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Cape Hatteras National Seashore
Manteo, North Carolina

Ocracoke Light Station
Cultural Landscape Report





Cultural Resources
Southeast Region

Cape Hatteras National Seashore

Ocracoke Light Station
Cultural Landscape Report

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National Park Service
Southeast Region
Cultural Resources, Partnerships & Science

SER
CULTURAL LANDSCAPES

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Cape Hatteras National Seashore

Ocracoke Light Station

Cultural Landscape Report

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Foreword

We are pleased to make available this cultural landscape report, part of our ongoing effort to provide comprehensive documentation for the landscapes and historic structures of National Park Service (NPS) units in the Southeast Region (SER). A number of individuals and institutions contributed to the successful completion of this work. We would particularly like to thank the staff at Cape Hatteras National Seashore for their assistance throughout the process. We hope this study will be a useful tool for park management in continuing efforts to preserve the cultural landscape and to others interested in the significance of the park's many cultural resources.

Dan Scheidt, Chief
Cultural Resources, Partnerships & Science
Southeast Region
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Introduction

Management Summary

The Ocracoke Light Station is located on Ocracoke Island of the Cape Hatteras National Seashore in Hyde County, North Carolina. The approximate two-acre site is located on the southwest end of the seventeen-mile-long Ocracoke Island, which extends southwest from Hatteras Inlet to Ocracoke Inlet between Hatteras and Portsmouth Islands. The Ocracoke Light Station, located on National Park Service (NPS) land, is surrounded by the village of Ocracoke, the southernmost community associated with the Cape Hatteras National Seashore. The station is set back from the marshy Pamlico Sound to the west. North Carolina State Highway 12 (NC 12) connects the village of Ocracoke with Hatteras Island to the north via a ferry across Hatteras Inlet.

Congress authorized Cape Hatteras as America's first National Seashore in 1937, but it was another sixteen years before the park was officially established in January 1953. The U.S. Coast Guard (USCG) continued to own and manage the Ocracoke Light Station until 1955, when they issued a revocable permit to the NPS for the use and occupancy of the quarters building of the station. An amendment that included the garage, chicken house, carpenter shop, and pump house was signed in 1957, granting the use of these buildings with the stipulation that the NPS keep them in good repair and condition. A revised use agreement signed in 1986 included the grounds and fence. On June 7, 1999, the USCG transferred title of the lighthouse and approximately two acres to the NPS. The USCG continues to own and operate the Fresnel lens.[1]

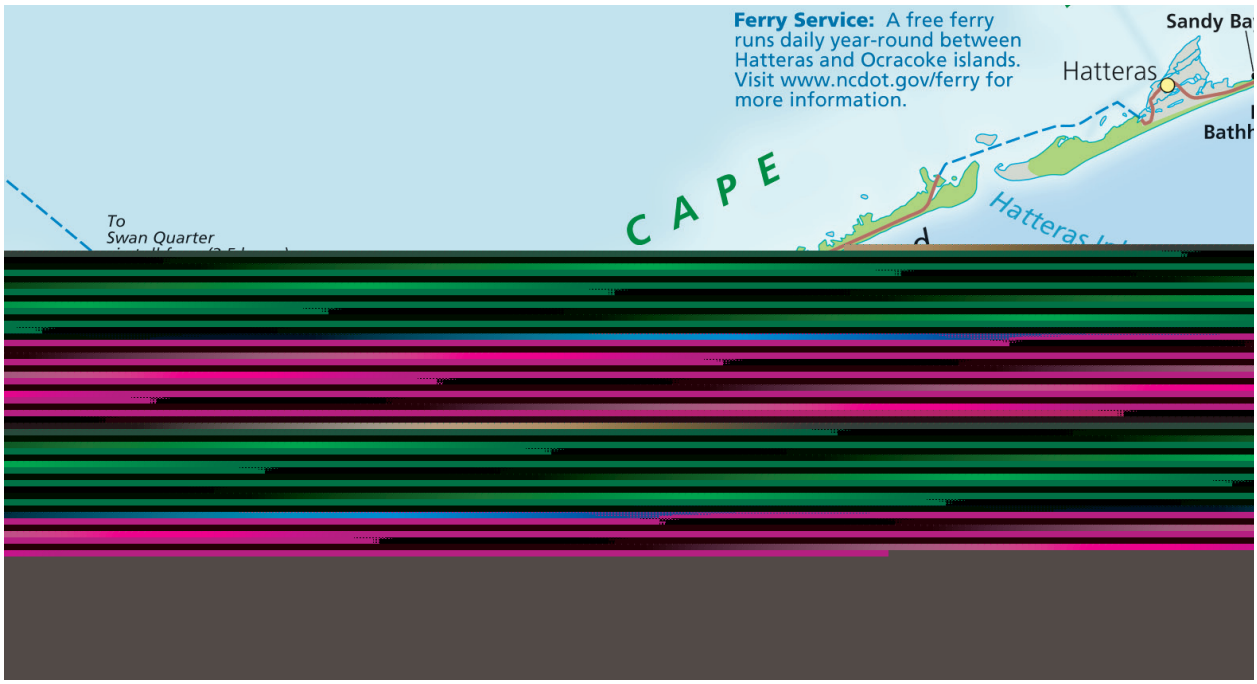


FIGURE 1–1. Ocracoke Island site map. (NPS/Harpers Ferry Center)

1 Ocracoke Light Station, HS-1A/HS-1B Buildings #501/501B/503, Accession 191, Catalog 5037, Box 1 Folder 1, Cape Hatteras National Seashore (CAHA) Collection. In 1822, French physicist Augustin Fresnel developed a complex lens that concentrated light into a powerful beam.

Treatment recommendations enable the park to better manage its cultural landscape.

Archival research and existing conditions documentation were conducted during site visits in July 2013 and August 2014. During the site visits, SER-CRPS staff met with park staff to discuss management issues and treatment concerns regarding the cultural landscape. These issues included the need for additional parking to augment inadequate parking at the light station. During the site visit, SER-CRPS staff checked and annotated base maps and completed digital photography as part of the existing conditions survey.

SER-CRPS staff completed comparative analyses and integrity evaluations by comparing historical information—taken from the written site history and historic maps and photographs—to existing conditions data in order to understand how the landscape had changed over time. The landscape characteristics and associated features, values, and associations that make a landscape historically significant were identified. Integrity evaluations used the seven aspects of historic integrity as described in *A Guide to Cultural Landscape Reports* and standards set by the National Register.

Appropriate treatment recommendations were developed from the condition assessments and the results of the comparative analyses and integrity evaluations. Recommendations responded to existing issues and offered suggestions that would preserve and enhance the park's historic landscape character.

There has been no evaluation of the landscape features at the Ocracoke Light Station. The Southeast Regional Office completed a historic structure report for the lighthouse in 1990. A comprehensive historic structure report for the lighthouse, double keepers' quarters, and outbuildings by Joseph K. Oppermann—Architect was just completed. Park planning documents consulted include *The Creation and Establishment of Cape Hatteras National Seashore* written by Cameron Binkley and *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore and Interpretive Themes of History and Heritage* prepared by Impact Assessment, Inc.

In addition to park planning documents, *Ocracoke Lighthouse* written by Ellen Fulcher Cloud, *The Outer Banks of North Carolina* written by David Stick, *Historical Geography of the North Carolina Outer Banks* written by Gary S. Dunbar, and *The Outer Banks of North Carolina* written by Robert Dolan and Harry Lins provided valuable information about the history and landscape of Ocracoke Island.[14]

Additional archival research for the CLR was undertaken at the Outer Banks Group Museum Resource Center. Field work undertaken in 2013 and 2014 resulted in updated information about existing conditions at the site.

Summary of Findings

The centerpiece of the Ocracoke Light Station is the lighthouse with its fourth-order Fresnel lens built by the Department of the Treasury in 1823. The Ocracoke Lighthouse embodies a distinctive design and method of construction that typified secondary coastal lighthouses on the East Coast of the United States during the first half of the nineteenth century. Secondary lights were located on less prominent points and in broad sounds and bays. They were generally shorter and used less powerful optics than first-order lighthouses, such as Cape Hatteras and Bodie Island.

These early nineteenth-century light stations had a simplistic layout consisting of a light tower, dwelling, garden site, place to store oil, system to provide water, privy, and perhaps a chicken house or shelter for a milk cow. The layout of the Ocracoke Light Station was consistent with other light stations of the day, where a clustering of support buildings facilitated easy access. A picket fence enclosed the station, and walkways connected the various buildings on site. The site retains three original support buildings (double keepers' quarters, storehouse, and privy) and two historic outbuildings (concrete oil house and carpenter shop). Most of the historic circulation system survives, which linked major features of the station.

14 Cloud, *Ocracoke Lighthouse*; Stick, *The Outer Banks of North Carolina;* Gary S. Dunbar, *Historical Geography of the North Carolina Outer Banks* (Baton Rouge: Louisiana State University Press, 1959)*;* and Robert Dolan and Harry Lins*, The Outer Banks of North Carolina, USGS Professional Paper 1177-B* (Washington, DC: U.S. Geological Survey/U.S. Department of the Interior, 1986).

Plantings at the site historically were live oaks and cedars clustered around the dwelling and light tower. There were no foundation plantings. Little is known about the garden plots located at the north end of the station although the keepers' families had a garden like most residents of the village. Historically significant plantings include mature live oaks and cedar trees around the dwelling, open ground around the lighthouse, areas of grass throughout most of the site, and marsh/wetland along the western edge of the site. Enclosed garden spaces do not survive, but the picket fence that surrounded the station has been maintained over the years, although not in its original location on all sides.

A major breach of preservation philosophy occurred in 1989 when a contractor removed the historic lighthouse windows and replaced them with vinyl-clad thermal sash windows and replaced the historic door with a non-historic metal door. Although the USCG agreed to replace the vinyl-clad windows with repaired/reconstructed windows and to have a new board-and-batten door constructed, questions exist as to the condition of these windows and the quality of wood chosen for the repaired/reconstructed window sash.

Largely in good repair after concerted restoration efforts in the late 1980s and early 2000s, the keepers' quarters has issues of concern limited to inappropriate choices of building materials and components.[15]

Period of Significance

The period of significance for the cultural landscape of the Ocracoke Light Station begins in 1823 with the construction of the light tower, keeper's quarters, storehouse, and privy and continues to the present, indicating its ongoing use as a federal aid to national and international navigation. There has been little development at the site since the 1950s when the NPS began using the station buildings under a special use agreement with the USCG. Since the acquisition of the light station in 1999, the NPS expanded the parking area and extended the boardwalk.

Integrity

Integrity of location and setting remains high. Integrity of materials and workmanship have been diminished by inappropriate material and application techniques. Modern intrusions have affected integrity of feeling and association. Nonetheless, the station retains many of the elements of a nineteenth- and early twentieth-century light station with few modifications.

Treatment

The overarching treatment associated with the historic landscape is *rehabilitation*. Because rehabilitation is defined as the act or process of making possible a compatible use for a property, this approach allows for protection of the site's historic character and resources while carefully addressing the need for limited enhancement of interpretive opportunities and circulation routes, sustainability, and the improvement of visitor amenities. As part of rehabilitation treatment, stabilization, protection, and preservation of historic and natural resources are assumed even when new uses are accommodated.

15 For further discussion see: Joseph K. Oppermann – Architect, P.A., *Ocracoke Light Station Historic Structure Report* (Atlanta, GA: Southeast Regional Office, 2016), 153.

Site History

Geologic History

The Outer Banks of North Carolina refer to a thin slice of land separated from the mainland by a large expanse of shallow water, comprising the Albemarle, Croatan, and Pamlico Sounds. The term "banks" is a topographic term that refers to a series of undersea sand bars or "sand banks," as they were called in the earliest references such as John Lawson's *A New Voyage to Carolina*.

Scientists generally agree that sea level during the past one-half million years has alternated between periods of interglacial conditions when continental ice melted causing shorelines to advance inland across the Continental Shelf and periods of glaciation when water was withdrawn from the seas and stored as glacial ice causing shorelines to move seaward. When the last period of glaciation ended between 14,000 and 18,000 years ago, the ocean level was 300 feet lower than today, and North Carolina's coastline extended 50 to 75 miles east of its present location.

When this change from glacial to interglacial conditions occurred, glaciers melted and sea level began rising. Winds from the west piled up sand to create a large dune at the easternmost edge of the continental landmass. Wave action reworked sediment that was moved along the shore, and seas broke through the dune ridge, flooding low areas in back of the dunes to form lagoons or sounds. Waves, currents, and winds transformed the dunes into long chains of barrier islands that run parallel to the coastline from New England to Texas.[1]

Vegetation stabilized the Outer Banks when sufficient rainfall removed the salinity from the sand and pushed the underlying saltwater table downward and to the sides so that a large pocket of fresh water was formed beneath the Outer Banks. Seeds carried in the air or transported by shore birds took hold. Grasses anchored the sand, which

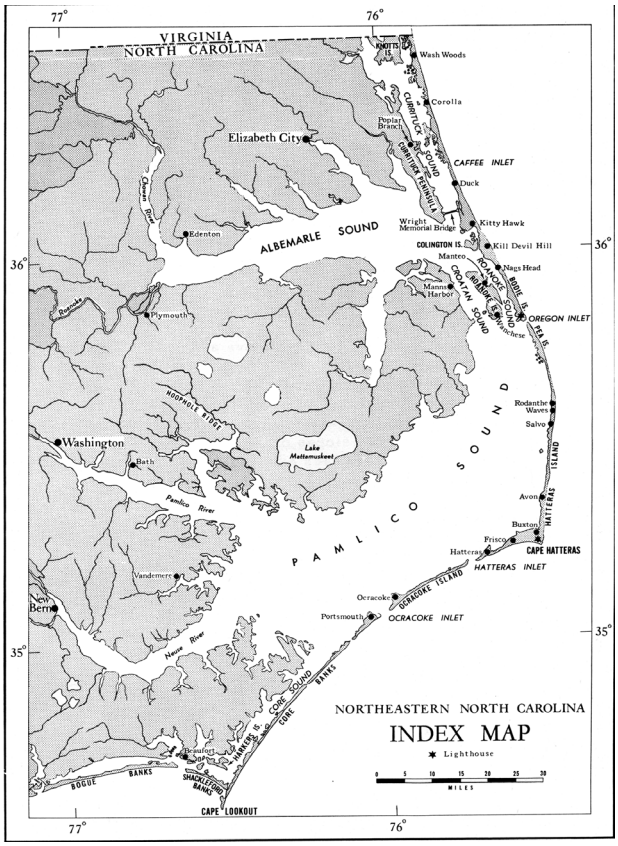


FIGURE 2–1. The Outer Banks of North Carolina. (Reprinted from Gary Dunbar, *Historical Geography of the North Carolina Outer Banks*)

allowed shrubs to survive. Finally, cedar, pine, and live oak, mixed with dense grape vine, covered areas that had once been bare sand beach.[2]

Native American Occupation

The Late Woodland cultures in coastal North Carolina emerged about 1,200 years ago. At the time of white settlement, these indigenous cultures were linguistically associated with either the Algonquian or Iroquoian traditions. Shell and grit-tempered pottery, horticulture supplemented

1 Dolan and Lins, *The Outer Banks of North Carolina*, 11–13; Oppermann, *Bodie Island Light Station Double Keepers Quarters HSR*, 1.

2 Stick, *The Outer Banks of North Carolina*, 2–3; John Lawson, *A New Voyage to Carolina; Containing the Exact Description and Natural History of That Country: Together with the Present State Thereof. And a Journal of a Thousand Miles, Travel'd Thro' Several Nations of Indians. Giving a Particular Account of Their Customs, Manners, &c.* (London: [s.n.], 1709), 68.

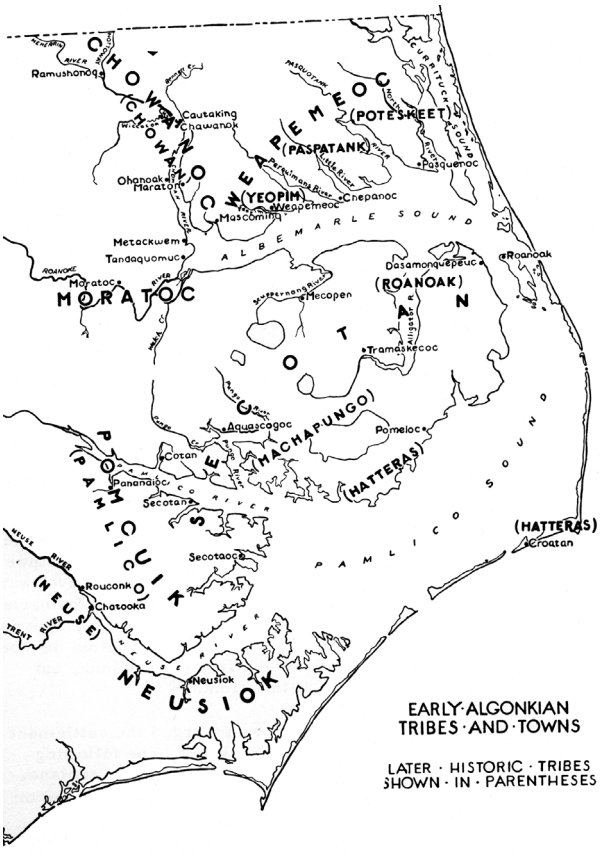


FIGURE 2–2. Early Algonquin tribes and towns. (Reprinted from Gary Dunbar, *Historical Geography of the North Carolina Outer Banks*)

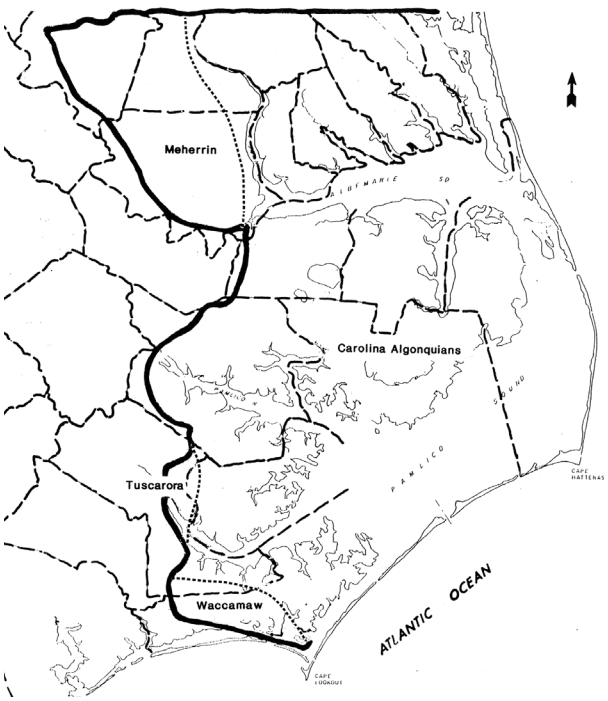


FIGURE 2–3. Historically known aboriginal groups of Eastern North Carolina. (Reprinted from Richard Lewis, *Cultural Resource Studies Eastern North Carolina Above Cape Lookout*)

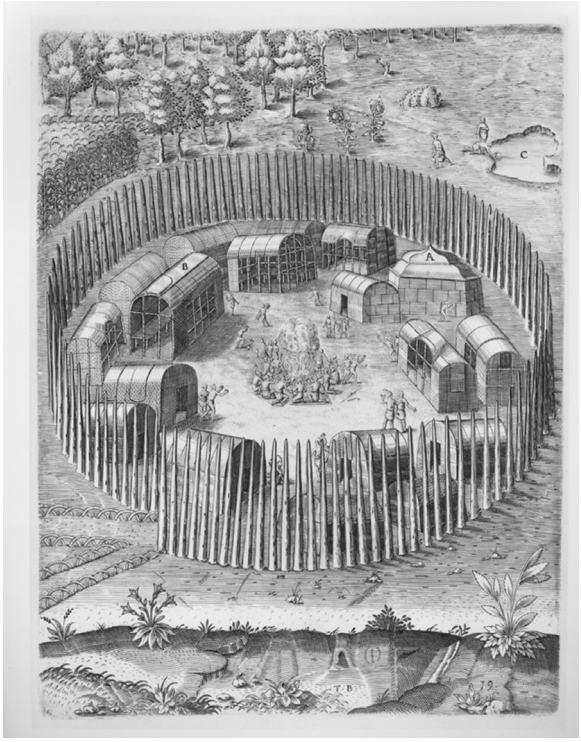


FIGURE 2–4. The Indian Village of Pomeiooc, Theodor de Bry's engraving of John White watercolor, ca. 1590. (The University Library, the University of North Carolina at Chapel Hill)

by hunting and gathering, burial ossuaries, bow-and-arrow technology, and palisaded villages typify these cultures.

Contact with Europeans occurred around 1520. The Algonquin tribes included the Pasquotank, Yeopim, Poteskeet, Chowanoc, Machapunga, Bay or Bear River, Pamlico, Hatteras, Neusioc, and possibly the Coree. They lived in an area extending from the Virginia border southward to Bogue Inlet and from the Outer Banks as far inland as present Plymouth, Washington, and New Bern.

Tribes associated with the Iroquoian tradition were the Tuscorora and the Meherrin. The more powerful and warlike Tuscorora lived just to the west of the Algonquin tribes. The Meherrin were confined to the east bank of the Chowan River.

European settlement led to the eventual disintegration of the aboriginal populations, mainly by disease and warfare. An epidemic in 1695 devastated the Pamlico, and the Chowanoc were wiped out by war in 1677. By the eighteenth century, the only indigenous people living permanently on the Outer Banks were the Hatteras Indians, whose villages were in the wooded area west of Cape Hatteras. After the Tuscarora

War of 1711–1715, American Indians eventually disappeared from eastern North Carolina. The last known reference to the Hatteras Indians was in a deed of 1788 from "Mary Elks, Inden [*sic*] of Hatteras Banks" to Nathan Midgett transferring a tract of land that included the site of the old Indian town.[3]

European Exploration and Permanent Settlement of the Outer Banks

The Outer Banks were first explored by Giovanni da Verrazzano's 1524 expedition for the French, who mistook the North Carolina sounds on the other side of the land mass for the Pacific Ocean. In 1584, a reconnaissance voyage for Sir Walter Raleigh's English venture landed above Cape Hatteras, commanded by Captains Arthur Barlowe and Philip Amadas. Captain Barlowe described the natural systems of the Outer Banks in 1584:

> Wee viewed the lande about us, being . . . very sandie, and lowe towards the water side, but so full of grapes, as the very beating, and surge of the Sea overflowed them, of which we founde such plenty . . . that I thinke in all the world the like aboundance is not to be founde.
>
> Wee passed from the Sea side towards the toppes of those hils . . . being but of meane height, and from thence wee beheld the Sea on both sides to the North, and to the South, finding on ende any of both waies. This lande laye stretching it selfe to the West, which after wee founde to be but an Island of twentie leagues long, and not above sixe miles broade. Under the banke or hill, whereon we strode, we beheld the vallies replenished with goodly Cedar trees, and having discharged our harquebushot, such a flocke of Cranes (the most part white) arose under us, with such a crye redoubled by many Ecchoes, as if an armie of men had showted all together.
>
> This island had many goodly woods, full or Deere, Conies, Hares, and Fowle, even in the middest of Summer, in incredible aboundance . . . [and] the highest, reddest Cedars of the world.[4]



FIGURE 2–5. John White watercolor drawing from 1585 exploratory trip. (© Trustees of the British Museum)

Sir Richard Grenville's 1585 expedition landed at Ocracoke before eventually settling on the north end of Roanoke Island where they built a fort. Grenville left for England a few months later, leaving Ralph Lane in charge. In 1586, Sir Francis Drake offered to resupply the colony, but Ralph Lane and his colonists abandoned the settlement and returned to England with Drake. Sir Richard Grenville arrived at the settlement shortly thereafter and left fifteen men at the fort on Roanoke Island.[5]

In 1587, yet another expedition led by artist John White arrived on Roanoke Island. They found the fort demolished and the fifteen men gone, apparently killed in retaliation for an earlier attack on the main village of the Roanoke tribe. White returned to England to get needed supplies, leaving 112 colonists. Upon his return with a supply ship in 1590, he discovered the colonists missing. The mystery of the disappearance of the "Lost Colony," except for the words "Croatoan" carved on a post at the entrance to the palisade and "Cro" on a tree, has never been solved. White assumed the clues referred to Croatoan Island, but he was unable to persuade his party, who feared the treacherous

3 "Southeastern Prehistory, Woodland Period," http://www.nps.gov/seac/hnc/outline/04-woodland/index.htm; U.S. Army Corps of Engineers, *Cultural Resource Studies for Eastern North Carolina Above Cape Lookout,* 2-2; Torres, *HRS of Cape Hatteras,* 64.

4 Stick, *The Outer Banks of North Carolina,* 14–15.

5 Ibid., 17–18; Dunbar, *Historical Geography*, 8–9.

nature of the coast, to sail to Croatoan Island, located south of Cape Hatteras. White was forced to return to England without knowing the fate of the settlers.

Permanent settlement did not begin until the mid-seventeenth century, when fur trappers, Indian traders, and planters from Virginia's southern frontier moved into the area. American Indian habitation of the Outer Banks at the time of white settlement was sparse, and some used the area only for seasonal hunting. The Hatteras Indians lived in a town on the sound side of Cape Hatteras. Francis Yeardley of Virginia sponsored a group that visited Roanoke Island in 1654 and bought land in eastern North Carolina. A fur trading post operated by Nathaniel Batts, the first known permanent settler on the Albemarle Sound, is recorded near Fletts Creek on Nicholas Comberford's 1657 *The south part of Virginia, now the north part of Carolina*.[6]

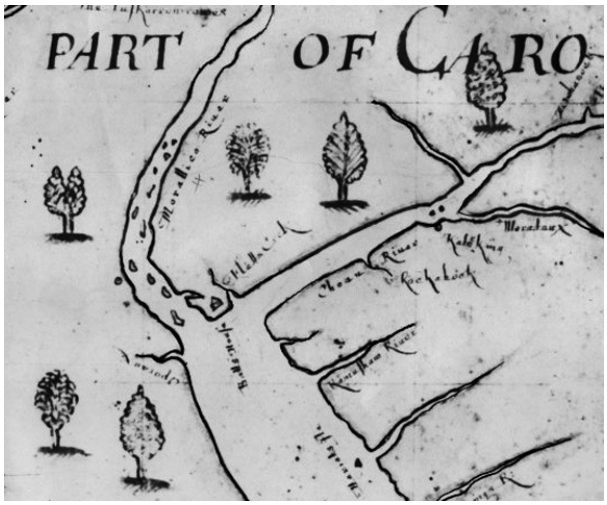


FIGURE 2–6. Portion of Comberford map of 1657 showing Batts House. (The New York Public Library)

The first land grant was issued by the Lords Proprietors in 1663, following receipt of their royal charter, to Sir John Colleton who set up a plantation on Colington Island. Other large land grants held by absentee landowners followed, but many people who sought smaller parcels were of more modest means. Most chose the wooded hammocks on the sound side of the islands, where their building sites were clustered near sloughs and creeks and where they found protection from strong winds and high tides.[7]

A lack of deep-water ports and navigable tributaries, such as those found in Virginia and South Carolina, stunted the commerce and prosperity of North Carolina. Accessing the ports that the colony did possess to reach small river settlements and plantations required sailing through treacherous inlets along the Outer Banks and across shallow sounds. Some felt that these limitations were actually helpful in times of war. Early explorer and naturalist John Lawson commented, "the Difficulty of that Sound to Strangers, hinders them from attempting any Hostilities against us; and at the same time, if we consider the Advantages thereof, nothing can appear to be a better situation, than to be fronted with such a Bulwark, which secures us from our Enemies."[8]

Before 1700, most settlers located between Roanoke and Currituck Inlets. They lived in small, scattered settlements with fenced gardens and free-ranging livestock. They were sustained by fishing, grazing stock, farming, and whaling. Most had migrated from Virginia and were joined by a few shipwreck survivors. The Outer Banks had a reputation as a refuge for Virginia outlaws, but most settlers were small landholders trying to get a foothold in the new colony. The death of the infamous pirate, Blackbeard, at Ocracoke Inlet in 1718 signaled the end of large-scale piracy and paved the way for the settlement of the lower Outer Banks. The shallow inlets and channels made resident pilots, hired to steer ships safely through the shifting channels to mainland ports, a necessity. Smuggling goods through the Outer Banks and avoiding ports where custom duties were paid was common practice in the eighteenth century. Because of its remoteness and lack of a customs house, smuggling flourished around Ocracoke Inlet.[9]

6 Stick, *The Outer Banks of North Carolina*, 19–21; Dunbar, *Historical Geography,* 10–11, 16–19; U.S. Army Corps of Engineers, *Cultural Resource Studies for Eastern North Carolina Above Cape Lookout,* 2–4; and Nicholas Comberford, "The South Part of Virginia Now the North Part of Carolina" [map], 1657, http://www.learnnc.org/lp/multimedia/7780.

7 Stick, *The Outer Banks of North Carolina,* 22–25; Dolan and Lins, *The Outer Banks of North Carolina,* 18; and Dunbar, *Historical Geography,* 105.

8 Stick, *The Outer Banks of North Carolina,* 2; Lawson, *A New Voyage to Carolina*, 175; and Mike McNamara, "A New and Correct Map of the Province of North Carolina: The Discovery of a 1737 North Carolina Manuscript Map," http://www.mesdajournal.org/2012/correct-map-province-north-carolina/.

9 Torres, *HRS of Cape Hatteras,* 39, 43.

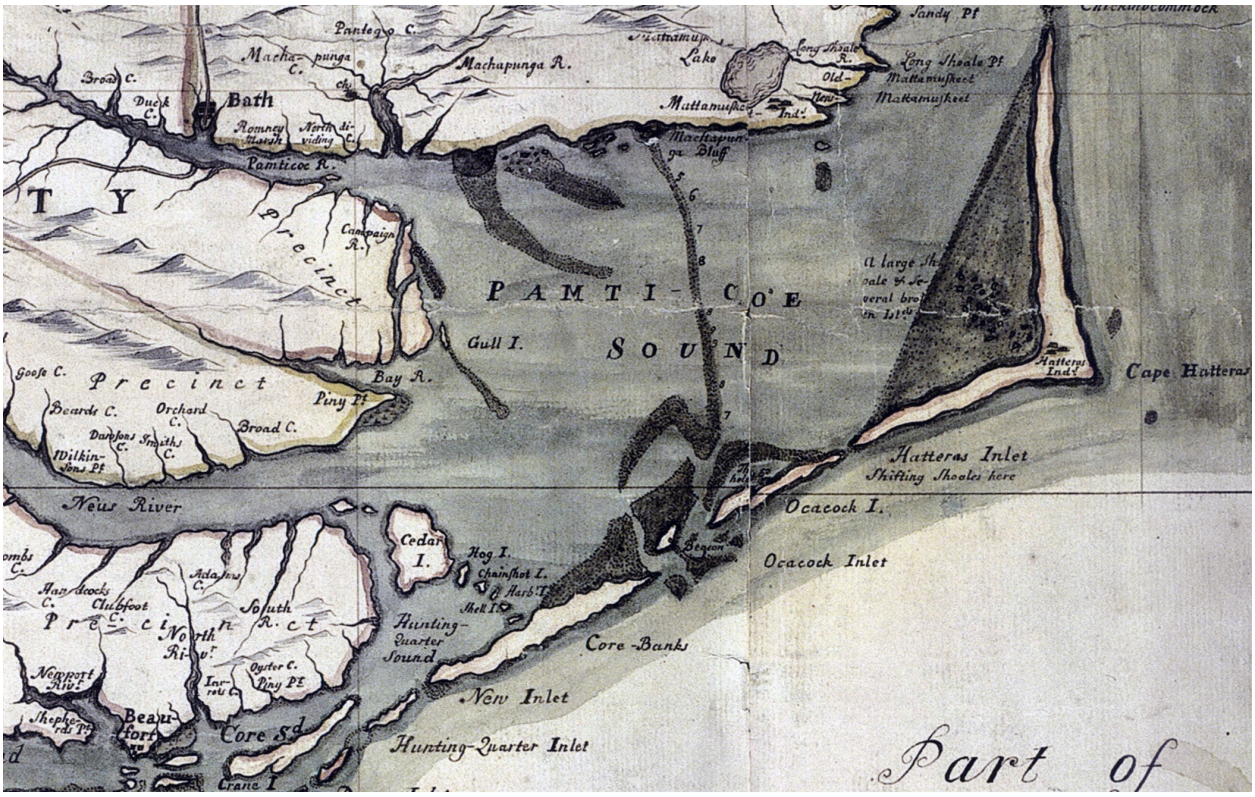


FIGURE 2–7. Edward Mosely, *Map of the Province of North Carolina,* 1737. (East Carolina University Libraries)

The shoaling and eventual closing of both Roanoke and Currituck Inlets led to a shift in maritime traffic seventy-five miles south to Ocracoke Inlet, the only reasonably navigable waterway for ships trying to reach inland ports, such as Elizabeth City, New Bern, and Edenton. Ocracoke Village, then known as Pilot Town, developed as a result of the inlet's use. In 1731, Governor George Barrington reported that "Curratuck Inlett is shut up and Roanock is so dangerous that few people care to use it but go around to Ocacock." He argued for the establishment of a central customs house at Ocracoke: "There is a good harbour and water sufficient for a ship that carrys 300 tunns. From this place the goods brought in may by small vessels be carried within Land to all places in this Country that does not depend on Cape Fear River for their trade, and be a port for the three districts of Roanoke, Currituck, and Bath Town."[10]

Although authorities ignored his suggestion, the majority of ships going to or from North Carolina were using Ocracoke Inlet, and there was a need for pilots to shepherd the vessels through the dangerous shores. Captain Miles Gale made one of the first requests for appointment as a pilot on November 9, 1734. Other early Ocracoke Inlet pilots were James Bun, David Wallace, John Dixon, Francis Jackson, George Howard, and Lorable Gaskins.

An industry developed around "lightering," the practice of transferring all or parts of cargoes from large trade ships arriving from Europe to shallow-draft boats that could travel the inlets to the mainland. Pilots navigated the inlets and dockworkers loaded and unloaded the cargoes. By 1750, hundreds of ships were using Ocracoke Inlet as a trade route. By the 1770s, the two largest communities on the Outer Banks were located there—the town of Portsmouth on the south side of the inlet and Pilot Town or Ocracoke Village on the north.[11]

By the time North Carolina became a state in 1789, about 1,000 permanent residents lived on the Outer Banks. The economy of the Federal period was not that different from colonial times. Garden

10 Stick, *The Outer Banks of North Carolina,* 34–35.

11 Stick, *The Outer Banks of North Carolina,*12–26, 42; Dunbar, *Historical Geography,* 21, 26–28, 105; Dolan and Lins, *The Outer Banks of North Carolina,* 18; and Jeffrey Pompe, *Altered Environments: The Outer Banks of North Carolina* (Columbia: University of South Carolina Press, 2010), 27.

patches largely accounted for "farming" in the region. In 1810, it was noted of the Portsmouth area that "the soil is not used for agricultural purposes, more than in Gardens & the raising of a few sweet potatoes." In the 1850 census, there were two farmers at Portsmouth, none on Ocracoke and Hatteras Islands, eleven on the North Banks, and eighteen on Roanoke Island. The 1860 census showed no farmers on Portsmouth, Ocracoke, and Hatteras, but twenty-six on the North Banks and thirty-nine on Roanoke Island. Prominent agriculturist Edmund Ruffin observed in 1856: "Roanoke Island, (which, however I did not see, because of accidental delays in the water trip,) . . . is very productive, and especially in potatoes and garden vegetables."[12]

In 1800, Ocracoke village had 137 people, but by 1850, the population grew to 536. Of that number, 432 residents were white and 104 were enslaved people of African descent. Slave ownership was not widespread except for large landowners. The 1850 census showed 503 slaves for the entire Outer Banks, with 168 enslaved blacks on Roanoke Island



FIGURE 2–8. John Bachman, *Panorama of the Seat of War,* 1861. (© Cartography Associates)

12 Dunbar, *Historical Geography,* 30–31.

far exceeding any other location. Records indicate that the children of free black William Meekins owned 140 acres at Cape Hatteras and 50 acres at "Kinnakeet Banks" in the late 1700s.[13]

The prominence of Ocracoke Inlet gradually decreased as its depth diminished at the same time as vessels were getting larger, resulting in the ascendency of Hatteras Inlet in the years leading up to the Civil War. Although the Army Corps of Engineers began dredging the inlet in 1830, they had abandoned the work by 1837. By this time, the inlet's use was in decline. In the 1850 census, there were fifty-seven pilots living at Ocracoke and Portsmouth and only eleven at or near Hatteras Inlet. By 1860, Hatteras Inlet, with about thirty-five pilots, had about eight more pilots than Ocracoke Inlet. By 1880, there were twenty-six pilots at Hatteras and none at Ocracoke.[14]

Before the Civil War, fishing had become the most prominent occupation according to the 1850 and 1860 census, with the job title "fisherman" and "mariner" far exceeding any other category. The isolated setting and its dangers required a self-sufficient and independent minded people, who grew their own food, caught their own fish, put up their own houses, and built and sailed their own boats. These same people would be called upon to operate the lighthouses and life-saving stations of the Outer Banks.[15]

Ocracoke Island

Sir Richard Grenville's expedition to the Outer Banks landed at Ocracoke in 1585, where the flagship grounded on a shoal. Grenville and Ralph Lane explored the sound and mainland while repairs were made before moving north to Roanoke Island. The origin of the name "Ocracoke," which was spelled "Wokokon" or "Wokoken" in the sixteenth century, is probably the Woccon Indians. John White's map of 1585 marks the earliest occurrence of "Wococon" on a map. The 1657 Nicholas Comberford map showed the island as "Wococock," and in 1665 surveyor T. Woodward referred to an "Inlett at Wococock or Wococon." The "W" was eventually dropped, but it was spelled many different ways before the adoption of the present-day spelling. The name "Ocacock" appears on Herman Moll's map of ca. 1736.[16]



FIGURE 2–9. Herman Moll, *Carolina*, ca. 1736. (© Cartography Associates)

From the 1580s to the middle of the eighteenth century, Ocracoke Island was approximately eight miles long, bounded by Ocracoke and Hatteras Inlets. Lawson describes several inlets through the barrier islands, and his journal gives a glimpse of the Outer Banks as they were in the early 1700s.

> Ocacock is the best Inlet and Harbour yet in this Country; and has thirteen Foot at Low-water upon the Bar. There are two Channels, one is but narrow and lies close aboard the South-Cape; the other in the Middle, viz: between the Middle Ground and the South Shoar, and is above a Mile wide. The Bar itself is but half a Cable's length over, and then you are in seven or eight Fathom Water; a good Harbour. The Course into the Sound is N.N.W. At High-water, and Neap-tides here is eighteen Foot Water; it lies S.W. from Hatteras Inlet, Lat. 35°20′.[17]

In the 1730s, Hatteras Inlet began to close, joining

13 Stick, *The Outer Banks of North Carolina,* 73, 89; Torres, *HRS of Cape Hatteras,* 53; and Impact Assessment, Inc., *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore and Interpretive Themes of History and Heritage* (Manteo, NC: Cape Hatteras National Seashore, 2005), 14.

14 Dunbar, *Historical Geography,* 28.

15 Dunbar, *Historical Geography,* 28–35; Stick, *The Outer Banks of North Carolina,* 72–77; and Torres, *HRS of Cape Hatteras,* 73.

16 Stick, *The Outer Banks of North Carolina,* 18, 298.

17 Lawson, *A New Voyage to Carolina*, 63.

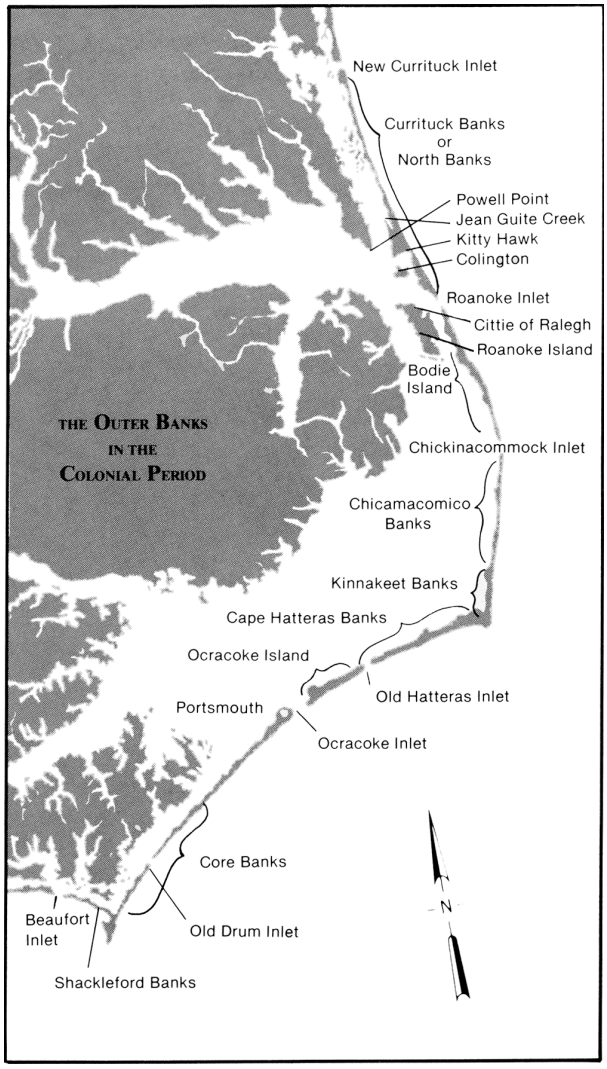


FIGURE 2–10. The Outer Banks in the Colonial Period. (Reprinted from Gary Dunbar, *Historical Geography of the North Carolina Outer Banks*)

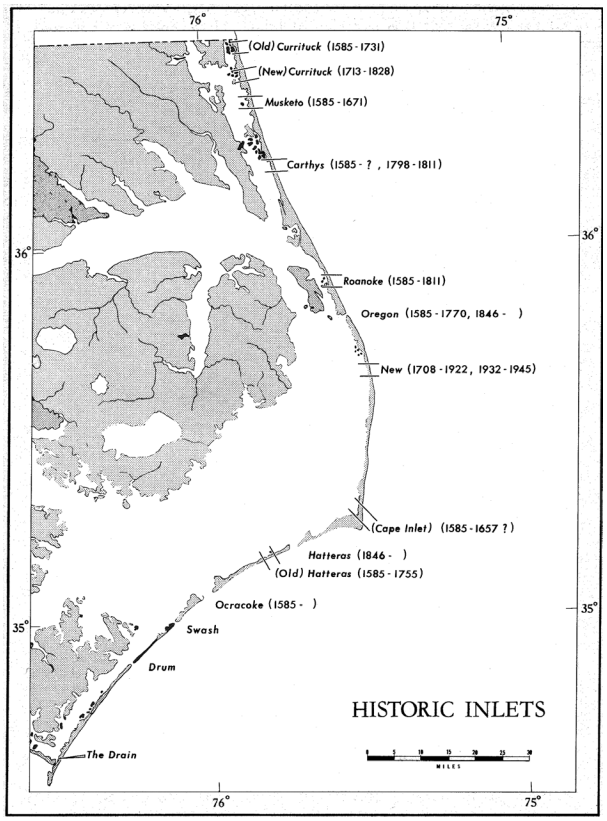


FIGURE 2–11. Historic Inlets. (Reprinted from Gary Dunbar, *Historical Geography of the North Carolina Outer Banks*)

Ocracoke to Hatteras Island. An 1846 hurricane opened a new inlet closer to Hatteras village, which was also called Hatteras Inlet. Ocracoke was once again an island but a different configuration than during its colonial history.[18]

Sometime around 1719, John Lovick received a 2,110-acre land grant for Ocracoke Island. The land was acquired by Richard Sanderson of Perquimans County, who, at his death in 1733, still owned the entire island. He bequeathed to his son Richard "Ye Island of Ocreecock, with all the stock of horses, sheep, cattle and hogs."[19]

French and Spanish privateers frequently raided livestock on Ocracoke, culminating in a Spanish tent camp on the western end of the island in 1741. Although the Spanish eventually abandoned their base of operations, the January 9, 1742, *Charleston Gazette* reported that "a Spanish Privateer has again lately been on that coast, and taken two Vessels off Okerecock." Such attacks prompted Outer Banks residents to demand protection. In 1747, Governor Gabriel Johnson felt that Ocracoke would be an excellent location for a fort. He stated:

> Inside the south end of the Island lyes the Harbor which has convenient places to careen ships. Wood and fresh water in abundance. A small fort mounted with some cannon would prove in time of war sufficient security to the shipping in the harbor and to the houses on land. Ocracoke is an airy and healthy place, abounding in excellent fish and wild fowl. If a Port is settled on Ocracoke Island a town will soon be built which will become in a little time a place of great commerce.

According to historian David Stick, the colonial

18 Stick, *The Outer Banks of North Carolina,* 298.

19 Stick, *The Outer Banks of North Carolina,* 299; Dunbar, *Historical Geography,* 18.

government eventually built a fort on the south side of Ocracoke Inlet. Fort Granville was garrisoned from about 1757 until 1764, but it does not show up on any maps of the 1770s, by which time it apparently had disappeared.

During the American Revolution, a committee of the Provincial Congress of North Carolina noted that the Outer Banks was defenseless in the face of the powerful British Navy. North Carolina and Virginia agreed to construct two large row galleys, one of which, *Caswell,* guarded Ocracoke Inlet from 1778 until she sank from rot a little over a year later. Her demise allowed British warships to conduct further raids on the Outer Banks until the end of the war. By this time, the importance of Ocracoke Inlet as a trade route had diminished.[20]

The Graveyard of the Atlantic

Secretary of the Treasury, Alexander Hamilton, has been credited with declaring the ocean off the Outer Banks as "the Graveyard of the Atlantic" for the extraordinary number of ships buried there. The Labrador Current that increased the speed of sailing ships also brought them perilously close to the shifting sand bars of the Outer Banks. If they did not veer east out to sea at Bodie Island, notorious Diamond Shoals awaited them. Once grounded, ships were soon torn apart by the turbulent waters, their crews doomed without assistance. Mariners who made it through then had to avoid the opposite-flowing Gulf Stream, a maneuver called "threading the needle."[21]

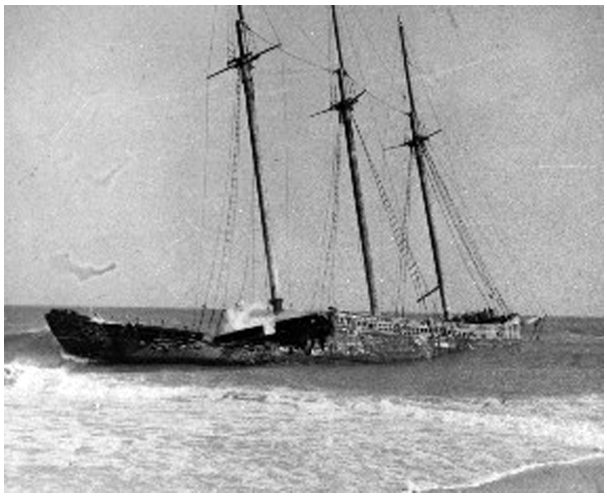


FIGURE 2–12. Wreck of an unknown schooner. (NPS/CAHA Collection)

Local pilots were an early aid to navigation, and piloting became an important occupation for residents of Ocracoke. When the captain of a vessel approached an inlet, a pilot boarded the ship and guided it through, avoiding the dangerous shoals. Because of their importance, pilots were appointed and licensed by the colonial government. To attract pilots to the area, the legislature passed a bill in 1760 setting aside fifty acres on Ocracoke for the use of pilots. Another twenty acres was leased to the pilots in 1766. A community known as Pilot Town formed at Cockle Creek, now known as Silver Lake. Jonathan Price noted in 1795 that the inhabitants of "Ocracock," as it was then called, were all pilots, "and their number of head of families is about thirty." The present day village of Ocracoke grew up around the Pilot Town community. In addition to the fact that the inlet was wide enough and deep enough to allow vessels of sizable draft to pass through with the aid of pilots, lightering at Ocracoke made it possible for large ocean-going ships to transfer cargoes to smaller boats capable of navigating the shallow sounds.

Mechanical aids such as beacons and channel markers were proposed as early as 1715. Buoying and beaconing of Ocracoke Inlet occurred around 1733, when Moseley's map notes that Beacon Island had "two large Beacons in it," but the problem of ocean currents and shoals were far greater. Edmund Ruffin described the problem:

> Taking the whole space within the outlines of Pamlico, Albemarle and Currituck sounds, and their connecting waters, and of all the deep, still and unobstructed waters of the many rivers discharging therein, there is not one of the Atlantic States, which has a greater extent of good and smooth navigable water—and safe from storms also, by its topographical features, and entirely secured from any invasion, or effective blockade, by a hostile naval force. . . . But these remarkable and otherwise valuable characteristics are rendered almost nugatory by another

20 Stick, *The Outer Banks of North Carolina,* 41; Torres, *HRS of Cape Hatteras,* 41–48.

21 Stick, *The Outer Banks of North Carolina,* 1; Oppermann, *Bodie Island Light Station Double Keepers Quarters HSR* 8; and Cheryl Shelton-Roberts and Bruce Roberts, Bodie Island Lighthouse: Its History & Restoration (Morehead City, NC: Lighthouse Publications, 2010), 2–3.

> remarkable feature of this region. There is now no access to the ocean, through the sand-reef, so good and deep as the narrow Ocracoke Inlet, which now only permits vessels of six feet draft to pass over the bar across the inlet, after tedious delays and much danger, and which passage opens upon an unsheltered and most dangerous sea coast. The whole ocean shore of North Carolina is a terror to navigators, and is noted for the number of shipwrecks, and especially near Cape Hatteras.[22]

Shell Castle Island Lighthouse

In 1789, the North Carolina General Assembly passed an act authorizing the first lighthouse at Ocracoke. Through an act of Congress that same year, the U.S. Light-House Establishment (Light-House Establishment) was created and operated under the Department of the Treasury. All U.S. lighthouse ownership was transferred to the federal government, which became the general lighthouse authority.[23] The following September, a group of men deeded a one-acre site on the southern tip of the island to the state, which transferred the land to the federal government for the purpose of building a lighthouse.

The Department of the Treasury seemed satisfied with the proposed location on Ocracoke Island until 1794, when an influential group of men, including pilots, merchants, ship owners, and captains, petitioned Congress to change the location to Shell Castle Island, a twenty-five-acre, shell-covered island located between Ocracoke and Portsmouth Island to the south. This site was adjacent to the deepest inlet channel between shallow Pamlico Sound and the ocean and would be more advantageous to ships approaching and leaving the inlet. In the early 1790s, John Wallace and John Blount began building wharves, warehouses, a gristmill, and a few residences on the island, where vessels would dock and transfer their cargo to lighters that could navigate the shallow sounds.

An invitation for bids published in the *North Carolina Gazette* on May 23, 1795, described the details of the lighthouse. It was to be a pyramidal-shaped wooden tower measuring 54½ feet, covered with shingles, and set on a ten-foot-deep submerged stone foundation. The tower was to be capped with a six-foot enclosure for a lantern and a three-foot dome. In November 1797, John Gray Blount and John Wallace deeded land to the federal government. Henry Dearborn was the low bidder and completed the Shell Castle Lighthouse in 1798. The site included a frame keeper's quarters with a cellar and an oil vault.

