

**APPENDIX C**  
**VISUAL IMPACT STUDY**



FINAL VISUAL IMPACT STUDY

CONSTRUCTION OF  
REMOTE FIXED FACILITY BUXTON  
DARE COUNTY  
NORTH CAROLINA



*Prepared for*

**U.S. Department of Homeland Security  
United States Coast Guard  
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### SECTION ONE INTRODUCTION

The United States Coast Guard (USCG) is in the process of modernizing and replacing its antiquated maritime search and rescue communications system in the State of North Carolina as part of a nationwide initiative. The new, very high frequency-FM equipment will fill in existing coverage gaps in marine communications used for Coast Guard operational missions, including search and rescue, maritime law enforcement, maritime pollution prevention and response, and national defense. The new system, known as Rescue 21, is the maritime equivalent of a “911” communications system. It is intended to enhance maritime safety by minimizing the time that search and rescue teams spend looking for people in distress. Rescue 21 equipment will strengthen the United States’ homeland security capabilities, as well as other safety and security missions, benefiting both the Coast Guard and the American public.

Under contract to the Coast Guard, URS Group, Inc. (URS) prepared this Visual Impact Study to assess the potential visual impacts from construction of a new communications tower in the project area. The study was conducted as a component of the Environmental Assessment being prepared for this project, which takes into account compliance requirements under the National Environmental Policy Act of 1969 (42 U.S.C. 4321, 4331, 4332), the Council on Environmental Quality Implementing Regulations (40 CFR Parts 1500–1508), Department of Homeland Security (DHS) Management Directive (MD) 023-01, the USCG Commandant Instruction M16475.1D, *National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts*, and the Federal Communications Commission’s National Historic Preservation Guidance Materials. Compliance with Section 106 of the National Historic Preservation Act (16 U.S. C 470 et seq.) is a component of this study, which also assesses effects the project will have on formally designated and potentially historic properties.

#### 1.1 PROPOSED UNDERTAKING

The proposed communications tower is to be erected on U.S. Government-owned property at 46392 Lighthouse Road, Buxton, NC (Figure 1 in Appendix A). The USCG proposes to replace an existing 425-foot-tall guy-wired communications tower with a new 525-foot-tall version and appurtenant structures. The addition of a top-mounted direction finding (DF) antenna and a lightning rod on the 525-foot-tall tower will bring the overall height of the tower and appurtenances to 538 feet above ground level. The new tower is being constructed to expand transmission area coverage, filling in gaps in VHF-FM marine communications used for Coast Guard operational missions including search and rescue, maritime law enforcement, maritime pollution prevention and response, and national defense. The new system, known as “Rescue 21,” will be the maritime equivalent of a “911” communications system, enhancing maritime safety by helping to minimize the time that search and rescue teams spend locating people in distress. Rescue 21 represents a quantum leap forward in coastal command-and-control and distress communications. It will enhance national homeland security capabilities, as well as other safety and security missions bringing tremendous benefits to the Coast Guard and the American public.

The Coast Guard is considering three design alternatives for the proposed tower:

- *Alternative 1 (Proposed Action):* A 525-foot-tall, tower with 24 guyed wires and three guy wire anchor points; bird diverter devices on the guy wires may be used.

- *Alternative 2:* A 525-foot-tall, tower with 39 guyed wires and six guy wire anchor points; bird diverter devices on the guy wires may be used.
- *Alternative 3:* A 525-foot-tall, self-supported lattice tower.

The guy-wire tower alternatives would include the use of bird diverter devices that are designed to prevent collisions of birds with unseen wires. For birds, these devices stand out against background features, allowing them to see the wires in both daytime and nighttime; in windy conditions the devices may also emit warning sounds. There are many options for bird diverter devices, including the “BirdMark” shown in Exhibit 1, or brightly colored balls that are attached directly to the wire. The Coast Guard would not install bird diverters that use reflective surfaces as a visual deterrent because of the visual intrusion of such devices. The proposed tower wires may require more than one bird diverter along the length of each wire. The specific type of bird diverters that would be used has not been determined.



**Exhibit 1: Example of BirdMark Bird Diverter developed by P&R Technologies (2009)**

For each tower alternative, the Coast Guard is considering two options to meet Federal Aviation Administration (FAA) standards as described in the FAA Advisory Circular AC70/7460-1K Change 2, *Obstruction Marking and Lighting*:

- *Option 1:* A tower painted with seven equal-width alternating bands of aviation orange and white paint according to FAA standards. This option would not require daytime high intensity white strobe lighting. Nighttime lighting for any of the painted tower alternatives would be similar in appearance and intensity to the existing HLS tower, although LED lights would be used in lieu of incandescent bulbs because they require less maintenance and less energy to operate. Two L-864 red flashing beacons would be mounted at both the 525-foot and 263-foot levels. Three L-810 steady burning red obstruction lights would be mounted at both the 131-foot and 394-foot levels.
- *Option 2:* An unpainted tower (the tower would remain a steel grey color) that would require daytime high intensity (270,000 candelas) white strobe lighting in accordance with FAA standards for dual high intensity obstruction lighting (FAA Style F). Because each high intensity (L-856) white strobe light only covers an arc of 120 degrees, three L-856 flashheads would be mounted at both the 525-foot and approximately the 263-foot levels. Nighttime lighting for any of the unpainted tower alternatives would be the same in appearance, flash rate, and intensity as Option 1 for a painted tower, while using low maintenance LED light fixtures (L-864 and L-810) instead of incandescent bulbs.

### 1.2 AREA OF POTENTIAL EFFECT

To assess the effects of the Proposed Undertaking on historic properties, an Area of Potential Effect (APE) was developed based on the type and height of the facility, the surrounding topography, and tree cover in the vicinity of the proposed tower. The APE consists of a 2-mile radius extending from the proposed tower site (Figure 2 in Appendix A). The APE was determined based on the actual visibility of the proposed structure, known as the viewshed, to and from other historic properties within this area.

All known or potential historic properties located within the viewshed were assessed for potential adverse effects associated with the Proposed Undertaking. An adverse effect is defined as any undertaking that will alter, either directly or indirectly, the characteristics that qualify a property for inclusion in the National Register of Historic Places (NRHP).

### 1.3 SITE DESCRIPTION

The property selected for RFF Buxton is located at 46392 Cape Point Campground Road, Buxton, Dare County, North Carolina. The site is approximately 1.5 miles south of Buxton within the limits of the Cape Hatteras National Seashore and approximately 0.5 mile from the coastline. The proposed tower site is an 11.25-acre tract of land acquired by the U.S. Coast Guard on May 29, 1937, and originally used by the Coast Guard for the Cape Hatteras Station. A High Level Site (HLS) communications tower was constructed on this property by the Coast Guard in 1993. After relocating its administrative and operational offices, the Coast Guard retained the unrestricted use of the entire 11.25-acre parcel as a communications site for the National Distress and Response System. In June 2004, the remainder of the property, including several former Coast Guard administrative and maintenance buildings, was transferred to the Department of the Interior, National Park Service (NPS). This project involves replacing the existing communications tower—already located on the site—with a new and taller tower. The proposed tower site is bounded to the south, east, and west by undeveloped wetlands, and is bounded to the north by wooded lands that are adjacent to the Buxton Woods.

