duty characteristic of lighthouse keepers in American history.

Significance under Criterion A

The Alligator Reef Light qualifies for National Register listing under Criterion A for its association with events related to Federal government efforts to promote maritime safety by providing for an integrated system of navigational aids in Florida, as manifested in the Monroe County locality. This property was established as an operating lighthouse in 1873 and has been an important local landmark for mariners ever since. It is historically significant because of its contribution to the broad historical patterns of maritime transportation and commerce in Florida waters. The Alligator Reef Light exemplifies the Federal government's concerted effort to establish a nationwide system of aids to navigation during a period when the nation experienced significant economic development, population increase, and an expansion of maritime activity. It is one of the famous Florida Reef Lights, a group of six offshore, tall skeletal tower lighthouses built along the Florida Keys during the middle to late nineteenth century. These six lighthouses have served as hazard warnings and guideposts that aided and continue to assist safe passage for thousands of ships. The Alligator Reef Light has contributed to maritime safety in Monroe County for more than 130 years and continues to promote safe navigation in the Florida Keys vicinity.

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Architectural Context

Construction of the Florida Reef Lights included an important advancement in U.S. lighthouse engineering. This is the technology of their foundations, which was developed to provide stability at locations where the seafloor lacks the solidity of bedrock. Such areas include coral reefs, which can be riddled with fissures and pockets filled with sand and rock fragments. The foundations of the Florida Reef Lights are made with wrought iron pilings that incorporate wrought iron disks for stability and to spread the load-bearing surface over a wider area. The first two Florida Reef Lights built from the late 1840s to the early 1850s used screw piles improved with disks for their foundations. The four Florida Reef Lights constructed from the late 1850s onwards used straight piles that incorporated iron disks, instead of screw piles.

The use of screw piles for lighthouse foundations originated in Great Britain in the 1830s (Clifford 2002). It was first employed in the U.S. in 1848 at Brandywine Shoal Light in Delaware Bay. This technology was also adopted for the construction of the first of the six Florida Reef Lights, the Carysfort Reef Light offshore of the Florida Keys. The 1848 design for the Carysfort Reef Light was prepared by lighthouse engineer I. W. P. Lewis and included a screw pile foundation supporting a skeletal tower. Lewis believed that a screw pile foundation was the best solution for overcoming problems relating to constructing an offshore lighthouse where the bottom substrate included coral rock and sand.

Parts to assemble Carysfort Reef Light's foundation were fabricated in Philadelphia in 1848. The completed kit was shipped to the Florida Keys where construction work at the lighthouse's offshore site began in 1849. The task of supervising this project was assigned to Captain Howard Stansbury, U.S. Army Corps of Topographical Engineers. Stansbury observed that screw piles driven into the reef's soft coral rock did not provide a foundation of sufficient strength to support the lighthouse's tall structure. To overcome this, he designed a circular foot plate with a hole in the center through which a foundation pile could be driven until it was tightly seated using a collar. The circular foot plate thus became a disk dispersing the weight supported by the pile over a larger area of the sea floor. Use of a foot plate with a metal pile is the key concept of a disk pile foundation. It provides a significantly larger load-bearing surface and gives better support for the superstructure.

The disk pile foundation that Captain Stansbury developed for the Carysfort Reef Light was successful. As a consequence, it was employed in building all five of the Florida Reef Lights constructed later (the Sand Key Light and the Sombrero Key Light in the 1850s, and the Alligator Reef Light, the Fowey Rocks Light and the American Shoal Light in the 1870s to 1880). All six of these lighthouses include an iron disk pile foundation, pyramidal skeletal tower, keepers' dwelling, and a lantern 100 feet or more above sea level.

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After the decision was made in the early 1870s to construct a lighthouse on Alligator Reef, a design was prepared that included a disk pile foundation using straight piles based on the Sombrero Key Light (built in 1857 to 1858). The skeletal tower design of the Alligator Reef Light was also similar to the Sombrero Key Light, as was its rectangular one-story keepers' dwelling. As built, the first tier of the Alligator Reef Light's skeletal tower is nearer sea level than the one at the Sombrero Key Light. Thus, its dwelling is positioned at a slightly lower elevation and the structure's overall height above the water is approximately six feet less than the Sombrero Key Light. Another difference is that the Sombrero Key Light's lantern has three tiers of triangular mullions in a helical pattern that hold the glazing, while the Alligator Reef Light's lantern has three tiers of rectangular mullions.

The first order Fresnel lens installed at the Alligator Reef Light in 1873 was manufactured in France by Henri-Lepaute of Paris. With its glass lens mounted atop the optic's pedestal and rotation machinery, this remarkable example of late nineteenth century technology stood approximately 14 feet tall.

The skeletal tower design used in constructing the Alligator Reef Light represented state-of-the-art engineering and construction methods at that time. However, its one-story keepers' dwelling provided limited living space for its keepers. The next Florida Reef Light built was the Fowey Rocks Light (completed in 1878). Its design included a pyramidal skeletal tower with sides that slope less steeply than the four lights built before. In addition, the keepers' dwelling at the Fowey Rocks Light is two stories in height and includes significantly more space than exists at the Alligator Reef Light's dwelling. This modified design was also used for the American Shoal Light, completed in 1880 and the last of the tall skeletal tower Florida Reef Lights built.

Significance under Criterion C

The Alligator Reef Light qualifies for National Register listing under Criterion C because of its significance in American lighthouse architecture and engineering. It embodies and represents the distinctive design and engineering characteristics of middle to late nineteenth century pyramidal skeletal tower lighthouses built offshore in Florida and elsewhere in the United States. The durable, efficient and weather-resistant character of its design has proven to be successful in the natural setting of the Florida Straits. It is also evidence of this lighthouse's high quality of materials and construction. The iron disk pile foundation and skeletal tower engineering technology used in building the Florida Reef Lights has enabled them to withstand powerful storms for more than a century. The Alligator Reef Light remains standing in its original location surrounded by water atop a hazardous reef several miles from shore. Its basic structure, appearance, and setting remain virtually unchanged from its historic 1873 appearance.

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9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

(see 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 # _____

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

- recorded by Historic American Engineering Record # _____
- recorded by Historic American Landscape Survey # _____

Name of repository: U.S. National Archives DC, USCG Civil Engineering Unit (CEU) Miami, USCG Aids to Navigation Team (ANT)-Key West, USCG Historian's Office - Washington, DC

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acreage of Property Less than one acre
(Do not include previously listed resource acreage.)

UTM References

(Place additional UTM references on a continuation sheet.)