The beacon's usefulness declined as the importance of Shell Castle Island as a commercial point diminished with the shoaling of Wallace Channel. By 1818, the channel had shifted nearly a mile away. The lighthouse remained in service until August 16, 1818, when lightning destroyed both its tower and keeper's dwelling. A light vessel replaced the Shell Castle Lighthouse in 1820, but its effectiveness proved inadequate.[24]



FIGURE 2–13. Shell Castle Island light tower. (© North Carolina Museum of History)

Ocracoke Island Lighthouse

Beginning in 1820, Stephen Pleasonton, Fifth Auditor of the Department of the Treasury, was assigned the "care and superintendence of the lighthouse establishment." Pleasonton relied on the local collector of customs to select sites, purchase land, and supervise the contractors who built the towers and related structures. Henry Dearborn was the Collector of Customs for the Districts

22 Torres, *HRS of Cape Hatteras,* 49, 52–60, 67.

23 Clifford and Clifford, *Nineteenth-Century Lights,* 3–5.

24 Torres, *HRS of Cape Hatteras,* 73–75; Stick, *The Outer Banks of North Carolina,* 302–303; "Ocracoke Light Station," http://www.nps.gov/caha/planyourvisit/ols.htm; *Ocracoke Lighthouse HSR,* 9.

of Boston and Charleston, and he executed the contracts for the construction of the Ocracoke Lighthouse.[25]

On May 7, 1822, Congress authorized $20,000 to construct a lighthouse on Ocracoke Island. For a charge of fifty dollars, the federal government purchased two acres at the south end of the island from Jacob Gaskill on December 5, 1822, as the site for a new lighthouse. Massachusetts builder Noah Porter completed the lighthouse and the one-and-one-half-story keeper's dwelling, well, and privy in 1823 for $11,359. The contract called for an octagonal iron lantern at the top of the tower. At the top of the lantern was to be a dome topped by a ventilator and a weathervane. Around the lantern was an iron railing. The tower had a door and six windows. The tower's solid white coloration served as its identifying mark to mariners by day and constructed a new lantern to accommodate the more compact Fresnel lens.[26]



FIGURE 2–14. Ocracoke Lighthouse, 1893. (NPS/CAHA Collection)

On July 28, 1823, Henry Dearborn executed a contract for the lamps and reflectors with Winslow Lewis, who oversaw the construction of many early lighthouses. The beacon would be a revolving light with fifteen lamps fitted with oil heaters and an equal number of sixteen-inch Argand parabolic reflectors. In 1849, the lighthouse was equipped with a new lantern room and lighting apparatus, which consisted of ten brass lamps and twenty-one reflectors, replacing the fifteen that had been used before. The apparatus revolved every two minutes to produce a flashing light. Although the French physicist Augustin Fresnel had devised a lens in 1822 that was considered far superior to the reflector lamps, Pleasonton was slow to adopt the new technology.[27]

U.S. Light-House Board, 1852–1910

In 1852, Congress replaced Pleasonton with a nine-member Light-House Board that totally revamped the administration of lighthouses. The board devised a classification system based on position and use. Primary coast lights were those with the most prominent locations along the coast; secondary lights occupied less prominent points along the coast or in broad sounds and bays. The Fresnel lens became the standard adopted by the Light-House Board, replacing the less powerful reflector lamps. These lenses used prisms to refract light to the center of the lens, where it was concentrated into a powerful beam. First-order lenses provided the largest range; sixth-order lenses provided the smallest. In 1854, as part of its modernization program, the board replaced the Argand reflectors in the Ocracoke lantern with a fourth-order Fresnel lens with a fixed white light and constructed a new lantern to accommodate the more compact Fresnel lens.[28]

Another development was the substitution of lard oil in place of sperm or whale oil, the single preferred fuel up until the middle of the nineteenth century. An increase in the price of whale oil spurred a search for an alternative fuel.

25 Clifford, 21; *Ocracoke Lighthouse HSR*, 10.

26 Cloud, *Ocracoke Lighthouse,* 3–4; *Ocracoke Lighthouse HSR*, 10; Stick, *The Outer Banks of North Carolina,* 303; and "Ocracoke Light Station, "http://www.nps.gov/caha/planyourvisit/ols.htm. The daymark system using unique patterns of contrasting colors was developed later by the Light-House Board; Oppermann, *Ocracoke Light Station HSR*, 36-37.

27 *Ocracoke Lighthouse HSR,* 10; Clifford, 24; and "Ocracoke, NC," http://www.lighthousefriends.com/light.asp?ID=355.

28 Clifford and Clifford, *Nineteenth-Century Lights*, 78; Cloud, *Ocracoke Lighthouse,* 5; Oppermann, *Ocracoke Light Station HSR*, 38.

In the 1850s, colza oil from rapeseed replaced expensive whale oil. In the late 1850s, the Light-House Board directed a committee headed by Joseph Henry of the Smithsonian to begin testing lard oil. Henry found that when heated to 250 degrees, the oil was the equivalent if not superior to whale oil. The introduction of lard oil began around 1865, and by 1867, it was being used in the larger lamps. It soon became the fuel for all lighthouse lamps.[29]



FIGURE 2–15. Ocracoke Light Station, 1893. (NPS/CAHA Collection)

During the Civil War, the strategic value of the North Carolina Outer Banks was coveted by both sides. After North Carolina seceded from the Union in May 1861, the Confederacy built a series of forts along the Outer Banks to protect the inlets and sounds. By 1862, Union forces had captured the entire North Carolina coast, and in the process, retreating Confederate troops dismantled the lens of the Ocracoke Lighthouse to darken the coast. Although it was reported in June 1863 that the Ocracoke Lighthouse had been "refitted and the lights re-exhibited," it was apparently not permanently lighted until 1864. [30]

In 1868, the station underwent numerous repairs that included relaying the brick walks around the house, and in 1869 it was declared to be "in fine order." Repairs also occurred in 1883 that included removing the existing fence and replacing it with a new picket fence. The first major change to the keeper's quarters came in 1889, when a frame shed room was added to the back of the house.[31]

In May 1892, plans of the lighthouse were drawn based on dimensions taken on site. One notable difference between the 1823 specifications and the lighthouse as documented in 1892 is the appearance of the lantern. The contract called for it to be an octagon in form, but by 1892, the lantern was round in shape.[32]

In May 1893, Herbert H. Bamber, Lighthouse District Superintendent of Construction, surveyed the light station and produced a detailed site plan and a series of photographs. The site plan shows the light tower at the northern end of the property and the double keeper's quarters, a storehouse, and privy sited southeast of the light tower. The dwelling, with the frame shed room addition, occupies the central portion of the site. The storehouse is located northeast of the dwelling; the privy is on the eastern boundary. The only other structure demarcated on the site plan is a well located southeast of the light tower. Areas for a garden are documented in the northwest and northeast corners of the site. A fence encloses the northwest garden. Live oaks are clustered around the dwelling and light tower and near the northeast garden area. A few cedars are scattered about the site. Shrubs or "bushes" (as noted by Bamber) of unknown identity are located in the southwest and northeast corners and along the eastern boundary. The entire station is enclosed by a picket fence with grass planted within the fence.

Images taken at the same time reflect what is seen on the site plan. In addition, images capture the family in residence standing on a brick deck or walkway that wrapped around the house. A work yard with chickens, wooden enclosures (probably for livestock and chickens), and sandy circulation paths surrounds the house. The trunks of live oak trees are painted white, as was the custom to keep insects out of trees. There were no foundation

29 *Ocracoke Lighthouse HSR,* 21; Oppermann, *Ocracoke Light Station HSR*, 28-29.

30 Stick, *The Outer Banks of North Carolina,* 118–52; Oppermann, *Ocracoke Light Station HSR,* 25-26, 39; Cloud, *Ocracoke Lighthouse,* 6; and *Ocracoke Lighthouse HSR,* 11.

31 Cloud, *Ocracoke Lighthouse,* 7; Oppermann, *Ocracoke Light Station HSR*, 25.

32 Oppermann, *Ocracoke Light Station HSR*, 19-20.

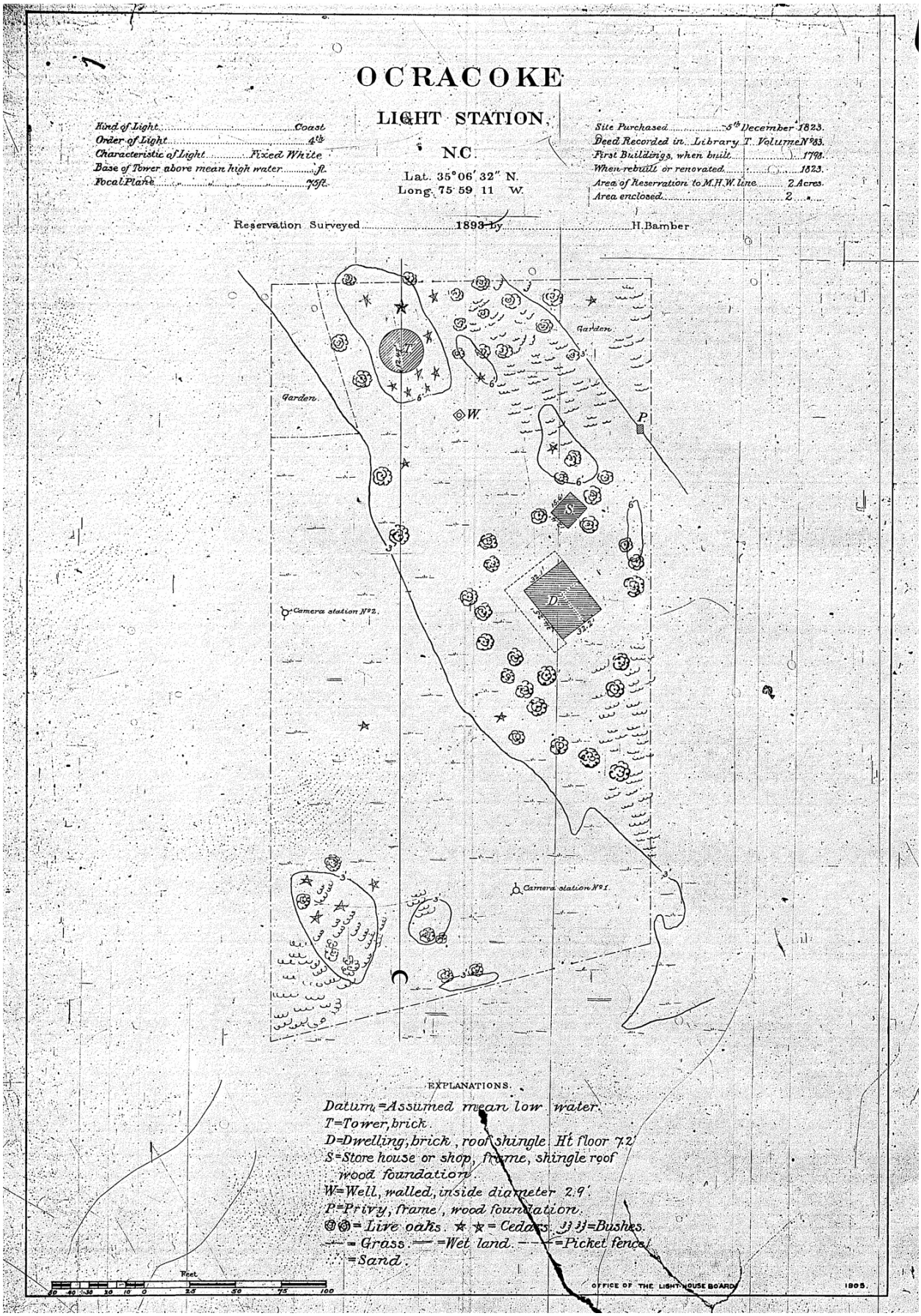


FIGURE 2–16. Ocracoke Light Station site plan, 1893. (NPS/CAHA Collection)



FIGURE 2–17. Ocracoke Lighthouse, 1893. (NPS/CAHA Collection)



FIGURE 2–18. Ocracoke Light Station, after 1897. (NPS/CAHA Collection)

plantings around the dwelling or storehouse.[33]

To provide more space for the keeper and his family, a second story was added onto the original quarters in 1897. An image from 1897 shows the station very much as Bamber documented it in 1893 but with a second story on the dwelling. In 1898, Keeper Tilmon F. Smith mentioned whitewashing a cow stable and chicken house in his logbook. In 1899, in addition to repairs, a new fourth-order lamp was installed.

Keepers performed a wide range of duties. Maintaining the buildings and grounds, hauling oil, trimming wicks, and polishing the lens were part of a well-trained lightkeeper's regulated life. Ocracoke lighthouse keepers fished, hunted waterfowl, raised livestock, and planted gardens. Because of the station's proximity to the village of Ocracoke, the keeper and his family did not face the isolation that other Outer Banks keepers experienced.

As the twentieth century dawned, the Department of the Treasury made several improvements to the station. In 1902, Keeper Smith began building a plank walk from the quarters to the light tower. In 1904, a small woodshed was built, fencing erected, and various repairs made.[34] A site plan from 1908 shows a clustering of outbuildings and a cistern linked to the dwelling by brick and wooden walkways (see figure 2-41).

U.S. Bureau of Lighthouses, 1910–1939

In 1910, Congress dissolved the Light-House Board and created in its place the civilian U.S. Bureau of Lighthouses under the Department of Commerce. The legislation referred to the bureau as the Lighthouse Service, its more commonly known name.[35]

In 1913, Wesley Austin had just taken charge of the light, after having served as first assistant at Currituck Beach Lighthouse since 1893. In February, Chief Construction Engineer H. B. Bowerman visited the light station. In May, Keeper Austin recorded that a repair party arrived to put a cement coating on top of the tower and to repair fence planks, walks, and outbuildings.

During hurricanes, the light station was a place of refuge for some local residents. Situated on higher ground, the complex often remained above flood waters. Villagers, sometimes arriving by boats that navigated inundated roadways, waited out the storm in the keepers' dwelling. One example of this occurred in September 1913, when a hurricane struck the Outer Banks. The Lighthouse Service commended Keeper Austin for saving government property and giving shelter to island residents during the storm. His daughter, Ruby, described the storm of 1913: "The waves were terrible. The boats washed up on the island over the fences around the lighthouse." Keeper Austin reported that high winds blew down part of the fence, washed over plank walks, and severely damaged trees inside the station. For the next week, he reported clearing litter out of the station. The following week he began making repairs to the privy, plank walks, and fencing. The station was inspected on October 4 and found to be in good condition.[36]

The substitution of mineral oil (kerosene) for lard oil as fuel for the light brought about the construction of an oil house in 1914, constructed of reinforced concrete and equipped with iron doors and ventilators. Keeper Austin reported in his logbook that a repair crew arrived on February 23, 1914, to build the oil house. Keeper Austin received an efficiency star on August 18, 1914. A repair crew arrived on March 22, 1915, to make minor repairs to the station.

Several improvements occurred at the station in 1916. A repair crew arrived on April 3 and began taking out the plank walks and replacing them with concrete walks. They also rebuilt the privy and repaired the top of the cistern. After the repair party left on April 13, Keeper Austin painted the outbuildings, tower, quarters, hot house, and fence and fixed the chicken lot. Although chickens had

33 [H. H. Bamber], Photographs 189 (C. S. 1) and 191 (C. S. 2), Ocracoke Light Station, N. C. May 24, 1893, NPS/CAHA Collection.

34 Cloud, *Ocracoke Lighthouse,* 7, 16–17; "Ocracoke, NC," http://www.lighthousefriends.com/light.asp?ID=355; Mr. John W. Lewis, Ocracoke Light Station, N.C. [map], 1897, 5th L.H. District, Baltimore, MD, NPS/CAHA Collection.

35 Lighthouse Digest Magazine, "Important Dates in United States Lighthouse History," http://www.foghornpublishing.com/history.cfm.

36 *Ocracoke Lighthouse HSR*, 24; Cloud, *Ocracoke Lighthouse,* 23–25; "Ocracoke, NC," http://www.lighthousefriends.com/light.asp?ID=355.



FIGURE 2–19. Ocracoke Light Station, 1936. (NPS/CAHA Collection)

been documented previously in photographs, this is the first mention of the cistern and hot house in the keeper's logbook.[37]

Telephone service came to the station on October 3, 1917, and the USCG telephone inspector visited the station on October 31. Light station families were encouraged to maintain gardens to support the war effort after America's entry into World War I in April 1917. No further improvements were reported by Keeper Austin until 1920, when he replaced pickets and gates in the existing fence and installed gutters on the quarters. Nonetheless, the Lighthouse Service declared the station in Excellent Condition in January, April, June, September, and October of 1914; June and September of 1917; March of 1918; and May of 1919. Keeper Austin was awarded the efficiency flag for having the best-kept station in the district in 1922. He retired from duty on September 30, 1929, after serving for forty-five years.

Joseph M. Burrus ("Cap'n Joe") took over as keeper on October 1, 1929. The light was electrified on October 29, 1929. As duties at the light station increased, the Light-House Board added an assistant keeper position. To house the additional keeper and his family, another addition to the keeper's quarters occurred in 1929, creating a double dwelling. Assistant Keeper Crawford Austin served in the 1930s. As Keeper Burrus made few entries in his logbook, not much is known about repairs or improvements at the station during his tenure. On April 2, 1930, the light station property consisted of the following buildings that could be valued:

1 lighthouse	$16,050
1 oil house	500
1 dwelling	5,670
1 dwelling	7,000
1 coal shed	400

37 Cloud, *Ocracoke Lighthouse,* 26–28.

Plans that pre-date 1939 show a more substantial chicken house, although its original location is uncertain (see figure 2-103).[38]

Construction of Artificial Barrier Dunes

In 1934, a project to build artificial barrier dunes from the Virginia state line to Ocracoke Inlet was begun using Works Progress Administration (WPA), Civilian Conservation Camp (CCC), and National Youth Administration labor authorized under the New Deal policies of President Franklin D. Roosevelt. This work was directed by the National Park Service (NPS) before the establishment of the Cape Hatteras National Seashore and used sand fences to raise a line of barrier dunes. By 1940, 600 miles of fences had been erected on 115 miles of beach. To stabilize the dunes, 142 million square feet of grass and 2.5 million seedlings, trees, and shrubs had been planted. Dunes were built only half the length of Ocracoke because of a lack of funds and conflicting programs for the future development of the island. While the North Carolina Livestock Act of 1934 stopped open grazing on Roanoke Island and from Currituck to Hatteras Inlet after February 1937, the stock law did not apply on Ocracoke Island, where the Ocracoke ponies ranged freely, or on the Outer Banks portion of Carteret County. Because dune building and grass planting could not be successfully accomplished with free ranging stock at large, most of the dune construction occurred in the Outer Banks portion of Dare County. Most Ocracoke properties were still fenced to keep out the free range Ocracoke ponies.[39]

U.S. Coast Guard, 1939–1999

President Roosevelt, under the Presidential Reorganization Act of 1939, transferred the operation and administration of the Lighthouse Service to the USCG. From 1939 to 1940, a USCG Station was built on the southern end of Ocracoke Island. During World War II, the U.S. Navy



FIGURE 2–20. Coast Guard Station on Ocracoke Island, n.d. (NPS/CAHA Collection)

38 Cloud, *Ocracoke Lighthouse,* 19–21, 30–35, 73; *Ocracoke Lighthouse HSR,* 12.

39 Dunbar, *Historical Geography,* 65, 88; Stick, *The Outer Banks of North Carolina,* 249.



FIGURE 2–21. Ocracoke Light Station, ca. 1940s. (The Outer Banks History Center, Manteo, NC/David Stick Collection)

operated a Section Base (1942–1944), Amphibious Training Base (1944–1945), and Combat Information Center (1945) just across Silver Lake Harbor from the lighthouse.

In 1946, the USCG automated the Ocracoke Lighthouse, and its keeper since 1929, "Cap'n Joe" Burrus, left its service. He was a keeper for forty-five years and also served at the Cape Lookout Lighthouse and the Diamond Shoals Lightship. The last keeper was Clyde Farrow, who served from 1946 to 1954.[40]

Around 1950, the USCG replaced the original wooden spiral stairs built into the inside of the exterior wall of the lighthouse with metal stairs located in the center of the tower. Also at this time, an extensive interior rehabilitation of the quarters occurred, including installation of modern kitchen and bathroom facilities. An elevation of the quarters and plot plan from 1950 shows two cisterns at the rear (east) of the building.[41]

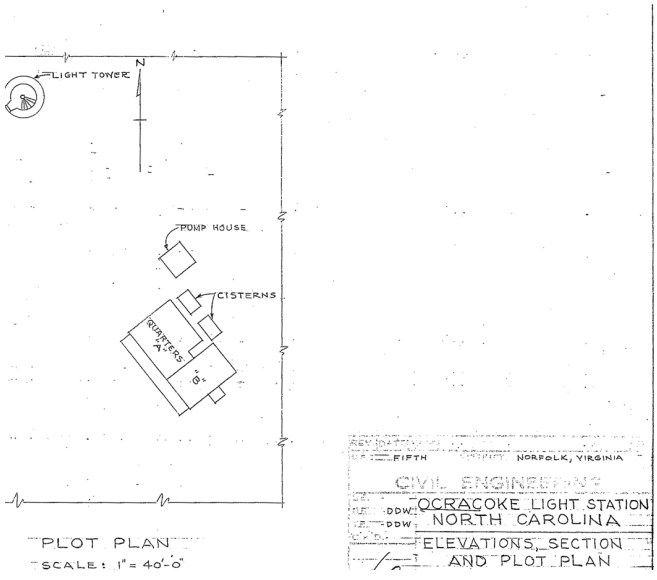


FIGURE 2–22. Plot plan, 1950. (NPS/CAHA Collection)

40 *Ocracoke Lighthouse HSR,* 17; Stick, *The Outer Banks of North Carolina,* 301; and Cloud, *Ocracoke Lighthouse,* 19.

41 *Ocracoke Lighthouse HSR,* 11; "Narrative Report on the Findings of Historic Structure Examination Conclusions and Recommendations Ocracoke Lightstation Keepers Quarters," Accession 191, Catalog 5037, Box 1, Folder 1, NPS/CAHA Collection.

Establishment of the Cape Hatteras National Seashore

Congress had authorized Cape Hatteras as the first National Seashore in 1937, but it was another sixteen years before the park was officially established in January 1953. In April 1955, Superintendent Allyn F. Hanks wrote the Commander of the Fifth USCG District to inquire about using the light station buildings:

> The National Park Service is anxious to more adequately meet public obligations on Ocracoke Island as part of the Cape Hatteras National Seashore. Lacking is a suitable base of operations, protection and interpretation. The buildings adjacent to the lighthouse are well adapted for this purpose and, in the event the U.S. Coast Guard no longer requires these units, it would be most helpful to the Service program if permission to occupy the grounds and utilize existing improvements equipped, exclusive of the lighthouse facilities, could be granted.

In response to this inquiry, the USCG granted a revocable permit to the NPS on May 17, 1955, for the use and occupancy of the quarters building of the station. Another letter dated April 10, 1957, asked if several outbuildings could be included:

> In view of the Coast Guard revocable permit of 17 May 1955 to the National Park Service granting use and occupancy of that Station, and our need of facilities to continue planned operations there, it is requested that the following buildings be included in the permit for our use and occupancy: (1) garage, (2) chicken house, (3) carpenter shop, (4), pump house. We hereby agree to provide the necessary maintenance to those buildings.

An amendment to that effect was signed on May 6, 1957, granting the use of the garage, chicken house, carpenter shop, and storehouse (pump house) with the stipulation that the NPS keep the buildings in good repair and condition.[42]



FIGURE 2–23. Ocracoke Light Station with garage along the fence line, 1952. (NPS/CAHA Collection)



FIGURE 2–24. Ocracoke Light Station with garage, concrete oil house, and chicken house, 1956. (NPS/CAHA Collection)

A new use agreement between the same parties was signed on February 13, 1974. It allowed the NPS to use the lighthouse to support an antenna required for the park FM radio network, as well as the use of the buildings at the station. The agreement also required the NPS to obtain authorization prior to making any structural changes to or removal of any of the buildings. From 1972 to 1982, the NPS painted and roofed the quarters, toolhouse, and storehouse (pump house). The fence was also painted during this time.[43]

In 1984, the NPS and the USCG agreed that the USCG would maintain the fence around the station, and the NPS would be responsible for the quarters and outbuildings at the station. The

42 Allyn F. Hanks, Superintendent to Commander, Fifth Coast Guard District, April 22, 1955 and April 10, 1957, Accession 191, Catalog 5037, Box 1, Folder 1, NPS/CAHA Collection.

43 Ocracoke Light Station, HS-1A/HS-1B Buildings #501/501B/503, Accession 191, Catalog 5037, Box 1 Folder 1, NPS/CAHA Collection.



FIGURE 2–25. Ocracoke Light Station with garage, concrete oil house, chicken house, carpenter shop, and storehouse, ca. 1960s. (The Outer Banks History Center, Manteo, NC/Aycock Brown Collection)

USCG had always been responsible for the upkeep of the lighthouse. Following complaints from the Ocracoke village regarding the condition of the station in 1985, the superintendent directed NPS staff to develop additional guidelines for residential occupancy, develop a maintenance and repair schedule for the grounds, and a schedule for repairs to the structures. An inspection of the station in January 1986 found numerous deficiencies and needed repairs. The superintendent contacted the NPS occupants of the station and sought their assistance in disposing of or properly storing personal property scattered around the site. He stated:

> Your help is needed, as quite a lot of personal property has been scattered around the site—primarily behind the residence, behind a storage building, and at the back of the property between the lighthouse and the old outhouse and garden. I ask that you pick up and either dispose of, or properly store any personal property that belongs to you, and that the work be accomplished by March 15. Anything lying around after that date will be considered trash that the Maintenance Division will remove and dispose of.

The initial effort for preservation maintenance of the grounds included trash and debris removal from the site in March 1986.[44]

A revised use agreement was signed on May 20, 1986. It called for the NPS to maintain the quarters and outbuildings in good repair, as well as the grounds and fence in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. In October, historical architect Rene Cote of the NPS Southeast Cultural Resources Preservation Center examined the quarters building, outbuildings, and site conditions to determine the historic development of the structures; structural problems; the condition of electrical, mechanical, and plumbing systems; paint failure; moisture problems; roof systems; and fabric analysis. He reported that the exterior appearance of the quarters resembled the basic form after the 1929 addition. Modifications that detracted from the appearance included: the screening of the south porch; the use of white paint for second story cypress shingles; the addition of composition shingles to the rear utility wing of the 1823 structure; the installation of exterior aluminum storm doors and windows;

44 Superintendent to Mac Basnight and Jim Henning, February 26, 1986, Accession 191, Catalog 5037, Box 1 Folder 1, NPS/CAHA Collection.

the modification of cisterns to include large concrete block sand filters on top of the cisterns; the addition of modern extruded aluminum gutters and downspouts to replace the deteriorated system; and the addition of new electrical and plumbing intrusions. Fabric analysis revealed the brick to be in relatively good condition with a few exceptions, the paint in various stages of failure, and the mortar soft but in relatively good condition. The fence system was in various stages of deterioration; vehicular access was undefined; and the surroundings of the 1929 east structure included broken plastic and Styrofoam coolers, auto tires, open plastic garbage bags, containers with trash and refuse, and broken window screens and garden hoses scattered around the site.[45]

In response to this report, the superintendent wrote the NPS employee who lived in the 1929 east structure a letter demanding prompt attention be given to the area around the residence:

> I recently inspected the site, and the area around your residence is simply not acceptable. It looks as bad now as it did before the area was cleaned up in March. Neither of us would tolerate such a situation at any of the park buildings that are open to the public, and I cannot tolerate it at the National Registry property that happens to be your residence. . . . On March 24, I sent you a letter asking that the lumber that you have stored in your attic be removed. Since that lumber is still there, I am directing you to remove it by January 1, 1987. In addition, outbuilding 501-B must be thoroughly cleaned out, as the layer of straw and manure on the floor in that building is accelerating the rate of deterioration of the floor. If, when this work is completed, it is found that the flooring in 501-B has deteriorated to the point where the building can no longer be safely used, then the building is to be left empty, and you will need to find suitable storage for the personal property that is now stored within this building.[46]



FIGURE 2–26. Condition of the site, 1986. (NPS/CAHA Collection)



FIGURE 2–27. Condition of the site, ca. 1986. (NPS/CAHA Collection)



FIGURE 2–28. Fence along the east boundary, 1985. (NPS/CAHA Collection)

45 "Narrative Report on the Findings of Historic Structure Examination Conclusions and Recommendations Ocracoke Lightstation Keepers Quarters," Accession 191, Catalog 5037, Box 1, Folder 1, NPS/CAHA Collection.

46 Thomas L. Hartman to James A. Henning, November 26, 1986, Accession 191, Catalog 5037, Box 1, Folder 1, NPS/CAHA Collection.

Rehabilitation of the Double Keepers' Quarters

In 1987, the NPS finally began Phase I of structural and interior rehabilitation on the double keepers' quarters. Completed by the Williamsport Preservation Training Center in September, the rehabilitation focused on stabilization and life safety issues. The NPS decided that a historic structure report was needed to determine a logical sequence of preservation work on the structure before Phase II began in January 1988, but it appears that work proceeded without a report. Electrical, plumbing, and sewage system plans were already being prepared by the park staff and HVAC system plans were being prepared by staff of the NPS Denver Service Center. Other work included repairs to chimneys, repairs to existing windows, repairs to shed roof addition, and replacement of wood shingle roofs on utility room additions. The NPS Williamsport Preservation Training Center also developed a scope of work for the carpenter shop, storehouse (pump house), and privy. The final inspection for Phase II occurred on September 22, 1988. The Williamsport Preservation Training Center completed and oversaw all of the work with the exception of the window repairs, which were partially completed, and repairs to the carpenter shop and privy. A heavy termite infestation expanded the scope of work for the storehouse (pump house) during Phase II. Repairs to windows and to the carpenter shop and privy were deferred to Phase III, which was concluded in January 1990.[47]

Stabilization and Preservation of the Lighthouse

Several informal inspections of the lighthouse during the early rehabilitation of the double keepers' quarters in 1987 revealed the tower's deteriorated condition and the need for immediate stabilization and preservation. In May 1987, the USCG submitted a project for exterior painting and repairs to the North Carolina Department of

47 Chief, Historic Architecture Division to Superintendent, Cape Hatteras, December 29, 1987; Exhibit Specialist, Williamsport Preservation Training Center, Harpers Ferry Center to Deputy Chief, Williamsport Preservation Training Center, HFC, October 27, 1988, Accession 191, Catalog 5037, Box 1, Folder 1 and 2, NPS/CAHA Collection.



FIGURE 2–29. Phase I rehabilitation, 1987. (NPS/CAHA Collection)

Cultural Resources for review. In their response, they questioned the USCG's proposal to replace the existing door with a metal frame and door, stating that the new door frame should be fabricated of wood or the existing door frame repaired. They allowed a steel door for security and maintenance purposes but specified that the door should have only a louvered panel with no glazing. They commented that snap-in muntins or moldings in either the door or windows would not meet the Secretary of the Interior's Standards for the Treatment of Historic Properties. A more serious concern was about the proposal to replace all of the windows and frames. The letter stated:

> We seriously question the need to replace all windows and frames as specified in Section 8G. Our photographs of the Ocracoke Lighthouse indicate that the existing wood windows and frames are in fair-to-good condition. It appears that they could be repaired as needed and repainted. The total replacement of all window frames and sash with new vinyl-clad or aluminum-clad units with snap-in muntins would be a violation of the Secretary of the Interior's Standards.
>
> We recommend that each existing window frame and sash be carefully inspected for its condition. Any deteriorated elements of the window frames, such as sills, stops, jambs, and lintels should be repaired or replaced to match the existing detailing. All sash which are in sound condition should be repaired and glazed as needed. Frames or sash which are too deteriorated to be repaired should be replaced with new

frames or sash which have been milled or fabricated to match the existing ones. Any new replacement sash should be of true six-light construction, and identical to the existing sash. Snap-in muntins are not acceptable.[48]

The Great Window Heist

Beginning in 1988, two events occurred that galvanized the Ocracoke community into taking action to preserve the integrity of the lighthouse. First, the generator that powered the lighthouse when there was a power outage ceased to function. Instead of replacing it, the USCG decided to install two small, battery-powered navigational lights on the gallery hand rails, much to the disdain of the Ocracoke community. In 1989, the USCG let a contract to paint the lighthouse and repair the windows and door. Local resident and author Ellen Fulcher Cloud learned that the contractor had removed the historic wood-clad windows and replaced them with vinyl-clad thermal sash windows and replaced the historic door with a non-historic metal door. She contacted two friends who joined her at the site, where the contractor informed them that the historic windows were to be destroyed but were still on site. The group immediately contacted the USCG, NPS, North Carolina Department of Cultural Resources, and Congressman Walter P. Jones's office. All agreed that the window replacement was in violation of Section 106 of the National Historic Preservation Act (NHPA). The group returned to the lighthouse, found the windows stored inside, and took them away for safe keeping at the protest of the contractor. They informed all parties of their actions, and a meeting was set up for the following week with the USCG, NPS, and Hyde County Commissioners. At the meeting, the USCG agreed to have the historic windows replaced in-kind, to replace the generator, and to remove the lights from the gallery hand rails.

When nothing had been done by April 1990, the group contacted the USCG but got no satisfaction that they planned to carry out their agreement any time soon. The group was hoping to have the work completed by National Lighthouse Day on August 7. They once again called Congressman Jones's office, who promised that the generator would be ordered that day and the lights taken off the lighthouse by August 7.[49]

A crew from the Williamsport Preservation Training Center replaced the non-historic windows with historically accurate wood windows using as much of the surviving fabric as possible. They also removed the non-historic metal door installed by the contractor and constructed a new board-and-batten door as specified by drawings supplied by the North Carolina Department of Cultural Resources. Following this incident, the USCG repeated its suggestion that the NPS consider taking ownership of the Ocracoke Lighthouse while the USCG would maintain the optic.[50]

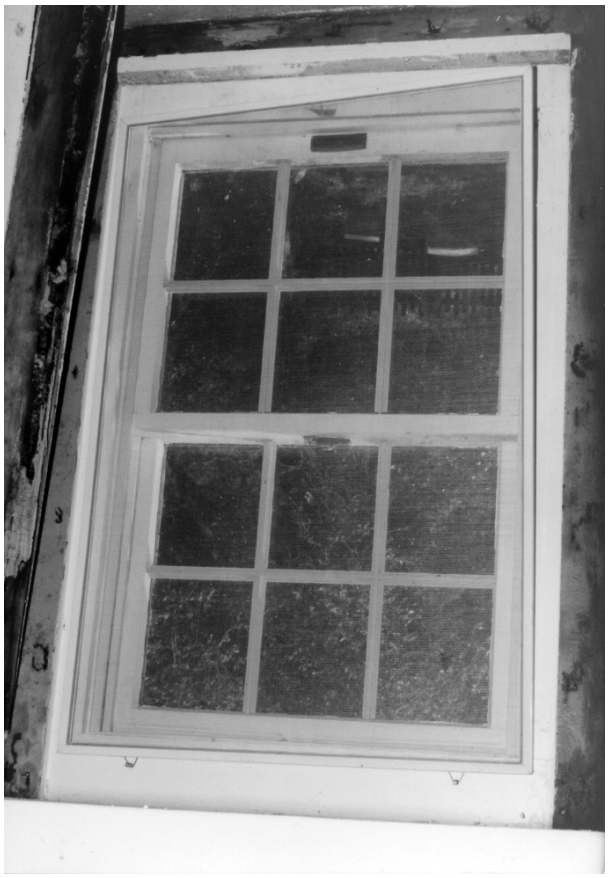


FIGURE 2–30. Non-historic replacement window, 1990. (NPS/SER-CRPS Collection)

48 David Brook to Marvin H. Barnes Jr., March 27, 1987, Accession 191, Catalog 5037, Box 1, Folder 1, NPS/CAHA Collection.

49 Cloud, *Ocracoke Lighthouse,* 45–53; J. C. Malmrose, Commander, U.S. Coast Guard to Thomas L. Hartman, Superintendent, Cape Hatteras National Seashore, February 26, 1990, Accession 191, Catalog 5037, Box 1, Folder 1 and 2, NPS/CAHA Collection.

50 Williamsport Preservation Training Center, "Completion Report Ocracoke Lighthouse Window and Door Replacement Cape Hatteras National Seashore."

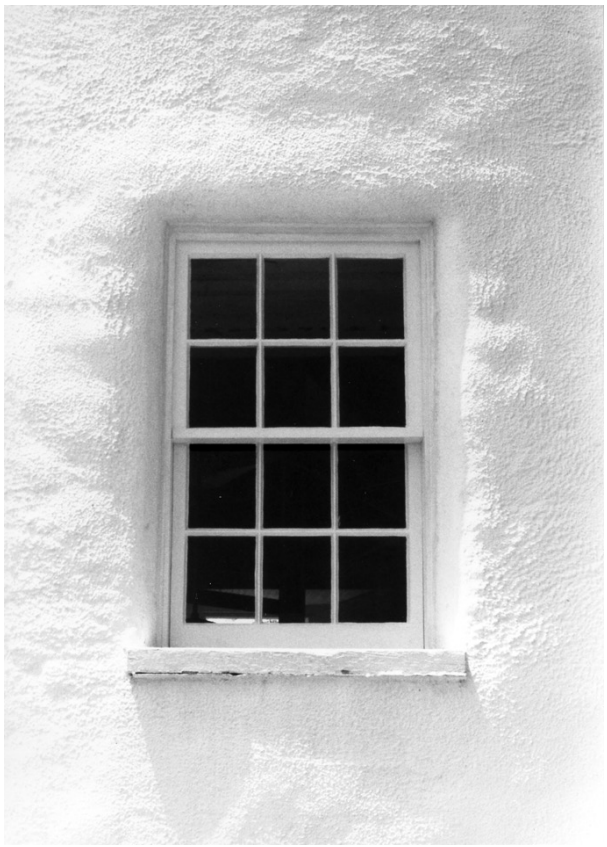


FIGURE 2–31. Refabricated window, 1990. (NPS/SER-CRPS Collection)

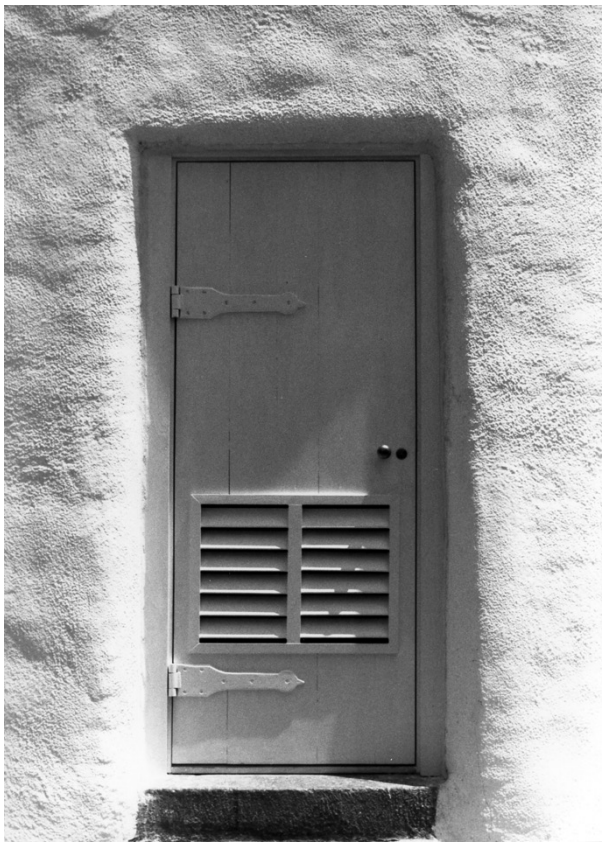


FIGURE 2–32. New board-and-batten door, 1990. (NPS/SER-CRPS Collection)

Lighthouse Preservation Grants

In 1988, the North Carolina Department of Cultural Resources received a $17,000 Lighthouse Grant from the Bicentennial Lighthouse Fund, which they transferred to the Cape Hatteras National Seashore via a Preservation Letter of Agreement. These funds were used to prepare a historic structure report to assess the structure's condition, document historic fabric, and develop a scope of work for rehabilitation of the lighthouse. In 1989, an additional $11,000 Lighthouse Grant initiated stabilization and preservation work on the structure, which included cleaning algae from interior brick surfaces, replacing deteriorated interior stair support brackets with stainless steel brackets, hand raking and repointing twenty courses of interior brick mortar joints, and repair of the gallery hatch door.

The NPS absorbed most of the costs of the historic structure report, which was completed in 1990, leaving $12,645 of the original Lighthouse Grant funds unobligated. The North Carolina Department of Cultural Resources approved a request to reallocate the remaining funds for use in Fiscal Year 1990. The scope of work included window sill repairs, window lintel repairs, entrance door lintel repairs, front step and sidewalk repairs, and replacement of Plexiglas in the lantern with Lexan to secure structure from water migration.[51]

In 1990, a third grant in the amount of $6,500 continued preservation work on the lighthouse. This funding was sufficient to allow for repairs of the lintels above the door and windows 2 and 3. In addition, inspections were made of the remaining window lintels to determine the extent of deterioration until such time as the park could assign staff to continue the project. Materials for the future work were purchased with the remaining funds in the grant account as of September 30, 1991. At the final inspection for the third grant, all parties noted the warping of the entrance board-and-batten door and advised that the NPS replace it with one of a different design.[52]

51 "Historic Preservation Fund Lighthouse Grants," Accession 360, Catalog 5609, Folder 7, NPS/CAHA Collection.

52 "Lighthouse Grant Project Ocracoke Lighthouse Phase III Completion Report Cape Hatteras National Seashore," February 10, 1992, Accession 189, Catalog 5035, Box 1, Folder 2, NPS/CAHA Collection.



FIGURE 2–33. Work on the lighthouse, 1989. (NPS/CAHA Collection)

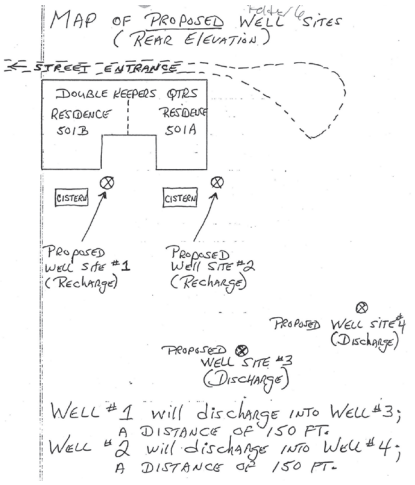


FIGURE 2–34. Sketch map of well system, 1993. (NPS/CAHA Collection)



FIGURE 2–35. Lighthouse tower with boardwalk in the foreground and new generator building in the background, 1994. (NPS/CAHA Collection)

In 1993, a new well system provided an adequate amount of water to the HVAC site to heat and cool the double keepers' quarters. In 1994, a new generator house constructed on the site of the old chicken house provided backup power to the double keepers' quarters. In 1996, the NPS replaced the HVAC system in the double keepers' quarters.[53]

At some point before 1994, the NPS developed a small parking area adjacent to the front gate and also laid a plank boardwalk outside the picket fence to take visitors closer to the lighthouse.

53 "Section 106 Clearance, Construction of a Well System at the HVAC site of the Ocracoke Keepers Quarters," April 26, 1993, Accession 360, Catalog 5608, Folder 6, NPS/CAHA Collection.

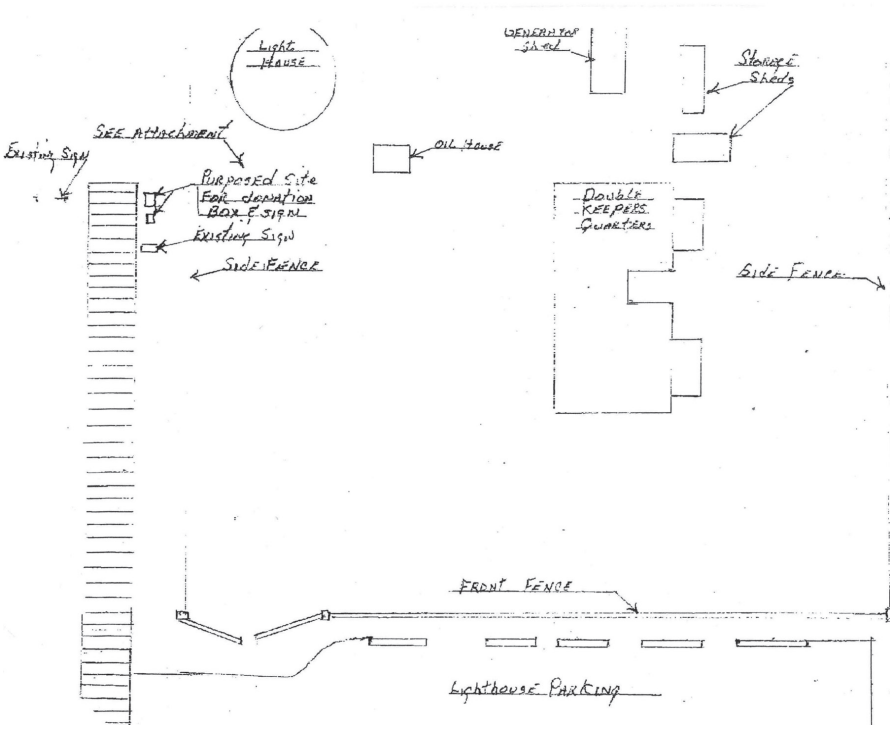


FIGURE 2–36. Drawing of donation box location, 2003. (NPS/CAHA Collection)

National Park Service, 1999–Present

In 1997, the NPS contacted the General Services Administration about receiving the Ocracoke Light Station and Lighthouse through the Surplus Property Program. On June 7, 1999, the USCG transferred ownership of the property to the NPS, which maintains the lighthouse as a functioning aid to navigation. Since the NPS had already been using the station buildings for some years, and due to its location in the heart of the Ocracoke village, there were no major development plans proposed for the existing site. In 2001, the NPS felt that there was a need to expand the parking area in front of the complex since it did not meet DOT standards, and they moved the existing fence forward fifteen feet to increase the existing area for parking. The NPS hoped that this would be a temporary solution until additional land could be acquired for a permanent parking area. In 2014, Eastern National acquired a noncontiguous parcel that the NPS may develop for parking.[54]

In 2003, the NPS placed a donation box and sign along the boardwalk leading to the lighthouse and rebuilt the privy. In November 2009, the lighthouse was closed for numerous repairs, including the replacement of the glass in the lantern, the gallery railing, the ground floor door, and the lightning protection system. It remained dark until March 3, 2010. Work completed in 2010 also included repointing and painting the entire lighthouse. This was the first major work performed on the lighthouse after it had been transferred from the USCG to the NPS in 1999. In conjunction with this work, the boardwalk was extended to its present location, including a ramp up to the door of the lighthouse. At this time a change occurred to the front gate without NHPA Section 106 review when a contractor working on the lighthouse replaced the existing front gate with an automatic gate because he felt it was too difficult to open and close the gate.[55]



FIGURE 2–37. Boardwalk and sign before addition of donation box, 2003. (NPS/CAHA Collection)

54 Russell W. Berry, Jr. to Tom Maguire, July 3, 1997, Accession 191, Catalog 5037, Box 1, Folder 1, NPS/CAHA Collection; MIS-MDL real estate management database, Southeast Region Division of Land Resources.

55 http://www.lighthousefriends.com/light.asp?ID=355; Doug Stover, personal communication.

Landscape Characteristics

Landscape characteristics include tangible and intangible aspects of the cultural landscape that individually and collectively give a landscape its historic character. Landscape characteristics range from large-scale patterns to site details and materials. These landscape character-defining features are used throughout the report to focus on the definition and details of the cultural landscape as it has evolved through time to the present.

Spatial Organization

Light Station Components

The term "light station" refers to the tower as well as any support buildings. Early light stations typically consisted of the light tower, a dwelling, a garden site, a place to store oil, and maybe a chicken house and shelter for a milk cow. The increased complexity of operation, with the introduction of the more sophisticated Fresnel lens in the 1850s, brought about a need for more personnel, which in turn required additional housing and other support buildings, such as workshops, cisterns and water catchment basins, storage buildings, garages, radio buildings, boathouses, and tramways, among others. By the 1920s and 1930s, however, the majority of light stations had electric service, reducing the number of staff necessary to operate the station. As ancillary buildings at many stations were rendered useless, the makeup of the light station began to change. In the 1960s, the automation of many light stations led to the surplusing or demolition of many obsolete, yet historic buildings.

The tower served principally as a support for the lantern that housed the light. The earliest materials used for lighthouse construction were wood and/or rubblestone. Later on, cut stone and brick were used, allowing towers to reach an increased height for better visibility. The lantern was typically a cast-iron enclosure surrounded by an exterior stone or cast-iron gallery with railing. Access to the lantern at the top of the tower was via stone, wood, or cast-iron stairs that either wound around a central column or spiraled along the interior sides of the tower walls (a few had straight sets of stairs that ran from landings around the tower interior). Windows in the tower were positioned to provide daylight onto the stairs. For taller towers, landings were provided at regular intervals. The top landing ended at the watch room where the keeper on duty ensured the optic was functioning properly. The lantern room above was usually reached via a ladder.

Second in importance to the light tower, dwellings for light keepers and their families were generally, in the early days, simple, one-and-one-half-story wooden or stone structures. Since lighthouses had only one keeper, there was only one dwelling. After 1852, the newly appointed Light-House Board assigned more keepers to light stations, and living accommodations became larger. The Light-House Board published books of drawings that served as templates for quarters, which could be single, double, triple, or even quadruple dwellings that reflected the prevailing architectural styles, adaptations to geographical conditions, or regional tastes. Complaints by keepers concerning lack of privacy for their families finally persuaded the Light-House Board not to build triplex housing. By 1913, the Lighthouse Service stressed that "recent practice favors detached houses, insuring greater privacy, and giving better opportunity for yards and gardens." By this time, the Light-House Board had a standardized design for keepers' dwellings.

Before the use of kerosene, oil was often stored in the lighthouse. Some lighthouse towers were constructed with attached oil room and workroom structures that were generally one-story masonry buildings with gable roofs with modest detailing. By 1890, all but a few lighthouses were using kerosene. The volatile nature of the illuminant necessitated the construction of separate oil houses, which were usually built of fireproof materials, such as brick, stone, iron plate, and concrete. Congress issued a series of small appropriations for the construction of separate oil houses at each light station. Installation of these buildings began in 1888 and was completed around 1918. Oil houses were simple and functional, usually with a gabled or pyramid roof. When oil was no longer required, the building was converted to another use, often storage.

Many onshore stations had separate frame or masonry storehouses where provisions, spare

parts, and other items could be stored. Some light stations received government-built barns where horses and perhaps a milk cow could be sheltered. With the coming of the automobile, light stations began to include garages. These buildings were simple, standard garage structures with up to three bays. Many barns were converted to garages. The privy at onshore stations was a simple building usually constructed of wood although some had detailing to match the keeper's quarters.

All light stations needed water. Some stations used wells. Often, water collection systems that collected rain water from the roof of buildings and channeled the water into gutters and downspouts to pipes going to water reservoirs provided water for drinking and washing. Where the underground water level was too high, a light station may have wooden water storage tanks aboveground.

A number of light stations had tramway tracks running from landings to the light station. The tramways were principally used to unload supplies and equipment from the lighthouse tender.[56]

Ocracoke Light Station

The spatial organization at the Ocracoke Light Station reflected a landscape pattern of support buildings clustered along a northeast axis to the keeper's quarters. The lighthouse and oil house occupied a northwest cross axis. A wooden fence enclosed the station and walkways connected the various buildings on site.

The earliest site plan of 1890 documents two buildings and a structure at the station in addition to the light tower. With the exception of the keeper's quarters, their use is not indicated. Their locations, however, coincide with a site plan from 1892 and the Bamber 1893 site plan that identifies a frame storehouse and a frame privy located on the northeast to southwest axis. The brick lighthouse sits in the northwest section of the site. A well occupies a central location southeast of the lighthouse. A fence encloses the entire station (see figure 2-16).