### 1.4 EXISTING TOWER DESCRIPTION

The existing 425-foot-tall HLS communications tower is a three-sided, painted, guyed tower, supported by 18 guy wires and six concrete anchor points. The three inner anchors are set within a 200-foot radius, while the three outer anchors are within a 340-foot radius from the tower. Bird flight diverter devices are not presently installed on the guy wires. Aircraft obstruction marking was accomplished by using the FAA's red obstruction lighting system (FAA Style A) which is composed of a single (2,000 candela) red flashing beacon (L-864) at the 425-foot level, two similar L-864 beacons at approximately the 212-foot level, and three L-810 steady burning red (32.5 candela) obstruction lights at both the 106-foot and 318-foot levels. The L-864 beacons flash synchronously 20 times per minute. The lights turn on and off automatically and operate only during the nighttime. All of the HLS tower lights use older, incandescent bulbs versus the more modern and easier to maintain, light emitting diode (LED) fixtures. In order to meet daytime and twilight marking requirements, the tower is painted with seven, equal width, alternating bands of aviation orange and white paint.

## SECTION TWO      METHODOLOGY

### 2.1      RESEARCH

In April 2009, a URS architectural historian, meeting the *Secretary of the Interior's Professional Qualifications Standards* (36 CFR Part 61) in the discipline of architectural history, conducted background research and a windshield survey of the areas surrounding the proposed tower site to identify any cultural resources within the APE that are listed in or determined eligible for listing in the NRHP or any potential historic resources that would require further study and/or evaluation. Background research was conducted April 14–16, 2009, at the Drake County Libraries in Nags Head and in Manteo, at the North Carolina State Historic Preservation Office's (SHPO) archives, including the Eastern Office in Greenville and the State Headquarters in Raleigh, and at the North Carolina Department of Archives and History. The SHPO offices were visited to identify any existing architectural and archaeological resources within the APE. Online research including the National Register Information System (NRIS) was also conducted.

A visit to the RFF site and a windshield survey of the area within the 2-mile APE was conducted on April 14, 2009, to observe the setting of the proposed tower. Photographs of the tower site were taken during the site visit and are provided in Appendix B of this report. Unless written documentation was found, age determinations were made based on visual analysis.

### 2.2      CRITICAL VIEWPOINTS

Three **Critical Viewpoints** were established and include:

- **Critical Viewpoint A:** The grounds near the base of the Cape Hatteras Light Station
- **Critical Viewpoint B:** The view from the top exterior railing of the Cape Hatteras Light Station
- **Critical Viewpoint C:** The view from the grounds near the Cape Hatteras Light Station Visitor's Center

Each of these Critical Viewpoints is related to the Cape Hatteras Light Station. Research unveiled other eligible and potentially eligible resources that were assessed through the development of five other Critical Viewpoints.

- **Critical Viewpoint D:** The view from the Civilian Conservation Corps Cabins
- **Critical Viewpoint E:** The view from the Rollinson House
- **Critical Viewpoint F:** The view from the Urias Gaskins House
- **Critical Viewpoint G:** The view from the former U.S. Coast Guard Station (National Park Service Ranger's Office)
- **Critical Viewpoint H:** The view from the World War II British Sailor Cemetery

A map showing the location of each Critical Viewpoint is provided in Figure 3 in Appendix A.

### 2.3 PHOTO SIMULATIONS

Utilizing field data and photographs, photo simulations of the proposed tower alternatives were created. Six photo simulations representing each tower alternative and each option were created from each Critical Viewpoint (Appendix B). The evaluation and findings in this report were based on these visual simulations from the Critical Viewpoint sites where the proposed communication tower would be visible.

Photo simulations for the tower alternatives are not provided for Critical Viewpoint E (Rollinson House) and Critical Viewpoint F (Urias Gaskins House) because none of the proposed tower alternatives would be visible from these resources.

## Findings: Identification and Evaluation of Historic Properties

### SECTION THREE FINDINGS: IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES

A review of the NRIS identified one historic property—the Cape Hatteras Light Station, listed in the NRHP and also designated as a National Historic Landmark (NHL)—within the APE (Exhibit 2). A review of SHPO files identified a total of five properties located within the APE, inclusive of the Cape Hatteras Light Station. Only four of the five properties are currently extant within the APE because one of the properties has been demolished (Fessenden Site, DR 241<sup>1</sup>). Records of the NRHP and the North Carolina SHPO identified these properties as the Cape Hatteras Lighthouse (DR 4); Civilian Conservation Corps (CCC) Cabins (DR 7); Rollinson House (DR 614); Urias Gaskins House (DR 615). As part of survey fieldwork, a site visit, and windshield survey, two additional potentially historic properties were identified. These include two buildings that appear to be more than 50 years old located at the site of the former U.S. Coast Guard Station, which is currently occupied by the National Park Service (NPS). Immediately adjacent to the northern boundary of the former U.S. Coast Guard Station is a World War II British Sailor Cemetery, which is also a potentially historic resource.

In summary, a total of six resources greater than 50 years of age were identified within the APE. The Cape Hatteras Light Station (DR 4) is listed in the NRHP and is a NHL. The CCC Cabins (DR 7), the Urias Gaskins House (DR 614), and the Rollinson House (DR 615) have each been determined eligible for listing in the NRHP. The former U.S. Coast Guard Station and the WW II British Sailor Cemetery are potentially historic resources.

The following table provides the survey inventory name, number, location, NRHP status, and distance and direction from the proposed tower, and indicates whether the proposed tower will be visible (high, medium, and low visibility) from each resource. Additional information on each property, including a resource description, a determination of NRHP eligibility, images of the resource and its view toward the proposed tower, and an assessment of effects for those resources from which the proposed tower would be visible are provided in Section 4.

**Table 1: Tower Visibility from Historic Properties within the APE**

Property Name	DR Number	Location	NRHP Status	Distance/Direction from Proposed Tower Site	Tower Visibility
Cape Hatteras Light Station	DR 4	Lighthouse Road, Buxton, NC	Listed	0.45 mile	High
CCC Cabins	DR 7	Cabin Road, Buxton, NC	Eligible	0.48 mile	Low
Rollinson House	DR 614	Rollinson Road, Buxton, NC	Eligible	1.65 miles	None
Urias Gaskins House	DR 615	Rollinson Road, Buxton, NC	Eligible	1.66 miles	None
Former U.S. Coast Guard Station	None Assigned	Lighthouse Road, Buxton, NC	Potentially Eligible	0 mile (on proposed tower site)	High
WW II British Sailor Cemetery	None Assigned	Lighthouse Road, Buxton, NC	Potentially Eligible	0.18 mile	Medium

<sup>1</sup> DR numbers refer to the SHPO's file system and signify the numbering system for Dare County resources.



**Exhibit 2: Aerial view of the project site with the Cape Hatteras Light Station in the upper left corner of photograph**

**Photo by: John M. Lehman, Photographer, USCG (circa 1930s)**

### SECTION FOUR ASSESSMENT OF EFFECTS TO HISTORIC RESOURCES

The photo simulations of the three tower alternatives at each Critical Viewpoint (Appendix B) were analyzed for the effect of the proposed tower on historic resources and impacts on the visual integrity of the surrounding viewshed, including the natural and man-built landscape and its freedom from encroaching elements. Visual integrity can be present in well-kept urban and rural landscapes, as well as in natural settings. Based on these photo simulations, the proposed tower's impacts on the visual integrity at each critical viewpoint and its effect on the historic resource located at that viewpoint are presented below. While a painted tower will have more visibility than an unpainted tower, the visual impact study revealed that the greater visibility is a minor factor in the assessment of effects and that the paint scheme, in itself, will not have an adverse effect on historic properties.

Because bird diverters would be attached to the guy wires high above the ground, they would either appear to be invisible to humans or would appear as tiny black or pale orange dots along the length of the guy wires. Because diverters would be nearly invisible when standing nearby, and would become practically invisible when viewing the tower from a distance, they were considered to have no visual impact and are not included in the photo simulations.