1	<u>17</u> Zone	<u>538510</u> Easting	<u>2748590</u> Northing	3	<u> </u> Zone	<u> </u> Easting	<u> </u> Northing
2	<u> </u> Zone	<u> </u> Easting	<u> </u> Northing	4	<u> </u> Zone	<u> </u> Easting	<u> </u> Northing

Verbal Boundary Description (Describe the boundaries of the property.)

The property's boundary is the perimeter of the octagonal configuration of the lighthouse structure's foundation pilings along with the adjoining rectangular configuration of the boat dock's foundation pilings.

Boundary Justification (Explain why the boundaries were selected.)

The boundary corresponds to the footprint of the lighthouse structure and its boat dock. This encompasses the entirety of Alligator Reef Light.

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Alligator Reef Light
Name of Property
Monroe County, Florida
County and State
Light Stations of the United States MPDF
Name of multiple listing (if applicable)

ADDITIONAL DOCUMENTATION

Bibliography Page 2 of 4

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**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Continuation Sheet**

Alligator Reef Light
Name of Property Monroe County, Florida
County and State Light Stations of the United States MPDF
Name of multiple listing (if applicable)

ADDITIONAL DOCUMENTATION

Bibliography Page 3 of 4

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United States Department of the Interior
National Park Service

**National Register of Historic Places
Continuation Sheet**

Alligator Reef Light
Name of Property Monroe County, Florida
County and State Light Stations of the United States MPDF
Name of multiple listing (if applicable)

ADDITIONAL DOCUMENTATION

Bibliography Page 4 of 4

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United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Alligator Reef Light
Name of Property Monroe County, Florida
County and State Light Stations of the United States MPDF
Name of multiple listing (if applicable)

ADDITIONAL DOCUMENTATION

11. Form Prepared By

name/title Daniel Koski-Karell, Ph. D., USCG HQ Office of Environmental Management, and Chad
Blackwell and Dan Hart, HDR|e²M, Inc.

organization United States Coast Guard (COMDT CG-47) date 19 August 2011
street & number 2100 Second Street SW – STOP 7901 telephone 202.475.5683
city or town Washington state DC zip code 20593-7901
e-mail Daniel.A.Koski-Karell@uscg.dhs.gov

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** (7.5 or 15 minute series) indicating the property's location. **The property is off the USGS topographical grid. A NOAA nautical coastal map has been used instead.*

A **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Continuation Sheets**
- **Additional items:** (Check with the SHPO or FPO for any additional items.)

Property Owner:

name United States Coast Guard
street & number 2100 Second Street SW telephone 202.267.1587
city or town Washington state DC zip code 20593

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

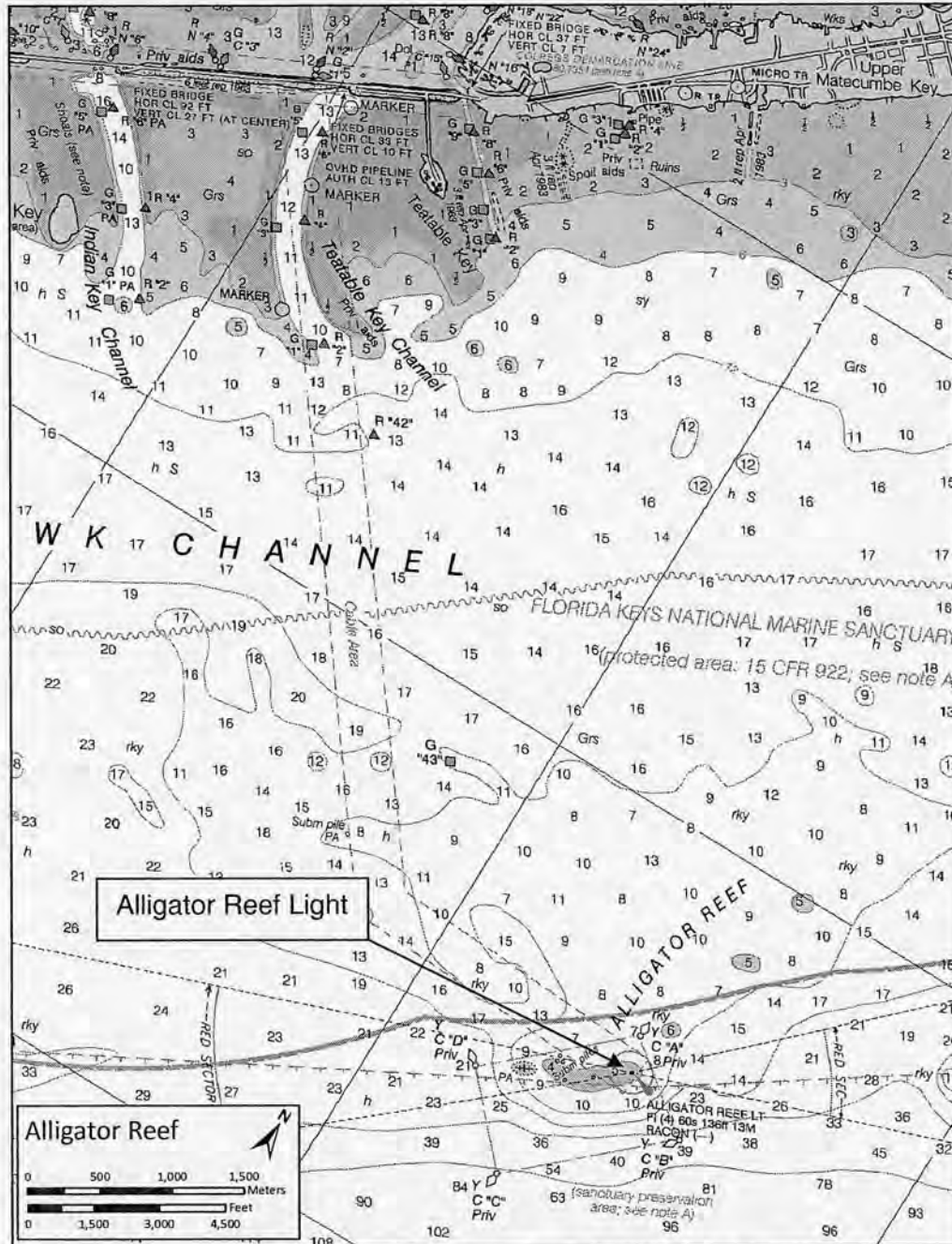
Estimated Burden Statement: Public reporting burden for this form is estimated to average 18 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Alligator Reef Light
Name of Property
Monroe County, Florida
County and State
Light Stations of the United States MPDF
Name of multiple listing (if applicable)

ADDITIONAL DOCUMENTATION
Location Map



Intracoastal Waterway Matecumbe to Grassy Key,
NOAA Coastal Map #11449, Scale 1:40000, 17th Ed., Dec.2005

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Alligator Reef Light
Name of Property
Monroe County, Florida
County and State
Light Stations of the United States MPDF
Name of multiple listing (if applicable)

ADDITIONAL DOCUMENTATION

Appearance in 1873: This is an 1873 image of Alligator Reef Light looking south (U.S. Light-House Establishment, artist unknown, on file in the U.S. Coast Guard Historian's Office, Washington, DC).