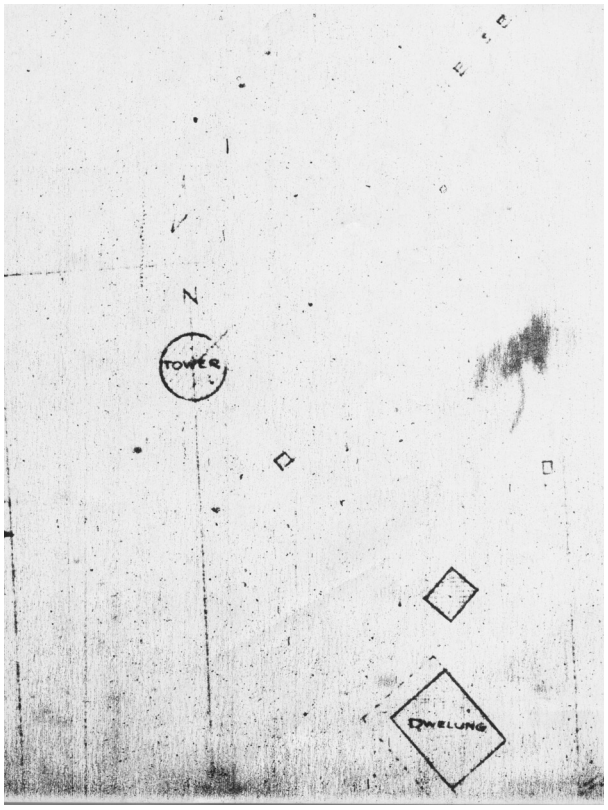


FIGURE 2–38. 1890 site plan. (NPS/CAHA Collection)

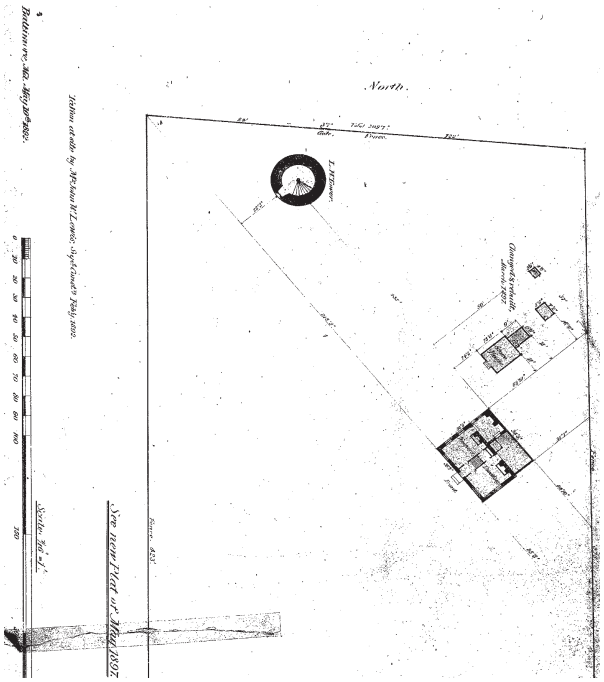


FIGURE 2–39. 1892 site plan. (NPS/CAHA Collection)

56 "Light Station Components," Excerpted from draft National Register of Historic Places Multiple Property Documentation form for "Light Stations of the United States;" George R. Putnam, *Lighthouses and Lightships of the United States* (Boston and New York: Houghlin Mifflin Co., 1917); and Ross Holland, *America's Lighthouses: An Illustrated History* (New York: Dover Publications, 1981 reprint); Oppermann, *Bodie Island Light Station Double Keepers Quarters HSR,* 24–28.

A site plan from 1908 documents the addition of a coal/woodshed between the storehouse and the privy and a cistern adjacent to the dwelling. These improvements occurred when the dwelling received a second story to provide more space to the keeper and his family. The lighthouse is sited in the northwest corner of the property on the highest ground. A curvilinear entrance road enters the site from the southeast. The entire station is enclosed by a picket fence with two gates: one where the entrance drive enters the site and one providing access to an enclosed area northeast of the light tower. The latter area was the location of a garden plot in the 1893 site plan but is unmarked on the 1908 plan. An annotated version of this plan may have been a working drawing for improvements that occurred later as the concrete oil house and south cistern are sketched in on the plan. According to Keeper Austin's logbook, the construction of the oil house occurred in 1914, and the privy was rebuilt in 1916. A coal shed was one of the buildings given a value on the 1930 property inventory.

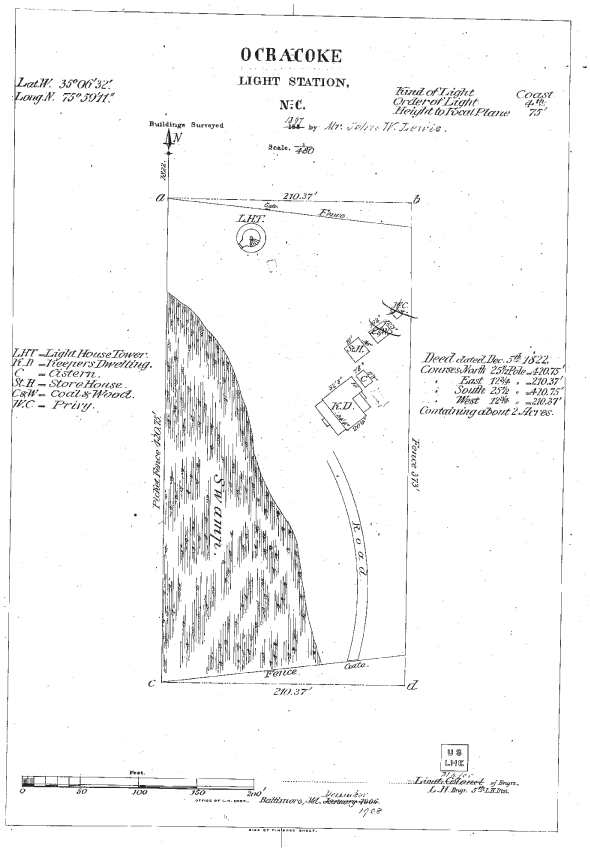


FIGURE 2–40. Annotated 1908 site plan. (NPS/CAHA Collection)

An updated version of the 1908 plan shows the addition of the concrete oil house and storage tank and notes its construction date of 1914. This updated plan also documents the 1929 addition to the keeper's dwelling. This is the first plan to show the walkways that linked the dwelling with its clustered outbuildings on the northeast axis and the lighthouse and oil house on the northwest axis. The picket fence remains in place.[57]

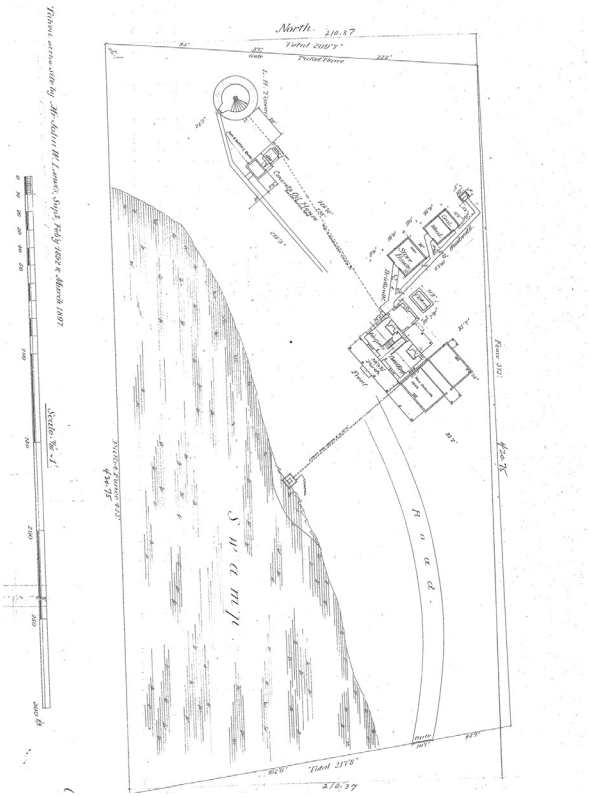


FIGURE 2–41. Updated 1908 site plan showing the addition of the concrete oil house in 1914 and the second story to the keeper's quarters. (NPS/CAHA Collection)

A 1927 map of the area shows the proximity of the lighthouse to Silver Lake. The USCG took over administration of the light station in 1939. The earliest plot plan dates to 1944 and shows five buildings on site: the lighthouse, concrete oil house, double keepers' dwelling, storehouse, and privy, all enclosed by the same fence line. This plan shows a dock and boathouse on Silver Lake.[58]

57 Mr. John W. Lewis, Plat of Ocracoke Light Station, N.C [map], May 10, 1892, 5th L.H. District, Baltimore, MD, updated in 1897, 1908, and 1929, a copy of the 1897 site plan has not been located. NPS/CAHA Collection.

58 Plot Plan Ocracoke, N. C. Light Station [map], May 10, 1944, USCG Norfolk District, Norfolk, VA, NPS/CAHA Collection.

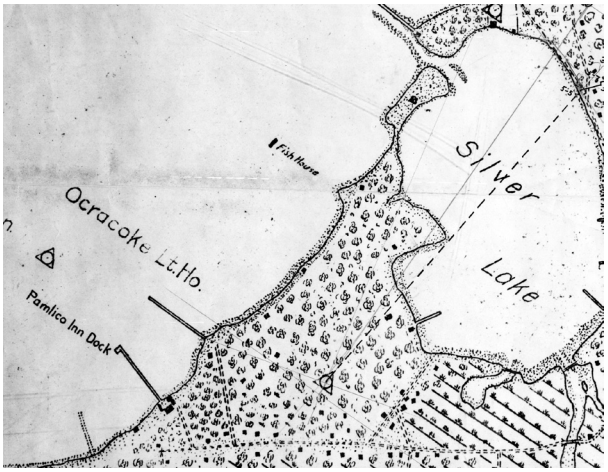


FIGURE 2–42. Ocracoke Lighthouse, represented as a triangle on a map from 1927, showing its proximity to Silver Lake. (NPS/CAHA Collection)

A more detailed site plan shows that several changes had occurred by 1958. The "storehouse" became the "pump house," the coal/woodshed is missing, and the privy is unmarked and possibly in a different location following an interior rehabilitation of the double keepers' quarters that included indoor plumbing and central heat. New outbuildings included a chicken house and carpenter shop enclosed by fencing east of the

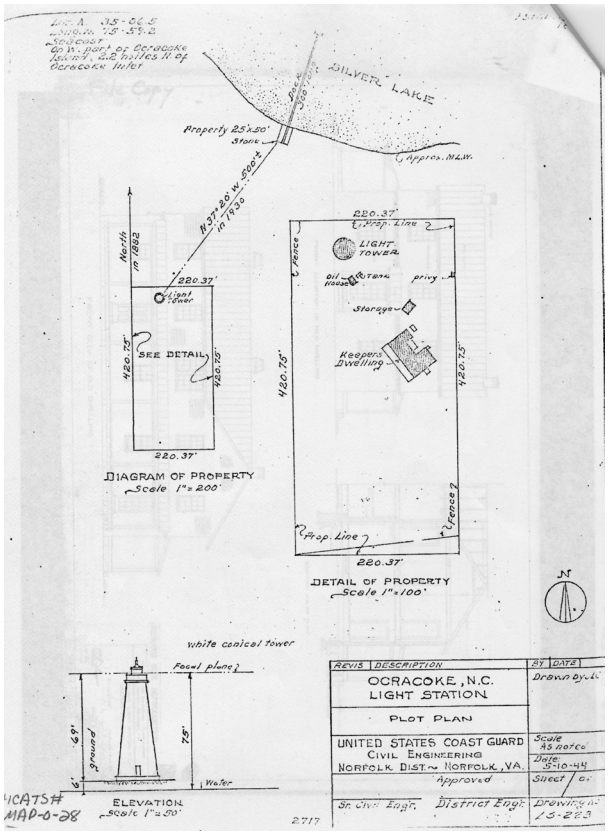


FIGURE 2–43. Plot plan of the light station showing a dock and boathouse on Silver Lake, 1944. (NPS/CAHA Collection)

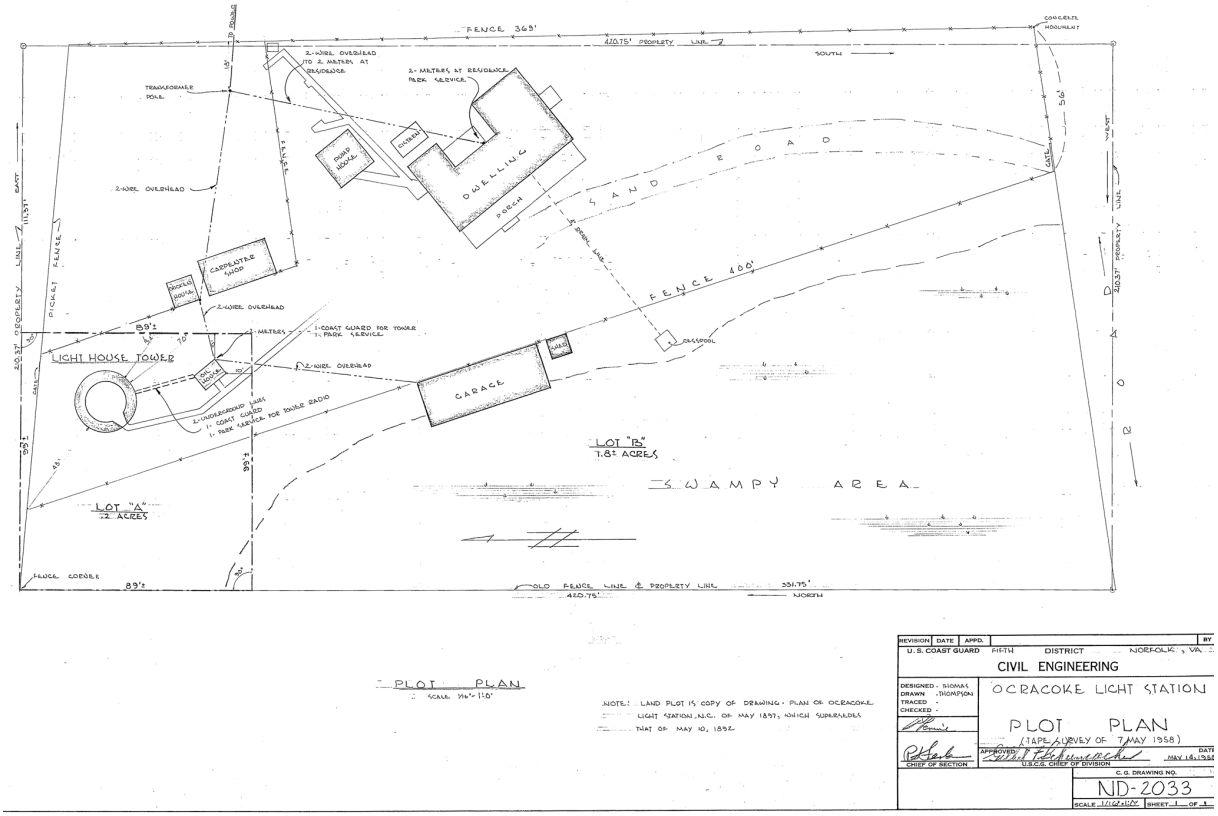


FIGURE 2–44. Site plan showing the addition of several new outbuildings, 1958. (NPS/CAHA Collection)

lighthouse and a garage and shed west of the lighthouse. The picket fence remained although the fence line on the west moved in towards the double keepers' quarters to avoid the low, swampy part of the site. By this time, the NPS had entered into an agreement with the USCG to use the double keepers' quarters and outbuildings. The USCG retained the use of the lighthouse and oil house. Based on a USCG plan, it appears that repairs to the dock occurred in 1958. It is unknown when the dock and boathouse were removed.[59]



FIGURE 2–45. Ocracoke Light Station, 1954, with garage in the foreground and chicken house in the background. (NPS/CAHA Collection)

NPS site plans from the late 1980s and early 1990s indicate that several outbuildings had been taken down. Missing from the site are the chicken house, garage, and shed. These were mentioned in the 1974 Use Agreement between the USCG and the NPS so apparently the USCG took them down between 1974 and 1986, when a revised use agreement was signed. A 1987 NPS site visit report described three board-and-batten outbuildings that were adjacent to the double keepers' quarters: the storehouse/pump house, carpenter shop, and privy. A plan dated 1994 was for a generator shed in the location of the chicken house.[60]

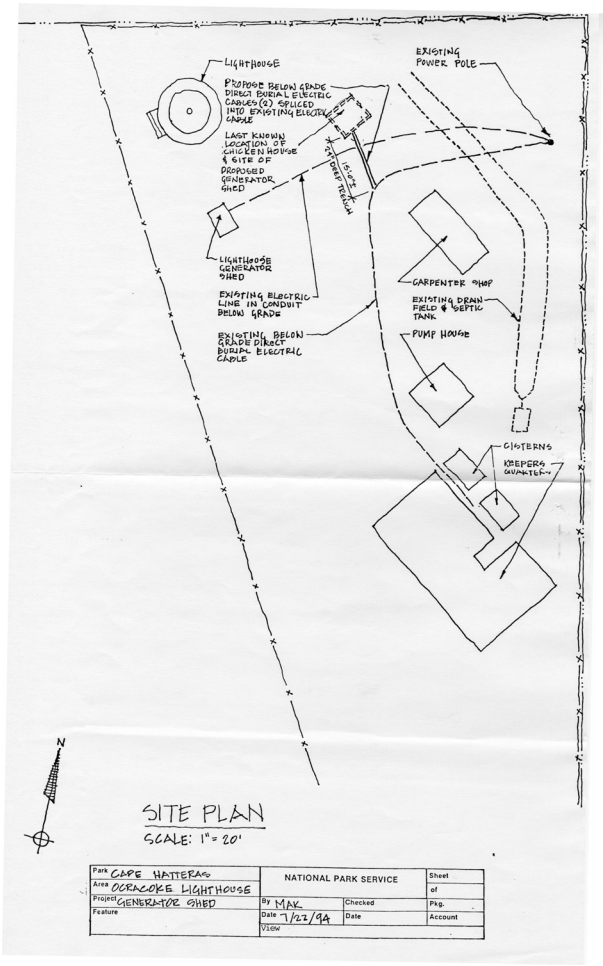


FIGURE 2–46. Site plan showing new generator shed in location of chicken house., 1994. (NPS/CAHA Collection)

Topography

The topography of the island near the light station was described on historic coastal survey maps as "low sand beach 3 ft above the level of mean water" south of the station and "sand hills" north of the station. An area east of the village was historically called "the Plains" because it was devoid of dunes and vegetation. The area between the village and the ocean was about a mile of sand and "a tidal place, mud flats."[61]

59 Plot Plan Ocracoke Light Station [map], May 14, 1958, USCG 5th District, Norfolk, VA, NPS/CAHA Collection.

60 Chief, Southeast Cultural Resources Preservation Center to Superintendent, Cape Hatteras National Seashore, January 7, 1987, Accession 191 Catalog 5037, Box 1 Folder 1, NPS/CAHA Collection.

61 Robert H. B. Brazier and Edward L. Young, "A chart of the coast of North Carolina comprising the three Capes Hatteras, Lookout, and Fear, with the Harbours of Ocracock, Beaufort, and Smithville" [map],1822, http://dc.lib.unc.edu/cdm/ref/collection/ncmaps/id/5360; Impact Assessment, Inc., *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore,* 357, 398.



FIGURE 2–47. Detail from Chart of the Coast of North Carolina, 1822. (The North Carolina State Archives)

A 1949 letter published in the *North Carolina Historical Review* described the topography of the island:

> The island is covered with heavy sand and only jeeps can navigate. Several natives have them and provide taxi service to visitors. . . .
>
> Between Ocracoke village and Hatteras, the terrain is bleak—the sea on one side, the sound on the other, less than a mile separating them. All along the beach are remnants of wrecks—one called the "ghost ship" is still partially intact. Offshore, one sees the masts of wreckage extending above the water level at low tide. The heat was terrific—no trees—just wild grass here and there. There was a flock of wild horses on a patch of grass at the end of the island. We were told that they dig in the sand with their forepaws to expose surface water when they are thirsty. Each home had a rain barrel under the eaves—their source of drinking water. . . .
>
> The south point of Ocracoke near Ocracoke Inlet is less desert-like than the

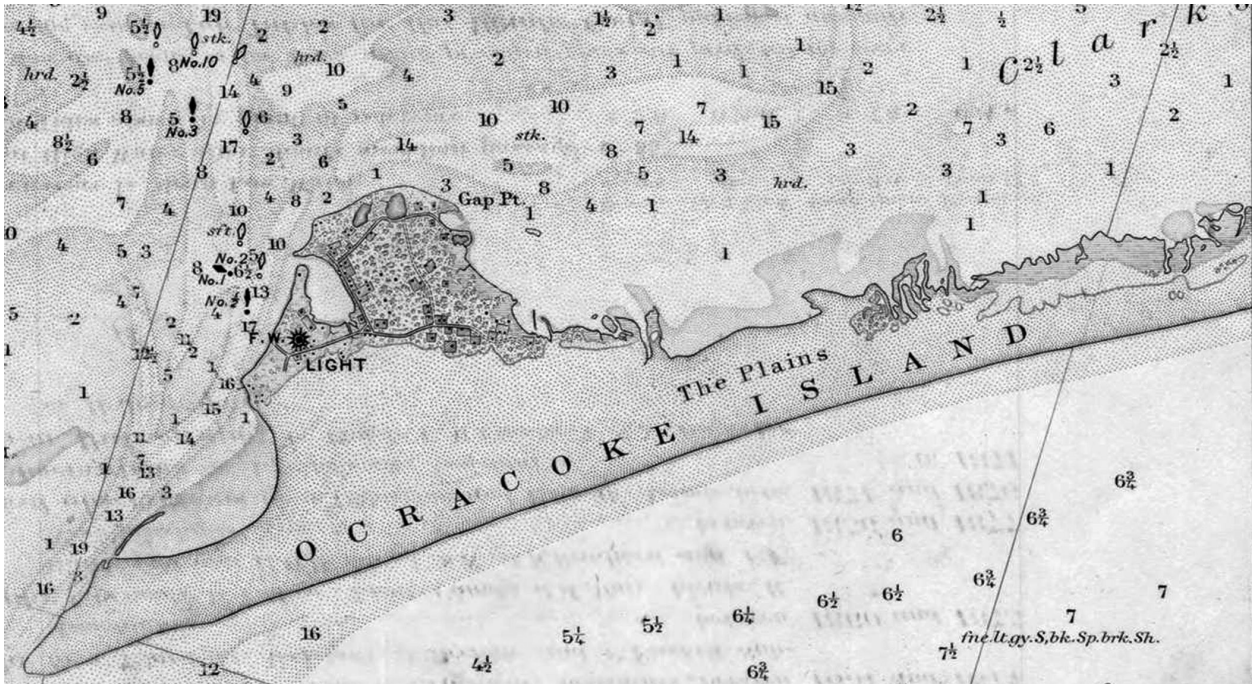


FIGURE 2–48. Detail from Coast Chart Pamlico Sound, 1883. (The Outer Banks History Center, Manteo, NC.)



FIGURE 2–49. Ocracoke village and Silver Lake with the lighthouse in the background, n.d. (The Outer Banks History Center, Manteo, NC)

country between it and Hatteras Inlet, but there are a number of sand dunes.[62]

Ocracoke village wraps around a body of water once called Cockle Creek or "the ditch," one of the few natural harbors in the area. It eventually became known as Silver Lake and was dredged and deepened in 1931 and again during World War II. Silver Lake has always been a hub of activity in the village and is considered significant to many villagers.[63]

Ocracoke Light Station

The topography of the site was relatively level with a slight rise in elevation in the direction of the lighthouse. The Light-House Board graded the site in 1883. In 1914, Keeper Austin reported that he filled in the yard with "mud from ditch to hold the grass in the back yard." A 1986 memo outlining proposed site improvements mentioned "leveling of yard with additional fill material." The NPS developed a parking area for visitors and quarters occupants by placing fill material in the area west southwest of the station. It is not known exactly when this work occurred, but it may have been in conjunction with the work outlined in the 1986 memo.[64]

Sand removal and utility trench excavation occurred at the site in 1987. In order to create sufficient crawl space for making repairs to the sub-flooring of the double keepers' quarters, "drift" sand was removed using a commercial sand vacuum truck. The NPS abandoned the existing drain field because it ran through an old dump site. New drain field trenches were excavated using both hand and machine methods.[65]

62 C. A. Weslager, "A Letter Concerning a Visit to Ocracoke," *North Carolina Historical Review* 35, no. 3 (July 1956): 350–51.

63 Dunbar, *Historical Geography,* 52; Impact Assessment, Inc., *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore,* 355, 403.

64 Cloud, *Ocracoke Lighthouse,* 7, 27; Superintendent, Cape Hatteras Group to Mac Basnight and Jim Henning, February 26, 1986, Accession 191, Catalog 5037, Box 1 Folder 1, NPS/CAHA Collection.

65 Paul Inashima, "Sand Removal and Utility Trench Excavation at the Ocracoke Light Station Keeper's Quarters, Denver Service Center, 1987, 1–4, Accession 360 Catalog 5608, Folder 6, NPS/CAHA Collection.

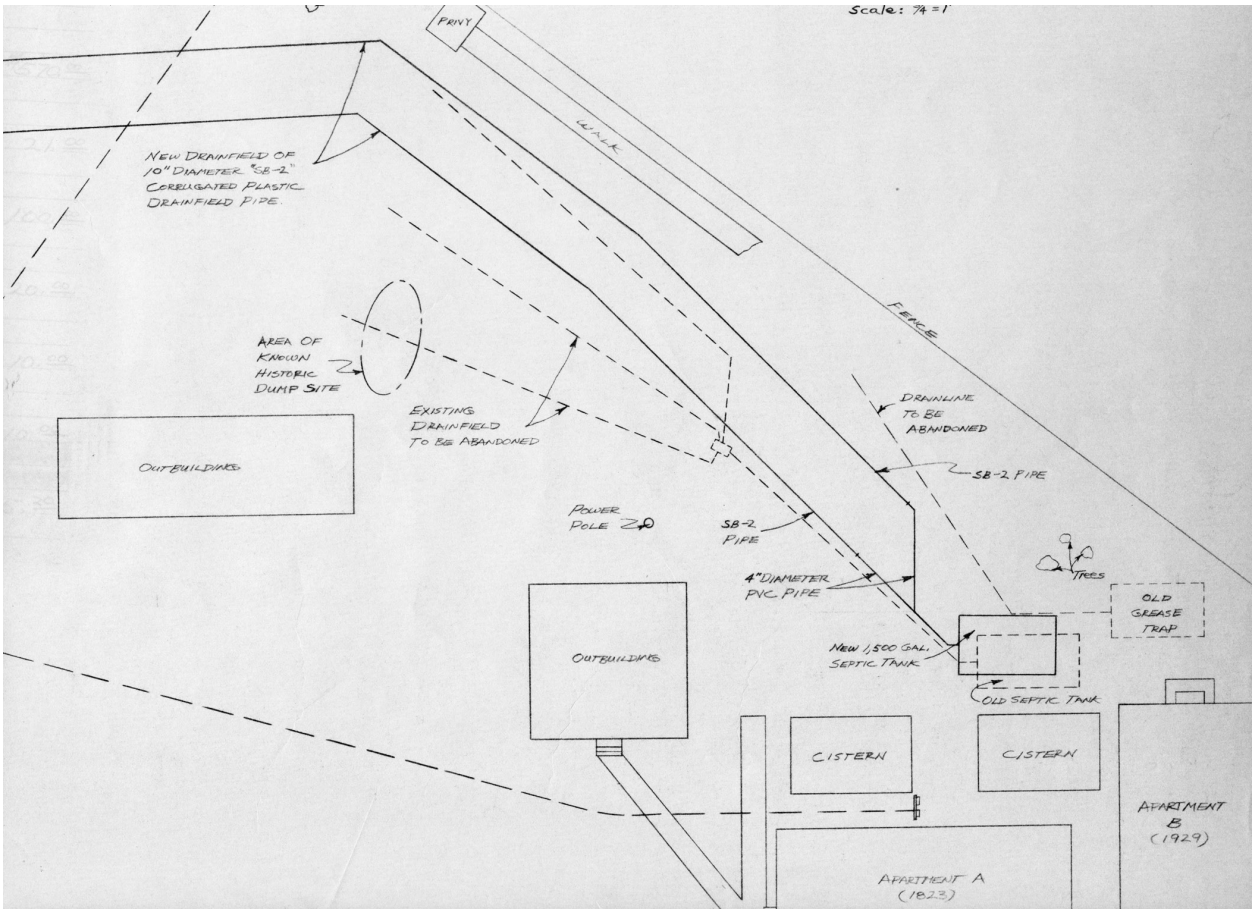


FIGURE 2–52. Drain field plan, 1987. (NPS/CAHA Collection)



FIGURE 2–50. Sand removal, 1987. (NPS/CAHA Collection)



FIGURE 2–51. Utility trench excavation, 1987. (NPS/CAHA Collection)

Erosion Control

Erosion control was a primary component of Mission 66 work at Cape Hatteras, a ten-year NPS development program aimed at upgrading the conditions and meeting the demands of the postwar era. Erosion control was intended to carry on the work begun by the WP A and the CCC in the 1930s and 1940s. With the assistance of the North Carolina Highway Department, the NPS installed thousands of feet of snow fencing, created tens of thousands of cubic yards of dunes, and planted thousands of square feet of grass to protect the park and the state highway from erosion and storm damage. In 1957, Superintendent Allyn Hanks announced that 21,000 pine seedlings would be planted to help prevent erosion on the islands of the Outer Banks.



FIGURE 2–53. Fencing being erected, 1938. (NPS/CAHA Collection)



FIGURE 2–54. Sand fence on the north end of Ocracoke Island, 1957. (NPS/CAHA Collection)



FIGURE 2–55. Grass planting on Pea Island, 1957. (NPS/CAHA Collection)

A long history of free-range grazing by the "wild" horses that roamed freely on Ocracoke Island clashed with NPS efforts to control erosion because they ate grasses planted to stabilize sand dunes that were needed to protect roads and other park developments. Although free-range grazing had been eliminated in Currituck and Dare Counties in the 1930s, such ordinances did not apply to Hyde or Carteret Counties, where the ponies remained free to roam. On November 29, 1954, Director Conrad Wirth directed Region One Director Elbert Cox to proceed with elimination of the wild ponies on Ocracoke within the park boundary, and Superintendent Hanks began to develop a program.

Many island residents, however, were opposed to eliminating the Ocracoke ponies although most were in favor of banning free-range grazing in the village. Many felt that the Ocracoke ponies were a picturesque feature of the historic scene. Moreover, local Boy Scout Master Marvin W. Howard maintained that the local Boy Scout troop was the only known mounted troop in the world. By 1958, there were around fifty ponies still roaming free on Ocracoke, about thirty-five of which belonged to the local Boy Scout troop. A committee representing the troop suggested setting aside a fenced area of marsh to allow the ponies to graze. Park management strongly favored the proposal as it had been delaying erosion plantings until a decision was reached. A compromise resulted in the fencing of three dozen ponies in a three-mile stretch of land. Owners of the remaining ponies were encouraged to fence or



FIGURE 2–56. Ocracoke ponies, 1956. (NPS/CAHA Collection)

remove their animals, and by June 1959, only six ponies remained on the island.[66]

The "Completion Report of Construction Project, Sand Fixation Program, June 30, 1961" stated that "the Cape Hatteras Seashore staff firmly believes that vegetation is the final sand stabilizing media." A variety of salt-tolerant grasses were planted, and on Ocracoke, it seemed that the elimination of grazing improved the stabilization and re-growth of the dunes.[67] Nonetheless, park efforts to stabilize its coastal dune system were hampered by hurricanes in the late 1950s and early 1960s. Ocracoke suffered setbacks in 1958, when Hurricane Helene destroyed 85 percent of beach improvements and in 1960, when Hurricane Donna destroyed one-third of the protective dunes. Island residents generally supported the grass planting program. One island resident who worked for the NPS commented that "if it wasn't for the grass the sand would just blow the beach all around." Another recalled: "We drove a farm tractor. . . . We were planting Spartina, building back the beach." Others remarked that the dune building "made it possible for the road to stay here—this stabilized it."[68]

Although park officials remained committed to dune stabilization, an experiment set up before the "Ash Wednesday" storm of 1962 showed massive change on Bodie Island, with its large barrier dune eroded over 100 feet from the ocean. After a 1963 report showed a massive amount of beach had disappeared near the Cape Hatteras Lighthouse, NPS officials became increasingly concerned about the efficacy of their techniques. In truth, the fight against these natural forces was failing.

A series of scientific reports in the 1970s concluded that barrier dunes constructed since the 1930s had actually contributed to a loss of up to 150 feet of beaches and had dramatically altered the ecological and topographical characteristics of the Outer Banks. In 1973, the NPS embraced an entirely new management plan based on the principle that permanent structures in a natural beach setting were unsustainable and that important historic resources might require relocation. This new policy led the NPS to end artificial dune maintenance on park property on Bodie Island in 1982.[69]



FIGURE 2–57. *Spartina patens* before fertilizer on Ocracoke. (NPS/CAHA Collection)

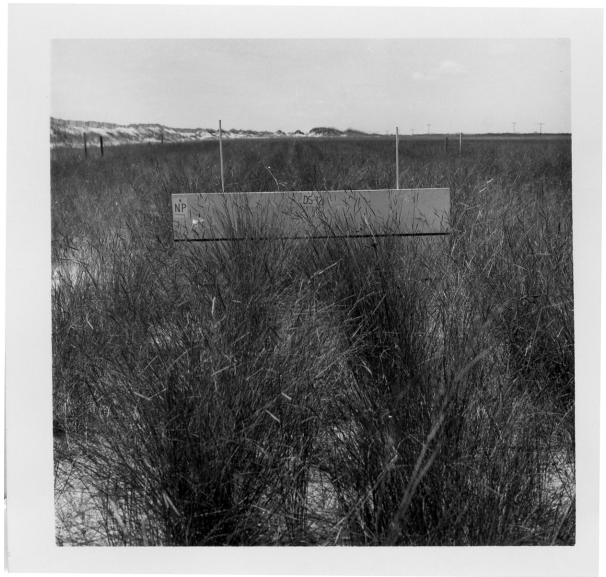


FIGURE 2–58. *Spartina patens* after fertilizer on Ocracoke. (NPS/CAHA Collection)

66 Cameron Binkley, *The Creation and Establishment of Cape Hatteras National Seashore* (Atlanta, GA: Southeast Regional Office, 2007, 145–48.

67 Ibid., 176.

68 Impact Assessment, Inc., *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore,* 408; Binkley, *The Creation and Establishment of Cape Hatteras National Seashore,* 176–77.

69 Binkley, *The Creation and Establishment of Cape Hatteras National Seashore,* 177–79, 201–203; Mary Stroh, "A Study of the Shrub and Vegetation Patterns on Bodie Island, North Carolina from 1932 to 1982," 1982, 2.

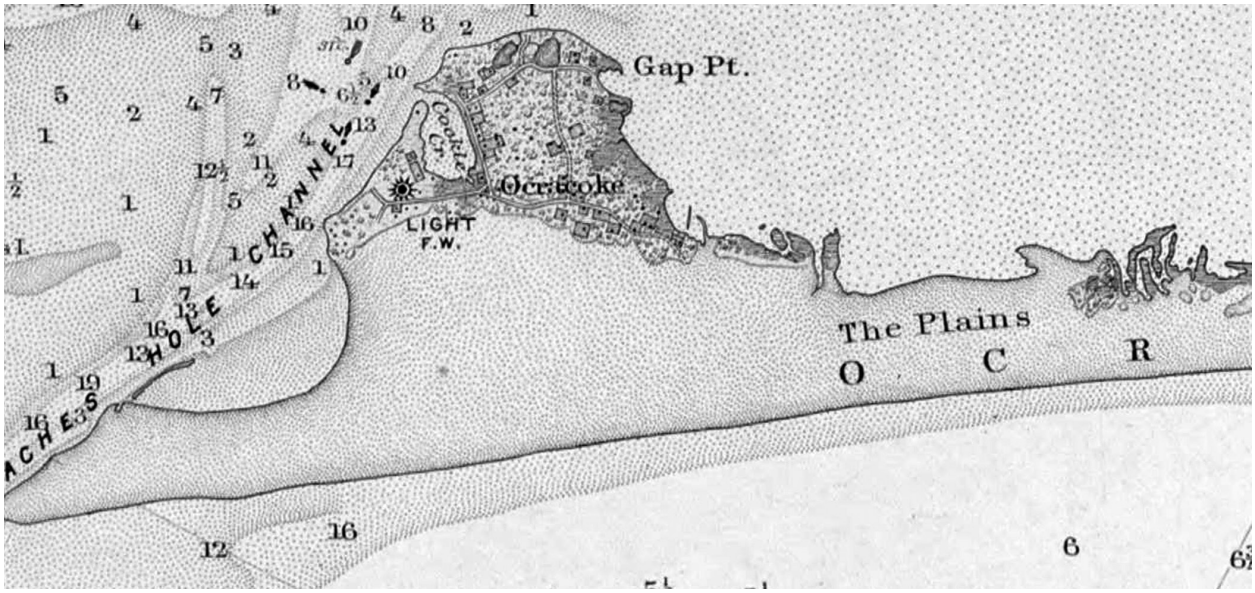


FIGURE 2–60. Detail from Coast Chart Cape Hatteras to Ocracoke Inlet, 1894. (The Outer Banks History Center, Manteo, NC)

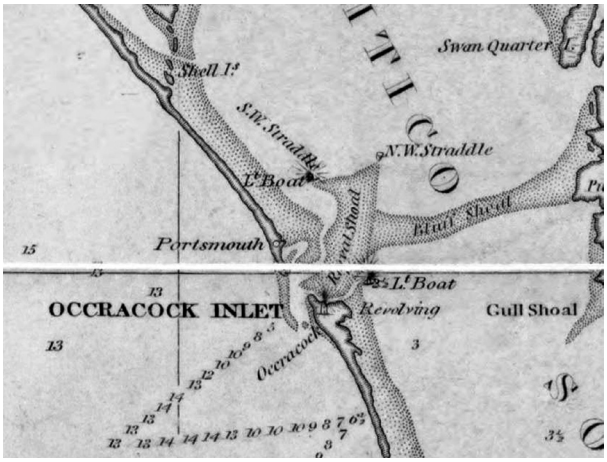


FIGURE 2–59. Detail from Coast of the United States of America from Cape Hatteras to Cape Fear, 1846–1850. (North Carolina Collection at the University of North Carolina at Chapel Hill)

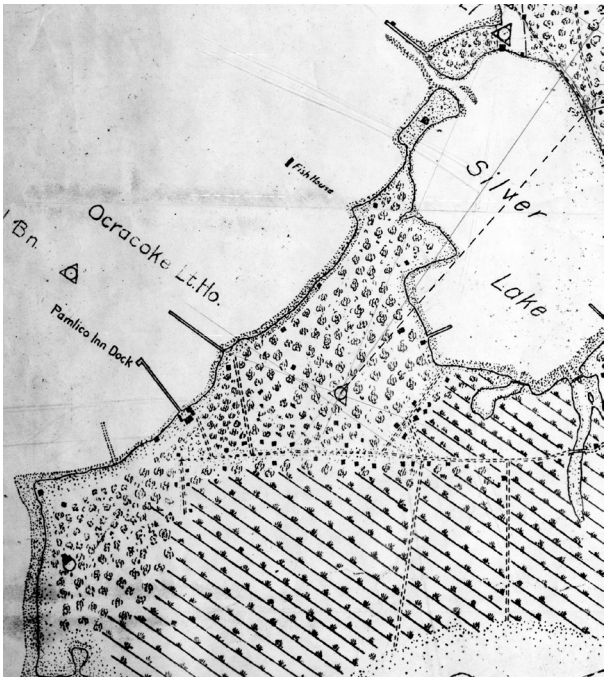


FIGURE 2–61. Detail from map of the island, 1927. (NPS/CAHA Collection)

Vegetation

Nineteenth-century U.S. Coastal Survey maps of Ocracoke Island show the village of Ocracoke on the sound side of the western tip of the island. Although these maps show vegetation interspersed throughout the village, locals referred to trees and shrubs growing in the village as "new growth" in the first part of the twentieth century, as "a bad hurricane killed all the growth on these banks in 1878." Before the NPS began planting grass and trees in the 1930s, the island of Ocracoke was described as "nothing but blowing sand." The beach was "bald, no trees, no grass—just beach gravel, shell, shipwrecks; flat, nothing." The village's location on the sound side of the island afforded it more protection. A more detailed 1927 map of the island shows extensive areas of trees on the sound side of the island with grassy sand flats on the ocean side of the island. Free-ranging livestock also contributed to a lack of vegetation outside the village, where properties were fenced.[70]

70 Impact Assessment, Inc., *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore,* 357, 398.



FIGURE 2–62. Ocracoke Light Station, 1893. (NPS/CAHA Collection)

Ocracoke Light Station

Vegetation patterns at Ocracoke Light Station were influenced by the site's proximity to Ocracoke village and its somewhat protected location on the sound side of the island. At the time of construction, the station had little vegetation and sat near the gently sloping wide beach. By 1900, trees and shrubs surrounded the station. The landscape was characterized by mature live oaks (*Quercus virginiana*) and cedars (*Juniperus virginiana*) around the dwelling, open ground around the lighthouse, enclosed garden spaces at the rear (north) of the property, areas of grass throughout most of the site, and marsh/wetland along the western edge of the site. Whitewash was used to keep bugs from the trees and was applied to a height that matched the picket fence. There were no foundation plantings historically.[71]

Clumps of shrubs occurred in the northeast and southwest areas of the site, as well as southeast of the dwelling during the nineteenth century. Historic images show the residential nature of the surrounding properties with similar vegetation patterns.

Wesley Austin reported that in September 1913 a hurricane "did very much damage" to the trees within the station. In 1914, he used mud to "hold the grass in back yard." Austin's only mention of cutting grass is in August 1916. He described "Cutting weeds around fence" and "Cutting grass inside reservation." One historic image has been found of a portion of the station near the front gate that shows a mown path west of the walkway and

71 Ronald Warfield, National Park Service, Cape Hatteras National Seashore, "Ocracoke Light Station National Register of Historic Places nomination," January 24, 1977; Cloud, *Ocracoke Lighthouse,* 11.



FIGURE 2–63. Panoramic view from the lighthouse showing residential nature of surrounding properties, 1936. (NPS/CAHA Collection)

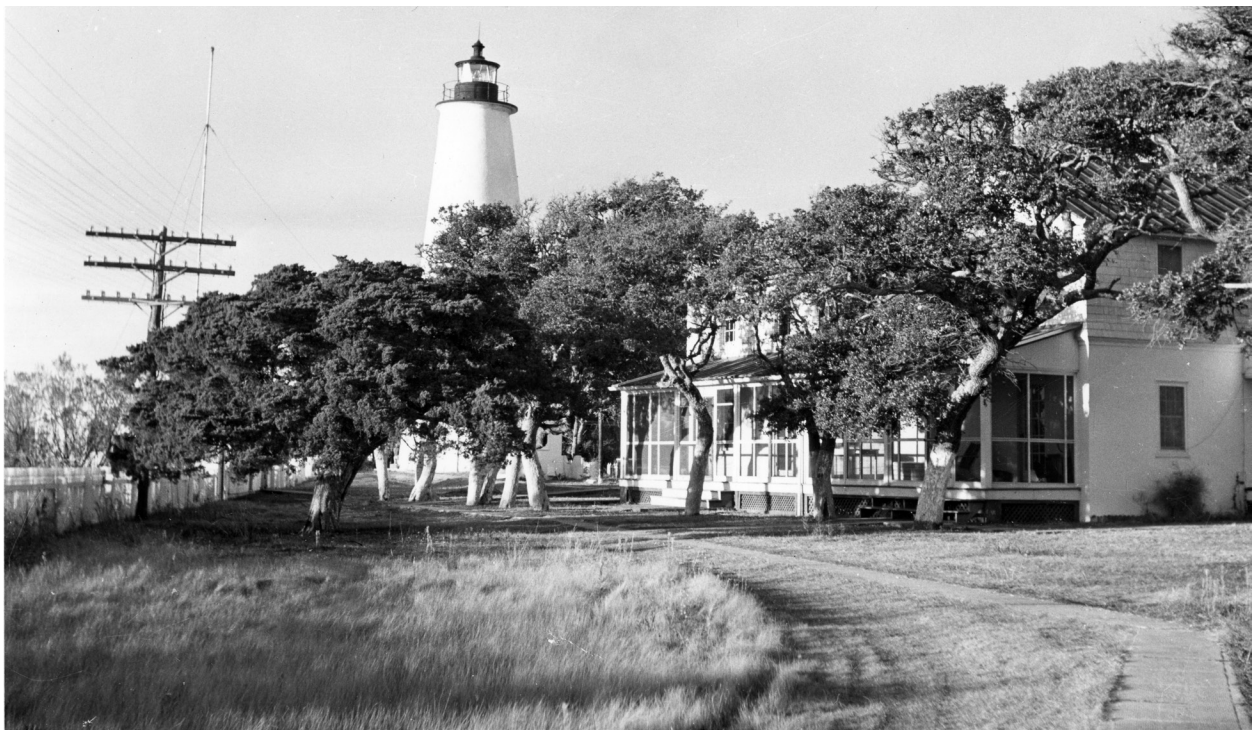


FIGURE 2–64. Ocracoke Light Station with uneven pattern of mowing, ca. 1940s. (The Outer Banks History Center, Manteo, NC/David Stick Collection)



FIGURE 2–65. Ocracoke Light Station, 1956. Note foundation plantings. (NPS/CAHA Collection)

the remainder of the grass left to grow in a more natural pattern. All other historic images show an evenly cut lawn. Images from 1987 indicate that the site was mainly sand in places.[72]

Beginning in the 1950s, shrubs can be seen along the south elevation of the double keepers' quarters. It is unknown if these were planted or came up from seeds. There is little documentation of the beds flanking the front entrances planted with ornamentals.



FIGURE 2–66. Sandy conditions of the site with carpenter shop in the background, 1987. (NPS/CAHA Collection)

Garden Plots

Two garden plots at the light station were documented in the 1893 Bamber site plan. One was west of the lighthouse and was enclosed by a picket fence. The other was in the northeast corner of the station and was not enclosed. The keepers' families had a garden that was damaged in 1933, when overwash from a storm damaged trees, figs, and grapes that grew on the property. Keeper Austin reported in 1916 that he "painted hot house," so it appears that the family was engaged in gardening, which was typical for villagers on the island. Most grew collards, Irish potatoes, sweet potatoes, cabbage, tomatoes, and beets. Many had fig trees, which were said to fare best "when somebody lived nearby. That was because everyone emptied their dishwater on the oyster shells at the base of the fig trees."[73]

72 Cloud, *Ocracoke Lighthouse,* 29–30.

73 *Ocracoke Lighthouse HSR,* 24; Cloud, *Ocracoke Lighthouse,* 29; and Impact Assessment, Inc., *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore,* 400.

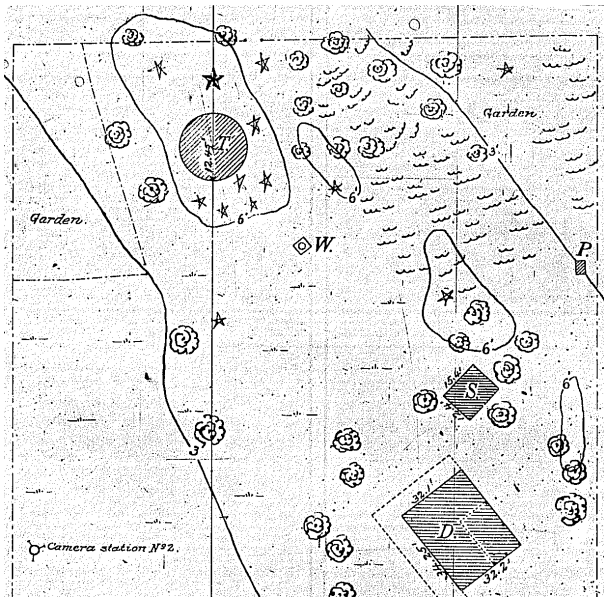


FIGURE 2–67. Detail from Bamber site plan, 1893. (NPS/CAHA Collection)

Buildings and Structures

From 1820 until the establishment of the Light-House Board in 1852, the administration of lighthouses fell to Stephen Pleasonton, the Fifth Auditor of the Department of the Treasury. During this time, brick came to be the preeminent masonry material used for the outer walls as well as the lining. Its small size, standardized production, and general availability made brick the best choice for southern lighthouses where cut stone was not locally available.

After 1852, the Light-House Board developed a classification system for lighthouses and required the use of the Fresnel lens. Primary coast lights were located at the most prominent points along the coast. The board believed that lights on prominent points should be at least 150 feet above mean sea level. The more important the classification, the larger the order of lens used. First-order lenses provided the largest range; sixth-order provided the smallest. The board also developed a system with different numbers of flashes at timed intervals, as well as use of color.[74]

In 1910, the Bureau of Lighthouses replaced the Light-House Board, which had become an ineffective means of managing the nation's lighthouse service. Detailed manuals were

74 Clifford and Clifford, *Nineteenth-Century Lights,* 78.

developed for the light keepers and other personnel. The 1911 "Regulations for the United States Lighthouse Service and Instructions for the Personnel of Vessels and Reservations" discussed the erection of buildings:

> Keepers shall not erect large buildings of a permanent character on lighthouse premises, except as such work may be authorized. Keepers may erect, at their own expense, minor buildings, such as henhouses. Approval must first be obtained, however, from the lighthouse inspector, as to the location, size, exterior appearance . . . , etc.

The 1918 "Regulations for the United States Lighthouse Service" stated:

> **Architectural design**
>
> Care shall be taken in the design of all lighthouses, keepers' dwellings, fog-signal buildings, and all structures on lighthouse and depot reservations to use simple, dignified, and substantial architectural designs appropriate to the purpose of the structure and in harmony with the location and surroundings. Unnecessary or elaborate ornamentation shall be avoided.
>
> **Drawings and plans**.
>
> Preliminary plans and estimates must be approved before going ahead with detailed plans. These plans shall show the general type of construction proposed, and shall provide in all cases for a design within the limit of funds available for the purpose.
>
> Plans for new construction work submitted for approval shall be definite and consistent. They shall show in general the forms of structures, their dimensions, materials with which they are to be constructed, and so far as practicable the character of the foundations on which they are to rest. Minute details of unimportant matters shall not be shown on the drawings, but all details shall be described in the specifications.[75]

75 Clifford and Clifford, *Nineteenth-Century Lights,* 185; "Regulations for the United States Lighthouse Service," 1911, photocopy, 161; "Regulations for the United States Lighthouse Service," 1918, photocopy, 55–56.