#### 4.1 CRITICAL VIEWPOINTS A, B, AND C: CAPE HATTERAS LIGHT STATION

Location:	Lighthouse Road, Buxton, NC
NRHP Status:	Listed
Distance:	0.45 mile
Tower Visibility:	High



**Exhibit 3: Cape Hatteras Light Station**

The Cape Hatteras Light Station, a NRHP and NHL property, consists of four buildings that have been relocated from near the edge of the ocean to safer ground about 2,870 feet inland. The complex of buildings consists of the Cape Hatteras Lighthouse, the Oil House, Double Keepers Quarters, and Principal Keepers Quarters.

Construction of the lighthouse was completed in 1870 with a Fresnel lens that was lit by oil lamps. The Cape Hatteras Lighthouse rises 198 feet from its base, making it the tallest lighthouse in the United States and the second tallest in the world. The conical brick shaft is painted in a distinctive black and white striped spiral pattern and stands upon a floating foundation of cross-laid layers of yellow pine timbers that is coursed with a cut stone foundation laid in an octagonal pattern with granite groins. Atop the shaft is iron nicking with a wide corbel cornice that supports a balustraded balcony that surrounds a second catwalk encircling the cupola that houses the light. The light is crowned with a circular roof decorated with a spherical finial and metal spire. The lighthouse is fenestrated by two doors and seven windows. The lintels and sills are of stone, and a spiral staircase of 268 steps with semi-circular landings winds from the base to the light, reaching a focal plane of 191 feet above mean high water.

Built in 1892, the brick Oil House is constructed of red brick, is 15 feet 6 inches by 13 feet 6 inches in plan, and stands roughly 65 feet from the lighthouse tower. The walls are 8 feet 6 inches high and the gabled roof is 4 feet high and covered by a turned beam metal sheathing. Originally, the building was used to house oil drums for the light.

Erected in 1854, the Double Keepers Quarters is a two-story wood frame building with a rectangular plan that has been adapted over time with renovations and additions. A one story porch runs the full length of the building's façade with 16 windows and two doors that provided access to each of the keeper's quarters. Two brick chimneys pierce the roof line. While the building was not originally divided into two units, in 1892 it was adapted into two or possibly three units, which included a two-story extension of the main building, a kitchen wing moved to the rear of the building, and various other renovations.

Constructed in 1871, the Principal Keepers Quarters, only a short distance from the Double Keepers Quarters, began as a one-and-one-half-story brick building with a one-story ell serving as the kitchen. Like the Double Keepers Quarters, this building was also modified over time with the addition of a two-story frame extension providing a larger living room and bedroom; also, a small, one-story frame addition was added to the kitchen.

### 4.1.1 Evaluation

This property is within the Cape Hatteras National Seashore and was listed in the NRHP on March 29, 1978, as the Cape Hatteras Light Station and/or the Cape Hatteras Lighthouse. The property was nominated under Criterion A for its relationship to important historical events in American History and Criterion C for its distinction as the tallest lighthouse in the United States and also as an outstanding example of engineering and architectural design in the period it was built. Furthermore, the property was designated as a NHL on August 5, 1998.

### 4.1.2 Integrity Analysis

The resource retains its integrity of design, materials, workmanship, feeling, and association. Because the resource has been moved inland, the location and setting have been lost.

### 4.1.3 Effects Analysis of Critical Viewpoint A: The Grounds near the Base of the Cape Hatteras Light Station

The potential visual impacts of each of the three proposed tower designs were analyzed for this critical viewpoint. The Cape Hatteras Light Station is within ½ mile of the proposed tower site.

#### 4.1.3.1 *Alternative 1 – 24 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the light station.

#### 4.1.3.2 *Alternative 2 – 39 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the light station.

#### 4.1.3.3 *Alternative 3 – Self-Supported Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall self-supported tower which would introduce a more substantial structure within the viewshed. Because of the proximity of the lighthouse to the proposed tower site, the current tower is visible. However, from the grounds near the base of the lighthouse, the massed base of the self-supported structure would be hidden by the surrounding forest, minimizing the visible size difference between it and the guyed tower alternatives. Therefore, the project will have no adverse effect on the light station from this critical viewpoint.

### 4.1.4 Effects Analysis of Critical Viewpoint B: The View from the Top of the Cape Hatteras Light Station

The potential visual impacts of each of the three proposed tower designs were analyzed for this critical viewpoint.

#### 4.1.4.1 *Alternative 1 – 24 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the light station.

#### 4.1.4.2 *Alternative 2 – 39 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the light station.

### 4.1.4.3 *Alternative 3 – Self-Supported Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall self-supported tower a much more substantial structure within the viewshed. The proximity of this historic property to the project site makes the current tower visible. From the top of the lighthouse, the visibility of the current tower is intensified. Because the entire tower is visible from this viewpoint, the self-supported tower's massing in comparison with a guy-wire tower is much greater. Regardless of which tower is selected, the viewshed will still be altered by a new tower; however, because of the size difference, which is most substantial near the base of the self-supported tower, the viewshed is being altered more significantly by this tower alternative. Therefore, this tower alternative will have an adverse effect on the light station from this critical viewpoint.

### 4.1.5 Effects Analysis of Critical Viewpoint C: The View from the Grounds near the Cape Hatteras Light Station Visitor Center

The potential visual impacts of each of the three proposed tower designs were analyzed for this critical viewpoint.

#### 4.1.5.1 *Alternative 1 – 24 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the light station.

#### 4.1.5.2 *Alternative 2 – 39 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the light station.

#### 4.1.5.3 *Alternative 3 – Self-Supported Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall self-supported tower and, in turn, a more substantial structure will be within the viewshed. Because of the close proximity of this resource to the project site, the current tower is visible. However, from the base of the lighthouse, the massed-base of the self-supported structure is hidden by the surrounding forest, minimizing the visible size difference between it and the other tower configurations. Therefore, the project will have no adverse effect on the Cape Hatteras Light Station from this critical viewpoint.

### 4.2 CRITICAL VIEWPOINT D: CCC CABINS

Location:	Cabin Road, Buxton, NC
NRHP Status:	Eligible
Distance:	0.48 mile
Tower Visibility:	Low



**Exhibit 4: CCC Cabins**

Built between 1939 and 1940, these cabins consist of five, one-story wood-frame houses designed by the NPS and built by the CCC. The buildings are located within the Cape Hatteras National Seashore on property owned by the U. S. Government. The wood-frame buildings are distinctly plain, with a simple decorative cornice and a large brick exterior chimney. The buildings each have a similar appearance of early colonial dwellings in North Carolina; however, they differ in size. Two of the buildings are larger, exhibiting a five-room plan, while three of the buildings are smaller, exhibiting three-room plans.

#### 4.2.1 Evaluation

These buildings are not eligible for the NRHP under Criterion B (person) or D (information potential). They are not known to be associated with a significant individual at the local, State, or national level; nor is the property known to have archaeological potential. The buildings are eligible under Criterion A (event) because they were constructed by the CCC in the early 1930s as part of the Cape Hatteras State Park. The CCC was a public works relief program that focused on natural resource conservation from 1933 to 1942 as part of the New Deal legislation proposed by President Roosevelt. The buildings are also eligible under Criterion C (architecture) because

they were constructed near the end of the Colonial Revival period and the buildings were purposely designed to represent early colonial architecture in North Carolina.