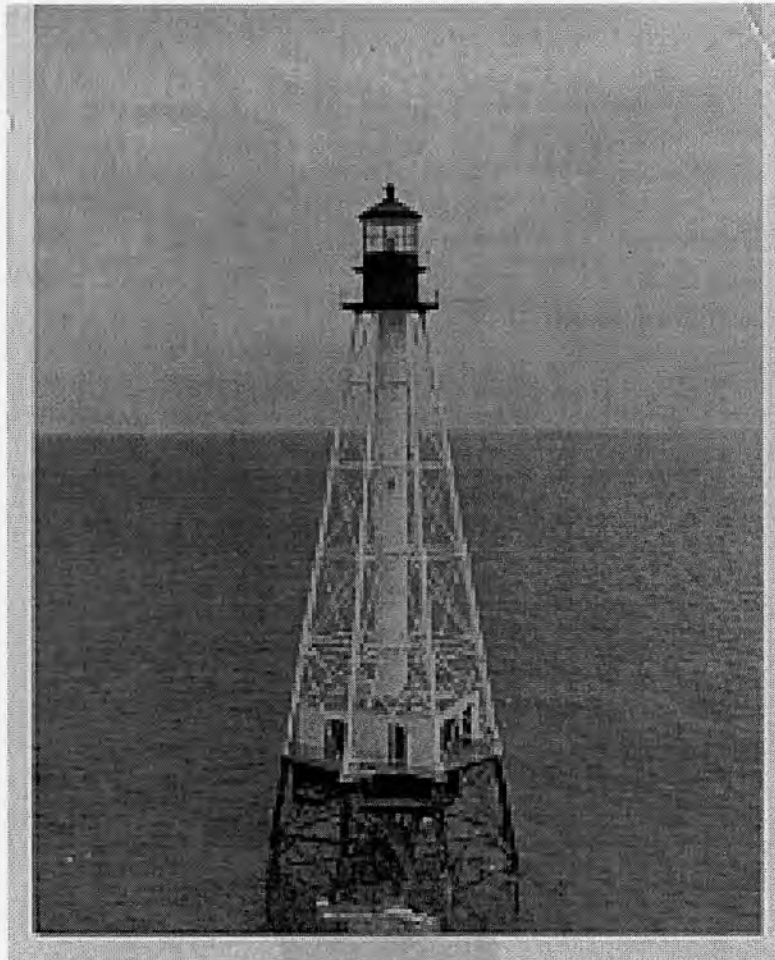
United States Department of the Interior
National Park Service

**National Register of Historic Places
Continuation Sheet**

Alligator Reef Light
Name of Property Monroe County, Florida
County and State Light Stations of the United States MPDF
Name of multiple listing (if applicable)

ADDITIONAL DOCUMENTATION

Appearance circa 1960: This is a photograph of Alligator Reef Light looking southeast, circa 1960 (U.S. Coast Guard, photographer unknown, on file in the U.S. Coast Guard Historian's Office, Washington, DC).



**United States Department of the Interior
National Park Service**

Alligator Reef Light
Name of Property Monroe County, Florida
County and State Light Stations of the United States MPDF
Name of multiple listing (if applicable)

**National Register of Historic Places
Continuation Sheet**

ADDITIONAL DOCUMENTATION

Photographs

The following information is common to the eight contemporary photographs:

Name of Property: Alligator Reef Light
 Location: Monroe County, Florida
 Photographer: Timothy McGrath
 Date: 28 October 2009
 Location of original negative: U.S. Coast Guard Historian's Office,
 U.S. Coast Guard Headquarters, Washington, DC.

Photograph
Number

Description

1. Lighthouse northeastern elevation, boat dock on right, looking southwest.
2. View upward from boat dock toward access ladder and second tier platform, looking east.
3. Second tier platform deck with keepers dwelling west façade on left, looking north.
4. Keepers dwelling interior with stair cylinder doorway in center, looking southeast.
5. Stair cylinder interior, looking upward.
6. Watch room interior with stairway to lantern room, looking southwest.
7. Watch room gallery with ladder to lantern gallery and solar array, looking southwest.
8. Lantern room interior, view upward to pedestal drum and existing optic.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY Alligator Reef Light
NAME:

MULTIPLE Light Stations of the United States MPS
NAME:

STATE & COUNTY: FLORIDA, Monroe

DATE RECEIVED: 10/21/11 DATE OF PENDING LIST: 11/09/11
DATE OF 16TH DAY: 11/25/11 DATE OF 45TH DAY: 12/06/11
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 11000860

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: N
OTHER: N PDIL: N PERIOD: N PROGRAM UNAPPROVED: N
REQUEST: Y SAMPLE: N SLR DRAFT: N NATIONAL: N

COMMENT WAIVER: N

ACCEPT RETURN REJECT 12/01/2011 DATE

ABSTRACT/SUMMARY COMMENTS:

Meets the Requirements of MPS

*Great example of offshore skeletal tower. Part of US Govt effort to
Provide safe shipping through Florida Strait*

RECOM./CRITERIA Accept A & C

REVIEWER J. Calder DISCIPLINE _____

TELEPHONE _____ DATE _____

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.



ALLIGATOR REEF LIGHT
MONROE COUNTY, FLORIDA

PHOTOGRAPHER: TIMOTHY McGRATH

DATE: 28 OCTOBER 2009

LOCATION OF ORIGINAL NEGATIVE:

U.S. COAST GUARD HISTORIAN'S OFFICE

U.S. COAST GUARD HEADQUARTERS

WASHINGTON, DC

LIGHTHOUSE NORTHEASTERN ELEVATION,
BOAT DOCK ON RIGHT, LOOKING SOUTHWEST.

PHOTO # 1



ALLIGATOR REEF LIGHT

MONROE COUNTY, FLORIDA

PHOTOGRAPHER: TIMOTHY McGRATH

DATE: 28 OCTOBER 2009

LOCATION OF ORIGINAL NEGATIVE:

U.S. COAST GUARD HISTORIAN'S OFFICE

U.S. COAST GUARD HEADQUARTERS

WASHINGTON, DC

VIEW UPWARD FROM BOAT DOCK TOWARD
ACCESS LADDER AND SECOND TIER PLATFORM,
LOOKING EAST.