Ocracoke Lighthouse

The Ocracoke Lighthouse (1823) was a brick tower with a solid white coloration, crowned by an octagonal lantern with fifteen lamps fitted with oil heaters and an equal number of sixteen-inch Argand parabolic reflectors. Its focal height was seventy-five feet. In 1849, a new lantern room and lighting apparatus consisting of ten brass lamps and twenty-one reflectors replaced the fifteen that had been used before. The apparatus revolved every two minutes to produce a flashing light. In 1854, the Light-House Board replaced the outdated illuminating apparatus with with a fourth-order Fresnel lens and new lantern and "thoroughly repaired" the tower in March 1855.[76]

The lighthouse received new lanterns in 1860. During the Civil War, retreating Confederate troops dismantled the lens in 1862, but the light was returned to service in 1863. In 1868, the Light-House Board made numerous repairs to the lighthouse, including re-cementing and whitewashing a large portion of the tower, repairing the lantern deck and sashes and frames, and painting the lantern and all exterior and interior wood surfaces.[77]

In 1899, the light received a new fourth-order lamp and various repairs were made. It was described in the 1907 "List of Lights and Fog Signals" as a fixed white light, fourth order standing seventy-five feet above mean high water. Little is known about the treatment to the lighthouse during the late nineteenth and early twentieth centuries. Keeper Wesley Austin, who arrived in 1913, kept a logbook where he recorded his activities and those of various repair crews that worked at the station between 1913 and 1920. The following is an accounting of the work done on the tower during this time:

- May 28, 1913: Repair party arrived and put cement coating on top of tower
- October 25–November 4, 1913: Scraped and whitewashed outside of tower and lantern

76 *Ocracoke Lighthouse HSR,* 10; Clifford and Clifford, *Nineteenth-Century Lights,* 21, 31; Cloud, *Ocracoke Lighthouse,* 5; and http://www.lighthousefriends.com/light.asp?ID=355.

77 Cloud, *Ocracoke Lighthouse,* 6–7; Warfield, 1977 National Register nomination.

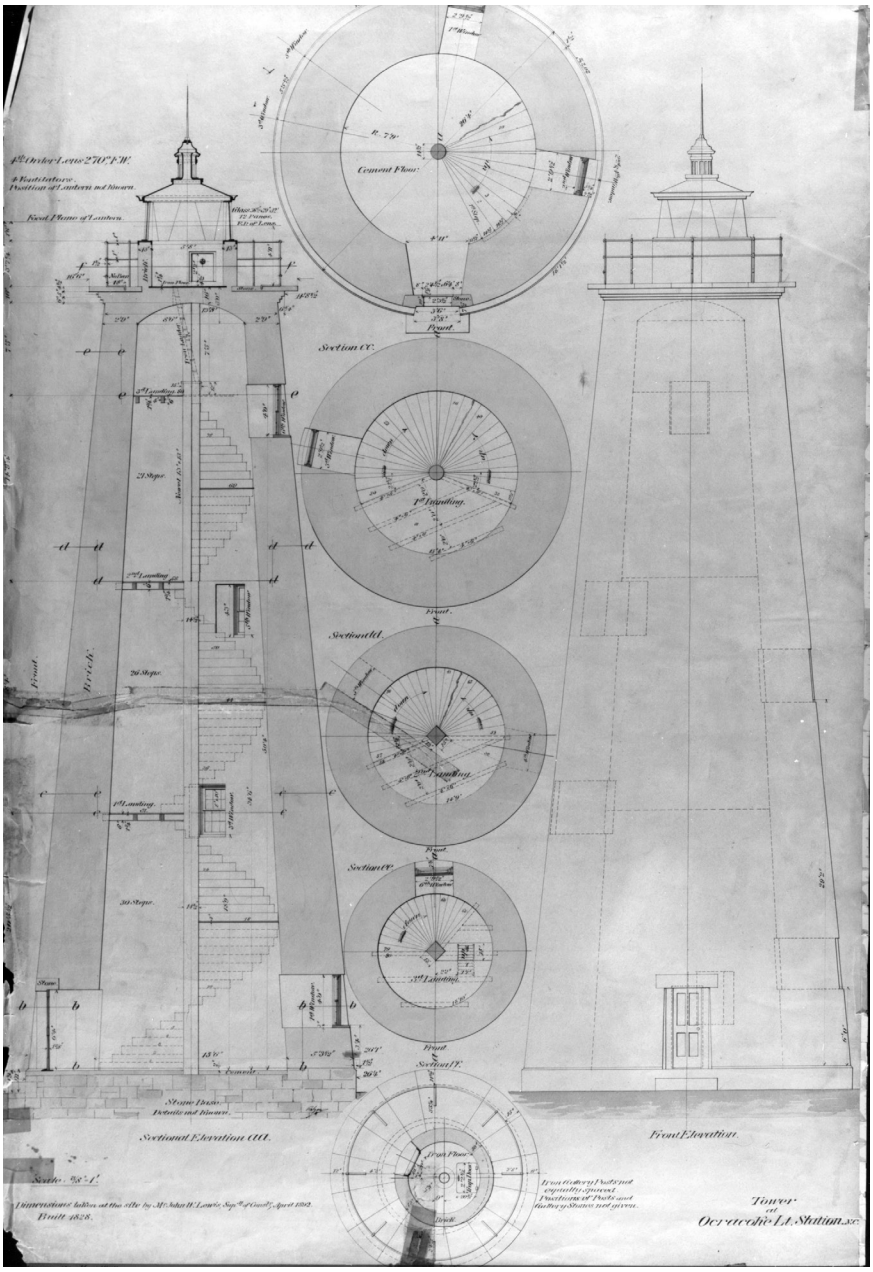


FIGURE 2–68. Lighthouse plan, 1892. (NPS/CAHA Collection)

- April 6–17, 1914: Whitewashed inside of tower and painted inside stairway
- September 20, 1915: Painted outside lantern of tower and lantern deck
- October 11, 1915: Painted inside of lantern and lantern floor
- April 17, 1916: Whitewashing inside walls of tower
- April 27–May 23, 1916: Whitewashing outside of tower
- June 16, 1916: Rain and wind badly beat off whitewash on outside wall of tower
- April 12, 1917: Painted black outside lantern

The electrification of the light in 1929 coincided with the arrival of Joseph M. Burrus or "Cap'n Joe." By 1937, the light had changed to a flashing white light with a five second light and twenty-five second eclipse. At the time of Keeper Burrus's retirement in 1946, the USCG automated the lighthouse. Since there was no longer a need for a substantial staircase, the USCG removed the original wooden spiral stairs built into the inside of the exterior wall of the lighthouse around 1950 and replaced them with metal stairs located in the center of the tower. The original stairs were removed due to excessive rotting of the boards. The holes left in the all-brick lighthouse were cemented closed and a new floor was installed in the base of the tower. In 1951, the USCG painted the interior and recoated the exterior.[78]

It appears that the lighthouse languished over the following years with little preservation maintenance undertaken by the USCG. After the creation of the Cape Hatteras National Seashore in 1953, the NPS entered into an agreement with the USCG for the use and occupancy of the other buildings at the station, which the NPS agreed to maintain.

78 Cloud, *Ocracoke Lighthouse,* 6–7, 19, 25–35; http://www.lighthousefriends.com/light.asp?ID=355; *Ocracoke Lighthouse HSR,* 11; Warfield, 1977 National Register nomination.



FIGURE 2–69. Ocracoke Lighthouse, 1936. (NPS/CAHA Collection)

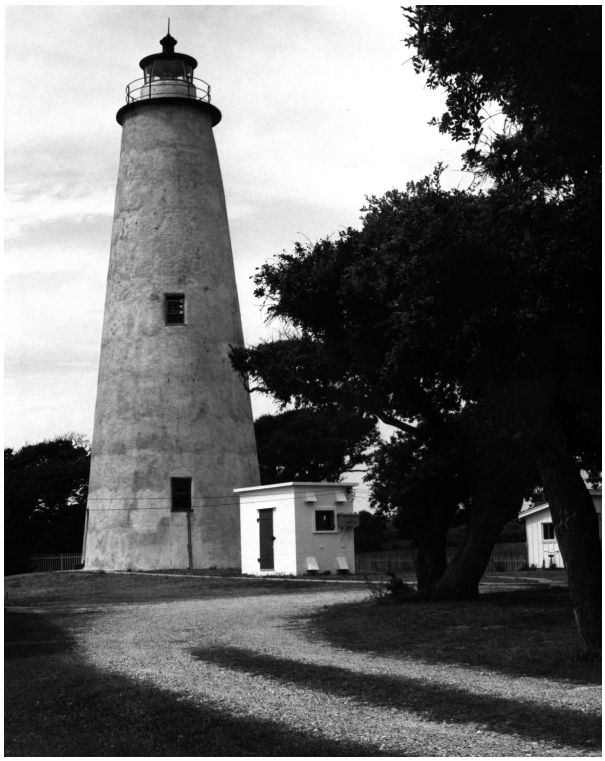


FIGURE 2–71. Ocracoke Lighthouse, 1963. (NPS/CAHA Collection)



FIGURE 2–70. Ocracoke Lighthouse, 1955.(NPS/CAHA Collection)

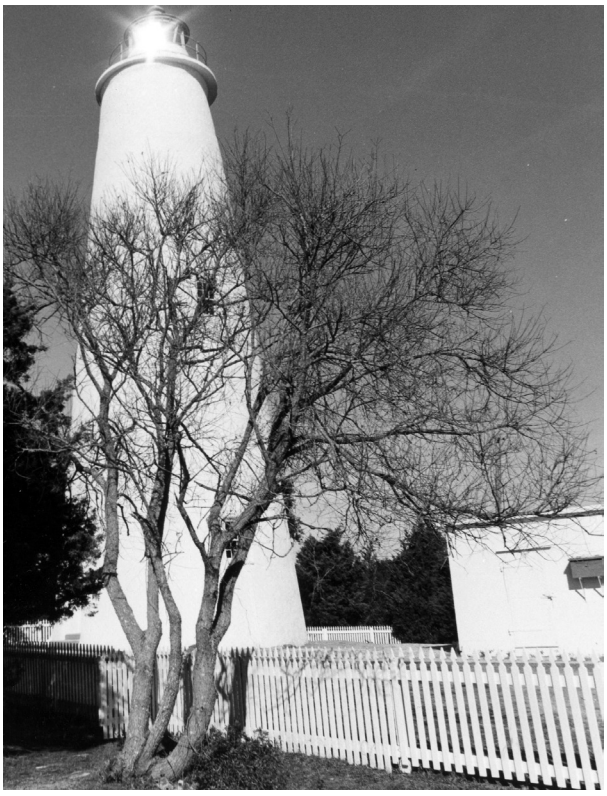


FIGURE 2–72. Ocracoke Lighthouse, 1978. (NPS/CAHA Collection)

In 1988, the North Carolina Department of Cultural Resources transferred a $17,000 Lighthouse Grant to the NPS to prepare a historic structure report to access the structure's condition, document historic fabric, and develop a scope of work for rehabilitation of the lighthouse. In 1989, after several inspections reported the lighthouse in a deteriorating condition, the USCG finally let a contract for exterior painting and window and door repair. After years of neglect, the USCG wanted to replace the windows and the exterior door, but the North Carolina Department of Cultural Resources felt that the windows could be repaired and objected to the use of a steel door frame. The contractor hired by the USCG removed the original windows anyway and installed vinyl-clad replacements. The historic wooden entrance door was also removed and replaced with a modern metal door. After intervention by community activists, the USCG agreed to pay for the repair/reconstruction of the original wood windows and entrance door, which were fabricated and installed by the NPS in 1990. Five of the early window sash were repaired and another seven reconstructed. The double sash windows were retrofitted into the vinyl track of the 1989 thermal replacement windows, which was left in place. The work, completed on August 3, 1990, included:

- Repair of five of the existing sash;
- Manufacture of seven new sash to match the existing;
- Construction of four new wood window frames to match the existing and repairs to the two remaining frames;
- Removal of non-historic windows and installation of historic/reconstructed windows;
- Construction of a new board-and-batten door, as specified in drawings supplied by the North Carolina Department of Cultural Resources; and
- Removal of non-historic door and installation of new historic character door.[79]

79 Cloud, *Ocracoke Lighthouse,* 45–50; "Lighthouse Grant Project Ocracoke Lighthouse Phase I and II Completion Report," July 10, 1990, Accession 189, Catalogue 5035, Box 1 Folder 1, NPS/CAHA Collection; Oppermann, *Ocracoke Light Station HSR*, 152.



FIGURE 2–73. Exterior view of flat metal door, 1990. (NPS/CAHA Collection)



FIGURE 2–74. Newly installed historic character door, 1990. (NPS/CAHA Collection)

Following the completion of a historic structure report, a crew from Cape Hatteras National Seashore began Phase I and II work on the lighthouse, which was completed in July 1990. This work included:

- Total replacement of deteriorated interior stairwell support brackets with stainless steel fabricated to match the existing dimensions.
- Removal of substantial interior algae build-up using water and soft bristle brushes.
- Raking and repointing of joints of fifteen courses of brick, circling the interior base of the lighthouse; repointing of all the mortar joints just inside the door.
- Removal of two of the Plexiglas panels that replaced the original glass in the lantern gallery on the top of the lighthouse to take measurements for replacement glass and the reinstallation of the Plexiglas.
- Inspection of the exterior lantern drum and the condition of the underlying brick and mortar recorded. Those areas opened were repaired with a mortar patch. The gallery floor was treated to stop water migration into the structure. Numerous cracks were raked out, packed with lead wool, and repointed.
- Inspection of the six window lintels to determine their condition for future work.
- Removal and repair of the exterior hatch gallery door.[80]

Phase III concluded in October 1991 and included the following work on the window lintels:

- Removal of the lintels above the entrance door and windows 2 and 3 and replacement with tongue and groove ceiling board that was primed and painted white. There were only six lintel boards over window 2, so a seventh had to be reconstructed. An area of brick approximately 5′ × 4′ × 4′ deep collapsed during replacement of the lintels and had to be relaid. All voids above these lintels were in-filled with new laid brick and mortar. A crack over the doorway was repointed with mortar.

Inspection of the lintel openings on windows 4, 5, 6, and 7 for future work. All brick above the windows was repointed and raked. The openings were shored up until such time as the park can assign staff to continue the project.[81]

It was noted during the final inspection of the window lintels that the non-historic entrance board-and-batten door was continuing to warp. The NPS subsequently replaced the door with a four-panel door as shown on the 1892 drawing. The two top panels were raised and the bottom two panels were constructed with wooden vents to improve ventilation throughout the lighthouse. The NPS also replaced the modern doorway lintel with a granite lintel as shown on the 1892 drawing.

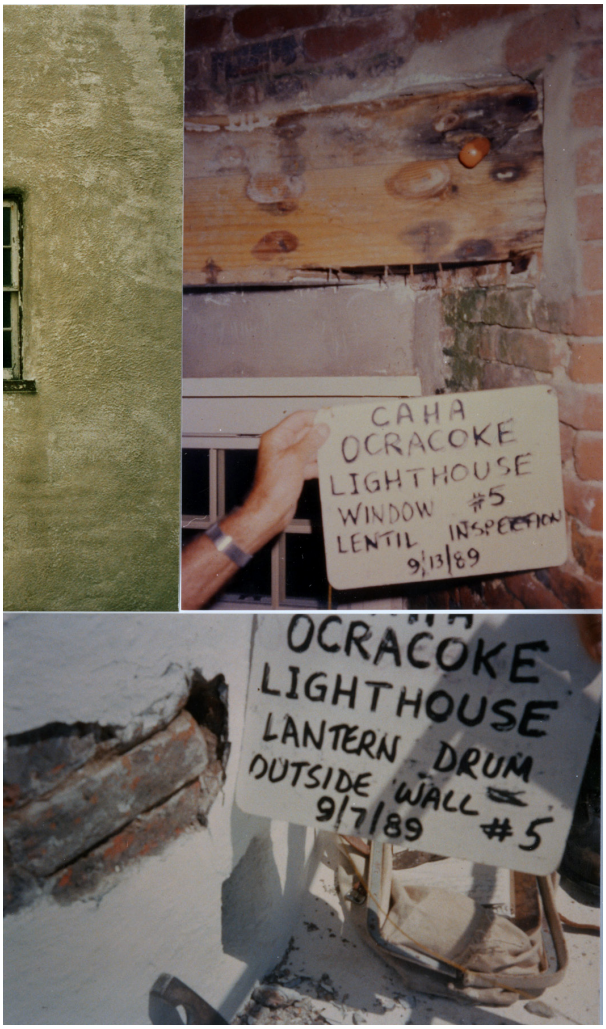


FIGURE 2–75. Crews inspecting the lighthouse, 1989. (NPS/CAHA Collection)

80 Lighthouse Grant Project Ocracoke Lighthouse Phase I and II Completion Report, July 10, 1990, Accession 189, Catalogue 5035, Box 1 Folder 1, NPS/CAHA Collection.

81 Lighthouse Grant Project Ocracoke Lighthouse Phase III Completion Report, Accession 189, Catalogue 5035, Box 1 Folder 2, NPS/CAHA Collection.



FIGURE 2–76. Crews completing Phase III work on the lighthouse, 1991. (NPS/CAHA Collection)

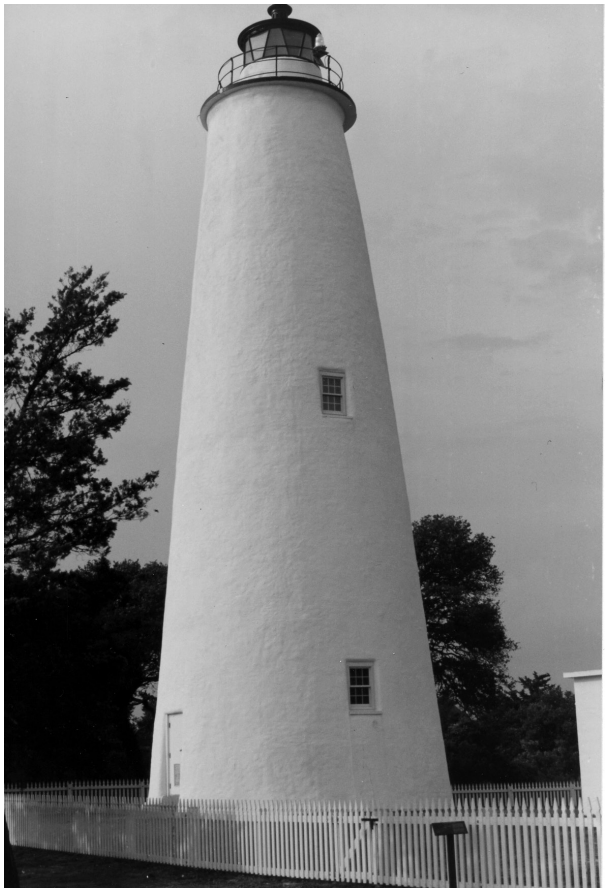


FIGURE 2–77. Lighthouse after completion of Phase II, 1990. (NPS/CAHA Collection)



FIGURE 2–78. Work on the lighthouse, 2010. (NPS/CAHA Collection)

Ocracoke Lighthouse was switched off in November 2009 and remained dark until March 3, 2010, while new glass was installed in the lantern room, metalwork was repaired, and lightning protection was installed. This was the first major work performed on the lighthouse after it had been transferred from the USCG to the NPS in 1999.

Work in 2011 included repointing brick, replacing balcony rails, installing new windows, adding a universally accessible deck to the lighthouse with a new side metal gate, and painting the entire lighthouse.[82]

82 http://www.lighthousefriends.com/light.asp?ID=355; Doug Stover, personal communication.

Double Keepers' Quarters

The original building (keeper's quarters) was a one-story brick dwelling with an upper living level. The downstairs was divided into two rooms with a chimney in the middle and an entry in front of the chimney. Stairs led from the entry into the upstairs chambers. The roof was cypress shingles. The 1823 contract called for a building to be attached to the dwelling whose description fits that of a kitchen. The contract mentions a chimney with iron crane, trammels and hooks, and on one side of the chimney an oven, while on the other side there was to be a sink with a gutter to run through the back wall.[83]

The Light-House Board "thoroughly repaired" the keeper's quarters in March 1855. After the Civil War, the dwelling needed numerous repairs that were completed in 1868. Repairs included: painting of all interior and exterior wood surfaces; extensive renovation of stairways, including 33 feet of newel; repairing one side of the roof and reshingling the other; relaying fire-hearths; plastering; repair of doors, sashes, and hardware in every room; and repair and painting of floors.

In 1883, work included plaster repairs and floor

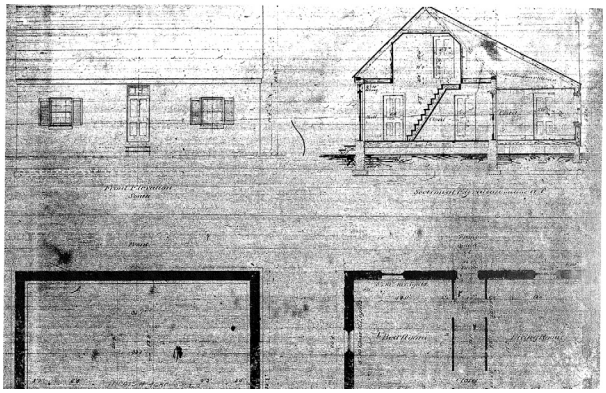


FIGURE 2–79. Plan of keeper's quarters showing rear addition, dated 1889. (NPS/CAHA Collection)

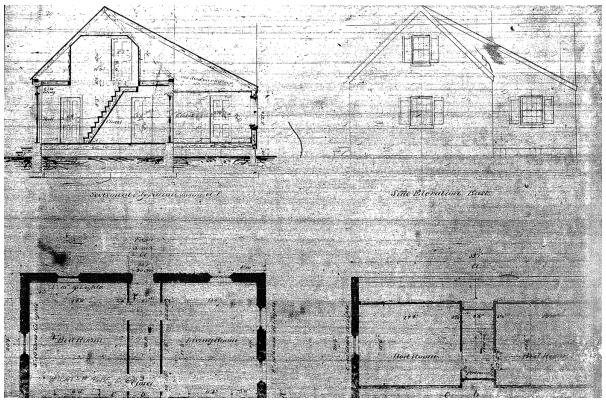


FIGURE 2–80. Plan of keeper's quarters showing rear addition, dated 1889. (NPS/CAHA Collection)

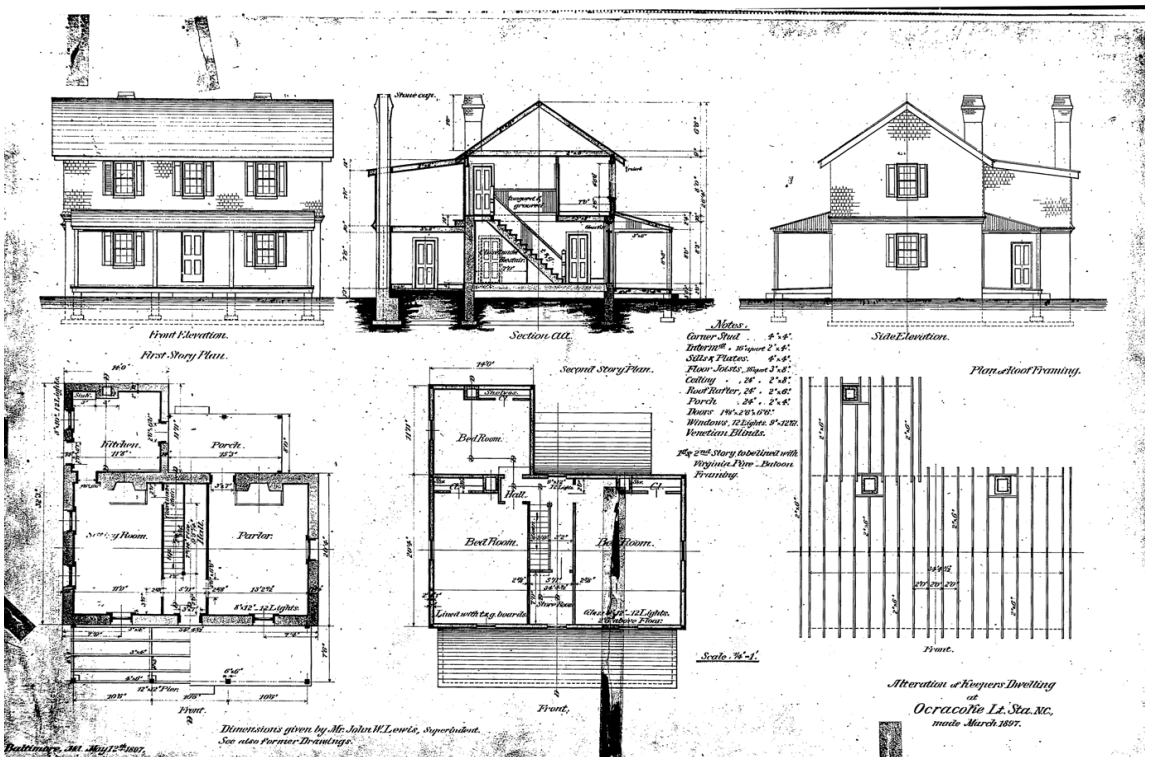


FIGURE 2–81. Plan of second story addition, 1897. (NPS/CAHA Collection)

83 *Ocracoke Lighthouse HSR,* 11. Oppermann, *Ocracoke Light Station HSR*, 58.



FIGURE 2–82. Plan of double dwelling, 1929. Note that rear elevation is labelled "FRONT." (NPS/CAHA Collection)

replacements. As documented by plans of 1889 and the 1893 photographs taken by Bamber, the first major change to the keeper's quarters was a frame shed room that was added to the back of the house in 1889 (see figure 2-62). The new room was behind the parlor and extended from the south side of the kitchen to the southeast corner of the house, forming a long rectangle. The Light-House Board added a second story to the original quarters in 1897 to provide additional space for the keeper and his family. A one-story, shed-roofed porch with chamfered posts was added across the front of the house. Six-over-six sash windows replaced the earlier eight-over-eight sash windows.[84]

Keeper Wesley Austin's logbook recorded his activities and those of various repair crews that worked at the station between 1913 and 1920. The following is an accounting of the work done on the quarters during this time:

- March 4, 1913: painted roof of dwelling
- March 16, 1913: [painted] window shutters on dwelling
- September 17, 1913: touched up dwelling with whitewash
- March 16, 1914: painted boxing around eves [*sic*] of dwelling
- March 17, 1914: painted outside of dwelling
- April 6, 1916: repaired kitchen[85]

Joseph M. Burrus's tenure as keeper began on October 1, 1929. At this time, the keeper's quarters was expanded to create a double dwelling (double keepers' quarters). Though attached to each other, the two quarters were to function independently of each other. The two-story frame addition was attached to the south end of the older dwelling. It was oriented at a right angle to the previous quarters, and the exterior design of the two was very similar. The shed-roofed porch across the façade of the old dwelling extended across the west end of the new dwelling, providing continuity between the two. Exterior wall surfaces of the addition consisted of stucco applied to metal mesh on the balloon-frame construction at ground level and wood shingles on the second story. The roofing material was changed to standing-seam metal.[86]

84 Cloud, *Ocracoke Lighthouse,* 7; Oppermann, *Ocracoke Light Station HSR*, 58-61; "Plans of Keeper's Dwelling at Ocracoake [sic] Light Station, N.C., filed February 5, 1889; [H. H. Bamber], Photographs 189 (C. S. 1) and 191 (C. S. 2), Ocracoke Light Station, N. C. May 24, 1893; "Narrative Report on the Finding of Historic Structure Examination," December 30, 1986, Accession 191, Catalogue 5037, Box 1 Folder 1, NPS/CAHA Collection.

85 Cloud, *Ocracoke Lighthouse,* 23-32.

86 Oppermann, *Ocracoke Light Station HSR*, 63-64.

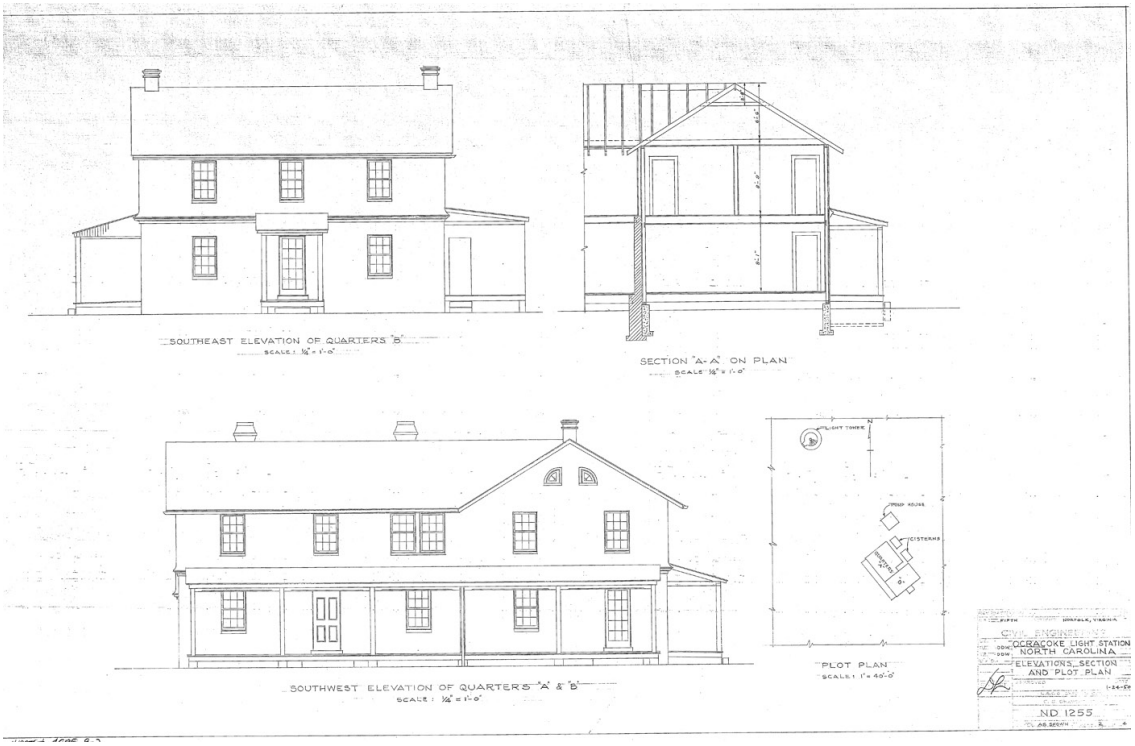


FIGURE 2–83. Elevations that accompanied work of 1950. (NPS/CAHA Collection)

Around 1950, the USCG extensively rehabilitated the quarters. Work included:

- Covering beaded walls with painted wallboard;
- Installing modern kitchen and bathroom facilities;
- Replacing or refinishing floors;
- Lining ceilings and walls with plywood paneling;
- Increasing closet space; and
- Screening in full-length porch added in 1929.[87]

After establishment of the Cape Hatteras National Seashore in 1953, the NPS wanted a base of operations on Ocracoke and first asked the USCG for permission to use the station buildings in 1955. The NPS agreed to maintain the structures in the 1957 use permit, and in 1972 and 1982, the NPS replaced the standing seam metal roof of the double keepers' quarters.[88]

A major rehabilitation project undertaken by the Williamsport Preservation Training Center began in 1987. The crew accomplished the following during Phase I, which was completed in September:

- Removed sand and debris below the bottom floor joists;
- Constructed concrete support piers upon which would rest new laminated treated beams and new treated supplemental joists to be installed between the existing joists;
- Replaced insect-damaged sill plate of east elevation; repaired stud ends; repaired/ replaced supplemental joist as required; treated all exposed wood with 2 percent zinc naphthenate; replaced sub-siding; and repaired damaged stucco;
- Constructed and installed new vents in the foundation walls;
- Replaced and painted four attic window frames and sash;
- Removed all utilities from the exterior of the dwelling, the existing electric panel, and the hot water furnace;

87 "Narrative Report on the Finding of Historic Structure Examination, December 30, 1986," 3, Accession 191, Catalog 5037, Box 1 Folder 1, NPS/CAHA Collection.

88 Ocracoke Light Station, HS-1A/HS-1B Buildings #501/501B/503, Accession 191, catalog 5037, Box 1 Folder 1, NPS/CAHA Collection.

- Cleaned and repaired two cisterns and removed non-historic concrete block filter boxes; and
- Installed underground conduit for electric services.[89]

The scope of work for Phase II included:

- Supervision of utility contracts;
- Repair of chimneys above roofline;
- Repair/painting of existing windows;
- Repair/replacement of floor joist system of shed roof frame addition, repair/replacement of floor, addition of supplemental rafters to roof that was inadequately framed; and
- Replacement of utility room roof.

This work concluded on September 22, 1988. Exterior painting occurred in 1992.[90]



FIGURE 2–84. Rehabilitation work, 1987. (NPS/CAHA Collection)

In 2008, the park developed a scope of work for exterior restoration. There is no completion report, so it is not clear if this project actually was undertaken. Nevertheless, the proposed work indicates the condition of the building at that time:

89 Exhibit Specialist, Williamsport Preservation Training Center, Denver Service Center to Superintendent, Cape Hatteras National Seashore, September 1, 1987, Accession 191, Catalog 5037, Box 1, Folder 1, NPS/CAHA Collection.

90 Exhibit Specialist, Williamsport Preservation Training Center, Harpers Ferry Center to Deputy Chief, Williamsport Preservation Training Center, HFC, October 27, 1988; Assessment of Actions Having an Effect on Cultural Resources, July 6, 1992, Accession 191, Catalog 5037, Box 1, Folder 1 and 2, NPS/CAHA Collection.



FIGURE 2–85. Double keepers' quarters, 1990. (NPS/CAHA Collection)



FIGURE 2–86. Double keepers' quarters, 2005. (NPS/CAHA Collection)

- Masonry restoration and cleaning of four chimneys and two brick cisterns;
- Carpentry and millwork to repair all wood siding, sheathing, shingles, windows, doors, associated trim, and exterior wood deck flooring;
- Replacement of all roof areas with standing seam metal and repairing rafters, joists, and lathe as needed;
- Rework gutters and downspouts to better carry rainwater away from the building;
- Repair and make operable all doors, including hardware;
- Repair and make operable all windows, including proper hardware, in preparation for painting;
- Restore period hardware to original condition;
- Prepare and repaint exterior surfaces.[91]

91 Oppermann, *Ocracoke Light Station HSR*, 72.

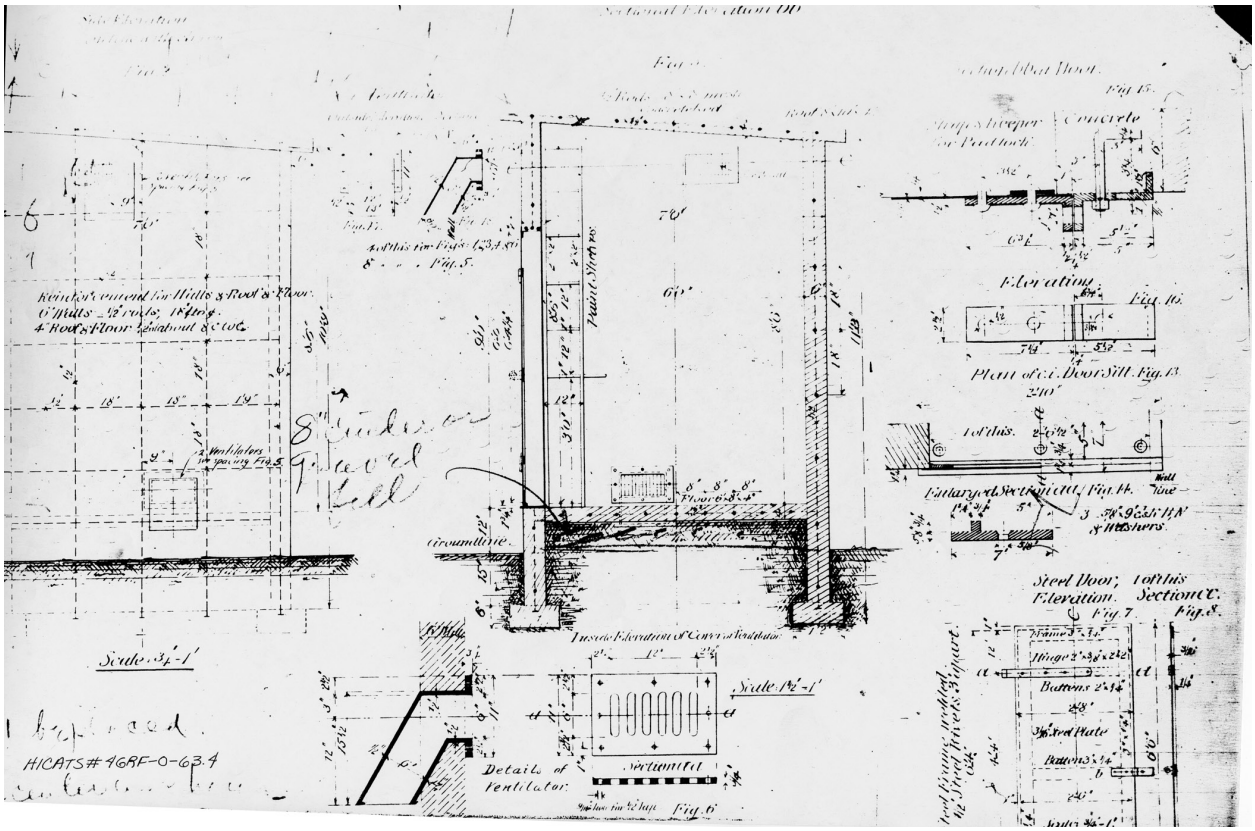


FIGURE 2–87. Concrete oil house drawing, 1913. (NPS/CAHA Collection)



FIGURE 2–88. Concrete oil house, 1941.(NPS/CAHA Collection)



FIGURE 2–89. Concrete oil house, 1952. (NPS/CAHA Collection)

Concrete Oil House

The low flashpoint of kerosene necessitated a detached oil storage building, which was built by a repair crew in 1914. It was constructed of poured concrete and equipped with a cast iron door and ventilators. It housed the backup generator after the lighthouse was electrified in 1929.[92]



FIGURE 2–90. Concrete oil house, 1990. (NPS/SER-CRPS Collection)

Cisterns

Rainwater, collected off the roof of the double keepers' quarters, was fed from gutters into two cisterns east of the dwelling. The construction

92 Cloud, *Ocracoke Lighthouse*, 26.

date of the north cistern is unclear. In response to a request from Keeper Smith in June 1901, W. A. Jones, the Lighthouse Engineer, responded with authorization to procure a pump and pipe for the cistern. However, the first appearance of the cistern on a plat map was not until 1908. A repair crew replaced the downspouts in 1911 and rebuilt a concrete top for the north cistern in 1916. The construction date of the south cistern is unknown, but it can be seen in a 1941 aerial image and was recorded on a 1950 plot plan (see figure 2-22). It is not recorded on site plans from 1944 or 1958.[93]

Repair of the two cisterns and removal of concrete block filter boxes was included in the scope of work for the double keepers' quarters completed in 1988.

Storehouse/Garage/Carpenter Shop

A frame outbuilding documented on the first site plan of 1890 and identified on the Bamber 1893 site

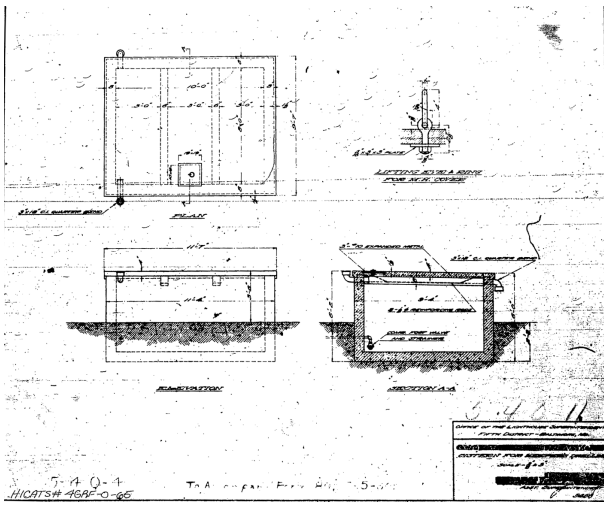


FIGURE 2–91. Plan of north cistern, n.d. (NPS/CAHA Collection)



FIGURE 2–92. Cisterns, 1941. (NPS/CAHA Collection)



FIGURE 2–93. Cistern repair, 1987. (NPS/CAHA Collection)



FIGURE 2–94. Cisterns, 1990. (NPS/CAHA Collection)



FIGURE 2–95. Cisterns, 2005. (NPS/CAHA Collection)

93 Cloud, *Ocracoke Lighthouse,* 28; Oppermann, *Ocracoke Light Station HSR*, 26, 36.

plan as "storehouse" was located on a northeast to southwest axis of clustered outbuildings. It may have been built as early as December 1875, when official correspondence mentions "build store house." According to the 2016 *Ocracoke Light Station HSR*, the façade of the current building is wider and its footprint more square than the building shown below in a 1893 Bamber photograph. The building's current configuration is shown on the updated 1908 plat (see figure 2-41).

The 1977 National Register nomination described the building's original use as a dining room that was connected to a smaller kitchen building by a screened-in walkway. Correspondence from Keeper Smith in 1899 described the use of a storehouse as a summer kitchen: "It is so hot in the kitchen in the Summer time it is next to impossible to bear the heat. Consequently we have to use one of the store houses for a Summer Kitchen it is a nice little house except it needs [a] ceiling." Keeper Smith proceeded to submit a proposal for having the storehouse ceiled, including an estimate of what it would cost to accomplish the work. In a letter of 1901, Smith again referred to the Summer Kitchen. The building's use was identified as "pump house" on site plans from 1950 and 1958 and in USCG use agreements thereafter.[94]

Images from 1936 (see figures 2-19 and 2-101) show an unidentified frame building outside the picket fence on the west. According to the 1977 National Register nomination, a building on the site was badly damaged by a 1944 hurricane and collapsed. It seems likely that it was this building, since it does not show up in any images after the 1940s.

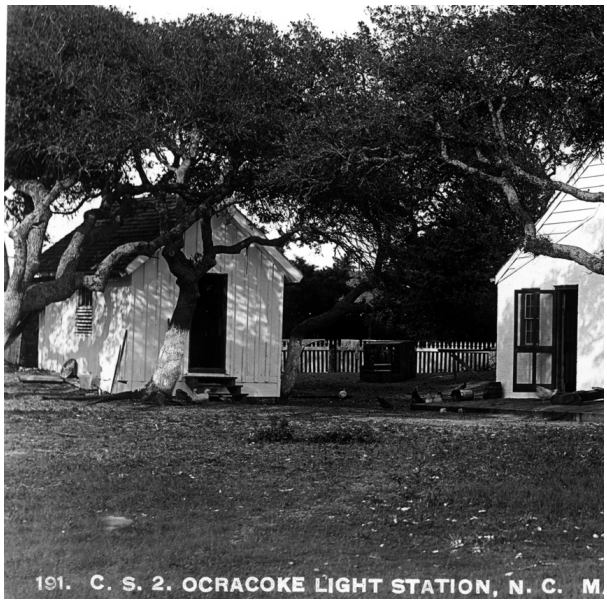


FIGURE 2–96. Storehouse, 1893. (NPS/CAHA Collection)



FIGURE 2–97. Storehouse, 1990. (NPS/SER-CRPS Collection)

By 1952, the fence line had been moved forward and a garage and shed constructed flush with the fence line. In addition to the storehouse (pump house), the 1958 site plan includes a chicken house (discussed below) and carpenter shop enclosed

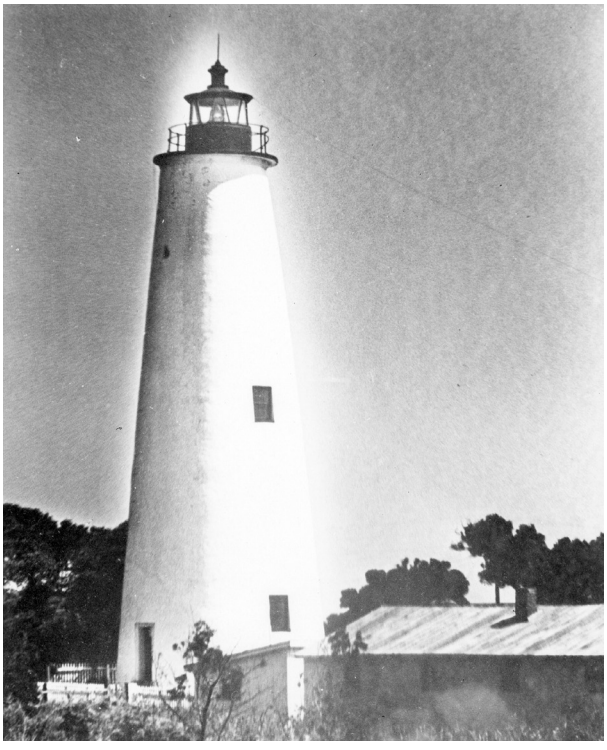


FIGURE 2–98. Frame building outside picket fence, n.d. (NPS/CAHA Collection)

94 Warfield, 1977 National Register nomination; Oppermann, *Ocracoke Light Station HSR*, 77.



FIGURE 2–99. Ocracoke Light Station with garage and shed in the foreground, before 1978. (Outer Banks History Center, Manteo, North Carolina)

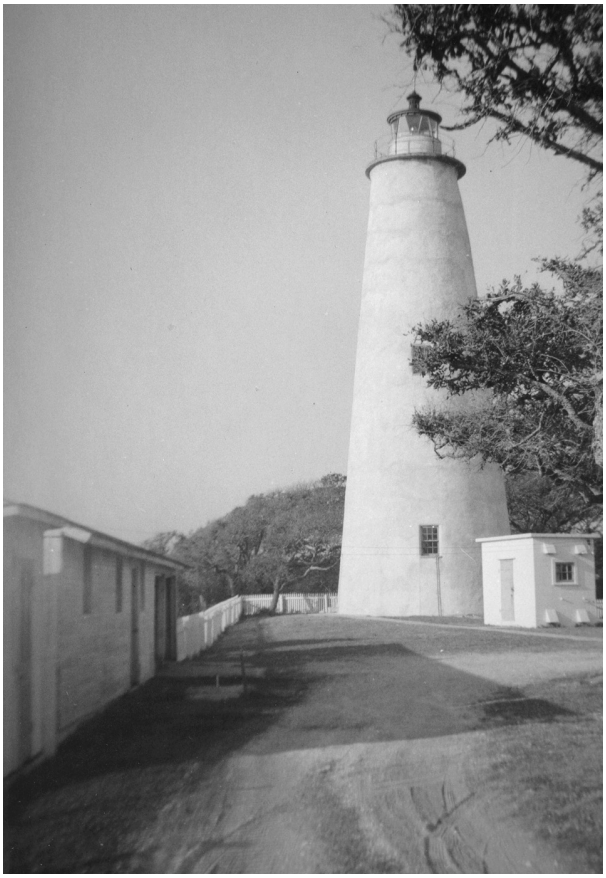


FIGURE 2–100. Garage and shed along the fence, n.d. (NPS/ CAHA Collection)

by fencing east of the lighthouse and a garage and shed west of the lighthouse. The front façades of the garage and shed are flush with the existing picket fence line. The 1955 and 1974 special use agreements with the NPS mention the storehouse (pump house), carpenter shop, and garage. A 1977 letter from the North Carolina Department of Cultural Affairs in response to a request from the NPS to remove the garage stated that its removal would not be an adverse effect to the property. The 1977 National Register nomination stated that it would be removed by 1978. Only the storehouse (pump house) and carpenter shop are mentioned in the 1986 special use agreement, indicating that the garage had been taken down.[95]

In 1988, the NPS developed a scope of work for the storehouse (pump house) that included: reroofing; removing interior concrete slab and re-establishing historic lower floor line; possibly raising the building from 12 inches to 16 inches to restore the original grade; reglazing and painting

95 "Revocable Permit," May 17, 1955, "Use Agreement," February 13, 1974, and "Use Agreement," May 20, 1986; and Larry E. Tise, State Historic Preservation Officer to Lawrence D. Roush, Chief, Resources Management and Visitor Protection, May 11, 1977, Accession 191, Catalog 5037, Box 1, Folder 1 NPS/ CAHA Collection; Warfield, 1977 National Register nomination.



FIGURE 2–101. Detail of an image showing carpenter shop south of concrete oil house and chicken house, n.d. (The Outer Banks History Center, Manteo, NC)

the window sash on all elevations; replacing doors on the north and south elevations; and removing utility lines and hookups on all elevations. This was a day labor preservation project performed by the Williamsport Preservation Training Center. The NPS also planned to remove blown-in sand and do minor grading for this building and the carpenter shop.

A heavy termite infestation expanded the scope of work during Phase II, which concluded on September 22, 1988. Additional repairs included: repair/replacement of some floor joists; replacement of 75 percent of the sill plates; repair of studs; and removal of deteriorated floor under cement slab and replacement with flooring to match. The building was not re-roofed, as upon closer inspection it was determined that the roof had three to five more years. Also, the NPS decided to lower the grade around the building instead of



FIGURE 2–102. Carpenter shop, 1990. (NPS/SER-CRPS Collection)

raising the building.

The scope of work for the carpenter shop included: return to proper grade on all elevations; repair/replacement of siding as required on all elevations; repair of doors, including replacing bottom boards, realignment of unit, and hardware work; repair of frame, including replacing sill, fabrication of replacement sash on south elevation window, west elevation window; and repair of shutter door on the east elevation. Repairs to the carpenter shop were deferred to Phase III, which concluded in January 1990.[96]

Chicken House

Chickens can be seen in Bamber's images from 1893 and a chicken lot was described in Austin's 1916 logbook. The U.S. Bureau of Lighthouses submitted a plan for a chicken house that pre-dates 1939. The plans were prepared by the Office of the Superintendent, Fifth District, Baltimore, MD, therefore pre-dating the USCG. The construction date and location are unknown. The building was not recorded on a 1944 plot plan, but a building can be seen in dated images from the 1950s and was recorded on the 1958 site plan as a chicken house. The building seen in the 1950s images does not match the pre-1939 drawing. It is possible that the unidentified building outside the fence discussed in the previous section could have been an earlier chicken house since the designs are very

96 Bebe Woody to Assistant Superintendent, August 15, 1988; Chief, Historic Architecture Division to Superintendent, Cape Hatteras, December 29, 1987; and Exhibit Specialist, Williamsport Preservation Training Center, Harpers Ferry Center to Deputy Chief, Williamsport Preservation Training Center, HFC, October 27, 1988, Accession 191, Catalog 5037, Box 1, Folder 1 and 2, NPS/CAHA Collection.

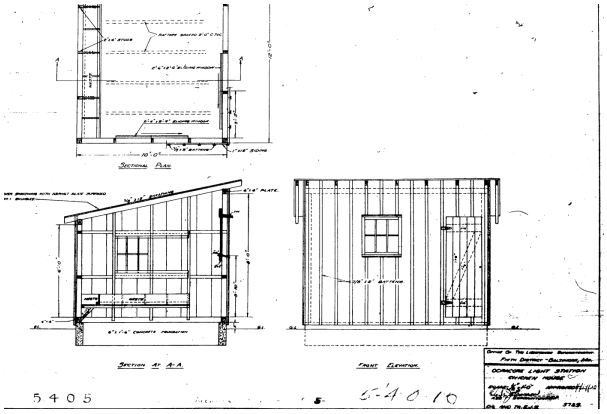


FIGURE 2–103. Plan of chicken house, before 1939. (NPS/CAHA Collection)



FIGURE 2–104. Chicken house to the left of garage and concrete oil house, 1954. (NPS/CAHA Collection)

similar (see Figure 2-101). The use agreements with the NPS in 1955 and 1974 also mentioned a chicken house. It is not known when the building seen in images from the 1950s was taken down.[97]

Around 1994, a new frame building was erected on the site to house a new generator. It was built in the style of the old chicken house with a shed roof.[98]

Stable

There are no images of barns or stables at Ocracoke Light Station, but in 1898, Keeper Smith noted that he whitewashed his "cow stable." Given the light station's close proximity to Ocracoke village, it would not have been difficult to stable a cow.[99]

Wood/Coal Shed

In 1903, keeper T.A. Smith asked for permission to build a woodshed stating that the wood was being stored in the rain and that he "would like to have a house to put the wood in and have made an estimation of the cost..." The Light-House Board recorded the construction of a "small wood shed" in 1904. [100] It sat between the storehouse and the privy and is recorded on several site plans through 1929. The building was identified as a coal shed in the 1930 inventory of buildings but is missing from a 1944 plot plan.