### 4.2.2 Integrity

The resources lack integrity of materials, but retain integrity of location, design, setting, workmanship, feeling, and association. At least two of the buildings have replacement vinyl siding. However, each building maintains the feeling of early colonial buildings of North Carolina exhibited through the use of the brick chimneys, cornice detail, and general scale and design.

### 4.2.3 Effects Analysis of Critical Viewpoint D: CCC Cabins

The potential visual impacts of each of the three proposed tower designs were analyzed for this critical viewpoint. Because the CCC Cabins are located in the Buxton Woods, they are heavily secluded and maintain a viewshed that is blocked by forest and other vegetation. The existing tower has a low visibility from the area in which the cabins are situated.

#### 4.2.3.1 *Alternative 1 – 24 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the cabins.

#### 4.2.3.2 *Alternative 2 – 39 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the cabins.

#### 4.2.3.3 *Alternative 3 – Self-Supported Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall self-supported tower and, in turn, a more substantial structure will be within the viewshed. Because of the close proximity of this resource to the project site, the current tower is visible; however, because it is within a forested viewshed, the tower's visual presence is minimized. The increase in size is not substantial enough to further detract from this potential historic property's integrity and, therefore, this project will not have an adverse effect on the cabins.

### 4.3 CRITICAL VIEWPOINT E: ROLLINSON HOUSE

Location:	47402 Rollinson Road, Buxton, NC
NRHP Status:	Eligible
Distance:	1.65 miles
Tower Visibility:	None



**Exhibit 5: Rollinson House**

Built in the first decade of the twentieth century, the Rollinson House is a traditional wood-frame I-House. It is two stories tall and one room deep with a gable-end roof. A single-story screened porch with a hipped roof stretches across the building's façade. A one-story ell is centered on the rear elevation of the house and a shed addition to the west elevation of the house.

### 4.3.1 Evaluation

The Rollinson House was previously determined eligible for listing in the NRHP on November 28, 2005, and is recorded as such by the North Carolina SHPO. The property was determined eligible for listing under Criterion C (architecture) as a representative of early-twentieth-century architecture in Buxton and as an example of the I-House form. The property was found not eligible for the NRHP under Criterion A (event), B (person), or D (information potential). It was not found to be associated with a significant event and/or individual at the local, State, or national level; nor is the property known to have archaeological potential.

### 4.3.2 Integrity

The resource lacks integrity of materials, but retains integrity of location, design, setting, workmanship, feeling, and association. Materials have been compromised with the replacement or suppression of the original wood siding with vinyl siding. Despite these alterations, the building maintains the feeling of an early-twentieth-century house in Buxton.

### 4.3.3 Effects Analysis of Critical Viewpoint E: Rollinson House

The potential visual impacts of each of the three proposed tower designs were analyzed for this critical viewpoint. The Rollinson House is located almost 2 miles from the proposed tower site and the existing tower is not visible from this resource. A new tower would not be visible from this resource and there would be no visual impact or adverse effect to this resource from any of the tower alternatives or options.

### 4.4 CRITICAL VIEWPOINT F: URIAS GASKINS HOUSE

Location:	47516 Rollinson Road, Buxton, NC
NRHP Status:	Eligible
Distance:	1.66 miles
Tower Visibility:	None



**Exhibit 6: Urias Gaskins House**

Built in 1907, the Urias Gaskins House is a traditional wood-frame I-House. It is two stories tall and one room deep with a gable-end roof. The roof of the house has a cross-gabled section in the front and each of the gables retain the original barge board trim with Eastlake details typical of houses in the late nineteenth and early twentieth centuries. A single-story porch with a hipped roof supported by wood posts stretches across the building's façade. A two-story ell is centered on the rear elevation of the house and one-story shed additions have been added to the east and west elevations of the ell, giving the house a rectangular shape.

#### 4.4.1 Evaluation

The Rollinson House was previously determined eligible for listing in the NRHP on November 28, 2005, and is recorded as such by the North Carolina SHPO. The property was determined eligible for listing under Criterion C (architecture) as a representative of early-twentieth-century

architecture in Buxton and as an example of the I-House form. The property was found not eligible for the NRHP under Criterion A (event), B (person), or D (information potential). It was not found to be associated with a significant event and/or individual at the local, State, or national level; nor is the property known to have archaeological potential.

### 4.4.2 Integrity

The resource lacks integrity of materials, but retains integrity of location, design, setting, workmanship, feeling, and association. Materials have been compromised with the replacement or covering of the original wood siding with vinyl siding and the addition of vinyl shutters. However, despite these changes, the building maintains the feeling of an early-twentieth-century house in Buxton.

### 4.4.3 Effects Analysis of Critical Viewpoint F: Urias Gaskins House

The potential visual impacts of each of the three proposed tower designs were analyzed for this critical viewpoint. The Urias Gaskins House is located almost 2 miles from the proposed tower site and the existing tower is not visible from this resource. A new tower would not be visible from this resource and there would be no visual impact or adverse effect to this resource from any of the tower alternatives or options.

## 4.5 CRITICAL VIEWPOINT G: FORMER U.S. COAST GUARD STATION

Location:	Buxton, NC
NR Status:	Eligible
Distance:	0 mile (on project site)
Tower Visibility:	High



**Exhibit 7: Former U.S. Coast Guard Station**

The former U.S. Coast Guard Station consists of two buildings, which serve as an administrative office and garage, respectively. Both buildings appear to be older than 50 years of age and were constructed in the Colonial Revival style (Exhibits 7 and 8).

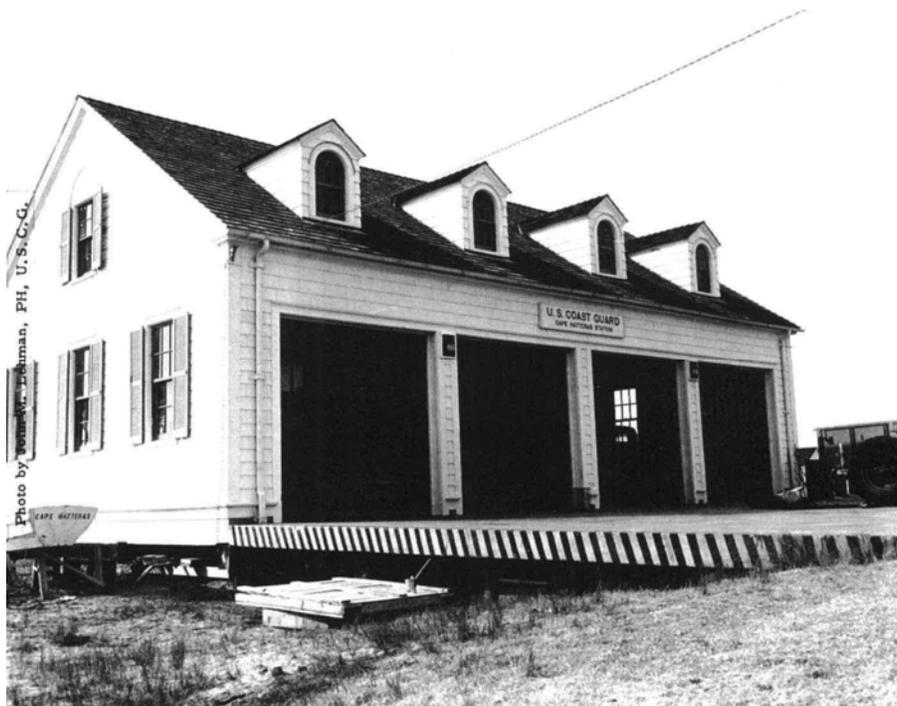
The office, currently used as a NPS Park Ranger's Station, consists of two (one to the north and one to the south) one-and-a-half-story, massed-plan, front-gabled sections, equal in size, that are connected by a central hyphen. Each elevation of the gabled roof is pierced with three joined shed dormers. The gabled roof of the southern section of the building is pierced with a brick chimney. The entire building is clad in whitewashed wood shingle siding typical of seaside buildings. The western elevation of each building includes one-story side wings that are enclosed with flat roofs. The flat roofs of each building are flanked with balustrades to give the allusion of a widow's watch as it is this elevation that is facing the sea. Doors are located on both the east and west elevations through the central hyphen and the north and south sections of the building.