PHOTO # 2



ALLIGATOR REEF LIGHT
MONROE COUNTY, FLORIDA

PHOTOGRAPHER: TIMOTHY McGRATH

DATE: 28 OCTOBER 2009

LOCATION OF ORIGINAL NEGATIVE:

U.S. COAST GUARD HISTORIAN'S OFFICE
U.S. COAST GUARD HEADQUARTERS
WASHINGTON, DC

SECOND TIER PLATFORM DECK WITH
KEEPERS DWELLING WEST FAÇADE
ON LEFT, LOOKING NORTH.

PHOTO # 3



ALLIGATOR REEF LIGHT
MONROE COUNTY, FLORIDA

PHOTOGRAPHER: TIMOTHY McGRATH

DATE: 28 OCTOBER 2009

LOCATION OF ORIGINAL NEGATIVE:

U.S. COAST GUARD HISTORIAN'S OFFICE
U.S. COAST GUARD HEADQUARTERS
WASHINGTON, DC

KEEPERS DWELLING INTERIOR WITH
STAIR CYLINDER DOORWAY IN CENTER,
LOOKING SOUTHEAST.

PHOTO # 4



ALLIGATOR REEF LIGHT

MONROE COUNTY, FLORIDA

PHOTOGRAPHER: TIMOTHY McGRATH

DATE: 28 OCTOBER 2009

LOCATION OF ORIGINAL NEGATIVE:

U.S. COAST GUARD HISTORIAN'S OFFICE

U.S. COAST GUARD HEADQUARTERS

WASHINGTON, DC

STAIR CYLINDER INTERIOR,

LOOKING UPWARD.

PHOTO # 5



ALLIGATOR REEF LIGHT

MONROE COUNTY, FLORIDA

PHOTOGRAPHER: TIMOTHY McGRATH

DATE: 28 OCTOBER 2009

LOCATION OF ORIGINAL NEGATIVE:

U.S. COAST GUARD HISTORIAN'S OFFICE

U.S. COAST GUARD HEADQUARTERS

WASHINGTON, DC

WATCH ROOM INTERIOR WITH STAIRWAY
TO LANTERN ROOM, LOOKING SOUTHWEST.

PHOTO # 6



ALLIGATOR REEF LIGHT
MONROE COUNTY, FLORIDA

PHOTOGRAPHER: TIMOTHY McGRATH
DATE: 28 OCTOBER 2009
LOCATION OF ORIGINAL NEGATIVE:

U.S. COAST GUARD HISTORIAN'S OFFICE
U.S. COAST GUARD HEADQUARTERS
WASHINGTON, DC

WATCH ROOM GALLERY WITH LADDER TO
LANTERN GALLERY AND SOLAR ARRAY,
LOOKING SOUTHWEST.

PHOTO # 7



ALLIGATOR REEF LIGHT
MONROE COUNTY, FLORIDA

PHOTOGRAPHER: TIMOTHY McGRATH

DATE: 28 OCTOBER 2009

LOCATION OF ORIGINAL NEGATIVE:

U.S. COAST GUARD HISTORIAN'S OFFICE

U.S. COAST GUARD HEADQUARTERS

WASHINGTON, DC

LANTERN ROOM INTERIOR, VIEW UPWARD
TO PEDESTAL DRUM AND EXISTING OPTIC.

PHOTO # 8

11449

ADS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

RADAR REFLECTORS
Radar reflectors have been placed on many leading aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

CAUTION
Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Oceanic and Atmospheric Administration 117. Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.
Station positions are shown thus:
(●) Accurate location
(○) Approximate location

CAUTION
Submarine pipelines and cables
Charted submarine pipelines and submarine cables and submarine pipelines and cables are shown as:
Pipeline
Cable

Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be located and shown on this chart. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist and when anchoring, dragging or towing. Covered wells may be marked by lighted or unlighted buoys.

INTRACOASTAL WATERWAY AIDS
The U.S. Aids to Navigation System is designed for use with nautical charts and the exact meaning of an aid to navigation may not be clear unless the appropriate chart is consulted.

Aids to navigation marking the Intracoastal Waterway consist of unique yellow signals to distinguish them from aids marking other waterways.

When following the Intracoastal Waterway regulations from Norfolk, Virginia, to Cape Sable in Florida Bay, aids with yellow triangles should be kept on the starboard side of the vessel and aids with yellow squares should be kept on the port side of the vessel.
A horizontal yellow band provides no lateral information but simply identifies aids to navigation as marking the Intracoastal Waterway.

NOTE X
With the 10-nautical mile Territorial Sea established by Presidential Proclamation, some Federal laws apply. The Three Nautical Mile Line, previously identified as the limit of the Territorial Sea, is retained as a reference aid to navigation. The jurisdictional limit of the Territorial Sea is typically 20 to 40 nautical miles from the exterior limit, but can be as much as 100 nautical miles for stations at high elevations.

NOTE Y
The public marine will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 1.49° northward and 0.74° eastward to agree with this chart.

Mercaator Projection
Scale 1:40,000 at Lat. 24°50' North
World Geodetic System 1984

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

TIDAL INFORMATION

Place	Mean High Water	Mean Low Water	Extreme High Water	Extreme Low Water
Indian Key Anchorage	2.2	2.1	2.1	2.1
Lower Matecumbe Key	2.2	2.1	2.1	2.1

HEIGHTS
Heights in feet above Mean High Water.

NOAA WEATHER RADIO BROADCASTS
The NOAA Weather Radio stations listed below provide continuous marine broadcast information. The reception range is typically 20 to 40 nautical miles from the station site, but can be as much as 100 nautical miles for stations at high elevations.

Key West, FL WX-95 162.40 MHz
Tallahassee, FL WX-60 162.40 MHz

HURRICANES AND TROPICAL STORMS
Hurricanes, tropical storms and other major storms may cause considerable damage to marine structures, aids to navigation and moored vessels, resulting in submerged debris in numerous locations.

Charted soundings, channel depths and shoreline may not reflect actual conditions following these storms. Flood aids to navigation may have been damaged or destroyed. Buoy may have been moved from their charted positions, damaged, sunk, extinguished or otherwise made inoperative. Mariners should not rely upon the position or operation of flood aids to navigation and submerged obstructions may have been discovered from channel soundings. Pilots may have become uncovered or moved.

Mariners are urged to exercise extreme caution and are requested to report aids to navigation discrepancies and hazards to navigation to the nearest United States Coast Guard unit.