Privy

One of the most essential support buildings included in the original 1823 specifications was a privy. It is recorded on the earliest site plan of 1890 and on the 1893 Bamber plan. It was frame with a wood foundation located northeast of the keeper's quarters on the eastern edge of the property. Plat maps show that the privy was always located along the east property line although, typical of privies, it was moved several times in the general area. A new privy may have been built in the early 1880s, for in 1881 the Light House Engineer provided the Chairman of the U. S. Light-House Board with an estimate "for new outhouse" as well as other work. Keeper Austin recorded repairing the privy in 1913 and rebuilding it in 1916 with a concrete foundation. Unlike the privies at Bodie Island that were eventually removed, the privy at Ocracoke has been rebuilt over the years. Its location, however, seems to have shifted further north according to a 1944 plot plan and 1987 drain field plan. It was not listed on the 1930 inventory of buildings, which only recorded the more substantial structures on



FIGURE 2–105. Privy, 1985. (NPS/CAHA Collection)

97 Cloud, *Ocracoke Lighthouse,* 29.

98 Site Plan Generator Shed [map], July 22, 1994, Accession 360, Catalog 5608, Folder 6, NPS/CAHA Collection.

99 Cloud, *Ocracoke Lighthouse*, 16.

100 Ibid., 7–8; Lewis, Ocracoke Light Station, N.C. [map], 1897, 1908, 1929.; Oppermann, Ocracoke HSR, 82.

the property.[101]

The privy was included in the scope of work for the double keepers' quarters, storehouse, and carpenter shop developed in 1988, but work was deferred until Phase III. The privy required total reconstruction. Maintenance records indicate that it was reconstructed in 2004 and 2010.[102]

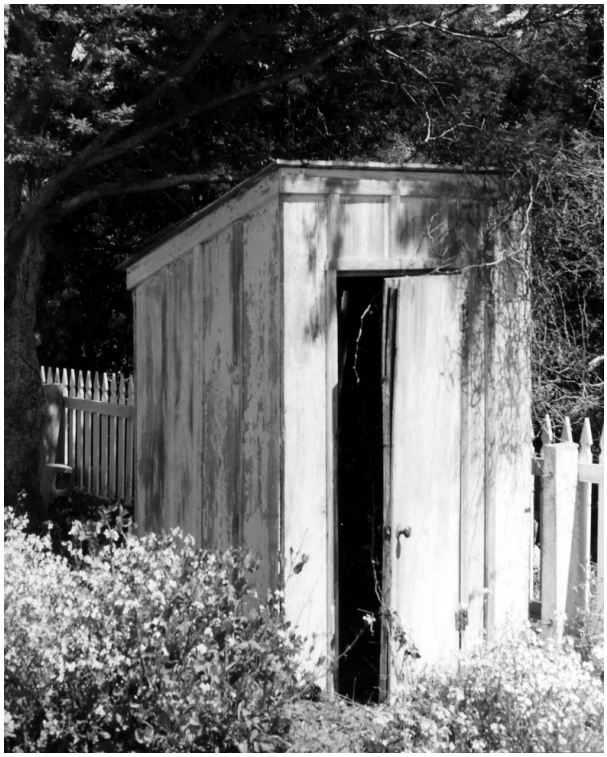


FIGURE 2–106. Privy, 1990. (NPS/SER-CRPS Collection)



FIGURE 2–107. Privy, 1999. (NPS/SER-CRPS Collection)



FIGURE 2–108. Privy, 2005. (NPS/CAHA Collection)

Pier/Boathouse

The U.S. Bureau of Lighthouses submitted a plan in 1930 for a pier and boathouse, which are recorded on a 1944 USCG plot plan as being northeast of the station on Silver Lake (see figure 2-43). A 1958 USCG drawing outlined repairs and the extension of the structure (called "dock") and labeled the building on the dock "storehouse." No images with clear documentation have been found although several docks can be seen in images from the 1930s and 1950s of Silver Lake taken from the lighthouse. It is not known when the structure was taken down.

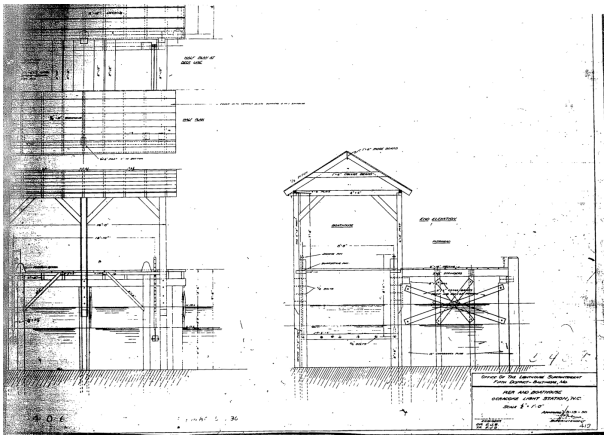


FIGURE 2–109. Plan of pier and boathouse, 1930. (NPS/CAHA Collection)

101 Cloud, *Ocracoke Lighthouse*, 25, 28; Oppermann, *Ocracoke Light Station HSR*, 74.

102 Superintendent, Cape Hatteras Group to Chief, Williamsport Preservation Training Center, April 5, 1988; Exhibit Specialist, Williamsport Preservation Training Center, Harpers Ferry Center to Deputy Chief, Williamsport Preservation Training Center, HFC, October 27, 1988, Accession 191, Catalog 5037, Box 1, Folder 1 and 2, NPS/CAHA Collection; Oppermann, *Ocracoke Light Station HSR*, 74.

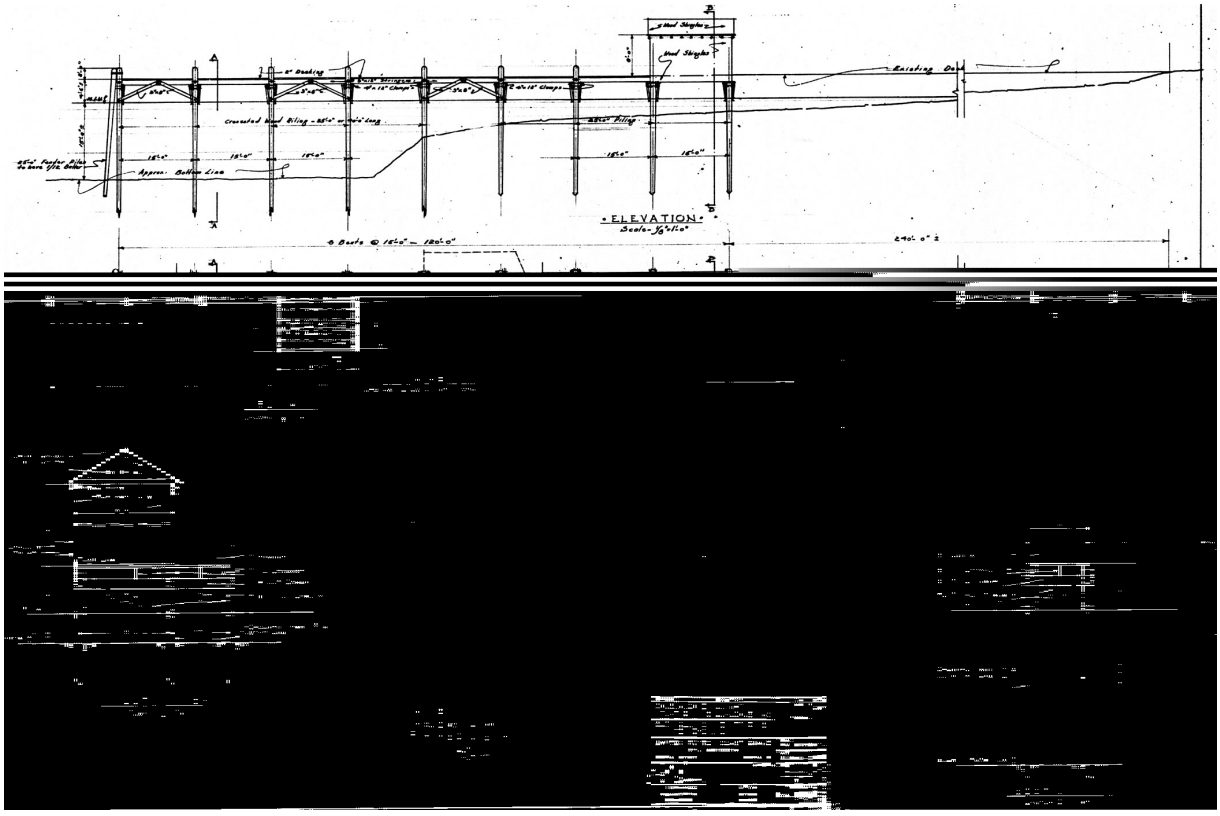


FIGURE 2–110. Repair/addition plans, 1958. (NPS/CAHA Collection)



FIGURE 2–111. View of several unidentified docks on Silver Lake, 1936. (NPS/CAHA Collection)

Well

A well was a necessity for the light station. The 1823 contract called for it to be "sunk sufficiently deep to procure good water, a convenient distance from the Light House." Its location, southeast of the light tower, is documented on the 1890 site plan and the 1893 Bamber site plan (see figures 2-16 and 2-38).[103]

Generator House

In 1994, the NPS proposed to build a new generator house on the last known location of the former chicken house, east of the lighthouse. The new building bears a striking resemblance to the design of the chicken house, with a similar roofline (see figures 2-35 and 2-45).

103 Oppermann, *Ocracoke Light Station HSR*, 74.

Circulation

Walkways/Driveways

Doorways in the dwelling were not at grade and the site was sandy so walkways were an important feature in the cultural landscape. According to Department of the Treasury documents, the Light-House Board relaid brick walks in 1868. As documented in images and a site plan from 1893, a raised brick walkway laid out in an axial arrangement linked the entrances of the dwelling (see figures 2-15, 2-16, 2–17). This raised platform connected the dwelling with the work yard of the station and the light tower beyond.[104]

Later site plans show that as the dwelling was enlarged and new outbuildings constructed, the circulation system changed to accommodate these additions. A brick walkway connected the dwelling with the storehouse and a wooden walkway linked the dwelling and the three outbuildings (storehouse, wood/coal shed, and privy). In 1902, Keeper Smith constructed a wooden walkway from the dwelling to the light tower (see figure 2-41). It is less clear when another walk that led from the northwest corner of the building to the rear of the property was constructed. These boardwalks would have been needed to traverse the sandy topography of the site and created a crisscross of walkways at the station. They were damaged in a September 1913 hurricane but repaired the following month. The Lighthouse Service changed the material to concrete in 1916. Other concrete walkways circumnavigated all sides of the dwelling at some point after the structure was doubled in 1929. Several small walkways between buildings are not well documented on site plans but can be seen in images of the site. It is not known when the original brick walkway that linked the dwelling and the storehouse was replaced with wood timbers.[105]



FIGURE 2–112. Aerial view of light station showing walkways, n.d. (The Outer Banks History Center, Manteo, NC/David Stick Collection)

104 Cloud, *Ocracoke Lighthouse,* 7.

105 Cloud, *Ocracoke Lighthouse,* 7, 25, 28–29.



FIGURE 2–113. Series of walkways linking the buildings on site, 1954. (NPS/CAHA Collection)



FIGURE 2–116. Wood timber walkway from storehouse to dwelling, 1994. (NPS/CAHA Collection)

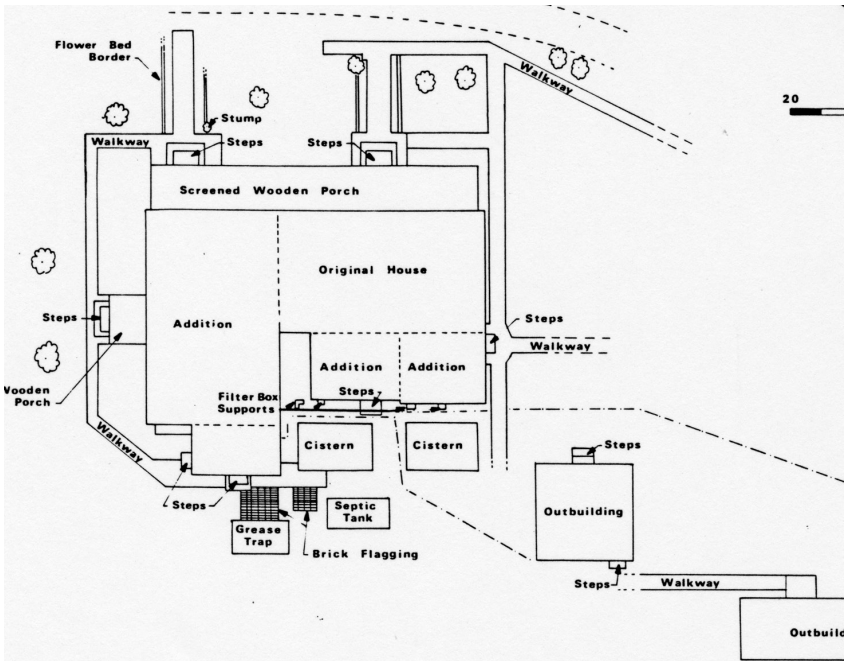


FIGURE 2–114. Layout of walkways from 1987 archeology site plan. (NPS/CAHA Collection)



FIGURE 2–115. Walkway from dwelling to lighthouse, with other walkways in the background, 1955. (NPS/CAHA Collection)

In 1987, the NPS Southeast Archeological Center (SEAC) monitored utility trench excavation near the double keepers' quarters. One of the areas monitored was immediately to the west of the existing concrete walkway to the lighthouse. Hand excavation uncovered a scatter of bricks with lime-sand mortar at a depth of approximately 1.1 feet extending for about 8 feet. Although the bricks were found in a random pattern, it seems likely that these are bricks from the original layout of the site.[106]

An unpaved road into the station is first recorded on the 1897 site plan. Historic images from the 1930s and 1940s indicate that access into the station was via a walkway from the front gate, which was paved. By the 1950s, the paved walkway had been taken up and replaced with a two-track gravel/sand drive into the station (see Figures 2-117 - 2-121). The sand drive appears on the 1958 site plan.

As early as 1962, the USCG gave the NPS permission to place fill material in the area west-southwest of the station to develop a parking area

106 Paul Y. Inashima, "Archeological Monitoring Report Sand Removal and Utility Trench Excavation at the Ocracoke Light Station Keeper's Quarters," 1987, Accession 360 Catalog 5608, Folder 6, NPS/CAHA Collection.



FIGURE 2–117. Gate into the light station with walkway beyond, 1941. (NPS/CAHA Collection)



FIGURE 2–118. Walkway into the light station, 1936. (NPS/CAHA Collection)



FIGURE 2–119. Two-track drive, 1952. (NPS/CAHA Collection)



FIGURE 2–120. Two-track drive, 1959. (NPS/CAHA Collection)

for visitors and quarters occupants. It is not known exactly when the parking area was laid out, as the USCG use permit of 1986 reauthorized the use of fill material to develop a parking area, indicating that parking had yet to be completed. A 1986 inspection of the double keepers' quarters reported that parking within the site was undefined, and a 1986 memo about planned improvements to the site recommended "delineation of an access road and parking areas." The Superintendent's Annual Report for 1986 stated that "Ocracoke roads and parking areas constructed, surfaced,



FIGURE 2–121. Driveway, 1960. (NPS/CAHA Collection)

and/or resurfaced." Although it does not identify the light station specifically, it seems likely parking area construction occurred in 1986 or shortly thereafter. In July 2001, the NPS submitted NHPA Section 106 compliance to expand the parking area to meet DOT standards.[107]

The NPS built a plank boardwalk outside the picket fence that led from the parking area to a gate

107 T.N. Miller, Property Officer, Fifth Coast Guard District to Tom Hartman, Superintendent, Cape Hatteras National Seashore, May 19, 1986; "Narrative Report on the Findings of Historic Structure Examination Conclusions and Recommendations," 5; Superintendent, Cape Hatteras Group to Mac Basnight and Jim Henning, February 26, 1986, Accession 191, Catalog 5037, Box 1, Folder 1, NPS/CAHA Collection; Assessment of Actions Having an Effect on Cultural Resources, July 23, 2001, Accession 229, Catalog 5511, Folder 10, NPS/CAHA Collection; and Superintendent's Annual Report, 1986, 10.

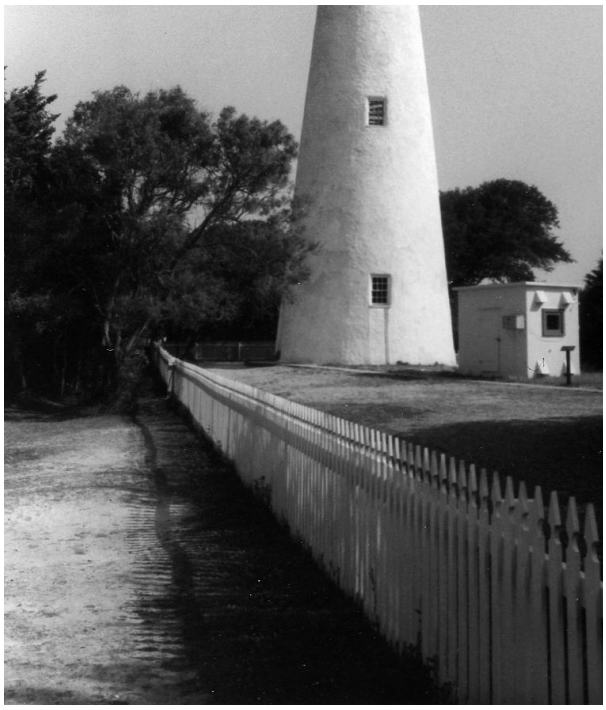


FIGURE 2–122. Prior to the construction of the boardwalk, 1984. (NPS/CAHA Collection)



FIGURE 2–123. After construction of the boardwalk, 1994. (NPS/CAHA Collection)

in the picket fence. Once inside the fence, visitors walked up to the front door of the lighthouse. Images of the station indicate that the boardwalk was first laid between 1984 and 1994. After Hurricane Isabel struck in 2003 and damaged the boardwalk, an incident recovery team from the North Carolina Forestry Service rebuilt it as a raised boardwalk with handrails without going through the compliance process. It was extended all the way up to the door of the lighthouse in 2010.



FIGURE 2–124. Before extension of boardwalk, n.d. (NPS/CAHA Collection)



FIGURE 2–125. Boardwalk with raised handrails, 2005. (NPS/CAHA Collection)



FIGURE 2–126. Extension of boardwalk, 2010. (NPS/CAHA Collection)

Roadways

Until the 1950s, there were no paved roads linking Ocracoke to the islands to the north. It was a long journey through thirteen miles of sand tracks to board the Hatteras Inlet ferry and then cross all of Hatteras Island to arrive at the Oregon Inlet ferry. One villager remarked that "it was like going on a safari across a desert to get to Manteo." A 1927 map of Ocracoke village shows a crude network of dirt roads that became more refined by the late 1940s. In 1938, a villager began a taxi service to Hatteras Inlet, navigating sand paths in a station wagon. The Navy built the first concrete road on the island during World War II. The 1950 United States Geologic Survey (USGS) map shows a larger network of unimproved dirt roads throughout the island, with a few improved dirt roads in the heart of the village. An unimproved dirt road linked Ocracoke with Hatteras Island to the north.[108]

While roads and bridges had been completed north of Hatteras Inlet in the early 1950s, the extension of the road from Hatteras to Ocracoke village via a ferry joining the south end of Hatteras to the north end of Ocracoke lagged behind. The difficulty of

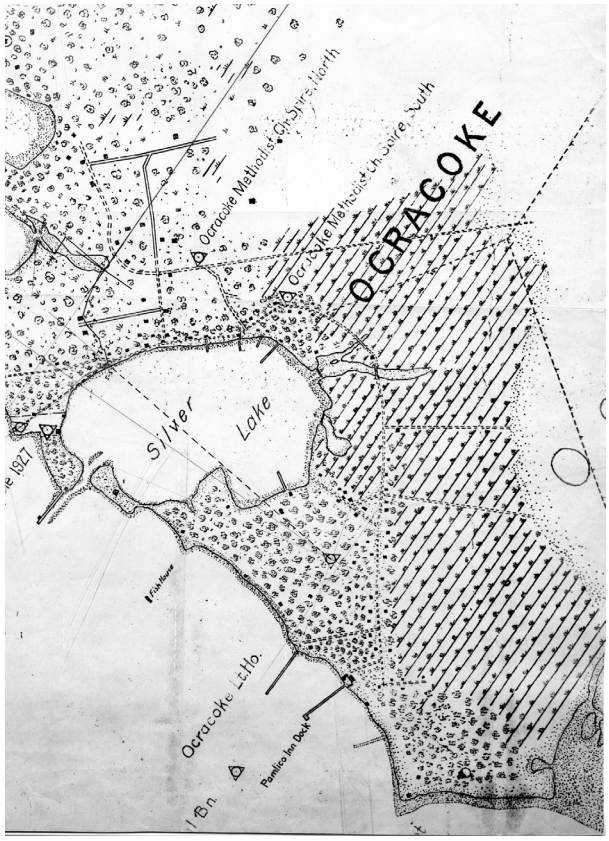


FIGURE 2–127. Map showing network of roads on Ocracoke, 1927. (NPS/CAHA Collection)



FIGURE 2–128. Aerial image showing network of roads, 1936. (NPS/CAHA Collection)

108 Impact Assessment, Inc., *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore,* 377–79.

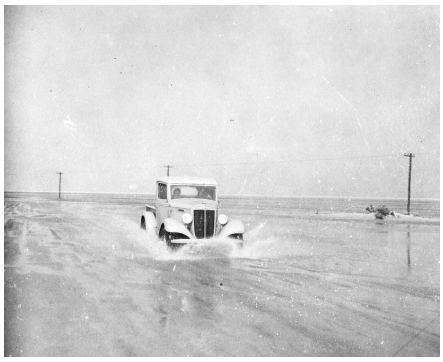


FIGURE 2–129. Driving on the beach at Ocracoke, 1936. (NPS/CAHA Collection)



FIGURE 2–130. 1950 Ocracoke Quadrangle. (Reprinted from USGS Historic Topographic Map Collection)

constructing a paved road on the island's sandy and unstable soils was complicated by outside groups' opposition to paved roads on the island. In 1955, North Carolina Governor Luther H. Hodges made $300,000 available to construct a road across the island, declaring to the island residents, "you must have outlets."

The NPS announced an effort in 1956 to rebuild and stabilize the National Seashore's protective dune system. The purpose was to protect highways and other improvements, but dune stabilization was a slow process. As the state struggled to complete the road in 1957, the NPS borrowed fifteen thousand steel landing mats from the Navy to use over a three-mile section of road on the northern end of Ocracoke to move traffic between the end of the paved road from Ocracoke village to the landing where ferries would leave for Hatteras Island. As soon as the road to Ocracoke was completed, the North Carolina Highway Commission began ferry service from Hatteras Island.[109]



FIGURE 2–132. Bridge construction on Ocracoke, 1957. (NPS/CAHA Collection)



FIGURE 2–131. Building the road on Ocracoke, 1956. (NPS/CAHA Collection)



FIGURE 2–133. Road at the north end of Ocracoke, 1966. (NPS/CAHA Collection)

109 Binkley, *The Creation and Establishment of Cape Hatteras National Seashore,* 134–36.



FIGURE 2–134. Ferry at the north end of Ocracoke, 1966. (NPS/CAHA Collection)

Vehicle Ramps

As the work continued on dune stabilization, vehicular access to the beaches, specifically vehicle ramps, became a topic of discussion. In 1963, NPS Director Conrad Wirth wrote Congressman Herbert Bonner explaining that more vehicle ramps would jeopardize NPS dune stabilization efforts. Eighteen ramps allowed commercial fishermen who were legal residents of the village to continue to use vehicles to fish from the shore, as they had done historically. Wirth pointed out that these ramps also allowed the public motorized access to the beach. According to Wirth, "past history has shown that each vehicular access is a vulnerable spot for the ocean to break through and cause extensive damage to the barrier dune and natural features of the area."[110]



FIGURE 2–135. Vehicle ramps, 1959. (NPS/CAHA Collection)

Small-Scale Features

Fencing

Fencing on the Outer Banks would probably have been picket, brush, or post-and-rail. Outer Banks residents rarely used Virginia or worm fences, which were popular on the mainland but required more wood and space. Because there was still open range grazing on the island into the 1950s, most Ocracoke villagers fenced their properties. A hierarchy of fencing resulted, with more decorative



FIGURE 2–136. Open grazing, 1956. (NPS/CAHA Collection)

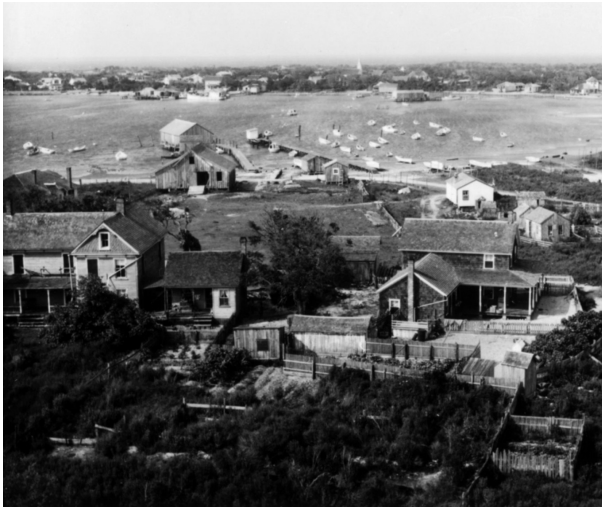


FIGURE 2–137. Aerial view of fence types seen from the lighthouse, 1936. (NPS/CAHA Collection)

110 Binkley, *The Creation and Establishment of Cape Hatteras National Seashore,* 179.

paling fences used close to the dwelling and more utilitarian fences used farther away.[111]

A fence enclosed the Ocracoke Light Station, described in 1883 maintenance records as a "ttt fence" when it was replaced. It was shown on the 1890 site plan and documented in images taken by Bamber in 1893. It was recorded on all the site plans for the property and had an entrance gate on the south and another gate at the north end of the property.

In 1904, the Light-House Board erected 324 running feet of fencing. It is not known if this was new fencing or replacement fencing. From Keeper Austin's log book we know the following tasks were completed:

- 1913: repaired fence planks in May, but a hurricane in September blew down part of the fence; whitewashed fence.
- 1916: whitewashed the fence.
- 1920: replaced the fence posts and pickets.[112]

Between 1944 and 1952, the picket fence line on the west was moved in towards the dwelling and a garage and shed constructed flush with the new fence. Other fencing at the site included a board-and-wire fence that enclosed the chicken house and carpenter shop. As recorded on images from 1987, pickets were missing from sections of the fence along the north, west, and east perimeter.



FIGURE 2–138. Picket fence (west) after addition of garage and shed, 1952. (NPS/CAHA Collection)



FIGURE 2–139. Picket fence (west), 1985. (NPS/CAHA Collection)



FIGURE 2–140. Rear gate (north), 1985. (NPS/CAHA Collection)



FIGURE 2–141. Picket fence (east), 1987. (NPS/CAHA Collection)



FIGURE 2–142. Picket fence (west), 1987. (NPS/CAHA Collection)

111 Dunbar, *Historical Geography,* 126.

112 Cloud, *Ocracoke Lighthouse,* 7, 17, 25–26.



FIGURE 2–143. Picket fence (west), 2005. (NPS/CAHA Collection)



FIGURE 2–144. New pickets installed in 2010. (NPS/CAHA Collection)

The NPS replaced these pickets as part of the work completed at the site between 1987 and 1988. Superintendent Hartman stated: "It's a tedious, time-consuming job. There are thousands of pickets. Yet, when you arrive at the Lighthouse grounds, the shiny white fence is the first thing that strikes you."[113]

Around 2001, the NPS moved the southern fence line forward in order to expand the parking area. In 2010, the NPS replaced the wooden pickets in kind along the entire fence. In conjunction with work on the lighthouse that occurred at the same time, a contractor replaced the existing front gate with an automatic gate because he felt it was too difficult to enter and exit the site. This work was done without NHPA Section 106 compliance.[114]

Concrete Curbing

Historically, there were no foundation plantings around the double keepers' quarters or

113 "Ocracoke Lighthouse Keeper's Quarters to be Restored," July 17, 1987, Accession 191, Catalog 5037, Box 1, Folder 1, NPS/CAHA Collection.

114 Assessment of Actions Having an Effect on Cultural Resources, July 23, 2001, Accession 229, Catalog 5511, Folder 10, NPS/CAHA Collection; Doug Stover, personal communication.



FIGURE 2–145. Storehouse before addition of edging, 1995. (NPS/CAHA Collection)



FIGURE 2–146. Storehouse after addition of edging, 2010. (NPS/CAHA Collection)

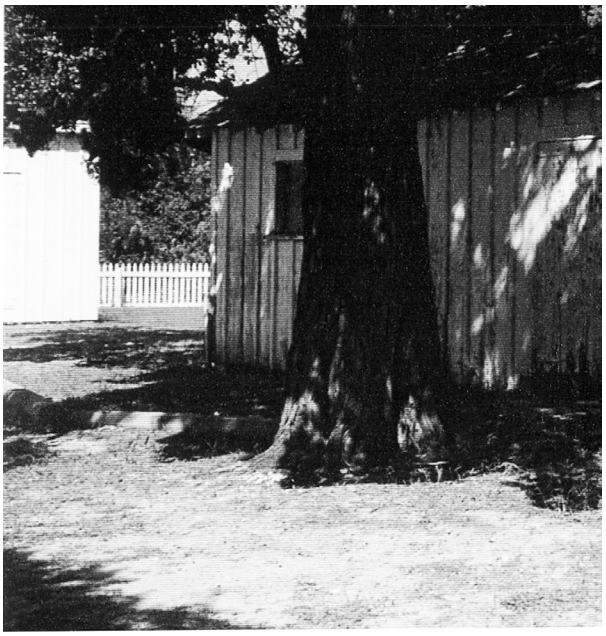


FIGURE 2–147. Concrete parking blocks north of the double keepers' quarters, 1994. (NPS/CAHA Collection)

outbuildings. Beds flanking the front entrances of the double keepers' quarters containing ornamentals were added at some point after 1952 when images show no foundation plantings. NPS staff added modern edging to the storehouse and double keepers' quarters at some point before 2005, when images show edging outlining beds with foundation plantings. Concrete parking blocks added north and south of the double keepers' quarters delineated parking spaces.

Telephone Poles

Telephone poles were installed inside the station in April 1916. A telephone in the office followed in October.[115]

Boundary Markers

One concrete boundary marker is located at the northeast corner of the property.

Views and Vistas

Unlike the open, windswept views of the Bodie Island Light Station, views at Ocracoke would have been influenced by the residential character of the surroundings and the abundance of vegetation within the site. Views west would have been open to the adjacent marsh/wetlands, but other views would have been obstructed by vegetation and buildings. Views out of the light tower would have been unobstructed across Silver Lake to the north, to Pamlico Sound to the west, and to Teaches Hole to the south taking in the residences surrounding the light station. (See figures 2-150 through 2-153).

Views of the light tower were important to the community. In 1988, the USCG decided not to replace the generator that kept the lighthouse lit when there was a power failure, which was a common occurrence on Ocracoke. Instead they placed battery-operated navigational lights on the gallery hand rails. Not only were they visually intrusive, but they were inadequate to light the tower when a power outage occurred. The village objected, and the USCG eventually agreed to remove the lights and replace the generator after meetings with community activists and the NPS and intervention by Congressman Walter P. Jones.[116]

115 Cloud, *Ocracoke Lighthouse,* 31.

116 Cloud, *Ocracoke Lighthouse,* 52–53.



FIGURE 2–148. Telephone poles, 1960. (NPS/CAHA Collection)



FIGURE 2–149. Boundary marker, 2013. (NPS/CAHA Collection)

Natural Systems and Features

The Outer Banks of North Carolina refer to a thin slice of land separated from the mainland by a large expanse of shallow water, comprising the Albemarle, Croatan, and Pamlico Sounds. The formation of these barrier islands began fifteen thousand years ago when the ocean level was 300 feet lower than today and North Carolina's coastline extended fifty to seventy-five miles east of its present location. Winds from the west piled up sediment to create a large dune at the easternmost edge of the continental landmass. Then, as glaciers melted and the sea level rose, the dunes became barrier islands paralleling the coastline. Although the sea continues to rise, the Outer Banks have slowly moved to the west and remained intact because of the unique combination of wind, waves, and weather.[117]

Inlets

By protruding so far into the Atlantic, the Outer Banks are particularly vulnerable to hurricanes and storms that continually resculpt the fragile

117 Oppermann, *Bodie Island Light Station Double Keepers Quarters HSR*, 7.



FIGURE 2–150. View across Silver Lake, 1936. (NPS/CAHA Collection)



FIGURE 2–151. Similar view across Silver Lake, 1956. (NPS/CAHA Collection)



FIGURE 2–152. View west to Pamlico Sound, 1956. (NPS/CAHA Collection)



FIGURE 2–153. View south to Teaches Hole, 1956. (NPS/CAHA Collection)

landscape. Inlets form when storm surge and high waves drive water across the islands to the sounds, or vice versa from sound-side flooding/surges. Ocracoke villagers have witnessed the cutting of new inlets from hurricanes: "When it gets by Cape Hatteras the wind will shift back to the northwest and here will come all this water out of the sound and the inlet won't take care of it as fast as it should." As the seawater moves into areas of progressively lower topography, channels form and may erode to the depths that permit a reverse flow (sound to sea) during ebb tide. Most such inlets are temporary features that only last a few days. Historical records dating from 1585 document more than twenty-four different inlets cutting across the Outer Banks at various times. Geographic formations indicate that almost half of the Outer Banks has been covered by inlets at one time or another. During the past 125 years, three inlets remained open as dominant waterways along the coast: Ocracoke, Hatteras, and Oregon.[118]

Sand Dunes

All mid-Atlantic barrier islands have natural dunes of various sizes landward of the beach, formed when sand particles are transported by wind across the beach face and deposited within the overwash flats and vegetated zones, which trap and stabilize the sediment. The oldest and largest dunes on the Outer Banks date to 3,000 to 4,000 years ago. As the islands were forming, alternating periods of erosion and accretion resulted in the development of parallel dune ridges with depressions or swales between them. These dunes were covered with maritime forests of pine and oak.[119]

A characteristic island configuration is: a broad beach, a dune field, overwash terraces, and a fringing marsh on the sound side of the island. Early settlement patterns on the sound side of the island reflected an awareness of the hazards associated with erosion and storm overwash. During the 1930s and late 1950s, stabilization efforts focused on the construction of sand fences to control these forces of nature. Trapped wind-blown sand formed an unbroken chain of barrier dunes, which were planted with vegetation to further stabilize them. Consequently, all but the most severe storm overwashes were contained seaward of the barrier dunes. These efforts changed the Outer Banks from a system dominated by natural processes to a stabilized system and allowed rapid development seaward to the barrier dunes. One major difference between stabilized barrier islands and natural barrier islands is the change in vegetation patterns that results when the stabilized dune line stops overwash and salt spray and enables vegetation, which usually grows farther away from the natural beach, to survive on its backslope.[120]

Archeological Resources

SEAC monitored work being done on the double keepers' quarters in June 1987. In order to create sufficient crawl space for making repairs to the sub-flooring, "drift" sand was removed by a commercial sand vacuum truck. SEAC uncovered cultural materials from several locations within the areas monitored. After removal of drift sand from the 1929 wing, at a depth of about 2½ feet below the flooring, archeologists recovered loose bricks with a soft mortar. At a depth of about 3 feet below the flooring, a pre-addition midden dating to the mid-nineteenth century was observed and left *in situ*. In removing the sand from an addition to the 1929 wing, archeologists discovered that the western half of the crawl space lies upon the slabs of an earlier concrete walk. Archeologists also monitored a series of utility trench excavations that included both hand and machine methods. All of the areas monitored, with the exception of the 1929 wing, appeared to be light-to-moderate redepositions of materials with little potential for providing insight into domestic activities at the keepers' quarters.[121]

Land Use

The need for navigational aid south of Cape

118 Hartramph Inc./Office of Jack Pyburn, Bodie Island Lighthouse Historic Structure Report (Atlanta, GA: Southeast Regional Office, 2004), 7; Dolan and Lins, *The Outer Banks of North Carolina,* 8; Impact Assessment, Inc., *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore,* 401.

119 Dolan and Lins, *The Outer Banks of North Carolina,* 16.

120 Ibid., 26, 35–36.

121 Paul Y. Inashima, "Archeological Monitoring Report Sand Removal and Utility Trench Excavation a the Ocracoke Light Station Keeper's Quarters," 1987, Accession 360 Catalog 5608, Folder 6, NPS/CAHA Collection.

Hatteras prompted the Department of the Treasury to build the Ocracoke Lighthouse in 1823. As a result, lighthouse keepers and their families lived at the Ocracoke Light Station until 1954. In 1939, the Lighthouse Service was incorporated into the USCG. A major change to the operation of the light occurred in 1946, when the USCG automated the light. In the 1950s, the NPS entered into a use agreement with the USCG and began using the light station buildings as a base of operations, protection, and interpretation. In 1999, the USCG transferred the light station and lighthouse to the NPS as part of the Cape Hatteras National Seashore. The NPS maintains the lighthouse as a functioning aid to navigation, and the USCG owns the lens.

Land use as part of the Cape Hatteras National Seashore has also included recreation, interpretation, law enforcement, maintenance, and administration.

Ethnography

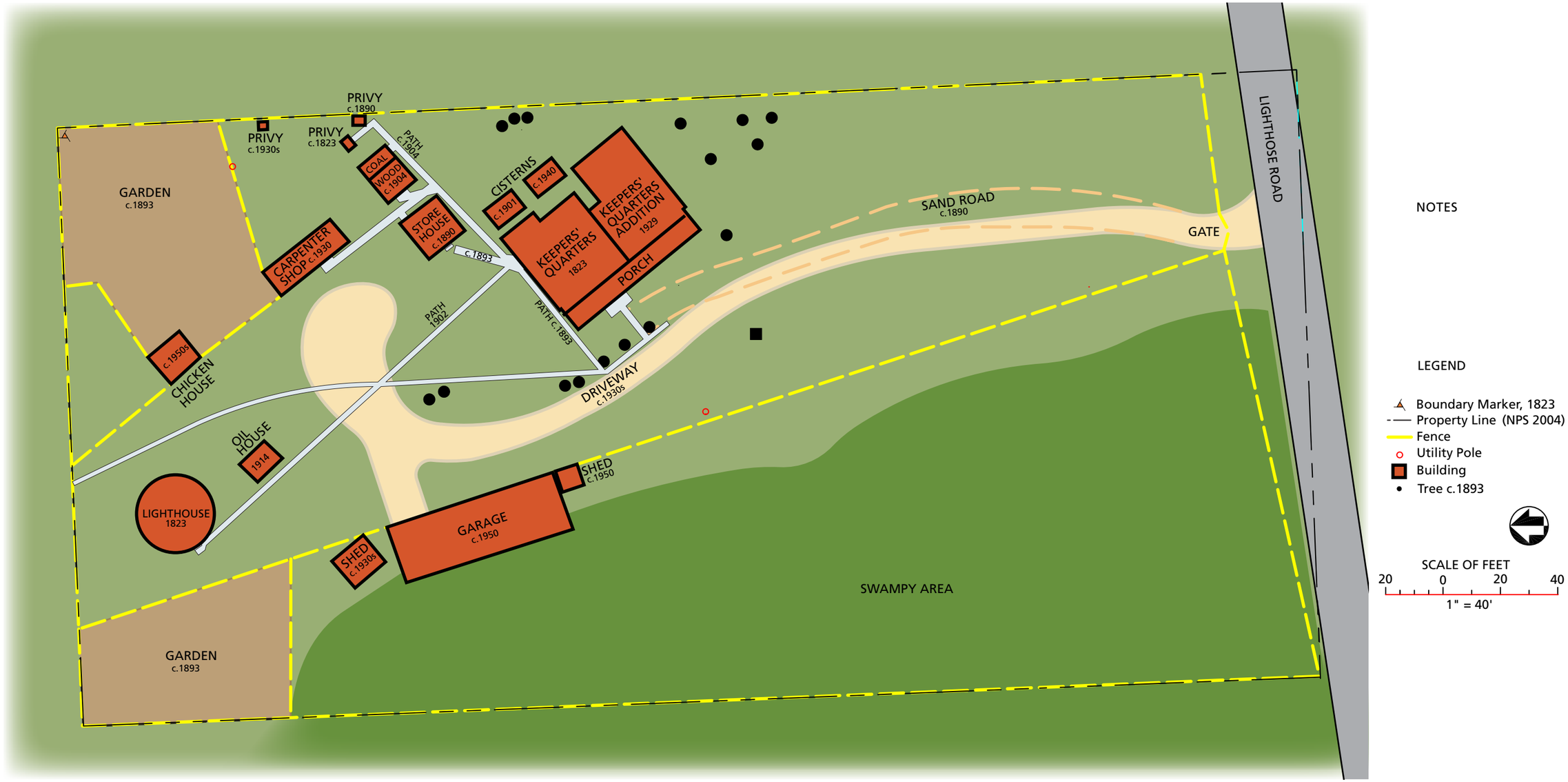
From the earliest times of permanent settlement, fishing was a primary occupation on the Outer Banks. The use of small boats and local modifications in gear became Outer Banks folkways, largely because of the shallowness of the sounds. Light keepers and lifesavers became increasingly important after the Civil War, and this was especially true on Ocracoke Island, which had both a light station, a lifesaving station, and later a Coast Guard station.

According to the census of 1810, the Shell Castle Island outpost had a population of eighteen whites and ten enslaved people of African descent. These maritime slaves were skilled watermen who piloted vessels across shoals into Portsmouth harbor or across the Pamlico Sound to New Bern or Edenton. They also sailed to Cape Lookout as part of the jumping mullet and porpoise fishery encampments.[122]

After the fall of Roanoke Island in 1862, freed slaves flocked to the north end of the island and built more than 500 houses on land appropriated for their use. With most of the able-bodied men drafted into Federal service, however, the community was left with mostly women, children, and elderly men. Acting on an order issued in 1865, the Assistant Commissioner for Freedmen's Affairs, concerned that the community could not make it through the winter, reported in November 1866 that land would be restored to the former owners in order to compel the freed blacks on Roanoke Island to leave and seek employment.[123]

122 Impact Assessment, Inc., *Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore,* 409.

123 Dunbar, *Historical Geography,* 105–107; David Stick, *Dare County: A Brief History* (Raleigh: North Carolina Division of Archives and History, 1970), 26; Stick, *The Outer Banks of North Carolina*, 166.



NOTES

LEGEND

- Boundary Marker, 1823
- Property Line (NPS 2004)
- Fence
- Utility Pole
- Building
- Tree c.1893

SCALE OF FEET
20 0 20 40
1" = 40'

CULTURAL LANDSCAPE LABORATORY
UGA College of Environment + Design
SERO CULTURAL LANDSCAPES

Drawn by: Fielding Link (NPS-SERO/UGA-CLL)

FIGURE 2–154. Ocracoke Light Station Historical Site Map. (NPS/UGA)

Existing Conditions

This chapter reflects existing conditions observed on site visits in July 2013 and August 2014.

Spatial Organization

The two-acre light station is located on the southwest end of the seventeen-mile-long Ocracoke Island, which extends southwest from Hatteras Inlet to Ocracoke Inlet between Hatteras and Portsmouth Islands. It is part of the village of Ocracoke, the southernmost community associated with the Cape Hatteras National Seashore in Hyde County, North Carolina. NC 12 connects the village of Ocracoke with Hatteras Island to the north.

A crushed gravel/asphalt parking area that can accommodate six cars (five regular spaces and one accessible space) is the only parking currently available at the Ocracoke Light Station. There is



FIGURE 3–2. Ocracoke Light Station, 2013. (© Joseph K. Oppermann - Architect)

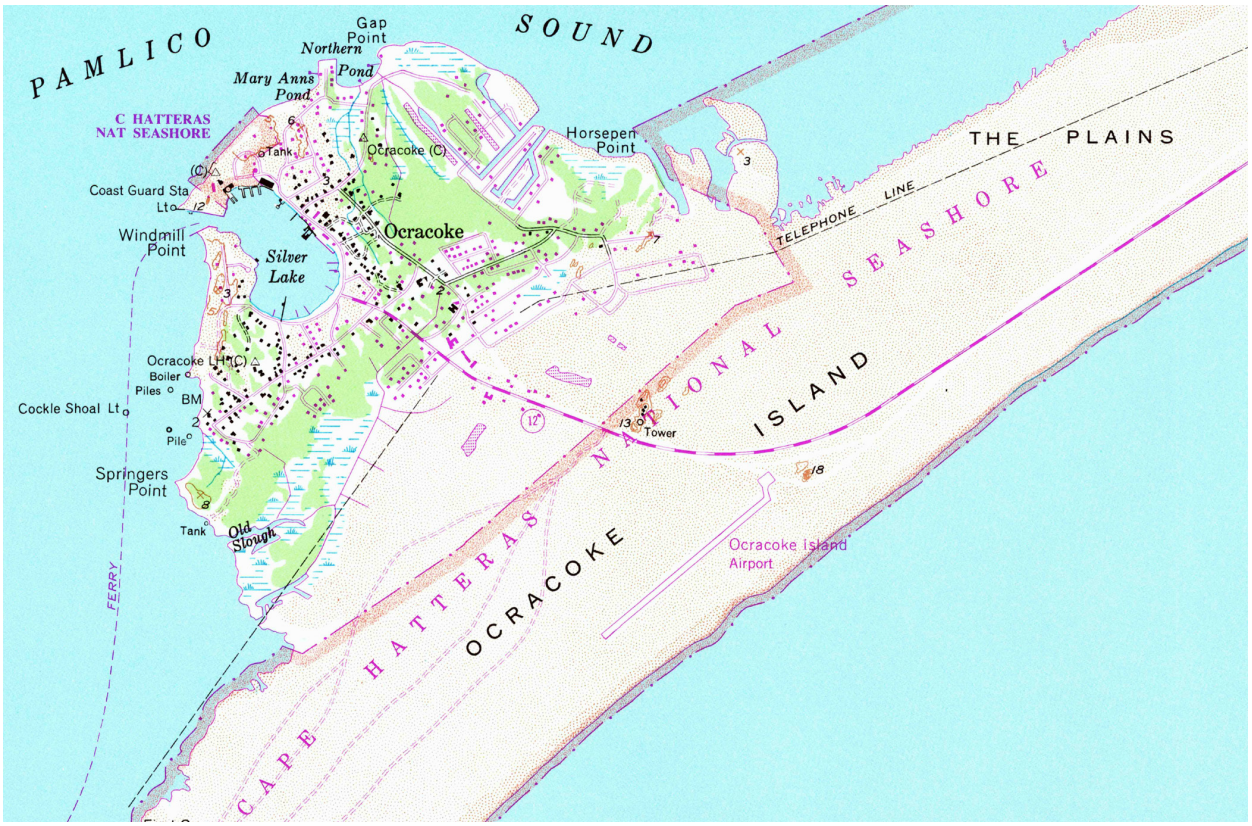


FIGURE 3–1. USGS quadrangle map of Ocracoke Island, 1983. (US Geological Survey)

no overflow parking. Visitors park here and walk to the lighthouse via a boardwalk adjacent to the parking area. The lighthouse is only open to the public when a volunteer is present to greet visitors and can show them the inside of the lighthouse. The remainder of the light station is closed to visitors at this time.



FIGURE 3–3. Parking area, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–4. Boardwalk to lighthouse, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–5. Front entry gate, 2014. (NPS/SER-CRPS Collection)

NPS personnel enter the site through an automatic gate with an entry code and park in front of concrete curbing north of the double keepers' quarters. NPS personnel living in the south apartment of the double keepers' quarters park in areas delineated by another set of concrete parking blocks. Paved concrete walks connect most of the buildings on site with each other and the lighthouse.

The two-acre station is dominated by the seventy-five-foot brick lighthouse. A concrete walkway links the tower, oil house, and the double keepers' quarters. The axial layout of the site is preserved by the surviving walkways, now paved in concrete. On the northeast side of the keepers' quarters,



FIGURE 3–6. Parking north of the double keepers' quarters, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–7. Ocracoke Lighthouse, 2014. (NPS/SER-CRPS Collection)

one original outbuilding (storehouse), a carpenter shop, and two cisterns survive, linked by concrete walkways. A reconstructed privy is located northeast of the storehouse along the property line.

Modern visitor amenities include a raised wooden boardwalk with rails that was extended all the way up to the door of the lighthouse in 2010.



FIGURE 3–8. Historic concrete walkways, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–9. Looking south toward the storehouse, carpenter shop, and cisterns, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–10. Privy, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–11. Looking back at the parking lot from the end of the boardwalk, 2013. (NPS/SER-CRPS Collection)

Topography

Barrier Islands

A typical cross section of a natural barrier island shows several characteristic features. Storm waves and tides carried sand and shells from the beach face to form a broad berm that slopes gently toward the interior of the island. This wide, bare berm serves as a buffer zone in which the wave energy of a moderate storm can be dissipated. Small dunes form on the berm between storms. Behind the wide berm is a zone of low, irregular dunes. Storm tides carry sand into the interior of the island through the depressions between dunes. The dunes form as sand accumulates around salt marsh cordgrass (*Spartina patens*) and sea oats (*Uniola paniculata*). Behind the dunes, storms leave a series of overwash terraces. The distribution of plants found on these flats depends on the elevation of each terrace above sea level. Broad salt marshes border the sound side of the barrier island.