The garage is a massed-plan, side-gabled building with four large bays across the front with replacement metal garage doors. The roof is pierced by a brick chimney and four gabled dormers with arched windows emulating the federal style. The entire building is clad in whitewashed wood shingle siding that has been covered with vinyl siding that is deteriorating in various areas of the building. A single doorway entrance is located on the northern elevation of the building. The fenestration pattern of the building seems to be original; however, all of the windows have been boarded up and, in some cases, there are remains of vinyl shutters.



Photo by John M. Lehman, PH, U. S. C. G.

**Exhibit 8: NPS Park Ranger's Station, former USCG Station (Circa 1930s/40s)  
Photo by: John M. Lehman, Photographer, USCG**



**Exhibit 9: NPS Park Ranger’s Station, former USCG Station Garage (Circa 1930s/40s)  
Photo by: John M. Lehman, Photographer, USCG**

### 4.5.1 Evaluation

The former U.S. Coast Guard Station is eligible under criterion C (architecture) as it represents seaside architecture in the Colonial Revival style. The property was found ineligible for the NRHP under Criterion A (event), B (person), or D (information potential). It was not found to be associated with a significant event and/or individual at the local, State, or national level. According to the North Carolina SHPO, no known archaeological sites are affiliated with the project side and/or in the immediately adjacent vicinity (Myers 2009).

### 4.5.2 Integrity

The office retains integrity of integrity of location, design, setting, materials, workmanship, feeling, and association. The garage retains integrity of location, setting, feeling, and association; however, because of the alterations, integrity of design and materials has been compromised. As a contributing building to the station complex, it retains a sufficient level of integrity to be listed in the NRHP.

### 4.5.3 Effects Analysis of Critical Viewpoint G: Former U.S. Coast Guard Station

The potential visual impacts of each of the three proposed tower designs were analyzed for this critical viewpoint.

### 4.5.3.1 *Alternative 1 – 24 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will result in no adverse effect on the station complex.

### 4.5.3.2 *Alternative 2 – 39 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will result in no adverse effect on the station complex.

### 4.5.3.3 *Alternative 3 – Self-Supported Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall self-supported tower, the latter representing a more substantial structure located at the project site. Due to the nature of this alternative, the actual tower has a greater physical presence. However, because this alternative is engineered to be self-supported and, unlike the current tower or the two guy-wire alternatives, the wires that currently intrude upon the entire property and its immediate grounds would be eliminated, minimizing the tower's overall visual effect on the viewshed. The increase in tower height and width will not further detract from the resource's setting and, in turn, this project will not have an adverse effect on the station complex.

## 4.6 CRITICAL VIEWPOINT H: WW II BRITISH SAILOR CEMETERY

Location:	Lighthouse Road, Buxton, NC
NR Status:	Eligible
Distance:	0.18 mile
Tower Visibility:	Medium



**Exhibit 10: WW II British Sailor Cemetery**

The WWII British Sailor Cemetery, recognized by Great Britain's Commonwealth War Graves Commission, consists of two graves that are surrounded by a white picket fence. A large marker near the road serves as an educational guide to circumstances surrounding Paukenschlag, (Operation Drumbeat) and explains the cemetery's placement. Paukenschlag was a German Naval attack on the east coast of the United States, which lasted from January 1942 to June 1942. German U-boats attacked and sank more than 600 merchant ships. As a result of this naval operation, sailors were killed along the east coast of the United States. The graves in this cemetery represent two sailors who lost their lives as a result of this attack.

### 4.6.1 Evaluation

The property is potentially eligible for listing in the NRHP under Criterion D (broad patterns of history) as a physical representation Paukenschlag (Operation Drumbeat), but further research would be required to validate this view. Furthermore, the property is a physical representation of a naval operation that led to the loss of civilian lives. The cemetery was created because of the tragedies that resulted from this operation, has only two British sailors, and has no space for future burials as the cemetery was designed to house these two particular grave sites. The property was found not eligible for listing in the NRHP under Criterion A (event), B (person), or C (architecture).

### 4.6.2 Integrity

The resource retains integrity of location, design, materials, setting, workmanship, feeling, and association.

### 4.6.3 Effects Analysis of Viewpoint H: WW II British Sailor Cemetery

The potential visual impacts of each of the three proposed tower designs were analyzed for this critical viewpoint. Because the WW II British Sailor Cemetery is located in the woods adjacent to the proposed tower site, vegetation limits the viewshed, but does not completely seclude the cemetery's visibility of the tower, making some visibility a possibility.

#### 4.6.3.1 *Alternative 1 – 24 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the cemetery.

#### 4.6.3.2 *Alternative 2 – 39 Guy-Wire Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall guy-wire tower, which, visually, will have the same effect on the viewshed with a 25-percent increase in the height of the tower. Because the increase in height will not greatly alter the visual impact of the tower, this project will have no adverse effect on the cemetery.

### 4.6.3.3 *Alternative 3 – Self-Supported Tower*

With this alternative, the 425-foot-tall guy-wire tower will be replaced by a 525-foot-tall self-supported tower and, in turn, a more substantial structure will be within the viewshed. Because of the close proximity of this resource to the project site, the current tower is visible; however, being within a forested viewshed, the tower's visual presence is minimized. The increase in size is not substantial enough to further detract from this historic resource's integrity and, therefore, this project will not result in an adverse effect on this cemetery.

### SECTION FIVE CONCLUSION

The NHL and NRHP property—the Cape Hatteras Light Station—has been given the utmost consideration with the use of three Critical Viewpoints looking toward the proposed tower site to assess the visual effects associated with new tower construction. This assessment has concluded that with each of the three tower alternatives and two options taken into consideration, the project will result in no adverse effect on the lighthouse from Critical Viewpoints A and C. The same is true for Critical Viewpoint B in regard to the two guy-wire tower alternatives. However, because the self-supported tower is a more substantial structure in terms of its massing, its physical presence is intensified and magnified from Critical Viewpoint B—resulting in an adverse effect on the lighthouse.

The existing HLS tower is painted with seven, equal width, alternating bands of aviation orange and white paint in accordance with FAA obstruction marking requirements and does not have daytime lighting. The HLS tower's nighttime lighting consists of a single (2,000 candela) red flashing beacon (L-864) at the 425-foot level, two similar L-864 beacons at approximately the 212-foot level, and three L-810 steady burning red (32.5 candela) obstruction lights at both the 106-foot and 318-foot levels. The L-864 beacons flash synchronously 20 times per minute. The lights turn on and off automatically and operate only during the nighttime.

Consideration was given to the visual effects of the proposed RFF tower during the daytime for both design options—either a tower painted with aviation orange and white bands without daytime lighting, or an unpainted tower with high intensity (270,000 candela) white strobe obstruction lights (FAA L-856) which will flash 40 times per minute. The high-intensity daytime strobes are believed to be more visually obtrusive at close range than a tower painted with orange and white banding. The painted option, however, may be more visually obtrusive from a distance than the high-intensity daytime strobes.