NO-DISCHARGE ZONE, 40 CFR 145
All Florida State waters within the Florida Keys National Marine Sanctuary are designated as a No-Discharge Zone (NDZ). Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, trash, paint or untreated, into the water. All vessels with an incinerator, garbage disposal or other device that is not receiving, removed, anchored, or disposed within a NDZ must have the MSD displayed to prevent the inadvertent discharge of sewage (treated or untreated) or other hazardous materials. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site: http://www.epa.gov/waters/nps/ndz_waiver/

SHOALS AND PASSES
Mariners are advised to use caution. The shoals and passes, as indicated by dark blue shading (SS) and dotted lines, are covered from surveys and are not well served by tidal surveys.

NOTE C
EVERGLADES NATIONAL PARK
Houses to be avoided.
The killing, collecting or molesting of animals, the collecting of plants, and other activities are prohibited by Federal regulations.

HEIGHTS
Heights in feet above Mean High Water.

CAUTION
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CHANNEL MARKERS
Reflector on obstructions and buoys along the Intracoastal Waterway are white or green on the left hand and red on the right-hand side when proceeding seaward.

POWER CABLES
Covered power cables run parallel to U.S. Route 1. All clearances are greater than those of the charted overhead.

AUTHORITIES
Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

PROHIBITED AREAS
Houses to be avoided.
Under the Florida Keys National Marine Sanctuary and Protection Act, 16 U.S.C. 605 and 16 U.S.C. 606, there are areas around which mariners should exercise extreme caution. See U.S. Coast Pilot volumes for information regarding this area.

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center at 1-800-253-8602; 24 hours or to the nearest U.S. Coast Guard facility if telephone communication is impossible (30 CFR 163).

Additional information can be obtained at nauticalcharts.noaa.gov.

LONG KEY VIA DUOT
WATERWAY AUTHORITY
STATE AND
FEDERAL
AID TO NAVIGATION
CHART NO. 11449

SYMBOLS AND ABBREVIATIONS
Consult U.S. Coast Pilot 4 for important supplemental information.

COLOURS
International Regulations for Preventing Collisions at Sea, 1972. Demarcation lines are shown thus.

PARTICULARLY SENSITIVE SEA AREA
This chart falls entirely within the limits of a Particularly Sensitive Sea Area (PSSA). A PSSA is an international maritime area around which mariners should exercise extreme caution. See U.S. Coast Pilot volumes for information regarding this area.

NOTE A
Navigation regulations are published in Chapter 2, U.S. Coast Pilot 4. Additions or revisions to Chapter 2 are published in the Notice to Mariners Information concerning the regulations may be obtained at the Office of the Commandant, U.S. Coast Guard District in Miami, FL, or at the Office of the District Engineer, Corps of Engineers in Jacksonville, FL.
Refer to charted regulation section numbers.

FLORIDA
INTRACOASTAL WATERWAY
MATECUMBE TO GRASSY KEY

Formerly CGO 85, 1st Ed. Apr. 1958 - XAMP 324



11th Ed. Dec/05
Corrected through NM Dec. 03/05
Corrected through LNM Nov. 20/05

This chart has been corrected from the Notice to Mariners (NM) published weekly for the National Oceanic and Atmospheric Administration and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard District to the data appearing on the lower demand cover.

SOUNDINGS IN FEET

The nautical chart has been designed to promote safe navigation. The National Oceanic and Atmospheric Administration and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard District to the data appearing on the lower demand cover.

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

PRINT-ON-DEMAND CHARTS
NOAA and its partner, OceanGraf, offer this chart updated weekly by NOAA to Mariners and critical customers. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 2-3 weeks before that NOAA's traditional charting cycle. For more information on Print-on-Demand charts or contact NOAA at 1-800-254-4843. <http://NauticalCharts.gov>, <http://MarineCharting.com>, or <http://OceanGraf.com>

LOGARITHMIC SPEED SCALE

To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in miles per hour. Example with 4.0 nautical miles run in 18 minutes, the speed is 16.0 knots.

FEET	METERS
1	0.3
2	0.6
3	0.9
4	1.2
5	1.5
6	1.8
7	2.1
8	2.4
9	2.7
10	3.0
11	3.3
12	3.7
13	4.0
14	4.3
15	4.6
16	4.9
17	5.2
18	5.5
19	5.8
20	6.1
21	6.4
22	6.7
23	7.0
24	7.3
25	7.6

Matecumbe to Grassy Key
SOUNDINGS IN FEET - SCALE 1:40,000

11449

ALLIGATOR REEF LIGHT
MONROE COUNTY, FL
UTM ZONE 17
E. 538510
N. 2748590

11449

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

2100 Second Street SW - STOP 7901
Washington, DC 20593-7901
Staff Symbol: COMDT (CG-47)
Phone: (202) 475-5687
Fax: (202) 475-5949

16475

AUG 23 2011

Honorable Heather Carruthers, Mayor
Monroe County Board of Commissioners
530 Whitehead Street
Key West, FL 33040

SUBJECT: NATIONAL REGISTER NOMINATION FOR ALLIGATOR REEF LIGHT

Dear Ms. Carruthers:

The U. S. Coast Guard (USCG) has determined that Alligator Reef Light offshore of Monroe County, Florida, is a historic property eligible for listing in the National Register of Historic Places (NRHP). We are proposing to nominate this lighthouse for official inclusion in the NRHP. A summary of the NRHP nomination is enclosed for your information (enclosure (1)). This action is being performed pursuant to the authorities contained in Section 110 of the National Historic Preservation Act, the National Historic Lighthouse Preservation Act, and the National Park Service regulations at 36 Code of Federal Regulations Part 60.9.

As part of the nomination process, the USCG is seeking your comments. Please provide any comments within 45 days from the date your office receives this letter. If we receive no response from your office within 45 days, we will assume you have no comments. We will also submit the NRHP nomination form for Alligator Reef Light to the Florida State Historic Preservation Officer for review and comments.

Thank you in advance for your assistance in this matter. If you have any questions or desire additional information, please feel free to contact Dr. Daniel Koski-Karell at (202) 475-5683.

Sincerely,

A handwritten signature in black ink, appearing to read "E. F. Wandelt", written over a faint circular stamp.