Stabilized barrier islands have an altered beach, dune, and marsh morphology. The most striking difference, other than the artificial barrier dune system, is a much narrower beach width. The stabilized dune line stops storm overwash and salt spray, allowing plants that usually grow farther away from the natural beach to survive on the back slope.[1]

Ocracoke Light Station

The station is set back from the marshy Pamlico

1 Dolan and Lins, *The Outer Banks of North Carolina*, 33–35.

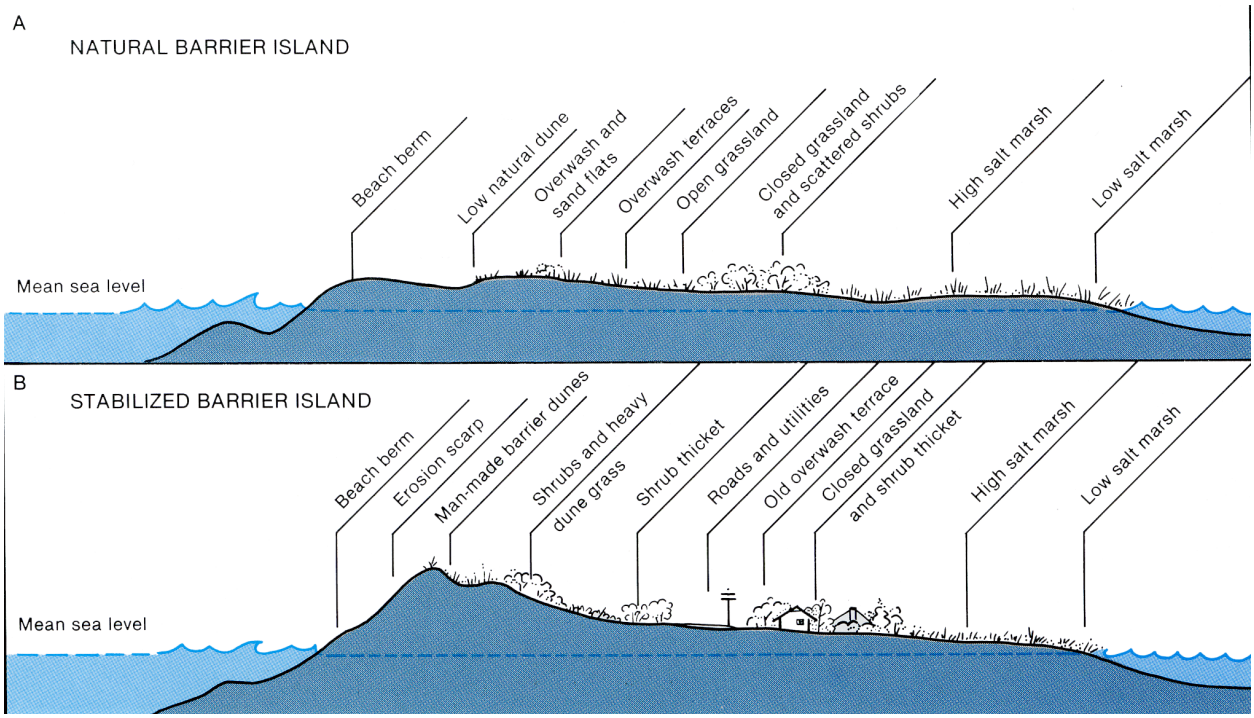


FIGURE 3–12. Natural vs. stabilized barrier island cross section. (Reprinted from Dolan and Lins, *The Outer Banks of North Carolina*)

Sound to the west and Silver Lake to the north. The general topography of the site is relatively level with a slight rise in elevation in the direction of the lighthouse. Sandy soil conditions predominate, promoting excellent vertical drainage. The double keepers' quarters is sited within a low area with poor horizontal natural drainage. A drain field for the septic system is sited east of the light house.[2]

Ocracoke Light Station Soils

Soils surrounding the Ocracoke Light Station fall into two categories: Duckston fine sand (DuA) and Corolla sand (CrB). The Hyde County Soil Survey describes Duckston fine sand to be nearly level, poorly drained soil occurring on flats and depressions on Ocracoke Island. Areas are elongated in shape and range from 5 to 500 acres in size with rare flooding.

Duckston is classified mainly as habitat for wildlife. It is not suitable for cropland or woodland because of wetness and exposure to salt spray. It is not generally used for urban or recreational development because of wetness, seepage, and flooding.

Intermingled areas of Corolla soils and Newhan soils are found on hummocks, Carteret soils are adjacent to salt marshes, and small areas pond for very brief periods.

Corolla soils are nearly level or undulating, moderately well drained or somewhat poorly drained soils found in areas between dunes and next to depressions and sloughs on Ocracoke Island. Areas are elongated in shape and range from 10 to 200 acres with rare flooding.



FIGURE 3–13. Unmown grass on drain field, 2013. (NPS/SER-CRPS Collection)

2 "Narrative Report on the Finding of Historic Structure Examination," December 30, 1986, Accession 191, Catalogue 5037, Box 1, Folder 1, CAHA Collection.

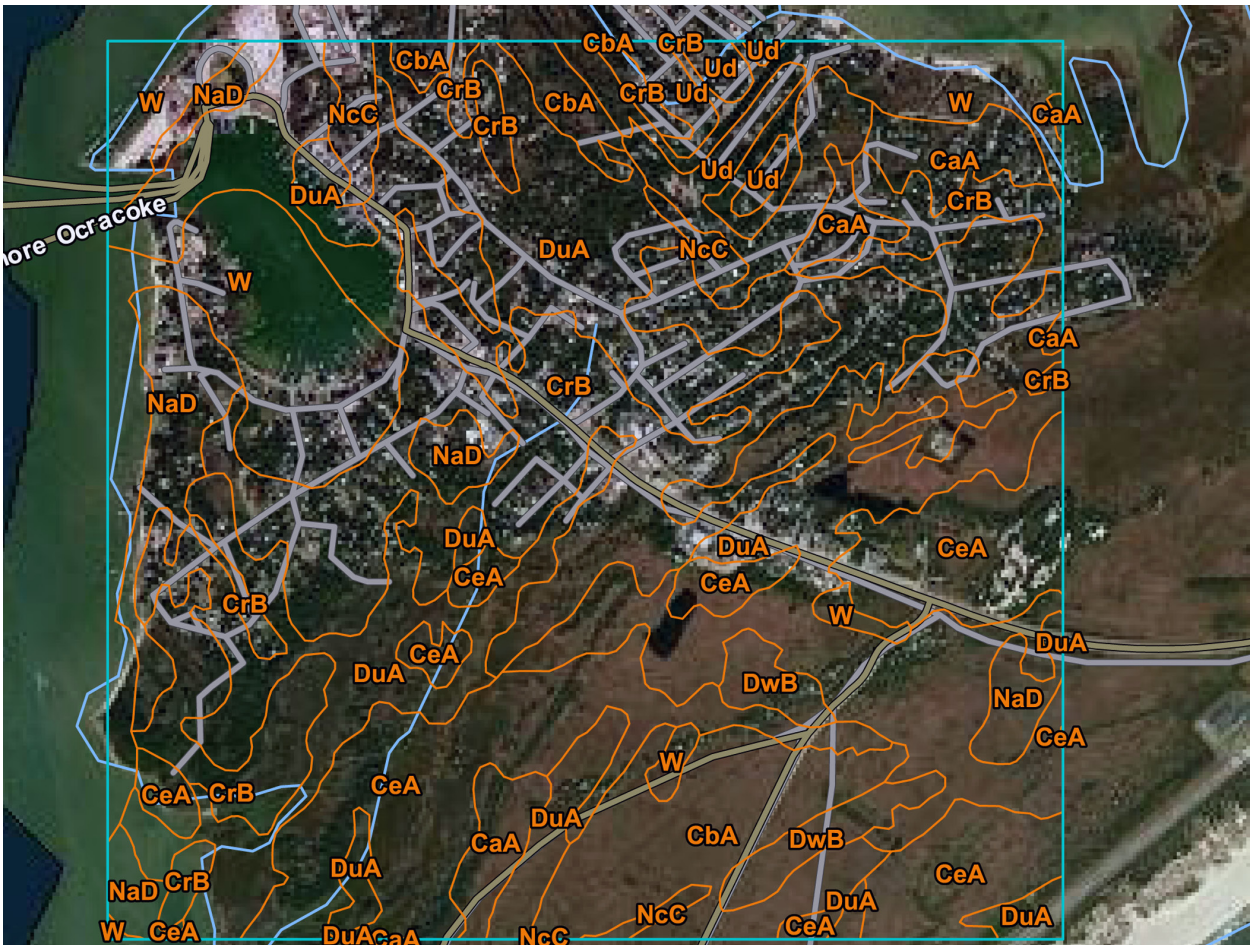


FIGURE 3–14. Hyde County soil map, 2014. (Natural Resources Conservation Service)

Corolla soils are classified mainly as habitat for wildlife. They are not suitable for cropland or woodland because of exposure to salt spray, flooding with salt water, and droughts. They are not generally used for urban or recreational development because of wetness, soil blowing, poor filtering capacity, seepage, and rare flooding from strong storms and hurricanes.

Intermingled areas of the poorly drained Duckston soils are found in sloughs and depressions, areas of the excessively drained Newhan soils on hummocks, and the very poorly drained Carteret soils near the edge of salt marshes.[3]

Vegetation

Ocracoke Light Station

The immediate grounds of the station are a choppy mix of centipede grass (*Eremochloa ophiuroides*), clover (*Trifolium* spp.), marsh pennywort (*Hydrocotyle* spp.), and other forbs in a setting of live oaks and eastern red cedars that have been documented since 1893. In August 2014, there were ten live oaks on the south side of the double keepers' quarters, four on the west side, five on the north side, and four on the east side. On the west side were six cedars and one on the north side. Images into the 1950s show the trees around the double keepers' quarters whitewashed as was done



FIGURE 3–15. Live oaks with painted trunks, 1954. (NPS/CAHA Collection)

3 National Cooperative Soil Survey, *Hyde County Soil Survey* (Washington, DC: U.S. Department of Agriculture, 1991), 41–45.



FIGURE 3–16. Choppy mix of forbs and grass, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–17. Live oaks and cedars looking towards the parking lot, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–18. Live oaks and cedars looking towards the double keepers' quarters, 2014. (NPS/SER-CRPS Collection)

historically.

Two bald cypresses (*Taxodium distichum*) are located north of the privy. It is unknown when these trees were planted, although their size suggests that they are twentieth-century trees of less than one hundred years.[4] A vegetable and cut flower garden is located south of the privy along the back fence, but it was not planted in August 2014. In July 2013, it included tomatoes, corn, lilies, and sunflowers. Ornamentals planted inside beds adjacent to the double keepers' quarters and storehouse included: hollies (*Ilex* spp.), hydrangea (*Hydrangea macrophylla*), azalea (*Rhododendron* cvs.), loquat (*Eriobotrya japonica*), gladiolus (*Gladiolus* cvs.), thorny elaeagnus (*Elaeagnus pungens*), lantana (*Lantana camera*), rose (*Rosa* cvs.), rosemary (*Rosmarinus officinalis*), daylilies (*Hemerocallis* cvs.), black-eyed Susan (*Rudbeckia* sp.), Morning Glory (*Ipomoea* sp.), and a chinaberry (*Melia azederach*) volunteer. These ornamentals are not historic and have been planted by various NPS staff living in the dwelling. Individual trees have been reduced over the years by various storms or natural decline.



FIGURE 3–19. Bald cypresses, 2013. (NPS/SER-CRPS Collection)

4 Personal communication, Sarah Corbett Heath.



FIGURE 3–20. Vegetable garden, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–21. Double keepers' quarters before the addition of ornamentals, 1987. (NPS/CAHA Collection)



FIGURE 3–22. Double keepers' quarters after the addition of ornamentals, 1994. (NPS/CAHA Collection)

A vegetation survey was conducted for the park in 2010. It did not include the developed area of the light station and Ocracoke village, but park staff performed a quick assessment in May 2014. Aside from the human-altered and -maintained areas directly adjacent to the lighthouse, vegetation based on U.S. National Vegetation Classification System includes:

Maritime Evergreen Forest

The vegetated area to the north and east of the lighthouse primarily consists of Maritime Evergreen Forest, dominated by live oak and eastern red cedar. Understory and shrub species include: *Persea borbonia* (redbay), *Morella cerifera* (wax myrtle), and *Ilex vomitoria* (yaupon holly). This community is common throughout the village of Ocracoke.



FIGURE 3–23. Vegetation to the north of the lighthouse, 2013. (NPS/SER-CRPS Collection)

Brackish Marsh

The area to the west and southwest of the lighthouse consists of two types of brackish marsh. One is a Needlerush High Marsh, which is heavily dominated by *Juncus roemerianus* (black needlerush). The other is a Southern Cattail Seasonally Flooded Temperate Herbacious Alliance, which is dominated by *Typha domingensis* (southern cattail). Other herbaceous species found in this community type include: *Cyperus* spp. (flatsedge), *Mikania scandens* (climbing hempvine), *Schoenoplectus* spp. (bulrush), *Hibiscus moscheutos* (swamp rose-mallow), and *Eleocharis* spp. (spikerush). Interspersed shrubs include wax myrtle and *Baccharis halimifolia* (eastern baccharis).[5]



FIGURE 3–24. Area to the west of the lighthouse, 2013. (NPS/SER-CRPS Collection)

5 Sara Strickland, personal communication, 2014.

Buildings and Structures

Ocracoke Lighthouse (LCS 000016)

The brick lighthouse stands about seventy-five feet tall. Its diameter narrows from twenty-five feet at the base to twelve feet at its peak. A round lantern crowns the tower and houses the Fresnel lens. The building has a modern vertical board door of historic design. North, south, and east sides each have two 6-over-6 sash windows. A metal rail circles the lantern balcony at the top. The exterior of the lighthouse is coated in shotcrete and painted white. Numerous repair projects were completed that returned the structure to good condition in 2011.



FIGURE 3–25. Ocracoke Lighthouse, 2014. (NPS/SER-CRPS Collection)

Double Keepers' Quarters (LCS 007237)

The original building was a one-story dwelling (keeper's quarters) with a gabled roof. A second story and shed-roofed front porch were part of alterations made in 1897 and the building's footprint doubled in 1929 (double keepers' quarters). The building currently contains two apartments for staff housing. The 2016 HSR completed by Joseph K. Oppermann contains a comprehensive physical description of the building and developmental history.[6]



FIGURE 3–26. Double keepers' quarters, 2014. (NPS/SER-CRPS Collection)

Concrete Oil House (LCS 091909)

A rectangular cast-in-place concrete building that measures approximately 8 × 11 × 9.7 feet with a low-sloped shed roof, also of cast-in-place concrete. The west façade has a sheet metal door; historic wood-framed window openings with modern thermal false six-light sash are centered on the north, south, and east façades. Four vent openings, one in each corner, are on both the north and south elevations. The building currently serves as a generator building for the lighthouse. The structure received a new roof and was painted in



FIGURE 3–27. Concrete oil house, 2013. (NPS/SER-CRPS Collection)

6 Oppermann, *Ocracoke Light Station HSR*, 53-73.



FIGURE 3–28. Cisterns, 2005. (NPS/CAHA Collection)



FIGURE 3–29. Cisterns, 2014. (NPS/SER-CRPS Collection)

2010.

Cisterns (LCS 091911)

Two brick and concrete structures with shed roofs that measure approximately 8 × 12 feet stand on the east side of the double keepers' quarters. The northern cistern is brick with a cast-concrete cap. The southern cistern is cast-in-place concrete with a cast-concrete cap. HVAC units sit atop the south cistern deck. The structures received a new roof and were painted in 2010 to bring their condition to good from fair. The cisterns are no longer connected to the gutters.

Storehouse/Carpenter Shop

Storehouse (LCS 091907). A one-story building that measures 16 × 16 × 14.8 feet with a front gabled roof with boxed cornice and board-and-batten siding. East and west sides have modern aluminum six-panel doors. Five 6-over-6 light modern thermal sash windows provide natural



FIGURE 3–30. Storehouse, 2014. (NPS/SER-CRPS Collection)

light to the interior. All windows have aluminum-framed single-sash storm windows. Foundation is brick pier and roof is wood shingles. The structure received a new roof and was painted in 2010 to bring its condition to good from fair.

Carpenter Shop (LCS 091908). A one-story building that measures approximately 31 × 10 × 12 feet with a wood shingled, side gabled roof and board-and-batten exterior. A single point of entry is in the west façade with flanking modern six-light thermal sash window. The structure was re-roofed and painted in 2010 to bring its condition to good from fair.



FIGURE 3–31. Carpenter shop, 2014. (NPS/SER-CRPS Collection)

Privy (LCS 091010)

A high shed roof outhouse that measures 4 × 5 × 7 feet with board-and-batten walls and a door on the



FIGURE 3–32. Privy, 2014. (NPS/SER-CRPS Collection)

south side. The privy was rebuilt in 2004 and 2010.[7]

Generator House

A building sited east of the lighthouse that bears a striking resemblance to the design of the former chicken house, with a similar steep-angled shed roofline. The one-story building has board-and-batten walls and a modern false Dutch door on the south elevation. To the left of the false Dutch door is a modern four-panel wood door. A six-light modern wood sash window is just north of center on the west elevation. Gravity dampers are on the north and east elevations. The building currently houses a generator for the double keepers' quarters.[8]



FIGURE 3–33. Generator house, 2013. (NPS/SER-CRPS Collection)

Circulation

Walkways/Driveways

A pea gravel and dirt two-track driveway enters the site from the street and curves around the double keepers' quarters to a location marked with concrete parking bumpers. Residents of the quarters also park adjacent to the south apartment where a concrete parking bumper marks a space. In August 2014, deep ruts were observed in the



FIGURE 3–34. Entry road into the light station, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–35. Parking bumpers, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–36. Deep ruts along entry road, 2014. (NPS/SER-CRPS Collection)

7 Mike Martin to George Perrot, July 28, 2004, George Perrot Papers, CAHA Collection; Oppermann, Ocracoke Light Station HSR, 34.

8 Oppermann, *Ocracoke Light Station HSR,* 92.

grass near the south apartment of the double keepers' quarters and the picket fence, but this was following a July 4 hurricane.

A rectilinear arrangement of concrete walkways circumvents the double keepers' quarters with links to various sections of the light station. One major axis connects the north door of the double keepers' quarters with the lighthouse door where a decorative metal gate (installed by a contractor in 2010) links the historic walk with the modern boardwalk; another links the front walkway with an area of the site that was formerly enclosed by a picket fence and now ends at the north boundary of the property. These walkways form a V at their intersection. Several walkways are becoming overgrown with grass in some sections, and in several places, the walkways disappears into the grass. A wood walk (originally brick) connects the dwelling with the storehouse.



FIGURE 3–37. Historic walkway terminating at modern decorative metal gate, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–38. Historic walkways intersecting, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–39. Wood walk, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–40. Historic walkway overgrown with grass, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–41. Modern boardwalk, 2013. Note dogleg where extended in 2010. (NPS/SER-CRPS Collection)

A raised wooden boardwalk with railings links the visitor parking area with the door of the lighthouse. It doglegs at the place where it originally ended, having been extended in 2010.

Roadways

NC 12 connects Ocracoke with Hatteras Island via a ferry service at Hatteras Inlet. An approximate fifty minute automobile/passenger ferry from Hatteras Island brings visitors to the north end of Ocracoke Island. There is a twelve mile drive from the ferry landing to Ocracoke village. The light station is located on Lighthouse Road, which is just off NC 12. Ocracoke village can also be reached from the south by way of the Cedar Island ferry or Swan Quarter ferry. These ferry rides take around two hours and thirty minutes each.

Parking at the site is problematic. There are currently only five spaces plus one accessible parking space for visitors in a graveled/asphalt pull in parking area off Lighthouse Road. Usually no more than four SUV-type cars can park at one time. These spaces are adjacent to the boardwalk that takes visitors to the lighthouse, where they can look inside but not climb the lighthouse.

In 2014, Eastern National purchased an undeveloped lot one block away from the light station that may be used as parking for the site when all permitting and compliance is completed. Since this is not an adjacent lot, a legislated boundary change would be necessary for the park to take ownership of the lot.



FIGURE 3–42. Lighthouse Road and parking area, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–43. Lot purchased by Eastern National, 2014. (NPS/SER-CRPS Collection)

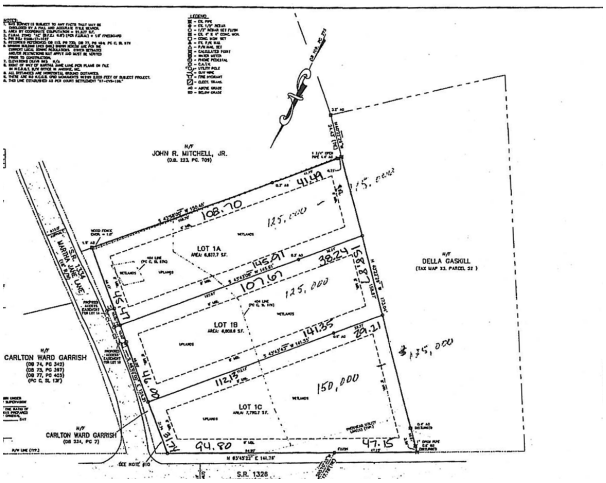


FIGURE 3–44. Survey map of lot, 2014. (NPS/CAHA Collection)



FIGURE 3–45. Gate key pad, 2013. (NPS/SER-CRPS Collection.)



FIGURE 3–46. Small boat and Horton Hauler within sight of the lighthouse, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–47. Personal items stored out of view of the lighthouse, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–48. View to the south, 2013. (NPS/SER-CRPS Collection)

Views and Vistas

Views into the light station along the entry drive are much as they were historically, except for the gate key pad that obstructs the view of the double keepers' quarters. Views from the lighthouse back into the station are degraded by cars and trucks parking on site and personal items, such as a Horton Hauler and a small boat and trailer. A camper shell, trailer, and other personal items are stored behind the carpenter shop and cannot be seen from the lighthouse.

Views to the south are of the parking area and residential neighborhoods beyond. Views to the north and east are blocked by vegetation. Views to the marsh on the west are partially blocked by the raised boardwalk. Views to the sound beyond are blocked by vegetation.

From the top of the lighthouse, views to the north are of Silver Lake and Ocracoke village beyond. Views to the east and south are of residential neighborhoods and the Atlantic beyond. Views to the west are of the boardwalk, marsh, residential neighborhoods, and Pamlico Sound beyond. The lighthouse can be seen across Silver Lake when standing next to the Ocracoke Harbor.



FIGURE 3–49. View to the north and east, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–50. View to the west, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–51. View to the north, 2013. (NPS/SER-CRPS Collection)

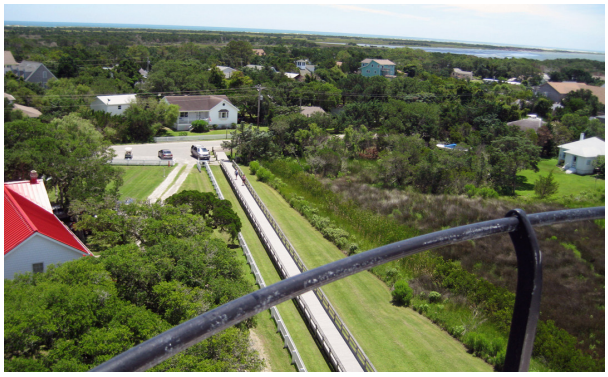


FIGURE 3–52. View to the south, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–53. View to the west, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–54. View of the lighthouse from the harbor, 2013. (© Joseph K. Oppermann - Architect)

Small-Scale Features

Fencing

Picket fencing encloses the site on four sides. A section of fencing extends past the northwest corner. Fencing has been repaired and/or replaced over the years. Entry into the site for park staff is through an automatic gate with controlled access, which was installed by a contractor working on the lighthouse in 2010. At some point, the NPS removed the rear gate. Current fence lines do not correspond to the original fence lines on the south and west, where fence lines were moved to accommodate parking and outbuildings.



FIGURE 3–55. Picket fencing along the entry road, 2013. (NPS/SER-CRPS Collection)

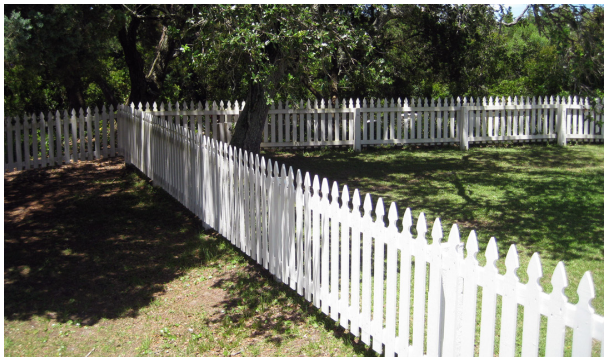


FIGURE 3–56. Picket fencing at the northwest corner, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–57. Picket fencing at the rear of the property (looking west), 2014. (NPS/SER-CRPS Collection)



FIGURE 3–58. Trash can enclosure adjacent to the parking lot, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–59. Trash can enclosure along the back fence, 2014. (NPS/SER-CRPS Collection)

Trash Can Enclosure

A wooden enclosure for two metal trash cans is located along the back (east) fence. Another metal trash can is located north of the parking lot.

Yard Hydrant

A yard hydrant, located north of the cisterns, is attached to a garden hose used to water plants. The yard hydrant is covered with rust. A modern wooden post with a metal bracket allows the hose to be coiled when not in use. A modern outdoor spigot mounted on a wooden post is located near the rear of the double keepers' quarters.

Boundary Marker

A concrete boundary marker painted white is located in the northeast corner of the property.



FIGURE 3–60. Yard hydrant attached to garden hose, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–61. Spigot near south apartment, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–62. Boundary marker, 2014. (NPS/SER-CRPS Collection)

Modern Features

Concrete Curbing

Concrete parking blocks are used to help drivers to align their vehicles and know when to stop. Modern concrete blocks are used in the designated visitor parking area outside the picket fence. Four wooden bollards with reflectors mark the end of the parking area and separate it from the pedestrian boardwalk. Concrete blocks of an unknown age are used to mark staff parking spaces north and south of the double keepers' quarters. Modern edging delineates planting beds around the storehouse and double keepers' quarters.



FIGURE 3–63. Parking blocks in visitor parking area, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–64. Bollards mark end of parking area, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–65. Parking blocks adjacent to the carpenter shop, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–66. Modern edging pavers lining beds outside the storehouse, 2013. (NPS/SER-CRPS Collection)



FIGURE 3–67. Modern edging pavers stacked near door of south apartment, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–68. Metal grill on north side of double keepers' quarters, 2014. (NPS/SER-CRPS Collection)

Metal Grills

Each apartment of the double keepers' quarters has a metal park-type grill of an unknown age.

Heating, Ventilation, and Air Conditioning (HVAC)

Four HVAC units sit atop the south cistern to meet mechanical code for flooding. A wooden panel blocks their view from the north.



FIGURE 3–69. HVAC units, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–70. Donation box, 2014. (NPS/SER-CRPS Collection)

Donation Box

A replica lighthouse donation box is located at a jog in the raised boardwalk.

Wayside and Signs

A wooden entry sign mounted on wooden posts is located west of the boardwalk at the edge of the grassed portion of the site. Immediately to the north, a wooden wayside mounted on wooden posts with two locked glass panels contains park maps and brochures. A shed roof protects the glass panels from wind and rain. Informational signage on a wooden post sits at the beginning of the boardwalk. Various signs direct visitor parking.



FIGURE 3–71. Signage at entrance to boardwalk, 2013. (NPS/SER-CRPS Collection)

Bicycle Rack

A metal bicycle rack sits south of the wooden entry sign.

Purple Martin House

A plastic purple martin house in mounted on a metal pole east of the drain field.

Satellite Dish

A satellite dish is mounted on a metal post near the rear (east) of the property. It is out of sight of visitors.



FIGURE 3–72. Bicycle rack, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–73. Purple martin house, 2014. (NPS/SER-CRPS Collection)



FIGURE 3–74. Satellite dish near east property line, 2014. (NPS/SER-CRPS Collection)

Natural Systems and Features

Ocracoke Registered Natural Heritage Areas

There are three registered Natural Heritage Areas on Ocracoke Island: Eastern End, Central Section, and Western End.[9]

Eastern End

The eastern half of Ocracoke Island (east of the "Pony Pens") is rather flat and is primarily composed of sand flats, low dunes, marshes, and shrub thickets. Maritime forests are poorly developed in this section. The eastern tip of the island (east of NC 12 and the ferry terminal) consists of low sand flats that are frequently overwashed by storm tides. In 1985, a pair of federally threatened piping plovers, plus their nest, was first observed on these sand flats, and have been observed in subsequent years' surveys. Several Wilson's plover and least tern nests were recorded in this area in the 1990s and in 2001, respectively, but it is uncertain if they currently nest here. It is anticipated that such birds will nest here in upcoming years if more sand is deposited by natural (or human-influenced) forces.

A population of the federally threatened seabeach amaranth (*Amaranthus pumilus*) has been recorded on the flats and beaches. This coastal plant is very rare throughout its range, with most present localities being in North Carolina. Despite recent annual surveys, seabeach amaranth has not been observed at the site since 2005; however, this annual plant is erratic in its location and population size from year to year due to its habitat and dispersal mechanisms. The species occurs on sandy beaches between the foredunes and the high tide zone. Seeds are washed out in the tide and may ultimately be deposited in different locations. Because it has been recorded at this site in the past and suitable habitat exists, there is a good probability that this species may occur there now or become established again in the future. Other rare plants growing in the interior of the site are significantly rare seashore crown grass (*Paspalum vaginatum*) and fragrant beaksedge (*Rhynchospora odorata*), which is designated as special concern, vulnerable in North Carolina.[10]

Central Section

The western third of the natural area consists of The Plains, a former sand flat (as late as 1959) that has now become a salt and brackish marsh because of blockage of overwash by dune buildup. A wide variety of marsh plant species, dominated by smooth cordgrass (*Spartina alterniflora*) and black needle rush, is present on The Plains. A line of relict dunes lies at the eastern edge of The Plains and is somewhat unusual in that the dunes are oriented diagonally to the present-day shoreline of the beach. They were presumably aligned along the former shoreline when they were created, indicating that the old shoreline was nearly north-south in the vicinity. These dunes—the First Hammock Hills—consist of herbaceous and shrub zones, but no maritime forest is present on them. However, maritime forest is present on relict dunes farther east (Hammock Oaks), and the forest extends in small patches for several miles.

The most significant biological feature of the natural area is Island Creek, which flows generally westward to Pamlico Sound near the campground. This stream contains a few small fresh to brackish ponds or pools along its short length, plus marshes along its borders. These ponds and marshes contain a number of rare plants and animals in North Carolina. The marsh killifish (*Fundulus confluentus*) is found in the pond where NC 12 crosses Island Creek. This fish is very rare in the state.

Given the location of the Seashore, it is subject to a high frequency of naturally occurring storm-, wind-, tide-, and wave-driven processes of erosion, accretion, and overwash that result in a very dynamic environment. Several anthropogenic stressors exist at the seashore that affect vegetation communities. Much of the land immediately outside of the seashore boundary is developed, and the eight villages occurring along the length of the seashore serve as a popular vacation destination.

9 The Registry of Natural Heritage Areas is administered by the North Carolina Natural Heritage Program of the North Carolina Department of Environment and Natural Resources. These areas possess natural values, and biological, botanical, zoological, and ecological resources justifying recognition as an outstanding part of the natural heritage of North Carolina. A Registry Agreement between the NPS and the North Carolina Department of Environment and Natural Resources protects outstanding examples of natural diversity and preserves unique and unusual natural features.

10 Cape Hatteras National Seashore Natural Heritage Area Registry, 2011.

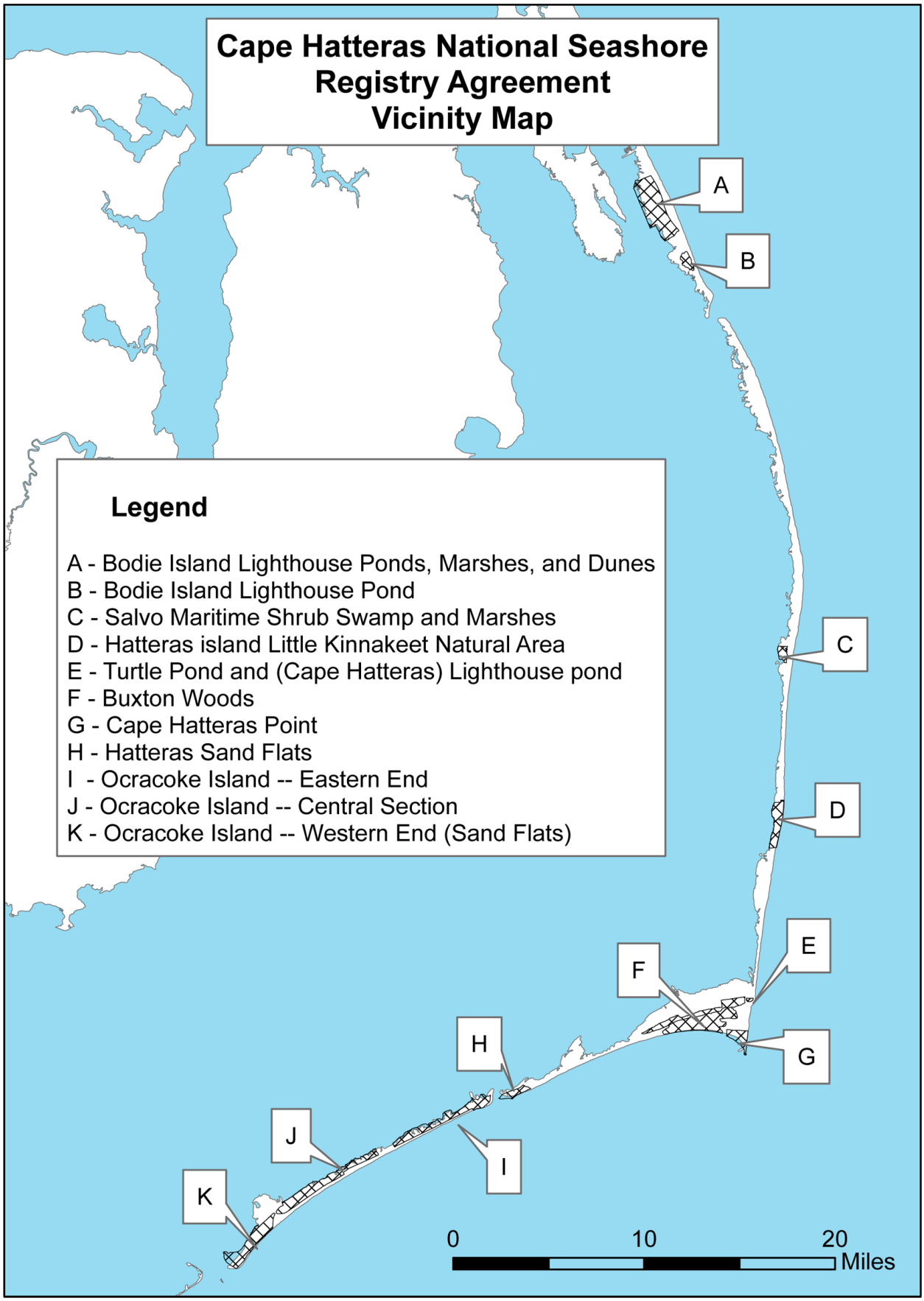


FIGURE 3–75. Natural Heritage Area map. (North Carolina Department of Environment and Natural Resources)

Because of the development throughout the seashore, natural barrier-island processes (e.g., westward migration of the island, overwash, and dune development) have been altered over the last century. Artificial stabilization and re-nourishment of the dunes and protection and maintenance of the road (NC 12) are the primary causative agents for altered natural barrier-island processes. The footprint of these developments has current and historic influences on the vegetative landscape of the seashore. Other anthropogenic stressors on vegetation communities at the seashore include the influx and expansion of non-native plants, feral hogs rooting damage, and over-browsing by white-tailed deer. The effect of sea-level rise on the seashore's resources remains unknown.[11]

Western End

The natural area was, until at least 1970, composed almost entirely of unvegetated sand flats and very low and scattered sand dunes. Marshes were essentially absent. However, at present, the northeastern half of the area has become brackish or a salt marsh, presumably because a build-up in dunes along the beach has slowed the frequency of overwash and has allowed herbaceous plants to obtain a foothold on the flats. Smooth cordgrass is dominant in some areas, whereas saltmeadow cordgrass is common in the drier spots. There are Salicornia flats, and several clumps of Phragmites are also present.

Seabeach amaranth, a federally threatened species, has been recorded scattered throughout the dune field, usually at the toe of the dunes, however, despite annual surveys it has not been observed in this area since 2003. By nature, seabeach amaranth is an annual plant and can be erratic in its location and population size from year to year due to its habitat and dispersal mechanisms. Because it has been recorded at this site in the past and suitable habitat exists, there is a good probability that this species may occur there now or become established again in the future. Other rare plants that occur on the site include the gulfcoast spikerush (*Eleocharis cellulosa*), fragrant beaksedge (*Rhynchospora odorata*), beaked spikerush (*Eleocharis rostellata*) and savanna nutrush (*Scleria verticillata*).

One of the largest and most important tern and black skimmer nesting colonies on a barrier island in the state is present on the low dunes. Unlike other tern colonies, this one is quite scattered, consisting not of one large, tight group, but of numerous small groups spread out over a handful of low dunes. The low elevation of the nests above mean high tide has caused a rather low reproductive success of the birds in many breeding seasons. Common terns and black skimmers nest in large numbers (usually several hundred pairs of each); also nesting in most years are Forster's, least, and gull-billed terns. Generally one or two pairs of Caspian terns have nested in recent years; this species is a rare breeding bird on the Atlantic Coast. One or two pairs of the federally threatened piping plover nest near the western tip of the island. Another rare bird species, reported here is the black rail. It has been heard calling in the brackish marsh during the nesting season and is perhaps nesting, although no surveys have been done here to determine their nesting status.[12]

Land Use

Current land uses at the station include housing, interpretation, recreation, law enforcement, and maintenance. The lighthouse continues to be used as a navigational aid.

Climate Change

The southeast experiences a wide range of extreme weather and climate events, including floods, droughts, heat waves, cold outbreaks, winter storms, severe thunderstorms, tornadoes, and tropical cyclones. These events have contributed to more billion-dollar disasters in the southeast than in any other region of the United States during the past three decades.[13]

11 Cape Hatteras National Seashore Natural Heritage Area Registry; Michael W. Byrne, Sarah L. Corbett, and Joseph C. DeVivo, "Vegetation Community Monitoring at Cape Hatteras National Seashore, 2010," Natural Resource Report NPS/SECN/NRDS—2012/257 (Fort Collins, CO: National Park Service Natural Resource Stewardship and Science, 2010), 3–4.

12 Cape Hatteras National Seashore Natural Heritage Area Registry.

13 Sonya A. Jones and Melinda S. Dalton, comps., U. S. Department of the Interior Southeast Climate Science Center Science Plan: U.S. Geological Survey Open-File Report 2012–1034, 2012, 8-11, http://pubs.usgs.gov/of/2012/1034/

Observed Climate Change

Long-term temperature records in the southeast show that average annual temperatures have not significantly changed during the last century; however, since 1970 average annual temperature has increased 2°F. Annual temperature increases in the Caribbean since 1970 have been about 1.5°F. During this time period the greatest changes in average annual temperature occurred during the winter months and the number of freezing days per year decreased. Precipitation records (1901-2007) indicate a regional reduction in rainfall in the summer, winter, and spring from 10 to 25 percent; however, precipitation increased during the fall by as much as 30 percent. Precipitation patterns are also changing, with the intensity of storms and the occurrence and severity of droughts increasing since 1970.

An increase in sea surface temperature since 1970 has been accompanied by an increase in the destructive potential of Atlantic hurricanes that make landfall in the Southeast region, although changes in the frequency of landfalling hurricanes has not been established. Summer wave heights have increased along parts of the U.S. Atlantic coastline since 1975, attributed to the increase in tropical storm intensity in the Atlantic Basin.

Projected Climate Change

Temperature projections indicate continued warming in all seasons across the southeast along with an increase in the rate of temperature increase through 2099. Projected rates of warming are twice the rates of temperature increases experienced in the southeast since 1975, with the greatest temperature increases projected to occur during the summer months. The number of days with peak temperatures over 90°F are predicted to increase at a greater rate than average temperature. Temperature projections vary based on emission scenarios, with lower emissions scenarios projecting an average temperature increase of about 4.5°F by 2080, while a higher emissions scenario projects an average annual temperature increase of about 9°F, including a 10.5°F increase in summer, and a much higher heat index for the southeastern United States. In the Caribbean, temperature is predicted to increase by about 4 °F by 2080, somewhat below the global average. Climate models also project a continuing decline in days below freezing across the entire region during the coming decades.

Sea surface temperature is projected to increase globally as the oceans absorb increasing heat energy from corresponding projected annual air temperature increases. Tropical storm and hurricane activity is likely to increase in the Atlantic hurricane formation region with global warming as a function of globally observed higher sea surface temperatures. If the intensity of Atlantic tropical storms increases, southeastern ecosystems will likely be exposed to higher peak wind speeds, rainfall intensity, storm surge, and wave heights.

Climate models provide divergent results for future average annual precipitation for most of the southeast and Caribbean; however, data suggests that southeastern states will tend to have less rainfall in winter, spring, and summer and precipitation in the Caribbean is expected to decline by about 12 percent. Because corresponding predicted temperature increases will lead to increased evapotranspiration, moisture deficits and droughts are likely to continue.

Predicted average annual temperature increases will warm oceans and increase the rate that land ice melts. Global average mean sea levels are expected to increase up to 2 feet or more by 2100. Increasing the rate and magnitude of sea-level rise has serious implications for low-lying southeastern coastal wetlands and barrier islands. Many coastal environments along the South Atlantic and Gulf of Mexico coastal margins are experiencing land surface subsidence due to factors such as groundwater withdrawals, changes in sediment delivery via rivers, and the drainage of soils for coastal development. Even if hurricanes do not increase in intensity, an increase in mean sea level will amplify coastal inundation and erosion during hurricane landfall.

There are currently 5,000 square miles of dry land within 2 feet of mean sea-level in the coastal areas of the continental United States. While the majority of this land is currently undeveloped, coastal development in the southeast is predicted to increase more than any coastal region in the United States, and any terrain within a few feet above mean sea level could be inundated; just a 2-foot rise in sea level would inundate an area the size of Massachusetts and Delaware. Currently, sea levels are rising at 0.07 inches per year. Predictions of

future sea-level rise through 2100 are between 0.6 to 2 feet. Impacts of rising sea levels include coastal erosion; coastal inundation (including wetlands); increased storm surge; loss of habitat, property, and cultural resources; and degradation of surface and groundwater quality. Highly productive coastal wetland ecosystems, which provide habitat for many species, act as filters to improve ground and surface water quality, provide an economic base for many coastal communities, offer recreational opportunities, and protect local areas from flooding, are particularly vulnerable to sea-level rise.[14]

The Ocracoke Light Station is vulnerable to sea-level rise and storm surge. The US Army Corps of Engineers predicts, under current rates of increase in greenhouse gas emissions, that the Beaufort tide gauge, the closest point of reference for Ocracoke, will experience a little less than a foot of sea-level rise by 2030, approximately 1.5 feet of sea-level rise by 2050, and about 5.25 feet of sea-level rise by 2100.

If the rate of greenhouse gas emission increase slows and renewable energy technologies are embraced, it is projected that an intermediate scenario of sea-level rise could unfold. An intermediate scenario would result in about 0.5 feet of sea-level rise by 2030, approximately 0.33 feet of sea-level rise by 2050, and almost 2 feet of sea-level rise by 2100.[15]

A study prepared by the Virginia Institute of Marine Science suggests that even small changes in sea-level rise over the next 100 years show a rapid increase in the amount of salt marsh lost to open water and that increases of 3.3 feet or higher would result in large scale losses of salt marshes in the CAHA area. [16] A study by investigators at East Carolina University to determine the impact of sea-level rise on cultural resources at CAHA is ongoing and will utilize rates adapted from the North Carolina Coastal Resources Commission Science Panel and the rise heights used by the National Oceanic and Atmospheric Administration (NOAA) Sea Level Risk Viewer by NOAA Office for Coastal Management (OCM).[17]

A 2011 study by Lautzenheiser, Bamann, and Gosser documented the disappearance of archaeological sites through coastal erosion in North Carolina. The authors attempted to revisit six prehistoric archaeological sites along the sound side of the Outer Banks, the mainland, and on Roanoke Island. Five of these six sites have been adversely impacted by coastal erosion and rising sea levels. Increasing erosion forced the NPS to move the Cape Hatteras Lighthouse further inland in 1999.[18]

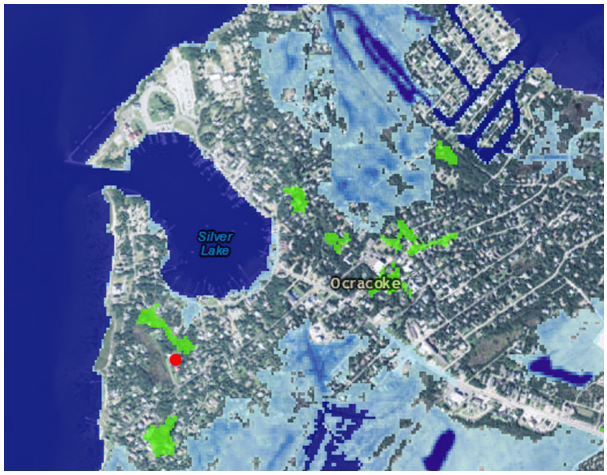


FIGURE 3–76. Inundation map for 1-ft rise in sea-level. Red dot denotes light station. (NOAA)

14 Jones, *U. S. Department of the Interior Southeast Climate Science Center Science Plan: U.S. Geological Survey Open-File Report 2012–1034*, 8-11.

15 The NPS has developed the Climate Change Response Program (CCRP), a cross-disciplinary program to preserve the natural and cultural resources and values under NPS stewardship. The CCRP has collaborated with the University of Colorado at Boulder to develop scenarios of sea-level rise based on local tide gauges and near-term timeframes,The NPS has developed the Climate Change Response Program (CCRP), a cross-disciplinary program to preserve the natural and cultural resources and values under NPS stewardship. The CCRP has collaborated with the University of Colorado at Boulder to develop scenarios of sea-level rise based on local tide gauges and near-term timeframes, http://www.nps.gov/orgs/ccrp/index.htm; personal communication, Janet Cakir, NPS SER Climate Change, Socioeconomics, and Adaptation Coordinator.

16 Christopher R. Perle, An Analysis of the Effects of Sea Level Rise on the Salt Marshes of Cape Hatteras National Seashore, North Carolina (Williamsburg, VA: Virginia Institute of Marine Science, 1996), 43-61.

17 Summary Report September 2013– July 2015 Identify Cultural Resources Sites Affected by Sea Level Rise at Cape Hatteras National Seashore Task Agreement No. P13AC01432, August 4, 2015.

18 Audrey R. Dawson and Tamara S. Wilson, The Effects of Climate Change on Cultural Resources: A Preliminary Assessment (Columbia, SC: South Carolina Institute of Archaeology and Anthropology, 2012), 10-11.



SOURCES

NPS Lands Survey 2004, NPS SERO, Redrawn 2015.

CAHA Base GIS Data, SERO Geospatial Support Program

2012 NAIP Aerial Photograph, USFS

LiDAR Data, 2014 (Post Sandy), USGS Online

Site Photographs, 2014, NPS SERO

NOTES

LEGEND

- Boundary Marker
- Yard Hydrant
- Bald Cypress
- Live Oak
- Eastern Red Cedar
- Tree Canopy
- Eastern Red Cedar Stump
- Property Line (NPS, 2004)
- 6" Contour (LiDAR ,2014)
- Fence
- Utility Pole
- Building

SCALE OF FEET
20 0 20 40
1" = 40'

CULTURAL LANDSCAPE LABORATORY
UGA College of Environment + Design
SERO CULTURAL LANDSCAPES

Drawn by: Fielding Link (NPS-SERO/UGA-CLL)

FIGURE 3–77. Ocracoke Light Station Existing Conditions Site Map. (NPS/UGA)

Analysis & Evaluation

Significance Evaluation

Current National Register Status

The Ocracoke Light Station was listed in the National Register of Historic Places on November 25, 1977. It is significant in the areas of commerce and transportation under Criterion A (associated with events that have made a significant contribution to the broad patterns of our history) and architecture under Criterion C (embodies distinctive characteristics of a type, period, or method of construction, represents the work of a master, or possesses high artistic values). The period of significance for the National Register nomination is 1823–present.

CLR Significance Evaluation

The existing National Register documentation served as the foundation document for evaluating the significance of the Ocracoke Light Station as part of this CLR. The documentation was reviewed in terms of relevant National Register criteria and the guidance provided in the National Register Bulletin's How to Apply the National Register Criteria for Evaluation. The comprehensive investigation into the history of the light station, coupled with the comprehensive review of the landscape, suggested aspects beyond that afforded by the existing nomination.

Period of Significance

The period of significance for the cultural landscape of the Ocracoke Light Station begins in 1823 with the construction of the light tower, keeper's quarters, and privy and continues to the present, reflecting its use as a federal aid to national and international navigation from its date of construction until present. There has been little development at the site since the 1950s when the NPS began using the station buildings under a special use agreement with the USCG. Since the acquisition of the light station in 1999, the NPS expanded the parking area and extended the boardwalk.

Statement of Significance

The construction of the Ocracoke Light Station is directly associated with federal government efforts to provide an integrated system of navigational aids for national and international shipping on the Atlantic coast. It is the oldest lighthouse in North Carolina still in continuous service. It is the second oldest lighthouse in the United States in continuous service. Boston Light on Little Brewster Island was the first lighthouse built in the United States in 1716 and is still in operation today. The Ocracoke Light Station provided safe passage for maritime trade along the hazardous waters of the Outer Banks, often referred to as the "Graveyard of the Atlantic." The lighthouses on the Outer Banks, located at Currituck Beach, Bodie Island, Hatteras Island, and Ocracoke, guided both national and international shipping along the coast. This national significance meets Criterion A.

The tower and the fourth-order lens reflect a standardized design used for many early lighthouses built by the Treasury Department. The early masonry towers were built separately from the keeper's quarters and were usually conical or octagonal in shape. Brick was used for the outer and inner walls after the turn of the nineteenth century, especially in southern states where stone was not readily available. The small size of brick, standardized production, and general availability made it the preeminent masonry material. The early nineteenth-century stations included the light tower, dwelling, garden site, place to store oil, a system to provide water, and perhaps a chicken house and shelter for a milk cow. The spatial organization at the Ocracoke Light Station reflected a similar landscape pattern. The distinctive architectural features of the tower, its oil house, double keepers' quarters, and outbuildings are locally significant and meet Criterion C for architecture.[1]

1 Clifford and Clifford, *Nineteenth-Century Lights,* 17–18.

Analysis of Landscape Characteristics

In order to better understand the relationship between the existing landscape of the Ocracoke Light Station and its character historically, this chapter includes a comparative analysis of historic and existing conditions. The focus of this section is to identify the broad patterns and specific features associated with the historic periods and to evaluate to what extent they survive today.

Spatial Organization

The spatial organization of the Ocracoke Light Station was consistent with the components of other early light stations. Of primary importance was the light tower followed by the keeper's (s') dwelling. Support buildings were clustered around these two structures. At Ocracoke, a pattern developed of support buildings clustered along a northeast axis to the keeper's quarters. The lighthouse and oil house occupied a northwest cross axis. A picket fence enclosed the station and walkways connected the various buildings on site. Garden plots were located at the perimeter of the property (north).

The footprint of the spatial layout of the site survives much as it was when documented by Bamber in 1893 and is a character-defining feature. The Bamber site plan (see figure 2-16) shows the axial relationship of the light tower, keeper's quarters, and outbuildings. The principal loss has been to five outbuildings built by the Lighthouse Service. Much of the historic circulation patterns survive although in some cases materials have changed.