The replacement tower will be 100 feet taller than the existing HLS tower and, when viewed from a distance during the daytime, there will be a negligible change in visual appearance between the existing HLS tower and the replacement RFF tower.

Consideration was also given to the visual effect during the nighttime of the proposed replacement tower which will use 2,000 candela, red light emitting diode (LED) beacon lights (FAA L-864) which will flash 20 times per minute and steady burning low intensity (32.5 candela) red obstruction lights (L-810). All of the tower alternatives will use the same nighttime lighting. The existing HLS tower uses the same nighttime lighting only with red incandescent beacons versus the red LED lights that would be used on any of the proposed new tower designs. LED lights turn instantly on then off versus incandescent bulbs which appear to more gradually brighten as they turn on, then more gradually dim as they turn off. The flash rate and intensity of the red incandescent bulbs versus the red LED lights would be the same at 20 flashes per minute. There will be a negligible change in visual appearance of the lighting between the existing HLS tower and the replacement tower during the nighttime and no change in the intensity or flash rate of the nighttime lighting.

**Table 2: Effects to Historic Properties Located within the APE**

<b>DR Number</b>	<b>Property Name</b>	<b>Location</b>	<b>NR Status</b>	<b>Distance From Tower</b>	<b>Effects Determination</b>
DR 4	Cape Hatteras Light Station: Critical Viewpoint A	Lighthouse Road, Buxton, NC	Listed	0.45 mile	No Adverse Effect
DR 4	Cape Hatteras Light Station: Critical Viewpoint B	Lighthouse Road, Buxton, NC	Listed	0.45 mile	Adverse Effect (self-supporting tower only)
DR 4	Cape Hatteras Light Station: Critical Viewpoint C	Lighthouse Road, Buxton, NC	Listed	0.45 mile	No Adverse Effect
DR 7	CCC Cabins	Cabin Road, Buxton, NC	Eligible	0.48 mile	No Adverse Effect
DR 614	Rollinson House	Rollinson Road, Buxton, NC	Eligible	1.65 miles	N/A
DR 615	Urias Gaskins House	Rollinson Road, Buxton, NC	Eligible	1.66 miles	N/A
N/A	Former U.S. Coast Guard Station	Lighthouse Road, Buxton, NC	Potentially Eligible	0 mile (on project site)	No Adverse Effect
N/A	WW II British Sailor Cemetery	Lighthouse Road, Buxton, NC	Potentially Eligible	0.18 mile	No Adverse Effect

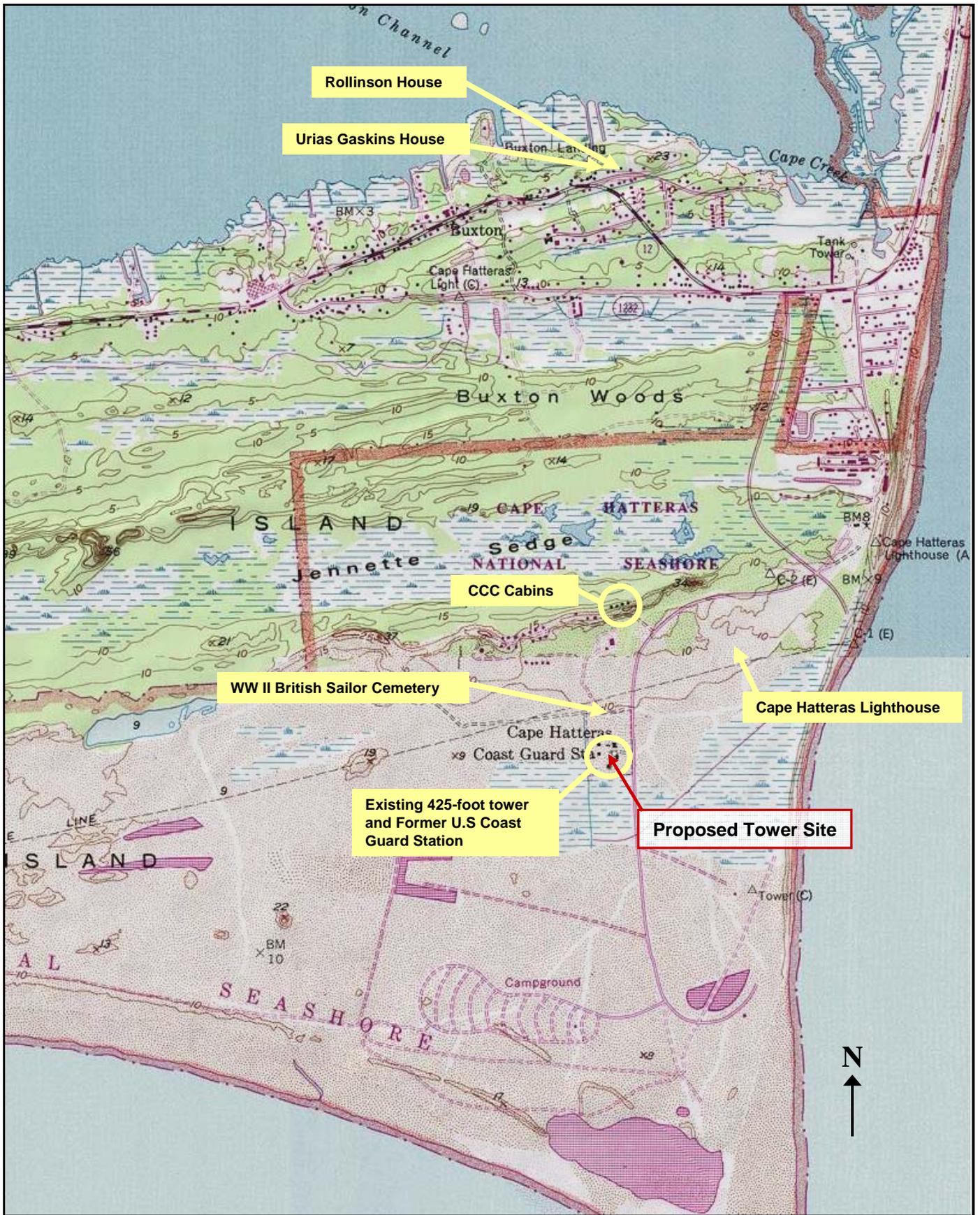
### SECTION SIX REFERENCES

- Myers, Susan. 2009. Electronic communication between Oscar Beisert, URS Architectural Historian, and Susan Myers, Archaeologist for the North Carolina State Historic Preservation Office. April 21.
- P & R Technologies. BirdMark Bird Diverters Web Site. <http://www.prttech.com/products/birds/birdmark.htm>. Site accessed April 27, 2009.
- National Register Information System Website. <http://www.nr.nps.gov/>. Site accessed April 22, 2009.
- North Carolina State Historic Preservation Office Site Files. Accessed during site visit on April 14, 2009 at Eastern Office of the North Carolina State Historic Preservation Office, 117 West Fifth Street, Greenville, NC. 27858.
- North Carolina State Historic Preservation Office Site Files. Accessed during site visit on April 15, 2009 at the North Carolina State Historic Preservation Office, 109 East Jones Street, Raleigh, NC. 27601.
- U.S. Geological Survey (USGS). 1985. Cape Hatteras quadrangle, North Carolina, 1:24,000 scale, 7.5-Minute Series. Washington, DC.