E. F. WANDELT

Chief

Office of Environmental Management

U. S. Coast Guard

Enclosure: (1) Summary of NRHP nomination for Alligator Reef Light

Copy (w/o enclosure): J. Paul Loether, National Park Service
COMDT (CG-0942)
CG SILC
CG CEU Miami
CG D7 (DPW)

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

2100 Second Street SW - STOP 7901
Washington, DC 20593-7901
Staff Symbol: COMDT (CG-47)
Phone: (202) 475-5687
Fax: (202) 475-5949

16475

AUG 23 2011

Honorable David Rice
District 4 Commissioner
Monroe County Board of Commissioners
9400 Overseas Highway, # 210
Marathon Airport Terminal
Marathon, FL 33050

SUBJECT: NATIONAL REGISTER NOMINATION FOR ALLIGATOR REEF LIGHT

Dear Mr. Rice:

The U. S. Coast Guard (USCG) has determined that Alligator Reef Light offshore of Monroe County, Florida, is a historic property eligible for listing in the National Register of Historic Places (NRHP). We are proposing to nominate this lighthouse for official inclusion in the NRHP. A summary of the NRHP nomination is enclosed for your information (enclosure (1)). This action is being performed pursuant to the authorities contained in Section 110 of the National Historic Preservation Act, the National Historic Lighthouse Preservation Act, and the National Park Service regulations at 36 Code of Federal Regulations Part 60.9.

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Sincerely,

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E. F. WANDELT

Chief

Office of Environmental Management

U. S. Coast Guard

Enclosure: (1) Summary of NRHP nomination for Alligator Reef Light

Copy (w/o enclosure): J. Paul Loether, National Park Service
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16475

AUG 23 2011

Mr. James E. Billie, Chairman
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024

SUBJECT: NATIONAL REGISTER NOMINATION FOR ALLIGATOR REEF LIGHT

Dear Mr. Billie:

The U. S. Coast Guard (USCG) has determined that Alligator Reef Light offshore of Monroe County, Florida, is a historic property eligible for listing in the National Register of Historic Places (NRHP). We are proposing to nominate this lighthouse for official inclusion in the NRHP. A summary of the NRHP nomination is enclosed for your information (enclosure (1)). This action is being performed pursuant to the authorities contained in Section 110 of the National Historic Preservation Act, the National Historic Lighthouse Preservation Act, and the National Park Service regulations at 36 Code of Federal Regulations Part 60.9.

As part of the nomination process, the USCG is seeking your comments. Please provide any comments within 45 days from the date your office receives this letter. If we receive no response from your office within 45 days, we will assume you have no comments. We will also submit the NRHP nomination form for Alligator Reef Light to the Florida State Historic Preservation Officer for review and comments.

Thank you in advance for your assistance in this matter. If you have any questions or desire additional information, please feel free to contact Dr. Daniel Koski-Karell at (202) 475-5683.

Sincerely,

A handwritten signature in black ink, appearing to read "E. F. Wandelt".

E. F. WANDELT

Chief

Office of Environmental Management
U. S. Coast Guard

Enclosure: (1) Summary of NRHP nomination for Alligator Reef Light

Copy (w/o enclosure): J. Paul Loether, National Park Service
COMDT (CG-0942)
CG SILC
CG CEU Miami
CG D7 (DPW)

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

2100 Second Street SW - STOP 7901
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16475

AUG 22 2011

Mr. Colley Billie, Chairman
Miccosukee Tribe of Indians of Florida
P.O. Box 440021
Miami, FL 33194

SUBJECT: NATIONAL REGISTER NOMINATION FOR ALLIGATOR REEF LIGHT

Dear Mr. Billie:

The U. S. Coast Guard (USCG) has determined that Alligator Reef Light offshore of Monroe County, Florida, is a historic property eligible for listing in the National Register of Historic Places (NRHP). We are proposing to nominate this lighthouse for official inclusion in the NRHP. A summary of the NRHP nomination is enclosed for your information (enclosure (1)). This action is being performed pursuant to the authorities contained in Section 110 of the National Historic Preservation Act, the National Historic Lighthouse Preservation Act, and the National Park Service regulations at 36 Code of Federal Regulations Part 60.9.

As part of the nomination process, the USCG is seeking your comments. Please provide any comments within 45 days from the date your office receives this letter. If we receive no response from your office within 45 days, we will assume you have no comments. We will also submit the NRHP nomination form for Alligator Reef Light to the Florida State Historic Preservation Officer for review and comments.

Thank you in advance for your assistance in this matter. If you have any questions or desire additional information, please feel free to contact Dr. Daniel Koski-Karell at (202) 475-5683.

Sincerely,

A handwritten signature in black ink, appearing to read "E. F. Wandelt".

E. F. WANDELT

Chief

Office of Environmental Management

U. S. Coast Guard

Enclosure: (1) Summary of NRHP nomination for Alligator Reef Light

Copy (w/o enclosure): J. Paul Loether, National Park Service
COMDT (CG-0942)
CG SILC
CG CEU Miami
CG D7 (DPW)

NATIONAL REGISTER OF HISTORIC PLACES NOMINATION
ALLIGATOR REEF LIGHT
MONROE COUNTY, FLORIDA

Alligator Reef Light is an offshore lighthouse located approximately 3.5 miles south of Islamorada on Upper Matecumbe Key in Monroe County, Florida. It is an operating aid to navigation owned by the U.S. Coast Guard (USCG), identified as number 980 on the regional Light List. This property is surrounded by water and accessible only by boat.

Alligator Reef Light was officially established as a Federal lighthouse in 1873. Based on its historic character, the USCG intends to nominate this property for listing in the National Register of Historic Places (NRHP).

The National Historic Preservation Act of 1966, as amended (NHPA) (16 United States Code 470 *et seq.*) authorizes the Secretary of the Interior to expand and maintain a national register of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. Federal agencies are charged with identifying, evaluating, and nominating such properties under their control to the NRHP. The National Historic Lighthouse Preservation Act of 2000 (Public Law 106-355) amended the NHPA for the purpose of establishing a National Historic Lighthouse Preservation Program.

The USCG has prepared a NRHP registration form for Alligator Reef Light. It will be sent to the Florida State Historic Preservation Officer for review and comment concerning the USCG position that the property is eligible for listing in the NRHP. Pursuant to 36 Code of Federal Regulations 60.9, we are notifying local elected officials who may have an interest in the property and inviting them to comment on the nomination during the 45-day comment period. The property is described below.

Site Name and Location:

- Alligator Reef Light
- Located approximately 3.5 miles south of Islamorada on Upper Matecumbe Key in Monroe County, FL
- Light List Number 980

Owner:

- U.S. Coast Guard COMDT (CG-47)
ATTN: Dr. Daniel Koski-Karell
2100 Second Street SW – STOP 7901
Washington, DC 20593-7901

Summary Description:

Alligator Reef Light is an iron skeletal tower lighthouse approximately 148 feet tall. It includes a foundation made with nine iron disk piles which supports an octagonal skeletal tower that includes seven horizontal tiers. The tower's second tier is a platform made with iron plates that supports a rectangular one story keepers dwelling. A cylinder that encloses a spiral stairway rises from the dwelling to the upper superstructure atop the skeletal tower. The lighthouse's upper superstructure includes a watch room and lantern. The lantern is equipped with a modern automated beacon with a focal plane 136 feet above sea level. This beacon signals a flashing white light towards the north and south, and a flashing red light

towards the northeast and southwest. The beacon's red sectors mark areas with hazards to navigation. Alligator Reef Light is also equipped with a RACON radar beacon. The lighthouse's day mark is a white tower with a black lantern and black base. This property includes a boat dock and walkway built in the twentieth century. The dock stands next to the lighthouse and provides for mooring a vessel. The walkway connects it to the lighthouse where a ladder ascends to the tower's second tier platform. The modern boat dock and walkway do not contribute to the property's historical significance.