Contributing features include the spatial pattern of the lighthouse and support buildings/structures on site, dominated by a central northeast to southwest axis aligned with the double keepers' quarters and a cross axis on the northwest; the historic circulation system that linked the lighthouse, double keepers' quarters, and historic outbuildings; the enclosing picket fence; and historic vegetation patterns. Non-contributing

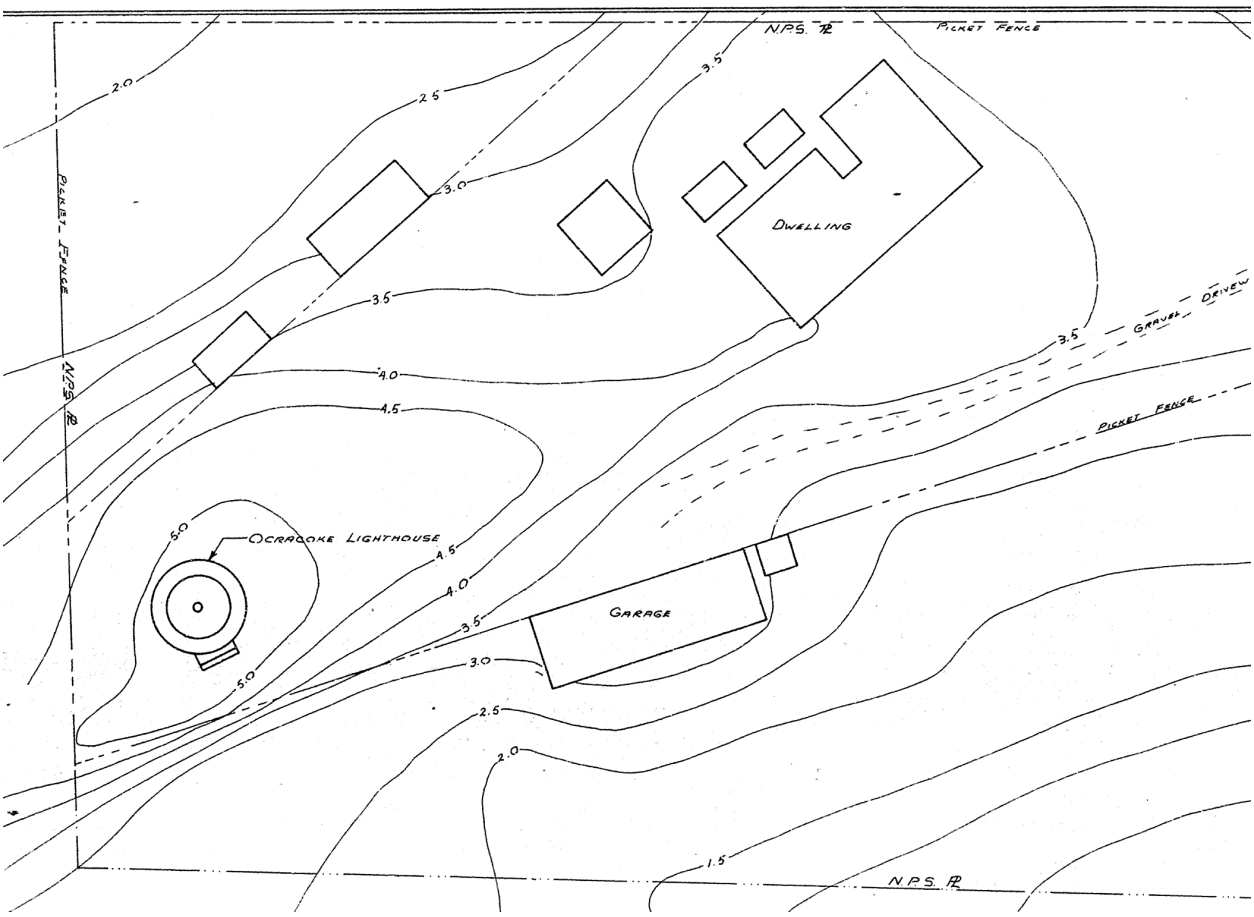


FIGURE 4–1. Topographic base map, 1961. (Denver Service Center etic 603/2172)



FIGURE 4–2. 1966 aerial image of the light station. Note garage and chicken house. (NPS/CAHA Collection)



FIGURE 4–3. 2015 aerial image of light station. (NPS/SER-CRPS Collection)

features include the layout of the parking area and the boardwalk that carries visitors from the parking area out to the lighthouse. Missing features include the coal shed and garden plots seen on the 1893 site plan and four twentieth-century outbuildings constructed by the Lighthouse Service.

Topography

Topographic changes are part of the cultural geography of the Outer Banks of North Carolina, where the opening and closing of inlets, which permit water to flow through the banks between the ocean and the sound, is commonplace. Over the years, different inlets have opened and closed between Ocracoke and Hatteras Islands. In the 1730s, Hatteras Inlet began to close, joining Ocracoke to Hatteras Island. An 1846 hurricane opened a new inlet closer to Hatteras village, which was also called Hatteras Inlet.[2] The instability of this landscape has resulted in the reshaping of Ocracoke Island over the years.

At the time of statehood in 1789, the Outer Banks featured areas of dense woods that stretched almost to the sea in some places interspersed with low and barren stretches of "bald beaches," which usually marked the sites of former inlets. In striking topographic contrast were the high, windswept sand dunes, constantly changing shape with the direction of prevailing longshore currents.[3]

The 1846–1850 U.S. Coast Survey showed the topography around the light station as "low sand beach 3 ft above the level of mean water" south of the station and "sand hills" north of the station. As documented on an 1894 map, the area east of the village was historically called "The Plains" because it was devoid of dunes and vegetation. The light station's location on the sound side of the island near the village of Ocracoke offered it more protection than the windswept topography along the ocean side of the island. The station was also known to be a high spot by villagers who sought refuge in the keepers' dwelling during storms, sometimes arriving by boat. The higher elevation of the light station is a contributing feature of the cultural landscape. The drain field for the septic system is a non-contributing feature of the cultural landscape.

2 Stick, *The Outer Banks of North Carolina*, 298.

3 Stick, *The Outer Banks of North Carolina,* 74; Dolan and Lins, *Outer Banks of North Carolina,* 4.

Vegetation

At the time of construction, the light station had little vegetation and sat near the gently sloping wide beach, but by 1900, trees and shrubs surrounded the station. The landscape was characterized by mature live oaks and cedar trees around the dwelling, open ground around the lighthouse, enclosed garden spaces, areas of grass throughout most of the site, and marsh/wetland along the western edge of the site. Except for the specimen trees in the landscape surrounding the dwelling, there were no foundation plantings historically.

The vegetation of the two-acre light station includes the lawn of centipede grass, clover, and other forbs in a setting of live oak and eastern red cedar that have been documented since 1893. Two bald cypresses are located north of the privy. Although they are not original to the light station, and it is unknown exactly when they were planted, it appears that the bald cypresses are between fifty and one hundred years old. Native marsh grasses form the western boundary of the site. Contributing vegetation includes the lawn, native marsh grasses, and the mature live oaks, cedars, and bald cypresses. Non-contributing vegetation includes the ornamentals planted by residents in areas that were not cultivated historically, including the vegetable garden. Missing are the enclosed garden spaces documented on the 1893 Bamber site plan. The cultural vegetation is a character-defining feature of the historic landscape.

Buildings and Structures

Ocracoke Lighthouse

A conical brick tower constructed in 1823 topped with octagonal cast-iron lantern with a focal height of seventy-five feet. It houses a fourth-order Fresnel lens and is the second oldest lighthouse in the United States in continuous operation. The lighthouse retains most of its original characteristics and is a contributing feature of the cultural landscape.

Double Keepers' Quarters

The original building (keeper's quarters) was a one-story dwelling with a gabled roof. A second story was added in 1897 to give the keeper and his family more room and the footprint expanded further in 1929 to accommodate an assistant keeper and his family (double keepers' quarters).

In 1950, the USCG began an extensive interior rehabilitation of the quarters, including installation of modern kitchen and bathroom facilities. A major rehabilitation project undertaken by the NPS began in 1987 and concluded in 1988.

The building's exterior appearance doubled in size throughout the period of service as living quarters for the light station crew and currently for park staff. It is a contributing feature of the cultural landscape and is one of the support buildings original to the light station.

Concrete Oil House

A detached oil storage building built by a repair crew in 1914 of cast-in-place concrete equipped with a metal door, window openings centered on the north, south, and east elevations, and ventilators on the north and south elevations. Its use changed to a generator building when the lighthouse was electrified in 1929. It is a contributing feature of the cultural landscape.

Storehouse

A one-story, frame outbuilding documented on the earliest site plan of 1890. Its use has been labelled as "storehouse" and "pumphouse" on various site plans, although it may have been used as a summer kitchen in the early part of the twentieth century. It is currently being used for storage. The building is a contributing feature of the cultural landscape.

Cisterns

Rainwater, collected off the roof of the double keepers' quarters, was fed from gutters into two cisterns east of the dwelling. The north cistern was constructed between 1893 and 1897. It is first recorded on a site plan dated March 1897. The construction date of the south cistern is unclear, but it can be seen in a 1941 image. The cisterns are contributing features of the cultural landscape.

Carpenter Shop

As seen in images and a site plan from the 1950s, board-and-wire fencing enclosed a chicken house and carpenter shop east of the lighthouse. A garage and shed west of the lighthouse were flush with the picket fence line. The carpenter shop is the only surviving of these outbuildings and is a contributing feature of the cultural landscape. The chicken house, garage, and shed are no longer extant.

Privy

One privy was original to the light station as recorded on the earliest site plan of 1890 and on the 1893 Bamber plan. It was located northeast of the keeper's quarters on the eastern edge of the property. Unlike the privies at Bodie Island that were eventually removed, the privy at Ocracoke has been rebuilt over the years, although its location seems to have shifted further north from its original location. The current privy was rebuilt in 2010 and is contributing.

Modern Features

In 1994, the NPS built a new generator house on the footprint of the old chicken house. The new building bears a striking resemblance to the design of the chicken house, with a similar roofline. The building is non-contributing.

Circulation

NC 12 connects Ocracoke with Hatteras Island via a ferry service at Hatteras Inlet. Until the 1950s, there were no paved roads linking Ocracoke to the islands to the north. The difficulty of constructing a paved road on the island's sandy and unstable soils was complicated by the opposition by some outside groups that wanted no paved roads on the island. In 1955, North Carolina Governor Luther H. Hodges made $300,000 available to construct a road across the island, declaring to the island residents "you must have outlets."

Access to the station was historically via an unpaved "road" through the front gate. Because the site was so sandy, walkways were an important feature of the cultural landscape, as documented on the 1893 Bamber site plan. Doorways in the keeper's quarters were not at grade, so as it was enlarged and new outbuildings constructed, the circulation system changed to accommodate these additions. A brick walkway connected the dwelling with the storehouse and a wooden walkway linked the dwelling and the three outbuildings (storehouse, wood/coal shed, and privy). In 1902, Keeper Smith constructed a wooden walkway from the dwelling to the light tower. It is less clear when another walk that led from the northwest corner of the building to the rear of the property was constructed. The Lighthouse Service changed the material to concrete in 1916. Other concrete

walkways circumnavigated all sides of the dwelling at some point after the structure was doubled in 1929. Several small walkways between buildings are not well documented on site plans but can be seen in images of the site.[4]

The entrance road into the station was changed to a walkway in the 1930s. A two-track unpaved drive eventually replaced the walkway as recorded on site plans and images from the 1950s. A parking area was constructed around 1986. Contributing features of the cultural landscape include the concrete walkways and the driveway. Non-contributing features include the wooden walk from the keepers' quarters to the storehouse, the parking area, and the boardwalk out to the lighthouse.

Views and Vistas

Views and vistas historically would have been influenced by the residential character of the neighborhood that grew up around the light station and the cultural vegetation at the site. Views west would have been open to the marsh/wetlands, but other views would have been obstructed by vegetation and buildings. Views out of the light tower would have been unobstructed across Silver Lake to the north, to Pamlico Sound to the west, and to Teaches Hole to the south taking in the residences surrounding the light station.

Views of the marsh and Pamlico Sound beyond and views of Silver Lake to the north are contributing. The sight lines along the primary northeast axis and the northwest cross axis are contributing, although internal views of the station are currently degraded and clustered with items, such as the automatic gate key pad, boats, Horton Haulers, grills, and other personal items. Views of the boardwalk and the parking area are non-contributing features of the cultural landscape.

Small-Scale Features

Fencing

A wooden picket fence was first described in maintenance records from 1883 when the Light-House Board replaced it. It has enclosed the station as documented on historic maps and images since 1890 and is contributing. An automatic gate and key pad are non-contributing.

Trash Can Enclosure

A wooden enclosure for two metal trash cans located along the back (east) fence is contributing.

Yard Hydrant

A metal yard hydrant covered with rust is contributing although its age is unknown.

Boundary Markers

A boundary marker located in the northeast corner of the property is contributing.

Modern Features

Trash cans, waysides and signage, bollards, parking stops, bicycle rack, donation box, automatic gate key pad, purple martin house, and grills are non-contributing.

The appendix shows the contributing features identified in the List of Classified Structures (LCS) for the Ocracoke Light Station, as well as other landscape features not included in the LCS.[5]

Evaluation of Integrity

Landscapes possessing integrity have the ability to convey historical significance through extant landscape features and characteristics. The effort to determine a landscape's significance according to National Register criteria focuses on seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. The persistence of these qualities as they apply to the landscape determines whether the landscape retains enough of its important features to convey its historically significant appearance or associations.

Location

The location of the Ocracoke Light Station is unchanged. The site was chosen because a light station at Ocracoke Inlet was critical to navigating

4 Cloud, *Ocracoke Lighthouse,* 7, 25, 28–29.

5 Structures listed on the LCS must meet one of the following criteria: either the structure is listed individually or is eligible for the National Register or the structure is a contributing element of an historic site or district that is listed or is eligible for the National Register. In addition, the LCS includes other structures, moved or reconstructed, commemorative structures, and structures which have achieved significance within the last fifty years that are managed as cultural resources.

the dangerous shoals of the "Graveyard of the Atlantic." Its location helped mariners determine their position both by day and night. Ocracoke is the second oldest lighthouse in continuous operation in the United States.

The location of the site, complemented by its residential setting, reflects the character of the landscape during the period of significance. Because of the protected location on higher ground on the sound side of the island, the station often remained above flood waters during hurricanes. As such, it was a place of refuge for locals throughout its history.

No resources within the light station have been relocated. The buildings and structures are in their original locations, with the exception of the frame privy, which has been rebuilt several times and is sited slightly north of its original location. The historic circulation features are essentially in their historic alignments. The site retains a high degree of integrity of location. The spatial order of the station is a character-defining feature of the cultural landscape.

Setting

The physical environment surrounding the site includes both natural systems and cultural land use patterns. The light station today is surrounded by residential development, but the remote location of Ocracoke Island helped the village retain much of its historic character.

A character-defining feature of the Ocracoke Light Station is the protected, residential setting of the station with predominately unobstructed views in all directions from the top of the lighthouse to the Atlantic Ocean and the Pamlico Sound. The impact of successional vegetation that has grown up since the construction of the station is predominately to the viewsheds from the ground plane, although the boardwalk on the west affects views from the double keepers' quarters and from the top of the tower.

With the historic village of Ocracoke surrounding the light station and with few changes to the original layout, integrity of setting remains high.

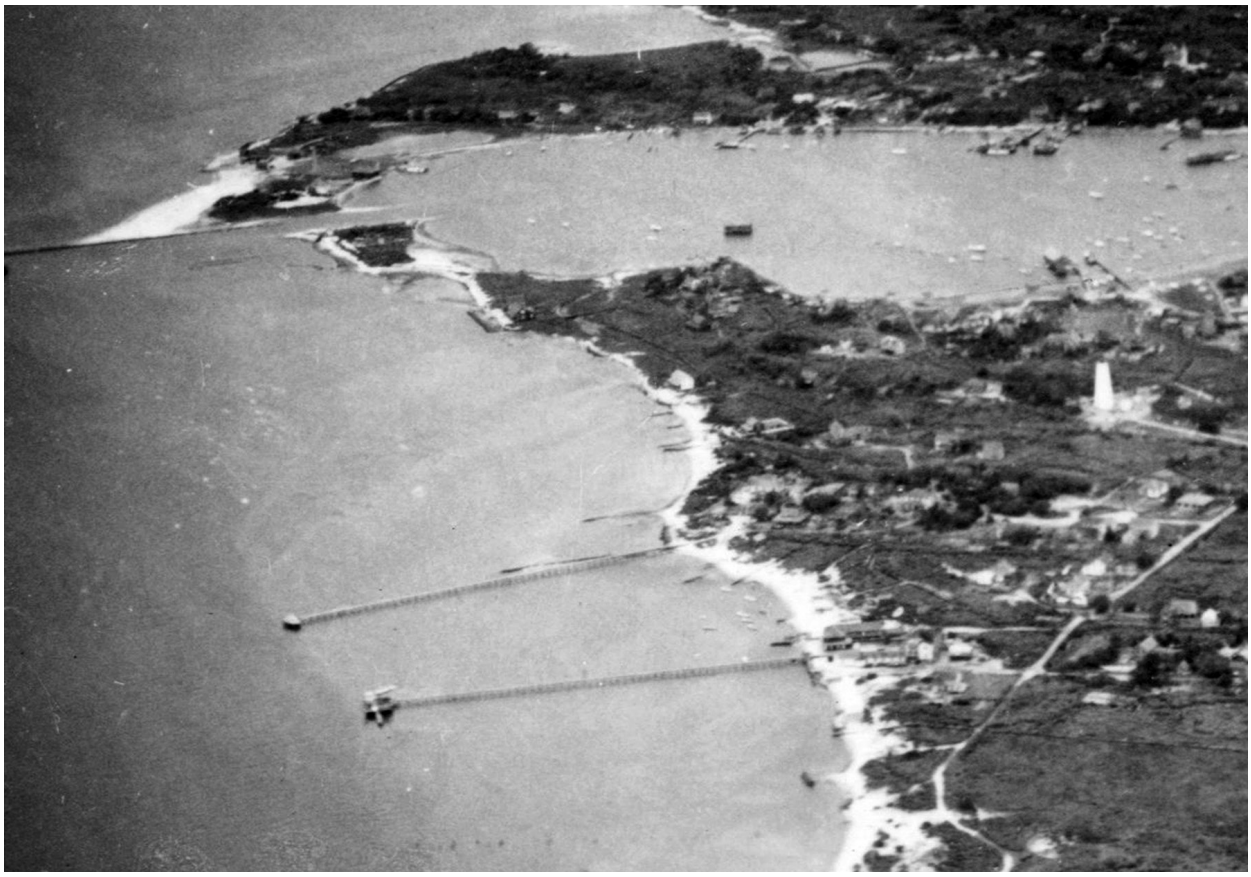


FIGURE 4–4. Aerial showing vegetation around the station, 1936. (NPS/CAHA Collection)



FIGURE 4–5. Aerial showing changes in vegetation succession around the station, ca. 1950s. (The Outer Banks History Center, Manteo, NC/David Stick Collection)

Design

The present lighthouse embodies a distinctive design and method of construction that typified secondary coastal lighthouses on the East Coast of the United States during the first half of the nineteenth century. Secondary lights were located on less prominent points and in broad sounds and bays. They were generally shorter and used less powerful optics than first-order lighthouses, such as Cape Hatteras and Bodie Island.

These early nineteenth-century light stations had a simplistic layout consisting of the light tower, dwelling, garden site, a place to store oil, a system to provide water, privy, and perhaps a chicken house or shelter for a milk cow. The layout of the Ocracoke Light Station was consistent with other light stations of the day, where a clustering of support buildings facilitated easy access.

The site retains the original outbuildings identified on the 1893 site plan, although the privy has been reconstructed several times. The site retains most of the original circulation system, which linked major features of the station, although materials have changed in some cases. A picket fence has enclosed the station since at least the late 1800s when it was first described in 1883 maintenance reports as being replaced. A character-defining feature of the Ocracoke Light Station is the axial relationship of the light tower, concrete oil house, double keepers' quarters, storehouse, privy, and cisterns.

Historically important live oaks and red cedars clustered around the dwelling and light tower were first identified in historic images taken by Bamber in 1893 (see figures 2-14 – 2-18). These were painted white up to the level of the picket fence to keep insects at bay. Many of these survive today and are a character-defining feature of the cultural landscape.



FIGURE 4–6. Historic live oaks and cedars, 1954. (NPS/CAHA Collection)

Materials

Brick is the most popular construction material of the surviving 640 lighthouse towers in the United States.[6] In addition to brick, other historic building materials used in the construction of the Ocracoke Light Station were granite, iron, copper, bronze, wood, and concrete. In 1950-1951, the original wood staircase of the light tower was replaced with a modern steel staircase, the whitewashed interior of the brick shell wall was sandblasted, and the exterior of the brick shell wall was coated in shotcrete. In 1989, a contractor hired by the USCG removed the original windows and installed vinyl-clad replacements. The historic wooden entrance door was also removed and replaced with a modern metal door. After intervention by community activists, the USCG agreed to pay for the repair/reconstruction of the original wood windows and entrance door, which were fabricated and installed by the NPS in 1990. The double sash windows were retrofitted into the vinyl track of the 1989 thermal replacement windows, which was left in place. Questions exist as to the condition of these windows, the vinyl track in which they have been placed, and the quality of wood chosen for the repaired and reconstructed windows.

6 Ibid., 22.

Largely in good repair after concerted restoration efforts in the late 1980s and early 2000s, interior work in the 1950s resulted in major changes in the character of the double keepers' quarters associated with inappropriate choices of building materials and components. Additionally, work in 1929 replaced the wood shingle roof with a standing-seam metal roof, which the park replaced in 2008 with the current bright red modern metal roof. The parge coat on the original brick walls has been largely removed and the exposed brick painted white.[7]

Plantings at the site historically were live oaks and cedars clustered around the dwelling and light tower, many of which survive today. There were no foundation plantings. Little is known about the garden plots located at the north end of the station on Bamber's site plan although the keepers' families had a garden like most residents of the village. It was damaged in 1933, when overwash from a storm damaged trees, figs, and grapes that grew on the property. A garden on Ocracoke would have fared better than the garden at the windswept station on Bodie Island that was never successful.

7 For a more complete description, see Oppermann, *Ocracoke Light Station HSR*, 96.

Pedestrian circulation materials are different from those used historically in some cases. Wooden walkways were replaced with concrete in 1916. At some point, the original brick walkway that connected the keepers' quarters and the storehouse was replaced with wood timbers. Historic fencing materials survive although the picket fence has been replaced in kind several times.

The Ocracoke Light Station retains a moderate level of integrity of materials.

Workmanship

Integrity of workmanship at the Ocracoke Light Station has been compromised by inappropriate choices of building components and techniques.

Ocracoke Lighthouse

The USCG removed the original wooden spiral stairs built into the inside of the exterior wall of the lighthouse around 1950 and replaced them with metal stairs located in the center of the tower. The new staircase is smaller in dimension, with shorter risers than the original wood staircase, giving an entirely different experience of ascending and descending the tower with no correlation to the existing windows. Cement patches cover the points in the brick shell wall where each tread of the original staircase was anchored. The footprint of the modern staircase is offset from the brick wall by several inches and supported laterally by a series of metal lintels cemented into the shell wall. This required new holes to be made in the brick shell wall for the supporting lintels.

While the exterior brick shell wall of the lighthouse was pargeted at some point early in its history, and may in fact have originally been so, the shotcrete coating applied in 1951 was an inappropriate material and an inappropriate application technique. Work done in 1989 when a contractor removed the original windows and installed vinyl-clad thermal replacements and removed the historic wooden entrance door and replaced it with a modern metal door reflected a poor level of workmanship. Although six of the original window sash were repaired and another six reconstructed, they were retrofitted into the vinyl tract of the thermal replacement windows, which was left in place. Questions exist as to the condition of these windows, the vinyl tract in which they have been placed, and the quality of the wood chosen for the windows.[8]

Double Keepers' Quarters

A major rehabilitation project undertaken by the Williamsport Preservation Training Center began in 1987 and concluded in 1988. Although this work preserved many of the character-defining features of the building, extensive termite damage required replacement of many wood elements. On the interior, some of the fireboxes on the first floor have been sealed over. All flue openings on the second floor have been sealed.[9]

Storehouse/Carpenter Shop/Privy

In 1988, the park developed a scope of work for the storehouse (pump house) that included numerous repairs/replacement of termite damaged historic fabric and removal of "blown-in sand from around siding." The grade around the building was also lowered to restore the original grade. This was a day labor preservation project performed by the Williamsport Preservation Training Center. Repairs to the carpenter shop were of a similar nature due to termite infestation, including repairs to the entire floor system. The privy required total reconstruction. The window sash of all the outbuildings have been replaced with modern thermal sash windows even though the buildings are not climatized. [10]

Modern Additions

The modern boardwalk's materials are consistent with the historic buildings of the light station, but its inappropriate form with high hand railings blocks views of the marsh and beyond. Moreover, two steps providing access to the door of the lighthouse were covered when the boardwalk was extended and a ramp up to the door was added in 2010.

Feeling

Integrity of feeling has been degraded at the Ocracoke Light Station. Although the isolated village of Ocracoke still retains most of its historic character, and the light station's close proximity to

8 Oppermann, *Ocracoke Light Station HSR*, 96.

9 Ibid., 31

10 Bebe Woody to Assistant Superintendent, August 15, 1988, Accession 191, Catalog 5037, Box 1, Folder 1, CAHA Collection.

the village remains unchanged, modern intrusions have affected integrity of feeling. These include the HVAC system's location on top of the cistern, the parking area and the boardwalk that currently take visitors from the parking area to the lighthouse, foundation plantings around the buildings, and personal items belonging to staff members who live at the site.

Association

Integrity of association remains high for the Ocracoke Lighthouse. The Fresnel lens and the operation of the lamp as an active aid to navigation remain under the jurisdiction of the USCG, providing a tangible link to the maritime history of the Outer Banks.

Although the continued use of the double keepers' quarters as housing continues its historic use, there is a lack of association between the NPS personnel living in the double keepers' quarters and the operation of the lighthouse. Modern intrusions such as outdoor gas grills, recreation vehicles, and foundation plantings that were not there historically affect integrity of association.

Summary

The centerpiece of the Ocracoke Light Station is the lighthouse. Constructed in 1823, it is the oldest lighthouse in North Carolina still in continuous service. It is the second oldest lighthouse in the United States in continuous service. Boston Light on Little Brewster Island, still in operation, was the first lighthouse built in the United States in 1716. The tower reflects a standardized design used for many early lighthouses. The layout of the site was consistent with other light stations of the day, where support buildings were clustered for easy access along a northeast axis to the keeper's quarters. The lighthouse and oil house occupied a northwest cross axis. A wooden fence enclosed the station and walkways connected the various buildings on site.

The site retains three original support buildings (double keepers' quarters, storehouse, and privy) and two historic outbuildings (concrete oil house and carpenter shop). Most of the historic circulation system survives, which linked major features of the station. Historically significant plantings include mature live oaks and cedar trees around the dwelling, open ground around the lighthouse, areas of grass throughout most of the site, and marsh/wetland along the western edge of the site. Enclosed garden spaces do not survive, but the picket fence that surrounded the station has been maintained over the years, although not in its original location on all sides.

A major breach of preservation philosophy occurred in 1989 when a contractor hired by the USCG removed the original windows and installed vinyl-clad replacements. The historic wooden entrance door was also removed and replaced with a modern metal door. After intervention by community activists, the USCG agreed to pay for the repair/reconstruction of the original wood windows and entrance door, which were fabricated and installed by the NPS in 1990.

Integrity of location and setting remain high. Integrity of materials and workmanship have been diminished by inappropriate material and application techniques. Integrity of feeling and association have been degraded by modern intrusions. Nonetheless, the station retains many of the elements of a nineteenth- and early twentieth-century light station with few modifications that could not be reversed.

Treatment Recommendations

The Ocracoke Light Station is a nationally significant example of early nineteenth-century engineering directly associated with federal government efforts to provide an integrated system of navigational aids for national and international shipping on the Atlantic coast. It is the oldest lighthouse in North Carolina still in continuous service. It is the second oldest lighthouse in the United States in continuous service. Boston Light on Little Brewster Island (1716) is the oldest lighthouse in the United States still in operation. The Ocracoke Light Station also provided safe passage for maritime trade along the hazardous waters of the Outer Banks, often referred to as the "Graveyard of the Atlantic."

The overarching treatment associated with the historic landscape is *rehabilitation* with restoration suggested for a select number of features. Because rehabilitation is defined as the act or process of making possible a compatible use for a property, this approach allows for protection of the site's historic character and resources while carefully addressing the need for limited enhancement of interpretive opportunities and circulation routes, sustainability, and the improvement of visitor amenities. As part of rehabilitation treatment, stabilization, protection, and preservation of historic and natural resources are assumed even when new uses are accommodated.

Spatial Organization

The spatial organization of the Ocracoke Light Station was consistent with the components of other light stations. Of primary importance was the light tower followed by the keeper's(s') dwelling. Support buildings were clustered around these two structures. At Ocracoke, a rectilinear arrangement resulted in a northeast axis and a northwest cross axis linking the light tower, concrete oil house, double keepers' quarters, storehouse, cisterns, privy, and other support buildings. The station was enclosed by a wooden fence and walkways connected the various buildings on site.

Development at the site ended in the 1950s when the NPS entered into a special use agreement with the USCG to occupy the station's support buildings. Since the NPS's acquisition of the light station buildings in 1999, there has been no further development other than the expansion of the parking area and the extension of the boardwalk.

A character-defining feature of the Ocracoke Light Station is the axial relationship of the light tower, oil house, double keepers' quarters, storehouse, and cisterns. The site retains remnants of the original circulation system, which linked major features of the station.

The following guidelines apply to spatial organization:

- Preserve the spatial footprint of the light station, including the spaces between buildings.
- Preserve the historic circulation system that linked the station buildings and enclosed spaces.
- Preserve the sight lines along the primary northeast axis linking the double keepers' quarters, storehouse, and cisterns and the northwest cross axis linking the light tower and concrete oil house.

Topography

The light station's location on the sound side of the island near the village of Ocracoke offered it more protection than the windswept topography along the ocean side of the island. The station was also known to be a high spot by villagers who sought refuge in the keepers' dwelling during storms, sometimes arriving by boat. The higher elevation of the light station is a contributing feature of the cultural landscape.

- No changes to the topographic relationship of the buildings and site should occur.



FIGURE 5–1. Aerial image, June 2015. (NPS/SER-CRPS Collection)

Vegetation

Historic vegetation patterns were characterized by mature live oaks and cedar trees around the dwelling, open ground around the lighthouse, enclosed garden spaces, areas of grass throughout most of the site, and marsh/wetland along the western edge of the site. Clumps of shrubs occurred in the northeast and southwest areas of the site, as well as southeast of the dwelling in the nineteenth century. There were no foundation plantings historically. Surrounding properties had similar vegetation patterns.

Little is known about the enclosed garden plots at the rear of the property documented on the Bamber 1893 site plan. Keeper Austin had a "hot house" and a storm in 1933 damaged trees, figs, and grapes growing on the site.[1]

1 Ocracoke Lighthouse HSR, 24; Cloud, Ocracoke Lighthouse, 29; and Impact Assessment, Inc., Ethnohistorical Description of the Eight Villages Adjoining Cape Hatteras National Seashore, 400.

The following guidelines apply to vegetation management:

- Preserve the live oaks and cedars within the picket fence, a character-defining feature of the cultural landscape. Trees should be replaced in kind.
- Although not as significant as the live oaks and cedars, the two bald cypresses near the privy are contributing and should be preserved. Trees should be replaced in kind.
- A comprehensive condition assessment of all trees within the park boundaries that provides the park with a report detailing existing conditions and recommendations for work should be conducted by an International Society of Arboriculture (ISA) certified arborist. The Olmsted Center for Landscape Preservation maintains a list of certified arborists working in the NPS.

- Trees should be mapped with GPS coordinates and a GIS base map created.
- Weeds within the planting beds around the double keepers' quarters and storehouse should be pulled by hand, and woody volunteers should be removed.
- Ornamental woody vegetation may need to be pruned on an annual or periodic basis. Consult with a regional historical landscape architect before the work is done. As plants decline, they should not be replaced.
- Perennials should be cut back to the ground after the first hard frost.
- English ivy and other invasive exotics should be removed from trees and buildings.
- New herbaceous plant material should not be added to the beds around the double keepers' quarters and storehouse. As plants decline, they should not be replaced. Furthermore, the North Carolina State Historic Preservation Office recommends removing any plantings that may appear to be trapping moisture to prevent deterioration to the foundation piers.[2]
- Chinaberry seedling growing in the bed adjacent to the south apartment of the double keepers' quarters should be removed to avoid damage to the structure.
- The vegetable garden in the rear of the property may be planted with ornamentals and vegetable plants.
- If the use of the double keepers' quarters changes to a visitor center/contact station, these beds should be removed, as well as the beds around the storehouse. Foundation plantings were not present historically.
- Consult with park exotic plant management staff for approval before planting any introduced plant material.
- Consult with park natural resource management staff before removal of any native vegetation.



FIGURE 5–2. Oaks and cedars within the picket fence on the west side of the double keepers' quarters, 2013. (NPS/SER-CRPS Collection)



FIGURE 5–3. Perennials beds in need of maintenance, 2013. (NPS/SER-CRPS Collection)



FIGURE 5–4. English ivy growing up a tree, 2013. (NPS/SER-CRPS Collection)

2 Ramona Bartos, North Carolina State Historic Preservation Office to Jami Lanier, Cape Hatteras National Seashore, February 2, 2016.



FIGURE 5–5. Chinaberry seedling to be removed, 2014. (NPS/SER-CRPS Collection)



FIGURE 5–6. Vegetable garden area, 2013. (NPS/SER-CRPS Collection)

- Avoid altering the habitats of rare, threatened, or endangered species or species of special concern. Evaluate the potential impact to wildlife habitat prior to undertaking any construction or vegetation removal project.
- Use Best Practices when using string trimmers around trees and the picket fence.

Buildings and Structures

Lighthouse

- Preserve the lighthouse.
- Repairs should replace materials in kind.
- All recommendations for the brick tower and iron lantern should be based on those in the Oppermann HSR and be in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- No changes should be made that detract from the historic character of the site.
- Special consideration should be taken to preserve the scale of the residential setting of the lighthouse.

Concrete Oil House

- Preserve the concrete oil house.
- Repairs should replace materials in kind.
- All recommendations for the oil house should be based on those in the Oppermann HSR and be in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- No changes should be made that detract from the historic character of the site.

Double Keepers' Quarters

- Preserve the double keepers' quarters.
- Repairs should replace materials in kind.
- All recommendations for the double keepers' quarters should be based on those in the Oppermann HSR and be in accordance with the Secretary of the Interior's Standards for

Treatment of Historic Properties.

- No changes should be made that detract from the historic character of the site.

Storehouse

- Preserve the storehouse, one of the early light station outbuildings.
- Repairs should replace materials in kind.
- All recommendations for the building should be based on those in the Oppermann HSR and be in accordance with the Secretary of the Interior's Standards for Treatment of Historic Properties.
- No changes should be made that detract from the historic character of the site.

Carpenter Shop

- Preserve the carpenter shop.
- Repairs should replace materials in kind.
- All recommendations for the building should be based on those in the Oppermann HSR and be in accordance with the Secretary of the Interior's Standards for Treatment of Historic Properties.
- No changes should be made that detract from the historic character of the site.

Cisterns

- Preserve the cisterns.
- Repairs should replace materials in kind.
- All recommendations for the structures should be based on those in the Oppermann HSR



FIGURE 5–7. Ocracoke light station buildings, 2005. (NPS/CAHA Collection)

and be in accordance with the Secretary of the Interior's Standards for Treatment of Historic Properties.

- Keep the area around the cisterns clear of extraneous material, such as planters and containers.

Modern Additions

- A generator house was constructed in 1994 on the site of the former chicken house. It should be maintained as needed.

Circulation

The historic circulation system is a character-defining feature of the historic landscape. The following guidelines apply to circulation management:

- Preserve concrete walkways linking the double keepers' quarters, storehouse, cisterns, concrete oil house, and the lighthouse. Repairs are needed in most sections. Material should be replaced in-kind.

- Preserve the concrete walkways around the double keepers' quarters, which are also historic. Material should continue to be concrete when repairs are needed. Some sections are grown over with grass and should be restored if they are still viable walkways.

- The material of the original brick walkway that connected the double keeper' quarters and the storehouse is currently wood. Restore to brick if the double keepers' quarters are opened to the public.

- The concrete remnant that once linked the double keepers' quarters, the chicken house, and the rear (north) picket fence may be allowed to grow over with grass but should not be removed.

- Preserve the alignment of the driveway, which is recorded as early as 1897.

- Restore the original footprint of the boardwalk. Its current configuration with hand rails is an inappropriate design that detracts from the spatial character of the light station and degrades views and vistas.

- The current parking lot dates to the 1980s and is inadequate for the site. Eastern National acquired property in 2014 where a new parking lot may be developed.

- If the new parking lot is completed, staff could park in the current parking spaces if the double keepers' quarters becomes a visitor center/ contact station and is no longer used for staff housing.



FIGURE 5–8. Concrete walkway linking the double keepers' quarters and the lighthouse, 2013. (NPS/SER-CRPS Collection)



FIGURE 5–9. Section of concrete walkway on the east side of the double keepers' quarters disappearing into the grass, 2013. (NPS/SER-CRPS Collection)



FIGURE 5–10. Modern wood pavers, 2014. (NPS/SER-CRPS Collection)



FIGURE 5–11. Concrete walkway that once led to the chicken house, 2014. (NPS/SER-CRPS Collection)



FIGURE 5–12. Alignment of the driveway, 2013. (NPS/SER-CRPS Collection)



FIGURE 5–13. Boardwalk as it looked in 1999. (© Elizabeth Williams)



FIGURE 5–14. Concrete parking blocks north of the double keepers' quarters, 2013. (NPS/SER-CRPS Collection)

- Such a change in use would allow the double keepers' quarters to be interpreted without modern vehicles parking inside the station.
- Concrete parking blocks north and south of the double keepers' quarters may remain to accommodate staff vehicles.
- A comprehensive plan that considers cultural and natural resource concerns in conjunction with park management goals in the layout of the parking area is needed before a final design is agreed upon.

Views and Vistas

Views and vistas are a character-defining feature of the cultural landscape.

The following guidelines apply to vista management:

- Preserve the 360 degree viewshed from the top of the light tower that includes: to the west the marshlands and the Pamlico Sound; to the east and south, residential neighborhoods



FIGURE 5–15. View looking east from the top of the light tower, 2013. (NPS/SER-CRPS Collection)



FIGURE 5–16. View looking south from the top of the light tower, 2013. (NPS/SER-CRPS Collection)



FIGURE 5–17. View looking northeast from the top of the light tower, 2013. Note Fresnel lens. (NPS/SER-CRPS Collection)



FIGURE 5–18. View looking west from the top of the light tower, 2013. (NPS/SER-CRPS Collection)

and the Atlantic beyond; and to the north Silver Lake and Ocracoke village beyond. Any new structures like wind turbines or any new buildings should be placed far enough away so that they disappear from view from the top of the light tower.

- The viewshed from the bottom of the light tower should also be preserved. A boardwalk that links the parking area and the lighthouse currently degrades the view to the west, but it is the only access for visitors to the lighthouse since the remainder of the light station is not open to the public. If visitor access changes so that visitors enter the station as they did historically through the front gate and driveway, remove the boardwalk to restore the viewshed to the



FIGURE 5–19. View of boardwalk from the entry drive, 2013. (NPS/SER-CRPS Collection)

west or restore to original footprint.

- Preserve the sight lines along the primary northeast axis linking the double keepers' quarters, storehouse, and cisterns and the northwest cross axis linking the light tower and concrete oil house.
- Views inside the light station are being degraded by resident's personal items like Horton Haulers, boats, and camper shells. Guidelines for residential occupancy of these buildings should be developed and enforced.

Small-Scale Features

The following guidelines apply to the management of small-scale features:

- Metal trashcans are located at the rear (east) of the double keepers' quarters in a bump out in the picket fence and also north of the parking area. A recycling center like the one at Bodie Island could replace the trashcan north of the parking area.
- The metal yard hydrant located near the cisterns is covered with rust and attached to a garden hose used to water plants. It should be preserved if further research shows it to be historic. Consult with NPS/SER-CRPS Museum and Archival Services if a metal conservator is needed. Consult with NPS/SER-CRPS Research and Science to determine if the resource is eligible for inclusion in the National Register.
- Preserve the granite boundary marker. Consult with NPS/SER-CRPS Museum and Archival Services if a stone conservator is needed. Consult with NPS/SER-CRPS Research and Science to determine if the resource is eligible for inclusion in the National Register.
- Although the fence line has been modified in some locations, the picket fence is a character-defining feature of the cultural landscape and should be preserved. Repairs should use in-kind materials.
- An automatic gate installed by a contractor without NHPA compliance should be removed if staff moves out of the double keepers' quarters and the driveway is returned to pedestrian use. It detracts from the picturesque character of the site.
- Remove the hose post if staff moves out of double keepers' quarters.
- Picnic tables should be a traditional design of wood, not plastic.
- Bicycle racks may remain as long as their design does not detract from the setting of the site.



FIGURE 5–20. Trashcans along the east fence, 2013. (NPS/SER-CRPS Collection)



FIGURE 5–21. Metal yard hydrant with hose post in the background. (NPS/SER-CRPS Collection)



FIGURE 5–22. Concrete boundary marker, 2013. (NPS/SER-CRPS Collection)

- Use consistent and unobtrusive informational and directional signage.
- Two 36 × 24 inch panels are included in the Cape Hatteras National Seashore Wayside Exhibit Proposal. They are to be installed side-by-side on the rail of the boardwalk near the oil house. One panel is proposed to cover the history of the lighthouse, and the other panel is proposed to cover life for the Ocracoke Lighthouse keepers.



FIGURE 5–23. Bicycle rack, 2013. (NPS/SER-CRPS Collection)

National Register Nomination

The current National Register nomination dates to 1977. An updated National Register nomination is needed that includes cultural landscape features.

Climate Change

Barrier islands, such as Ocracoke, will be especially vulnerable to the effects of climate change and sea-level rise, which may negatively affect cultural resources on these islands. For cultural landscapes, character-defining features are a key focus for assessing impacts. Management options should balance resource vulnerability and significance.

Cultural resources experience similar effects from climate change as the natural resources that are located in the same area. Cultural resources are individually unique and non-renewable. Much of their meaning is tied to their specific location on the land.

Weathering, sunlight, moisture, and other natural factors have always posed challenges for protecting cultural resources. Current trends suggest that the rates, combinations, and intensity of these factors are already increasing. Climate change projections indicate that these irreplaceable resources are likely to be altered, deteriorated, or removed at faster rates or in ways not previously observed.

Unlike natural systems, cultural resources are dependent upon people to help them withstand climate change. The adaptation strategy for cultural resources considers climate change impacts to specific locations, materials, and significance of these resources and the sustainability and feasibility of potential responses. An adaptive framework for cultural resource management includes the following steps:

- Inventory of resources to determine their character and significance
- Vulnerability assessment
- Development of adaptation options
- Implementation

The adaptation options step is the most common point of discussion in adaptation planning, but it

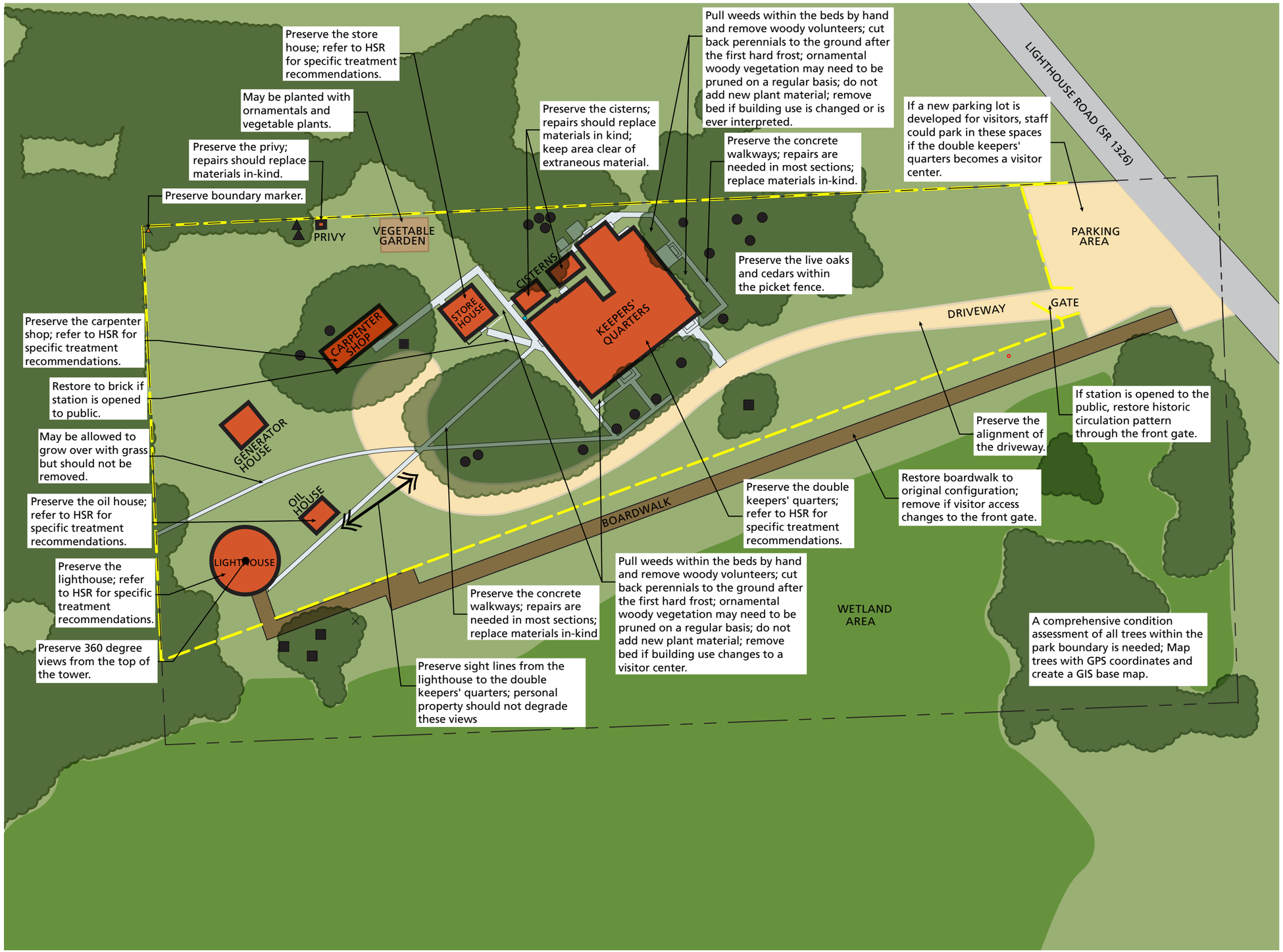
cannot function well without the other steps in the framework. While options can take many forms, a general list includes:

- No action, determine need for monitoring
- Deflect or remove environmental stressor
- Modify resource to better withstand environmental stressor
- Movement, either through relocation or a stationary resource or enabling migration of a biotic resource
- Document comprehensively, allow location to be lost
- Document briefly, allow location to be lost
- Interpret the change, as climate change is the heritage of the future[3]

The following resources may be helpful in developing resource-specific climate change adaptation recommendations:

- Use results from the climate change study "Identify Cultural Resources Sites Affected by Sea-Level Rise at Cape Hatteras National Seashore."
- Consult with NPS Climate Change Adaptation Coordinator for Cultural Resources (http://www.nps.gov/orgs/ccrp/index.htm) and SER Climate Change, Socioeconomics, and Adaptation Coordinator (http://www.southatlanticlcc.org/).
- Use final report from "Cape Lookout Structured Decision Making" workshop for cultural resources held in 2015-16.
- Use Climate Change and Cultural Landscapes: Research, Planning, and Stewardship (Melnick, Burry-Trice, and Malinay 2015), which provides six case studies, including three coastal examples (Portsmouth Village at Cape Lookout National Seashore, Dyke Marsh at George Washington Memorial Parkway, and Jacob Riis Park at Gateway National Recreation Area), that link climate projections to impacts on character-defining features and potential adaptive actions.
- Consult NPS Climate Change Coastal Adaptation website, where links to the latest documents can be found. http://www.nps.gov/subjects/climatechange/coastaladaptation.htm
- Use Coastal Adaptation Strategies: Case Studies (Schupp, Beavers, and Caffrey 2015), which provides twenty-four case studies of adaptation to climate change in coastal parks.
- Use Coastal Adaptation Strategies Handbook. This handbook is intended to provide guidance for National Park Service managers, partners, and other practitioners in exploring and implementing climate change adaptation in coastal areas, including along the Great Lakes.
- Use United States Department of Agriculture (USDA) Climate HUBS Tool Shed, an online, searchable database of tools that can help land managers adapt to the impacts of climate change. http://www.climatehubs.oce.usda.gov/content/tools-and-data

3 http://www.nps.gov/subjects/climatechange/adaptationforculturalresources



NOTES

LEGEND

- Boundary Marker
- Yard Hydrant
- Bald Cypress
- Live Oak
- Eastern Red Cedar
- Tree Canopy
- Eastern Red Cedar Stump
- Property Line (NPS, 2004)
- Fence
- Utility Pole
- Building

SCALE OF FEET
20 0 20 40
1" = 40'

Drawn by: Fielding Link (NPS-SERO/UGA-CLL)

FIGURE 5–24. Ocracoke Light Station Treatment Map

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Appendix A

List of Features in the Cultural Landscape

Feature	LCS#	Construction Date	FMSS	Contributing	Treatment
Ocracoke Lighthouse	000016	1823	29670	Yes	Preserve
Concrete Oil House	091909	1914	29675	Yes	Preserve
Double Keepers' Quarters	007237	1823	29671	Yes	Preserve
Cisterns	091911	1893-1916	29678	Yes	Preserve
Storehouse	091907	1890	29672	Yes	Preserve
Carpenter's Shop	091908	1930	29674	Yes	Preserve
Privy	091910	1823	29677	Yes	Preserve
Concrete walkways		1916, 1929		Yes	Preserve
Wooden walk		Unknown		No	Restore to brick if station is opened to the public
Yard hydrant		Unknown		Yes	Preserve
Boundary marker		1823		Yes	Preserve
Wooden fence		1883		Yes	Preserve
Spatial pattern between buildings		1823		Yes	Preserve
Driveway into station		1897		Yes	Preserve
Pattern of live oaks, cedars, and bald cypresses		1890s for some live oaks		Yes	
Higher elevation of the light station		1823		Yes	Preserve
Open expanses now in lawn		1823		Yes	Preserve
Native marsh grasses		1823		Yes	Preserve
Ornamentals planted by residents		Unknown		No	Do not replace

Feature	LCS#	Construction Date	FMSS	Contributing	Treatment
Enclosed garden spaces		1897		Missing	
Boardwalk		1980s		No	Restore to original footprint or remove
Sight lines along a central northeast to southwest axis aligned with the double keepers' quarters and a cross axis on the northwest		1823		Yes	Preserve
Views to the Pamlico Sound		1823		Yes	Preserve
360° views from top of lighthouse		1823		Yes	Preserve
Views across Silver Lake		1823		Yes	Preserve
Views of boardwalk and parking area		1980s		No	
Parking area		1986		No	Accessible/staff parking
Coal shed		1893		Missing	
Garage and sheds		1930s		Missing	
Chicken house		Unknown		Missing	

Appendix B

Site Plans, Building Plans, and Elevations (Resized, Chronological)

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Figure B–2. Plan of keeper's quarters showing rear addition, dated 1889. (NPS/CAHA Collection).....130