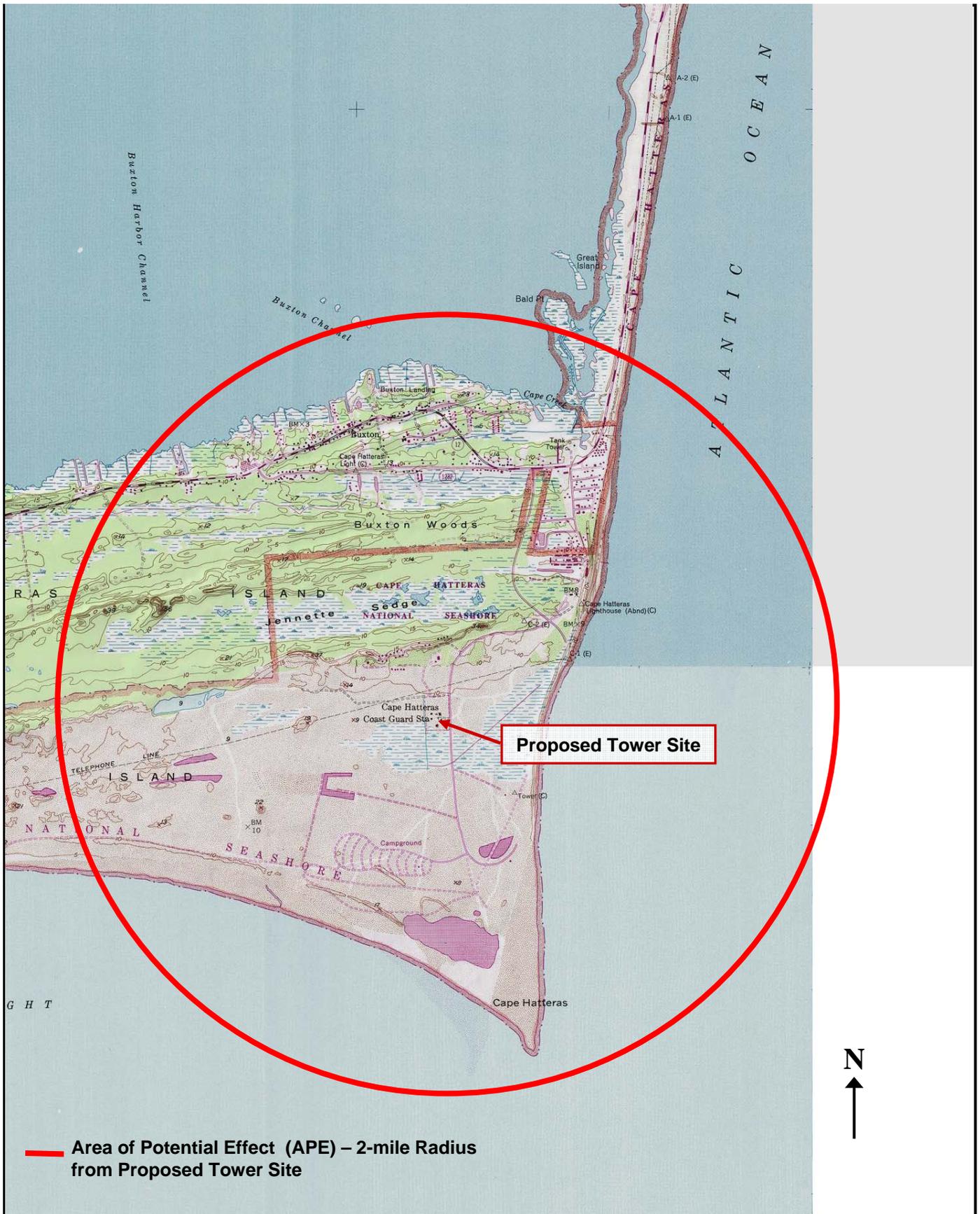


**APPENDIX A**  
**FIGURES**

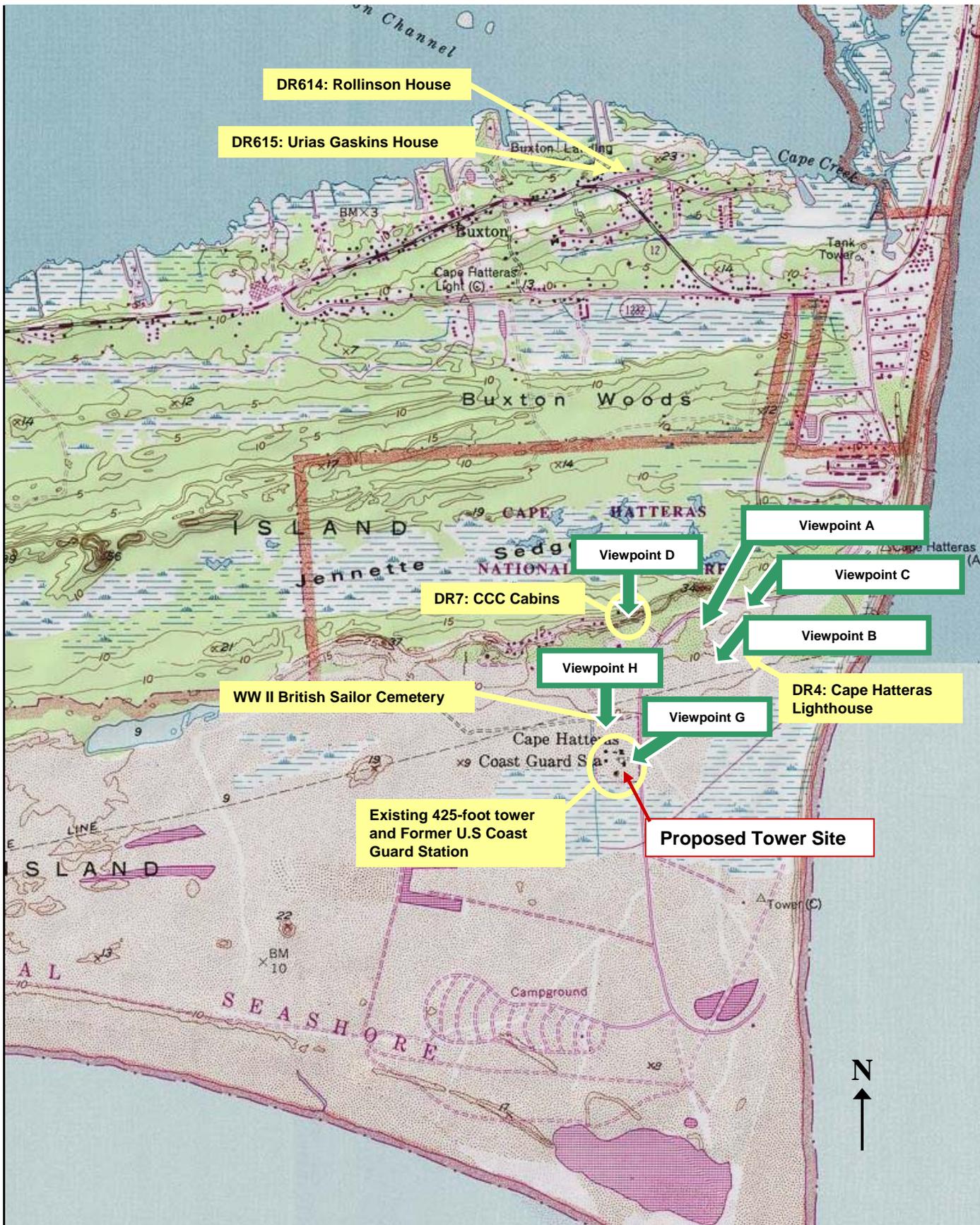




PROJECT: RFF Buxton, NC	Site Location	
SCALE: NOT TO SCALE		PROJECT NO. 15301803.00400
SOURCE USGS Cape Hatteras Quadrangle, 1:24,000		Figure 1