Summary Statement of Historical Significance:

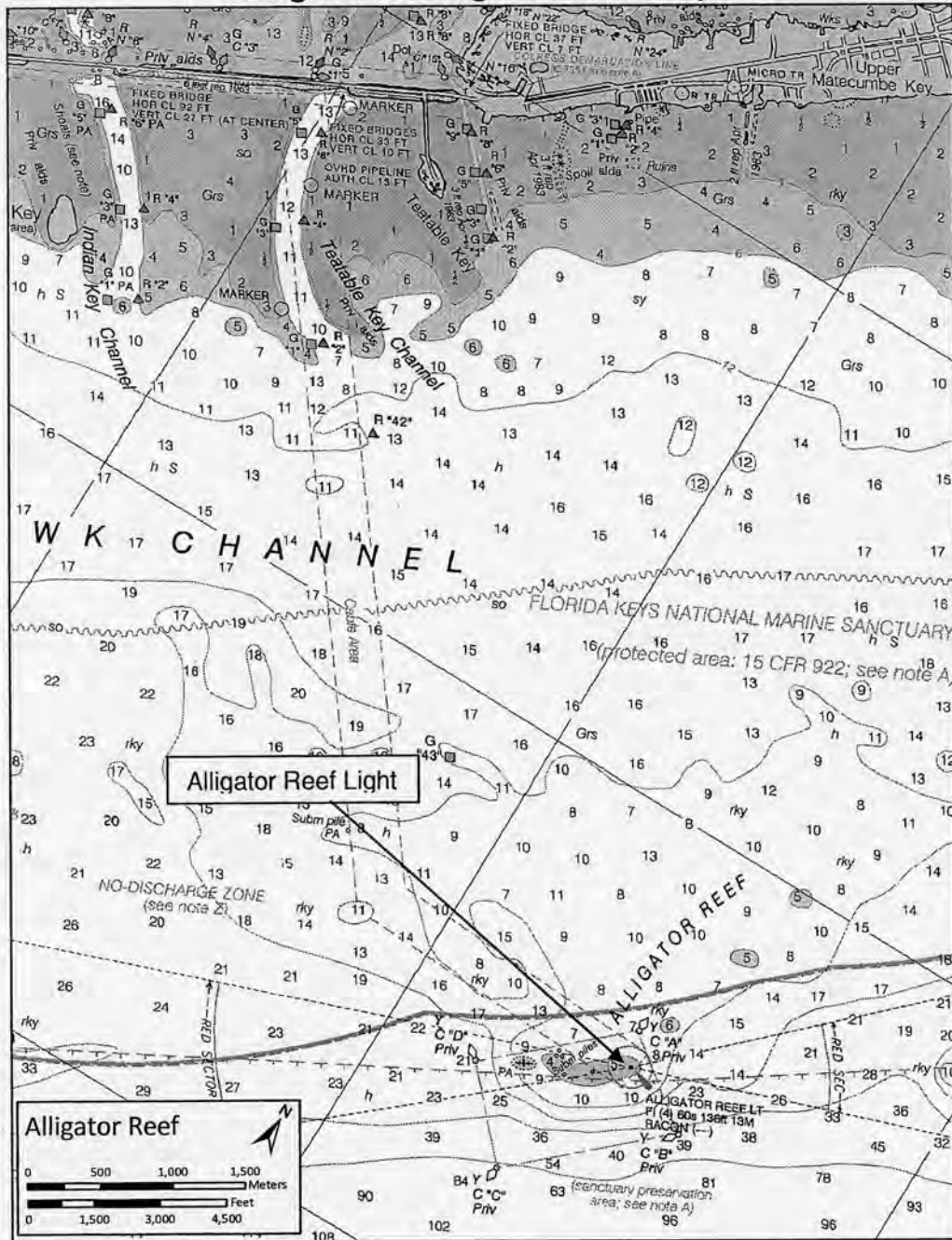
This lighthouse was constructed from 1872 to 1873 atop an area of reef and shallow water along the offshore side of the Florida Reef. This location is adjacent to an important route for vessels navigating between the Gulf of Mexico and Caribbean Sea, and ports in the eastern United States and Europe. This area has been the scene of a number of shipwrecks. Alligator Reef Light was the fourth of six tall skeletal tower lighthouses built offshore of the Florida Keys between 1852 and 1880. They are known as the Florida Reef Lights. The others offshore of Monroe County and include Sand Key Light, American Reef Light, Sombrero Key Light, and Carysfort Reef Light. One of the six Florida Reef lighthouses, Fowey Rocks Light, is offshore of Dade County.

This lighthouse property is significant in the history of Monroe County. It is eligible for National Register of Historic Places listing under Criterion A for its association with the maritime history of southern Florida. This property exemplifies a local manifestation of the Federal government's program to establish a nationwide system of aids to navigation in order to promote maritime safety and commerce. Alligator Reef Light is also eligible for NRHP listing under Criterion C for its architectural and engineering significance. It exemplifies how middle to late nineteenth century lighthouse architecture and engineering were applied to the need to mark the hazardous Florida Reef which extends westward from offshore of southeastern Dade County along the Florida Keys to Key West and beyond. The qualities of this structure's design, materials, and construction methods were applied to overcome the difficulties relating to building a lighthouse atop an offshore coral reef in an area subject to hurricanes and other tropical storms. Alligator Reef Light retains substantial integrity in terms of location, setting, design, materials, and workmanship. It is a well-known landmark offshore of Monroe County.