PROJECT: RFF Buxton, NC	Area of Potential Effect	
SCALE: NOT TO SCALE	<b>URS</b>	PROJECT NO. 15301803.00400
SOURCE USGS Cape Hatteras Quadrangle, 1:24,000		Figure 2



PROJECT: RFF Buxton, NC	Historic Resources/Critical Viewpoint Locations	
SCALE: NOT TO SCALE	<b>URS</b>	PROJECT NO. 15301803.00400
SOURCE USGS Cape Hatteras Quadrangle, 1:24,000		Figure 3



**APPENDIX B**  
**PHOTOGRAPHIC LOG**



<b>Client Name:</b> USCG	<b>Site Location:</b> Buxton, NC	<b>Project No.</b> 15301803.00400
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<b>Photo No.</b> 1	<b>Date:</b> 04/2009	
<b>Direction Photo Taken:</b> Southwest		
<b>Description:</b> Current view from Critical Viewpoint A, looking southwest toward proposed tower site, showing existing 425-foot tower		

<b>Photo No.</b> 2	<b>Date:</b> 04/2009	
<b>Direction Photo Taken:</b> Southwest		
<b>Description:</b> View from Critical Viewpoint A, simulated photo of a painted 24-guy-wire tower		

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 3	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint A, simulated photo of an unpainted 24 guy-wire tower with lights			

<b>Photo No.:</b> 4	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint A, simulated photo of a painted 39 guy-wire tower			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 5	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint A, simulated photo of an unpainted 39 guy-wire tower with lights			

<b>Photo No.:</b> 6	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint A, simulated photo of a painted self-supported tower			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 7	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint A, simulated photo of an unpainted self-supported tower with lights			

<b>Photo No.:</b> 8	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  Current View from Critical Viewpoint B looking toward proposed tower site, showing existing 425-foot tower			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 9	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint B, simulated photo of a painted 24-guy-wire tower			

<b>Photo No.:</b> 10	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint B, simulated photo of an unpainted 24-guy-wire tower with lights			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 11	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint B, simulated photo of a painted 39 guy-wire tower			

<b>Photo No.:</b> 12	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint B, simulated photo of an unpainted 39 guy-wire tower with lights			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.</b> 15301803.00400
<b>Photo No.</b> 13	<b>Date:</b> 04/2009		
<b>Direction Photo</b> Southwest			
<b>Description:</b> View from Critical Viewpoint B, simulated photo of a painted self-supported tower			

<b>Photo No.</b> 14	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> Southwest			
<b>Description:</b> View from Critical Viewpoint B, simulated photo of an unpainted self-supported tower with lights			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 15	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  Current View from Critical Viewpoint C looking toward proposed tower site, showing existing 425-foot tower			

<b>Photo No.:</b> 16	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint C, simulated photo of a painted 24 guy-wire tower			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 17	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint C, simulated photo of an unpainted 24 guy-wire tower with lights			

<b>Photo No.:</b> 18	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint C, simulated photo of a painted 39 guy-wire tower			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 19	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint C, simulated photo of an unpainted 39 guy-wire tower with lights			

<b>Photo No.:</b> 20	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint C, simulated photo of a painted self-supported tower			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 21	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b>  Southwest			
<b>Description:</b>  View from Critical Viewpoint C, simulated photo of an unpainted self-supported tower with lights			

<b>Photo No.:</b> 22	<b>Date:</b> 04/2009	
<b>Direction Photo Taken:</b>  South		
<b>Description:</b>  Current View from Critical Viewpoint D looking toward proposed tower site, showing existing 425-foot tower		

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 23	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> South			
<b>Description:</b> View from Critical Viewpoint D, simulated photo of a painted 24 guy-wire tower			

<b>Photo No.:</b> 24	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> South			
<b>Description:</b> View from Critical Viewpoint D, simulated photo of an unpainted 24 guy-wire tower with lights			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 25	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> South			
<b>Description:</b> View from Critical Viewpoint D, simulated photo of a painted 39 guy-wire tower			

<b>Photo No.:</b> 26	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> South			
<b>Description:</b> View from Critical Viewpoint D, simulated photo of an unpainted 39 guy-wire tower with lights			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.</b> 27	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> South			
<b>Description:</b> View from Critical Viewpoint D, simulated photo of a painted self-supported tower			

<b>Photo No.</b> 28	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> South			
<b>Description:</b> View from Critical Viewpoint D, simulated photo of an unpainted self-supported tower with lights			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 29	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> Southwest			
<b>Description:</b> Current View from Critical Viewpoint G looking toward proposed tower site, showing existing 425-foot tower			

<b>Photo No.:</b> 30	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> Southwest			
<b>Description:</b> View from Critical Viewpoint G, simulated photo of a painted 24-guy-wire tower			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.</b> 15301803.00400
<b>Photo No.</b> 31	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> Southwest			
<b>Description:</b> View from Critical Viewpoint G, simulated photo of an unpainted 24 guy-wire tower with lights			

<b>Photo No.</b> 32	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> Southwest			
<b>Description:</b> View from Critical Viewpoint G, simulated photo of a painted 39 guy-wire tower			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 33	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> Southwest			
<b>Description:</b> View from Critical Viewpoint G, simulated photo of an unpainted 39 guy-wire tower with lights			

<b>Photo No.:</b> 34	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> Southwest			
<b>Description:</b> View from Critical Viewpoint G, simulated photo of a painted self-supported tower			

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC	<b>Project No.:</b> 15301803.00400
<b>Photo No.:</b> 35	<b>Date:</b> 04/2009		
<b>Direction Photo Taken:</b> Southwest			
<b>Description:</b> View from Critical Viewpoint G, simulated photo of an unpainted self-supported tower with lights			

<b>Photo No.:</b> 36	<b>Date:</b> 04/2009	
<b>Direction Photo Taken:</b> South		
<b>Description:</b> Current View from Critical Viewpoint H looking toward proposed tower site, showing existing 425-foot tower		

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC		<b>Project No.</b> 15301803.00400
<b>Photo No.</b> 37	<b>Date:</b> 04/2009			
<b>Direction Photo Taken:</b> South				
<b>Description:</b> View from Critical Viewpoint H, simulated photo of a painted 24 guy-wire tower				

<b>Photo No.</b> 38	<b>Date:</b> 04/2009			
<b>Direction Photo Taken:</b> South				
<b>Description:</b> View from Critical Viewpoint H, simulated photo of an unpainted 24 guy-wire tower with lights				

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC		<b>Project No.</b> 15301803.00400
<b>Photo No.</b> 39	<b>Date:</b> 04/2009			
<b>Direction Photo Taken:</b> South				
<b>Description:</b> View from Critical Viewpoint H, simulated photo of a painted 39 guy-wire tower				

<b>Photo No.</b> 40	<b>Date:</b> 04/2009			
<b>Direction Photo Taken:</b> South				
<b>Description:</b> View from Critical Viewpoint H, simulated photo of an unpainted 39 guy-wire tower with lights				

<b>Client Name:</b> USCG		<b>Site Location:</b> Buxton, NC		<b>Project No.</b> 15301803.00400
<b>Photo No.</b> 41	<b>Date:</b> 04/2009			
<b>Direction Photo Taken:</b> South				
<b>Description:</b> View from Critical Viewpoint H, simulated photo of a painted self-supported tower				

<b>Photo No.</b> 42	<b>Date:</b> 04/2009			
<b>Direction Photo Taken:</b> South				
<b>Description:</b> View from Critical Viewpoint H, simulated photo of an unpainted self-supported tower with lights				