Map and Photograph:

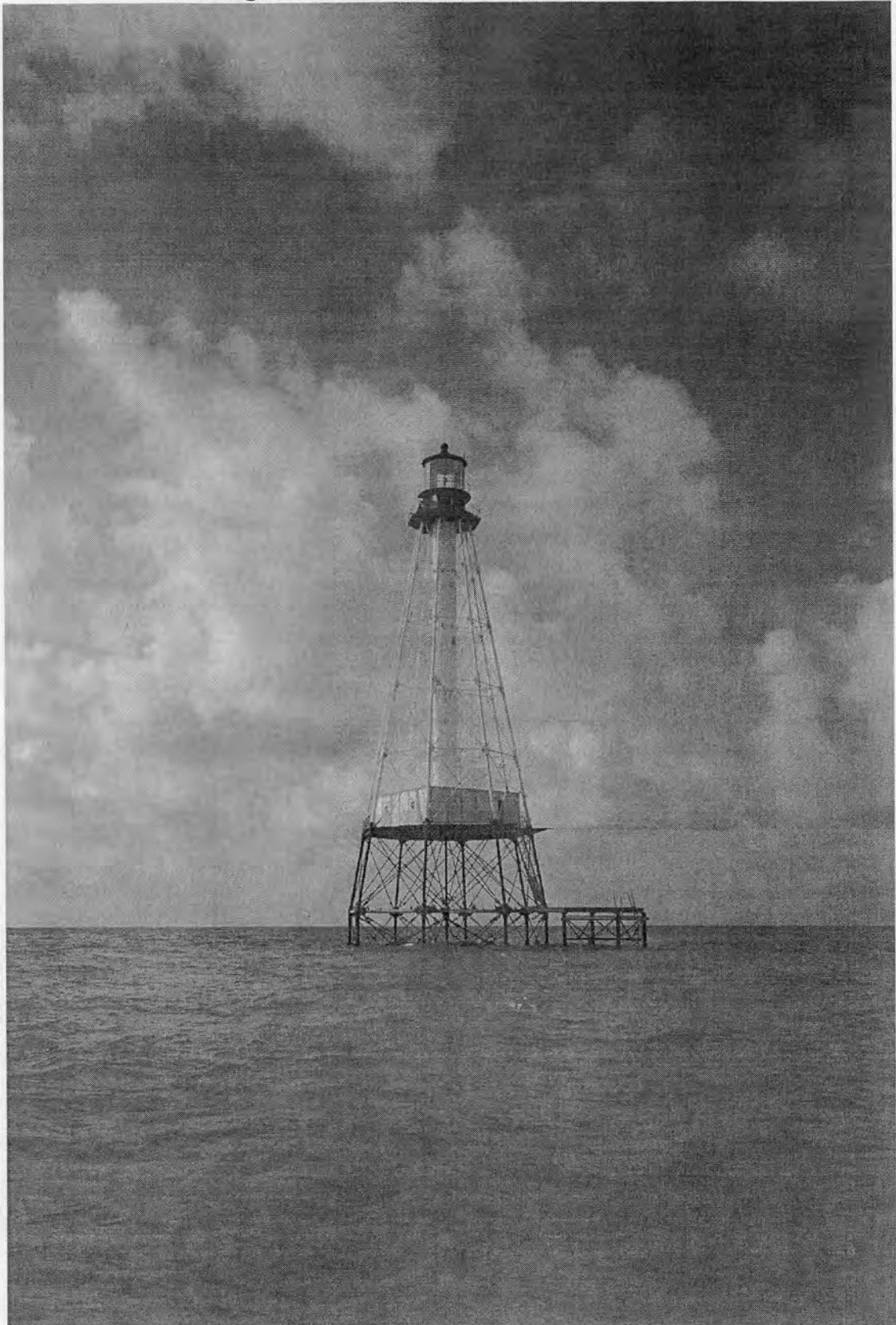
- Alligator Reef Light location map.
- Alligator Reef Light, view looking south.

Alligator Reef Light location map



Part of Intracoastal Waterway, Matecumbe to Grassy Key,
NOAA Chart # 11449, Scale 1:40000, 17th Ed., Dec.2005.

Alligator Reef Light, view looking south





BOARD OF COUNTY COMMISSIONERS

Mayor Heather Carruthers, District 3
Mayor Pro Tem David Rice, District 4
Kim Wigington, District 1
George Neugent, District 2
Sylvia J. Murphy, District 5

October 4, 2011



Chief E.F. Wandelt
Office of Environmental Management
U.S. Coast Guard
2100 Second Street SW – STOP 7901
Washington, DC 20593-7901

Dear Chief Wandelt,

I am writing in support of including Alligator Reef Light offshore of Monroe County, Florida in the National Register of Historic Places.

Alligator Reef Light, officially established in 1873 atop an area of reef along the offshore side of the Florida Reef, exemplifies the local manifestation of the Federal government's program to establish a nationwide system of aids to navigation. Specifically, the Alligator Reef Light architecture and engineering was born from the need to mark the hazardous Florida Reef, which extends westward from offshore of southeastern Dade County along the Florida Keys to Key West and beyond.

This lighthouse property is significant in the history of Monroe County, Florida for its association with the maritime history of southern Florida. The lighthouse was constructed along the important route for vessels navigating between the Gulf of Mexico and Caribbean Sea, an area that has been the scene of a number of shipwrecks. It has protected many ships along the offshore coral reef, an area subject to hurricanes, and other tropical storms. It is a well-known offshore landmark of Monroe County. Thank you for supporting the nomination of the Alligator Reef Light of Monroe County, Florida for the National Register of Historic Places.

Sincerely,

A handwritten signature in black ink, appearing to read 'Heather Carruthers'.

Heather Carruthers, Mayor
Monroe County, Florida
County Commission District 3

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard



2100 Second Street SW, STOP 7901
Washington, DC 20593-7901
Staff Symbol: COMDT (CG-47)
Phone: (202) 475-5687
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16475

OCT 18 2011

MEMORANDUM

From: *E. F. Wandelt*
E. F. Wandelt, Chief
COMDT (CG-47)

Reply to Dr. Daniel Koski-Karell
Attn of: (202) 475-5683

To: *PAUL*
Mr. J. Paul Loether, Chief
National Register of Historic Places and Historic Landmarks Division
National Park Service
1849 C Street NW, Mail Stop 2280
Washington, DC 20240

Subj: ALLIGATOR REEF LIGHT, MONROE COUNTY, FLORIDA

Ref: (a) National Historic Preservation Act Section 110, 16 U.S.C. 470h-2
(b) Programmatic Agreement Regarding Outgranting of Historic Lighthouse Properties

1. The Coast Guard nominates Alligator Reef Light, Monroe County, FL, for listing on the National Register of Historic Places (NRHP). The nomination package is enclosed (Enclosure (1)).
2. The Florida State Historic Preservation Officer's comments on this NRHP nomination were requested and received. They have been incorporated into this property's NRHP registration form where deemed appropriate.
3. Comments from appropriate local officials were solicited and one supporting the nomination was received. Copies of this correspondence are included in the enclosure.

#

Enclosure: (1) NRHP nomination package for Alligator Reef Light

Copy: CG SILC (with encl)
CG CEU Miami (with encl)
CG D7(DPW) (with encl)