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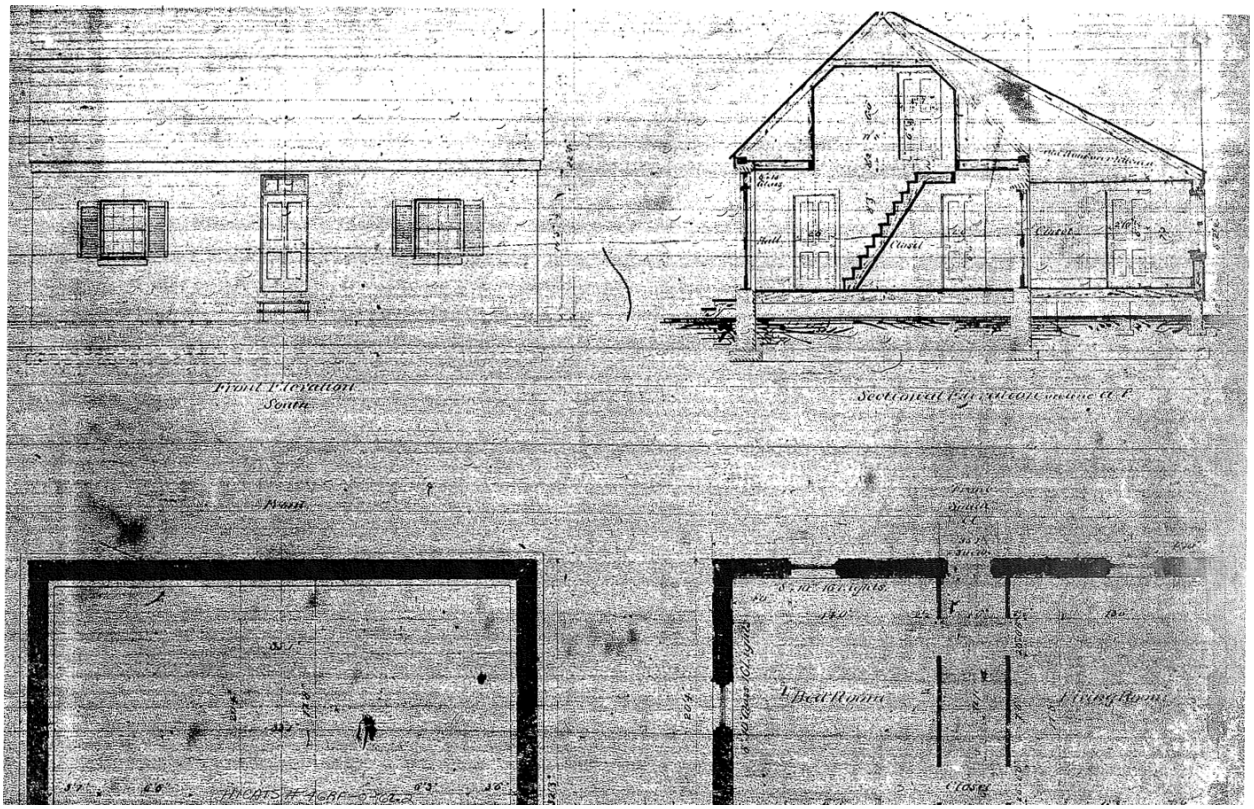


FIGURE B–1. Plan of keeper's quarters showing rear addition, dated 1889. (NPS/CAHA Collection)

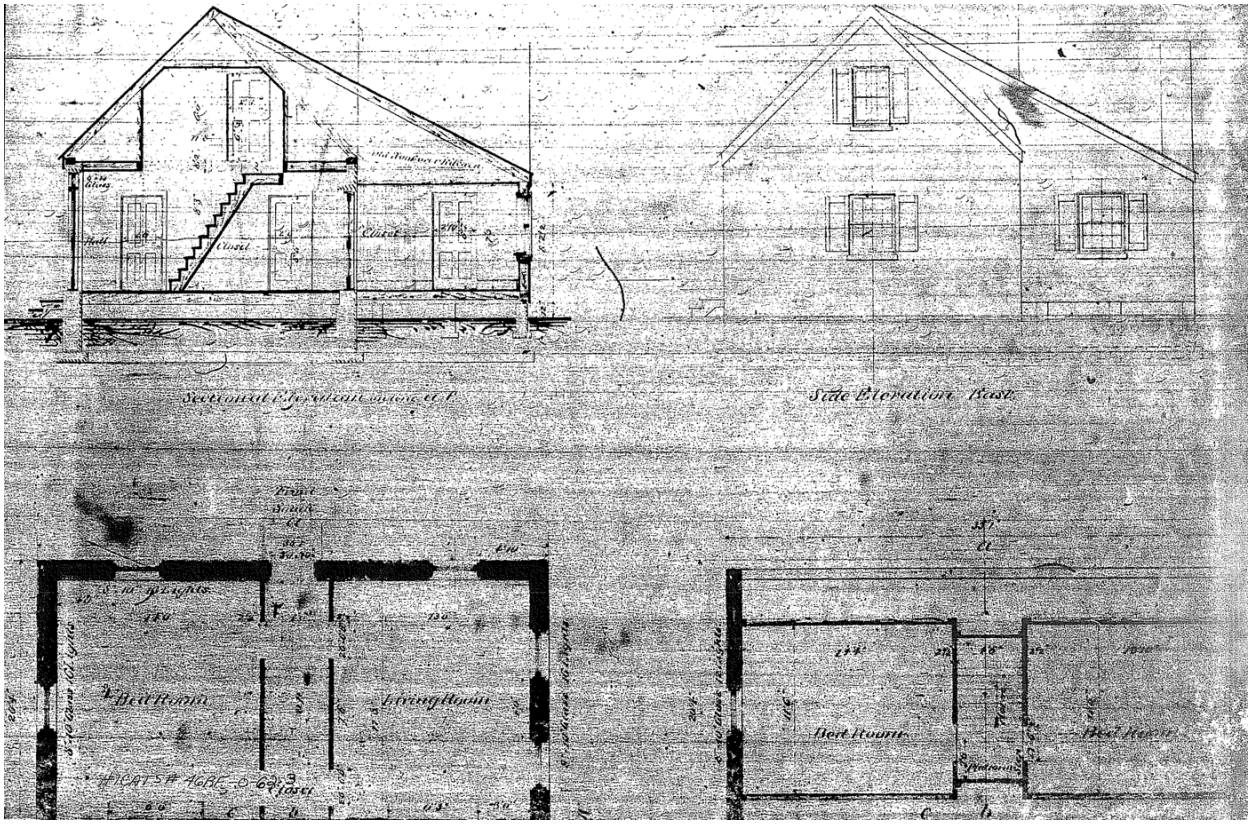


FIGURE B-2. Plan of keeper's quarters showing rear addition, dated 1889. (NPS/CAHA Collection)

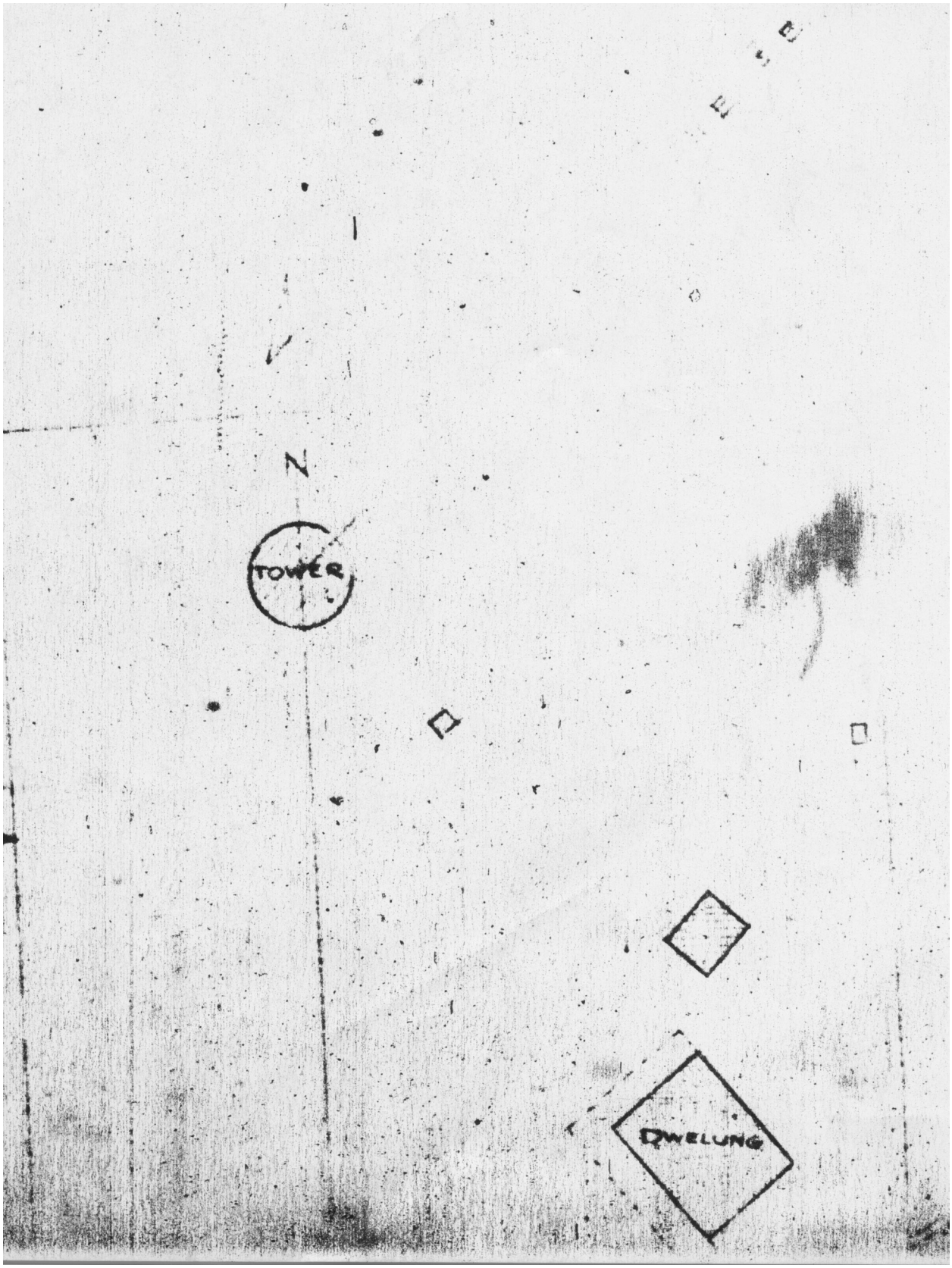


FIGURE B–3. 1890 site plan. (NPS/CAHA Collection)

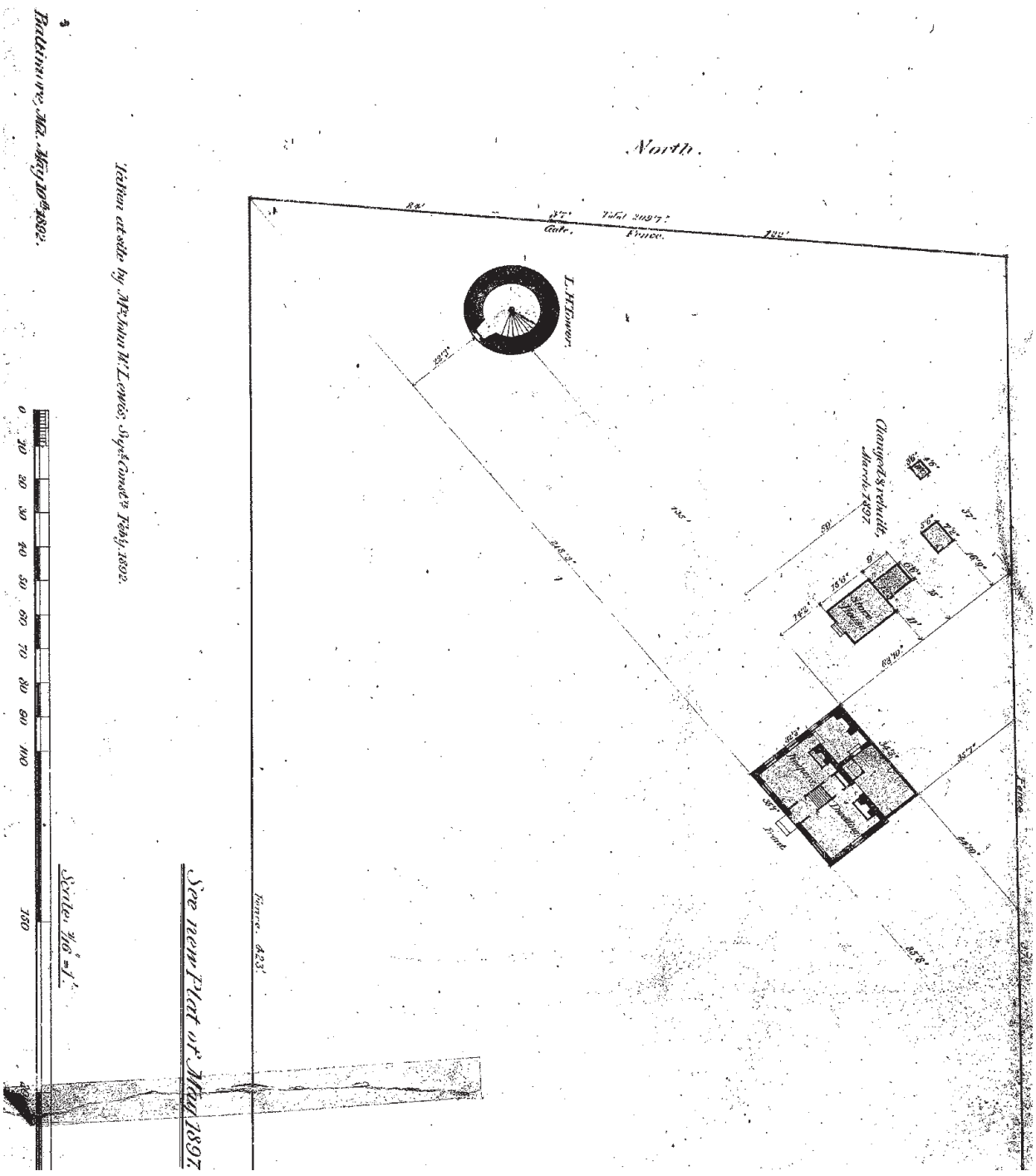


FIGURE B–4. 1892 site plan. (NPS/CAHA Collection)

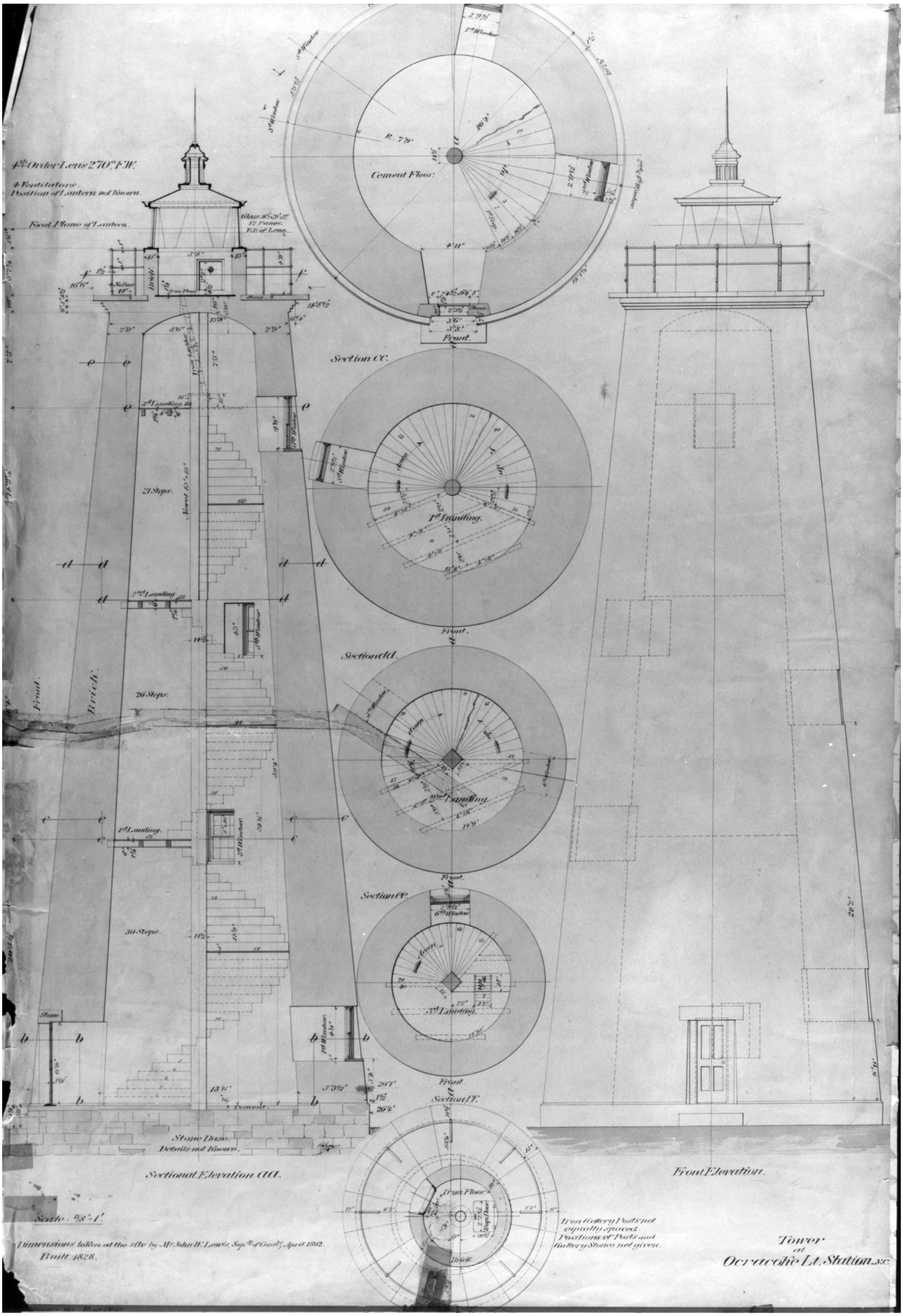


FIGURE B–5. Lighthouse plan, 1892. (NPS/CAHA Collection)

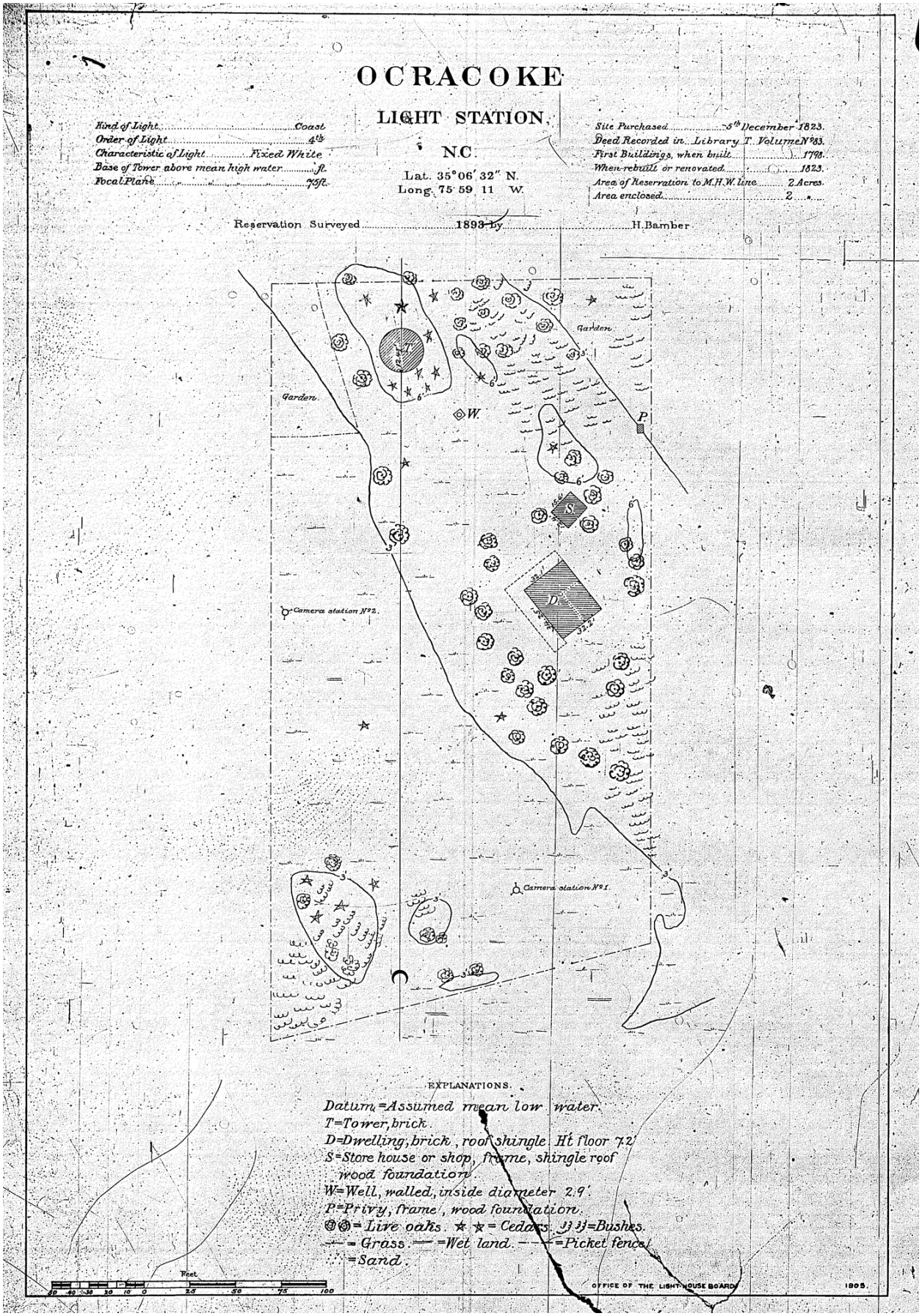


FIGURE B–6. Ocracoke Light Station site plan, 1893. (NPS/CAHA Collection)

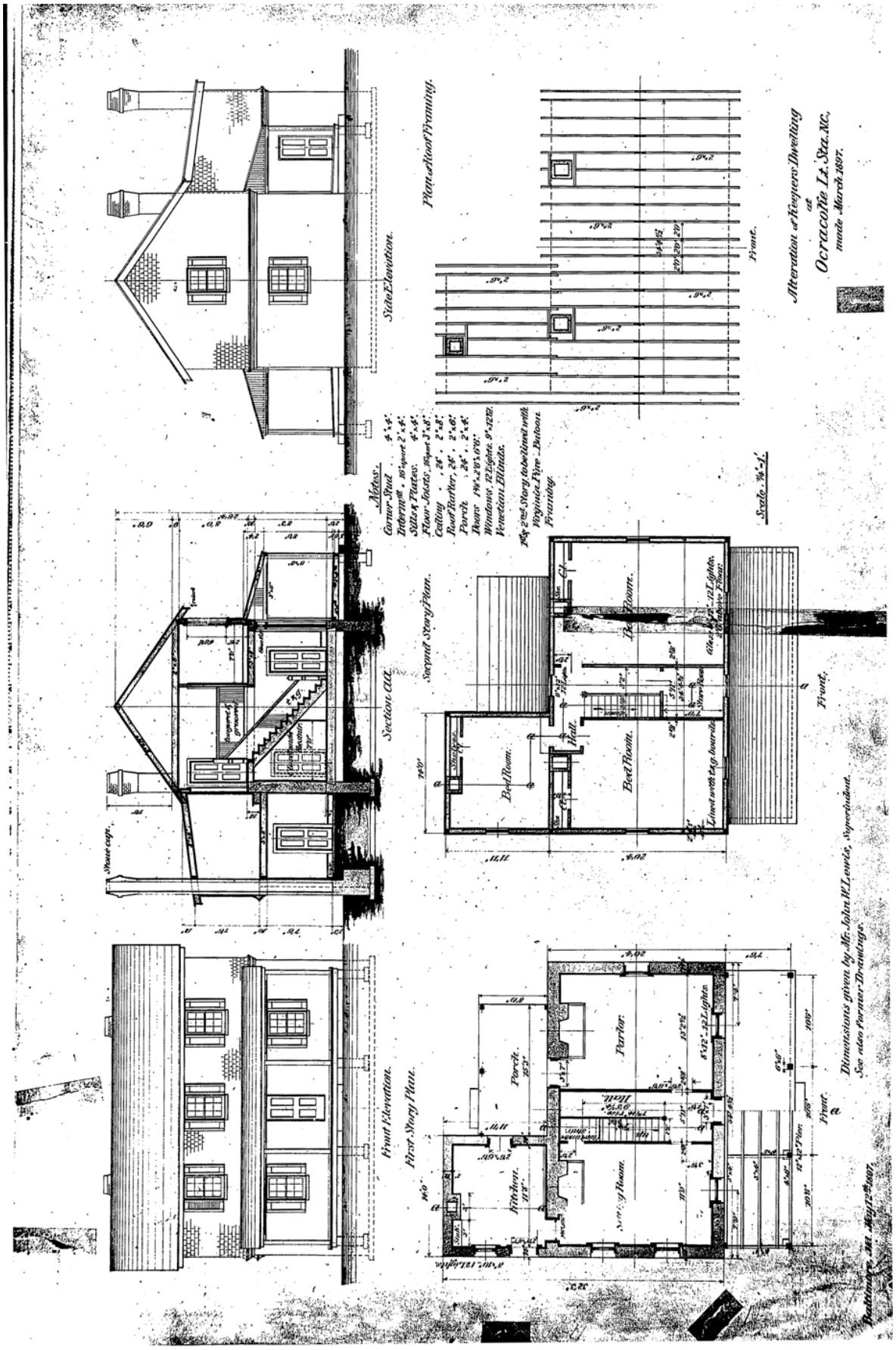


FIGURE B–7. Plan of second story addition, 1897. (NPS/CAHA Collection)

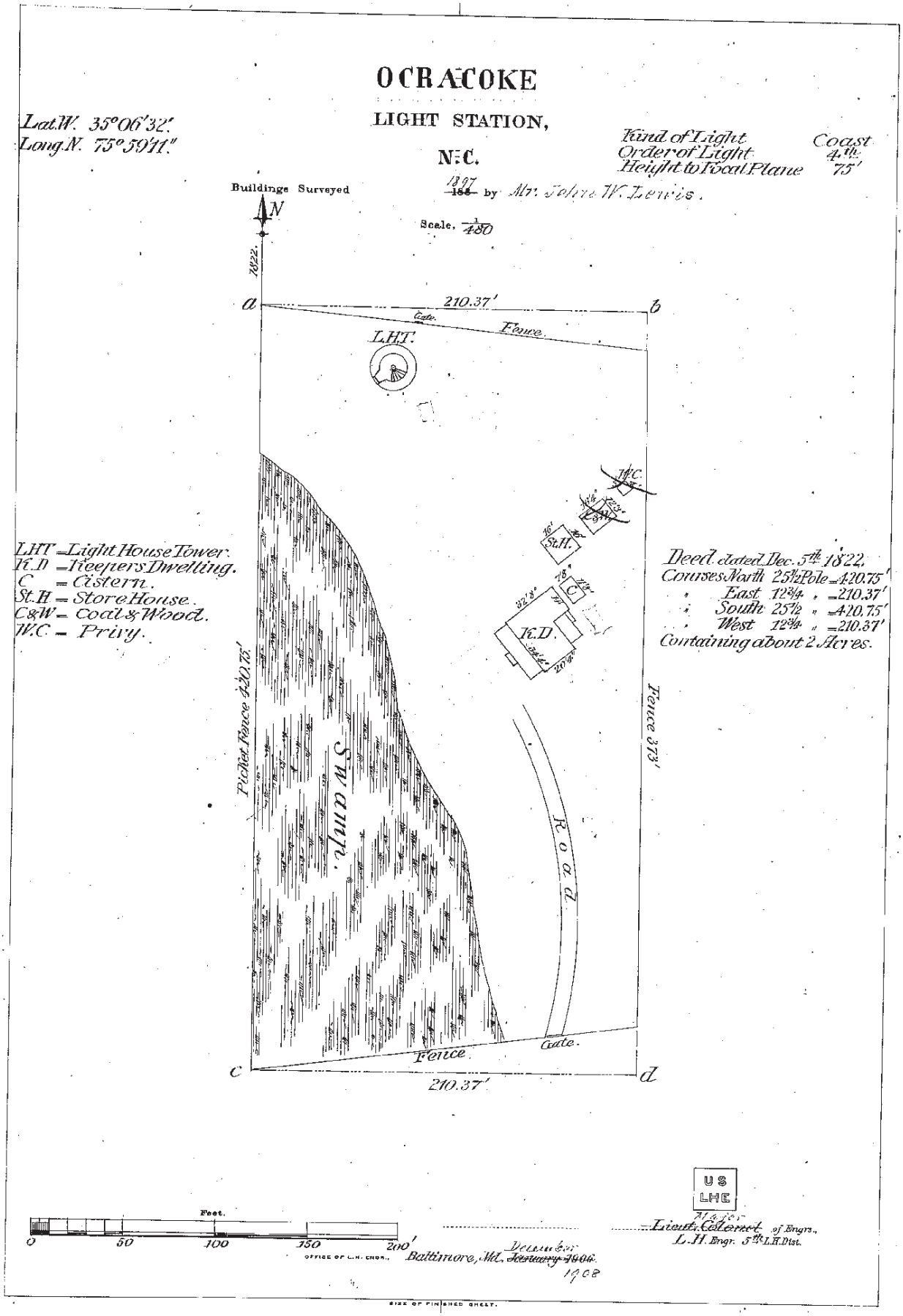


FIGURE B-8. Annotated 1908 site plan. (NPS/CAHA Collection)

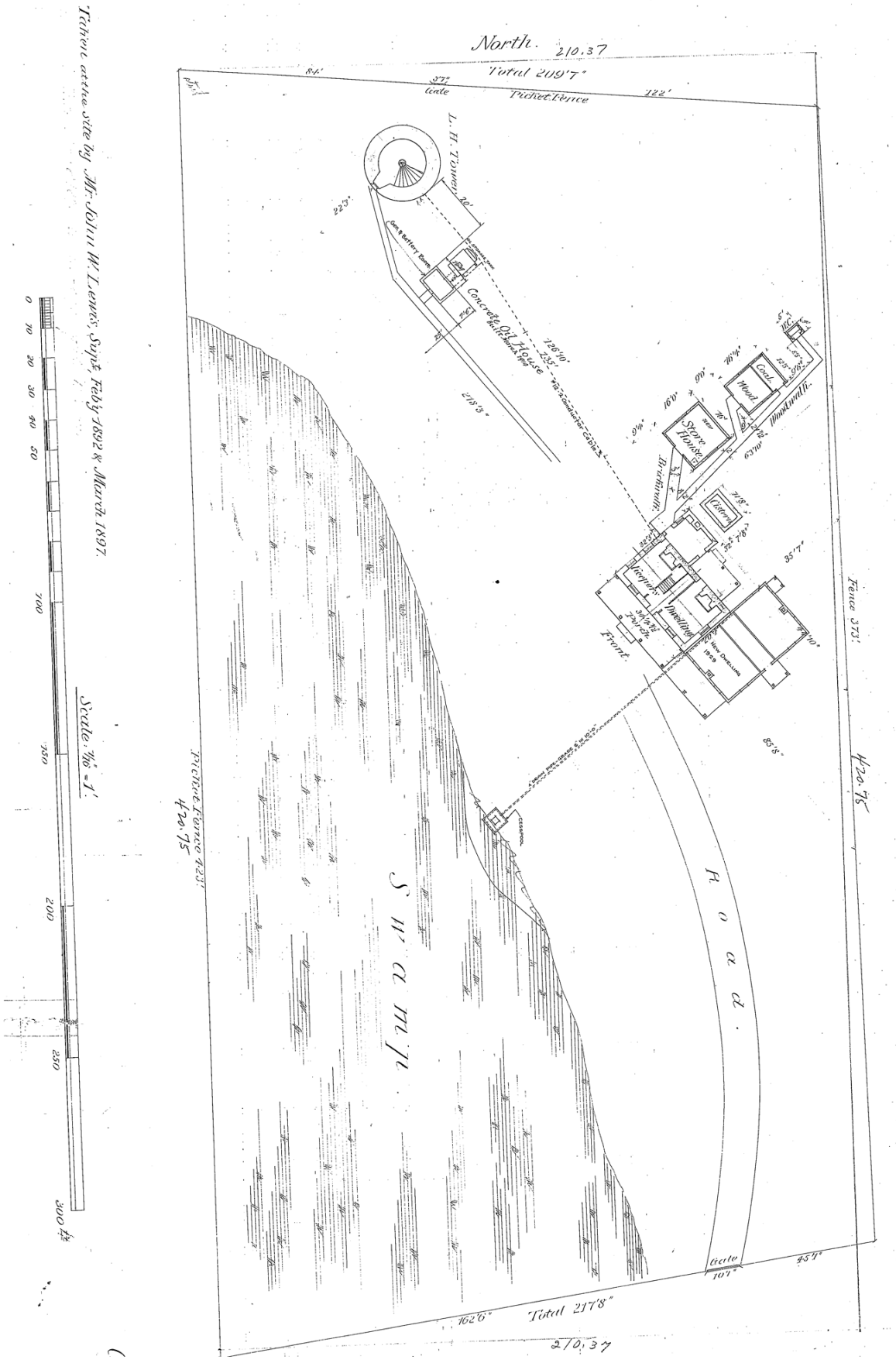


FIGURE B-9. Updated 1908 site plan showing the addition of the concrete oil house in 1914 and the keeper's quarters. (NPS/CAHA Collection)

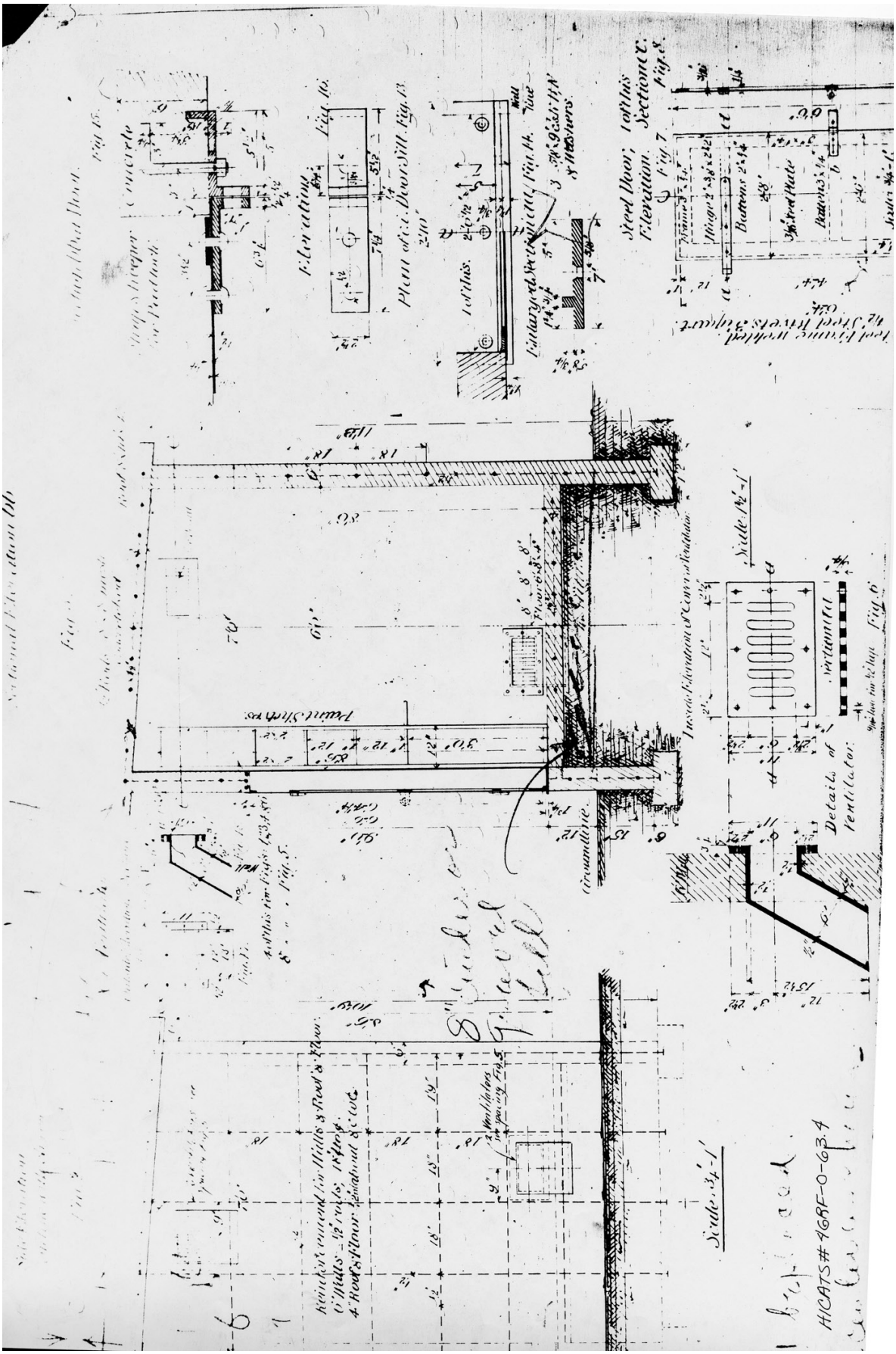


FIGURE B-10. Concrete oil house drawing, 1913. (NPS/CAHA Collection)

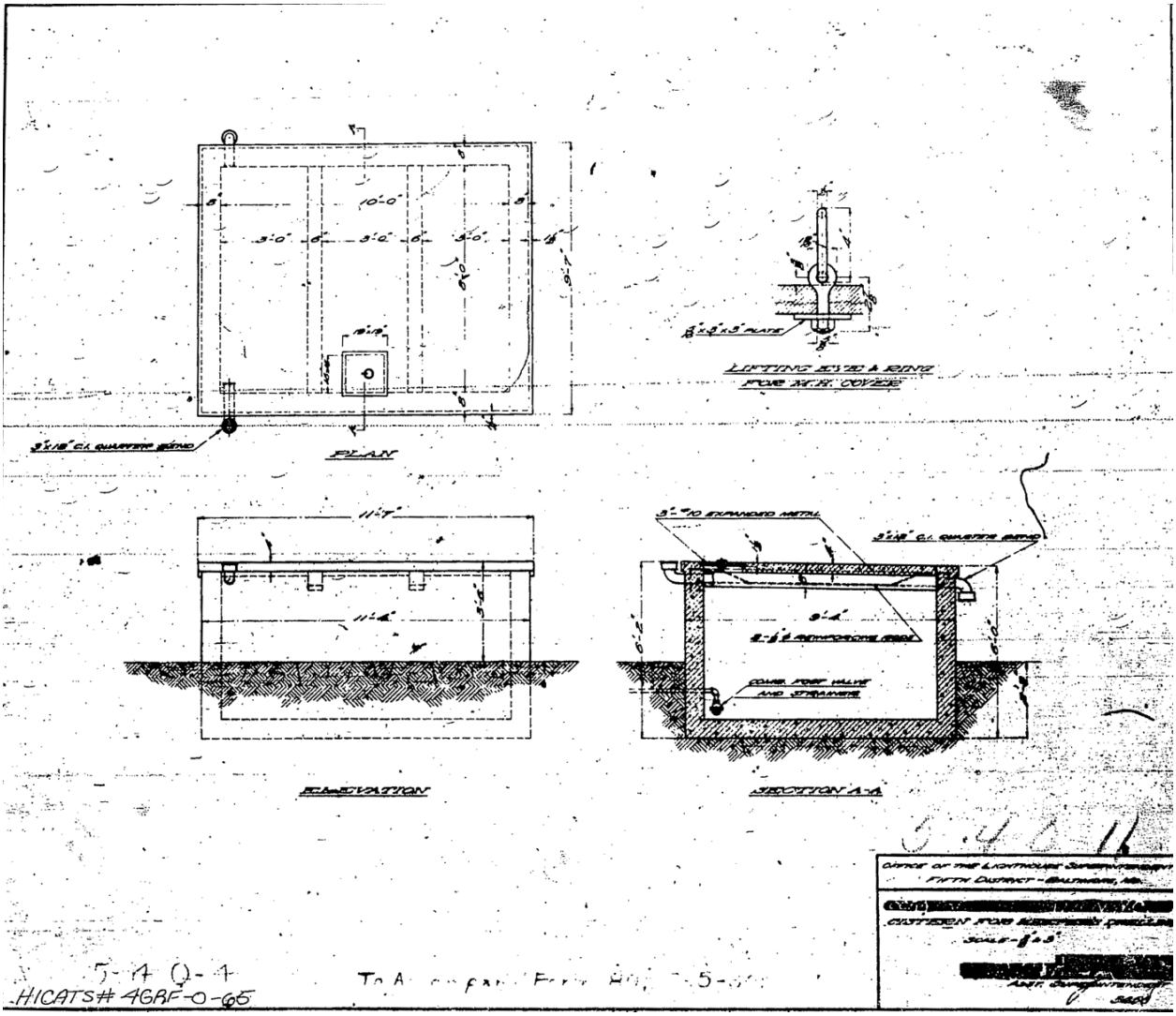


FIGURE B–11. Plan of north cistern, n.d. (NPS/CAHA Collection)

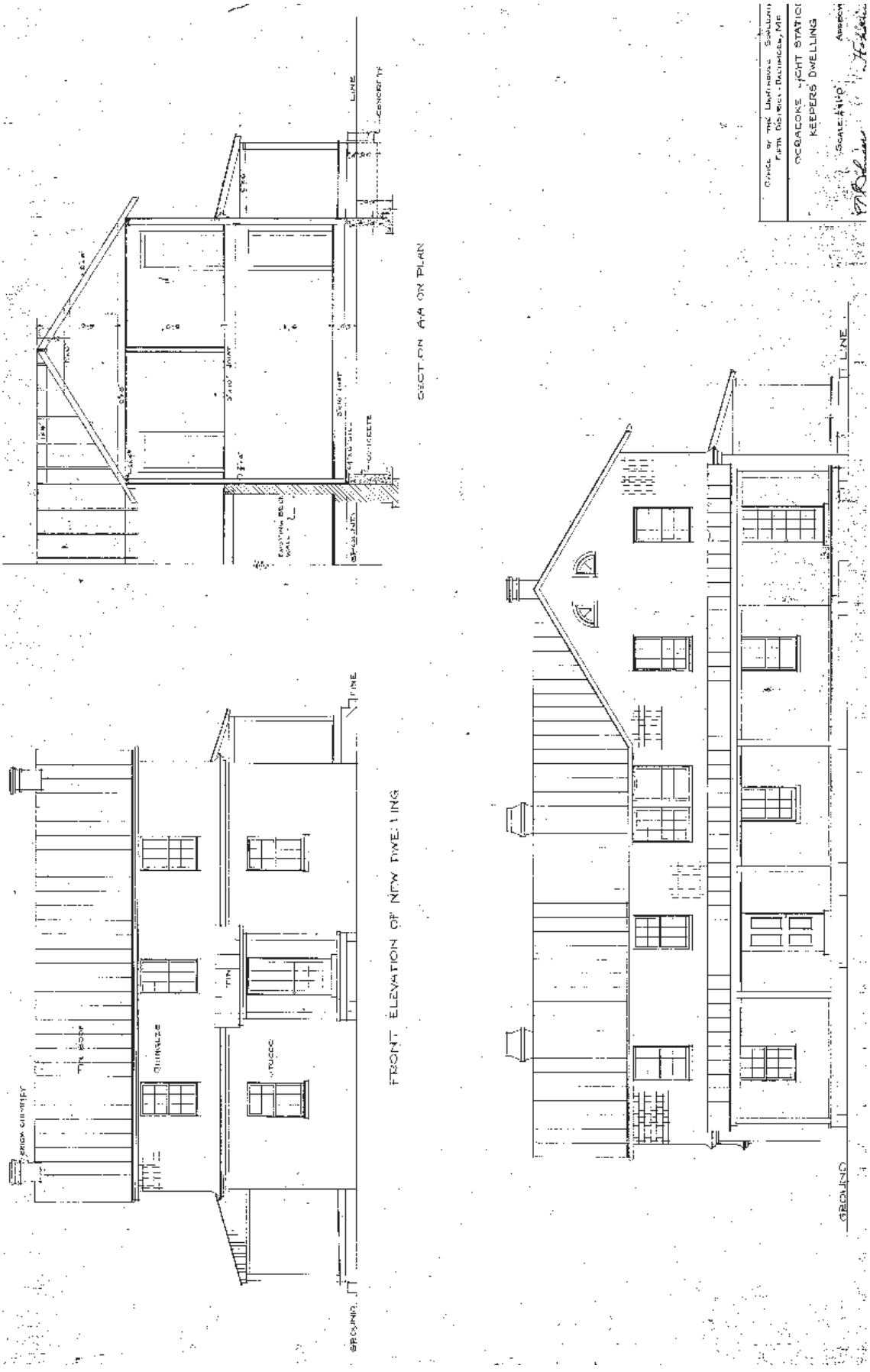


FIGURE B–12. Plan of double dwelling, 1929. Note that rear elevation is labelled "FRONT." (NPS/CAHA Collection)

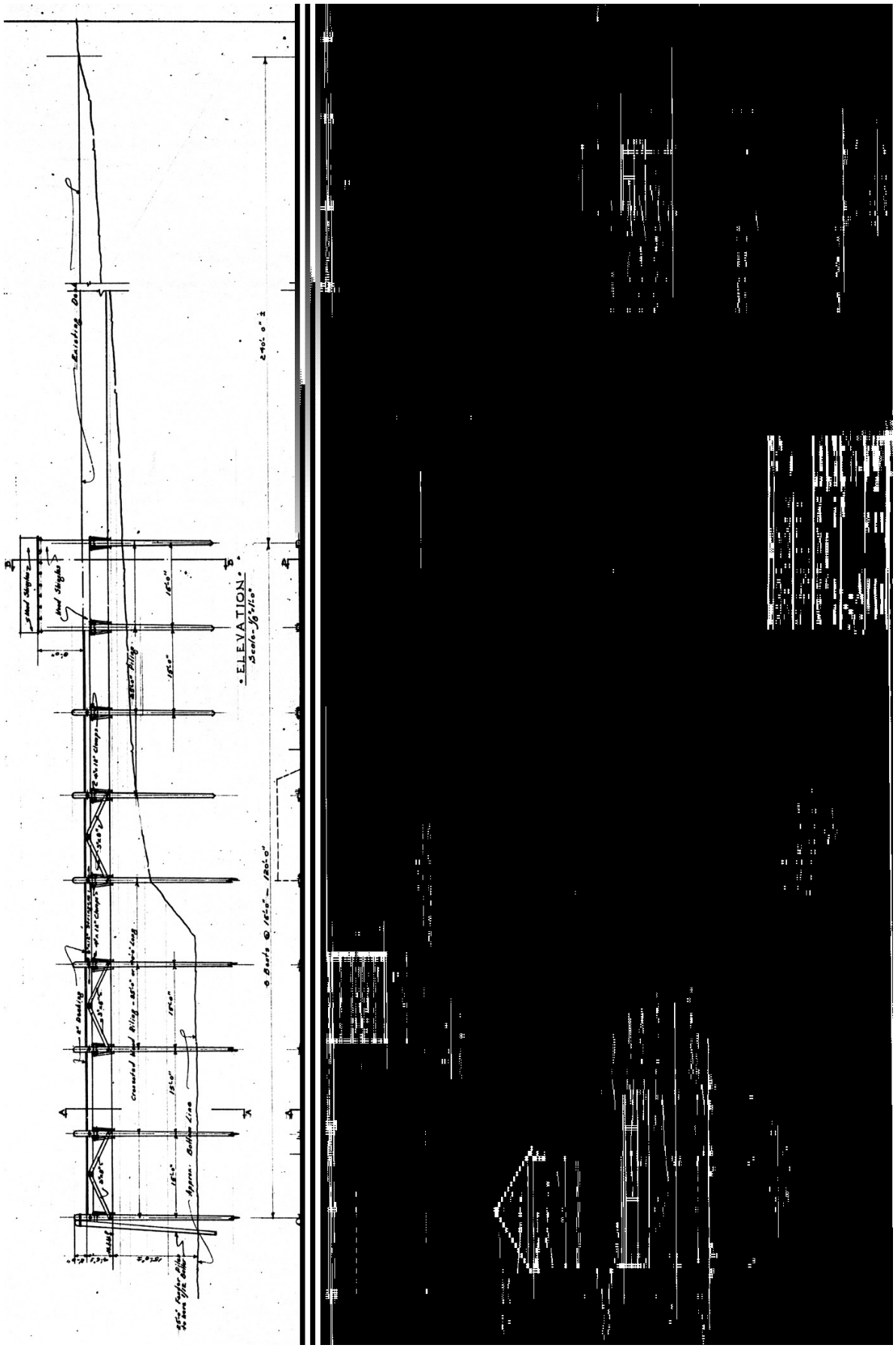


FIGURE B–13. Plan of pier and boathouse, 1930. (NPS/CAHA Collection)

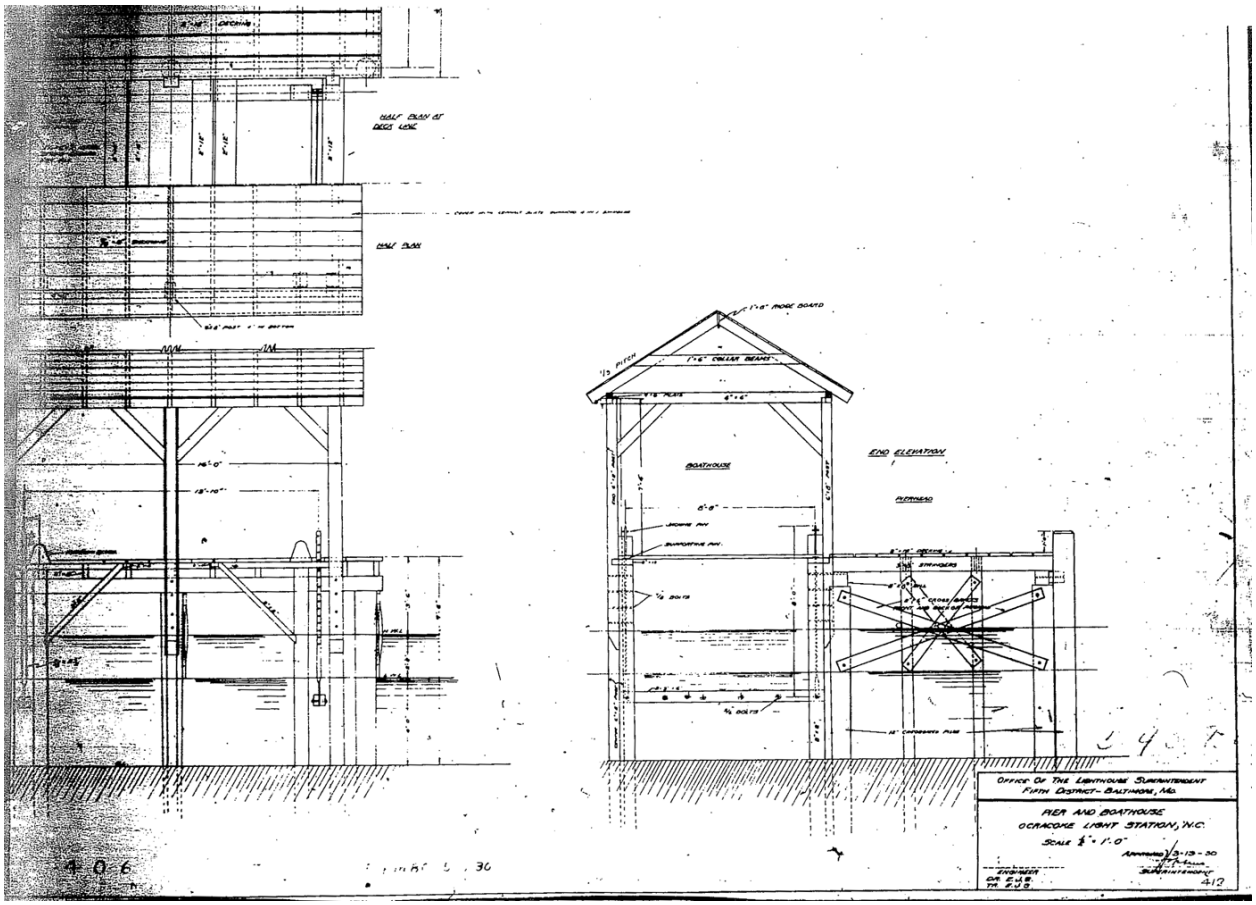


FIGURE B-14. Plan of pier and boathouse, 1930. (NPS/CAHA Collection)

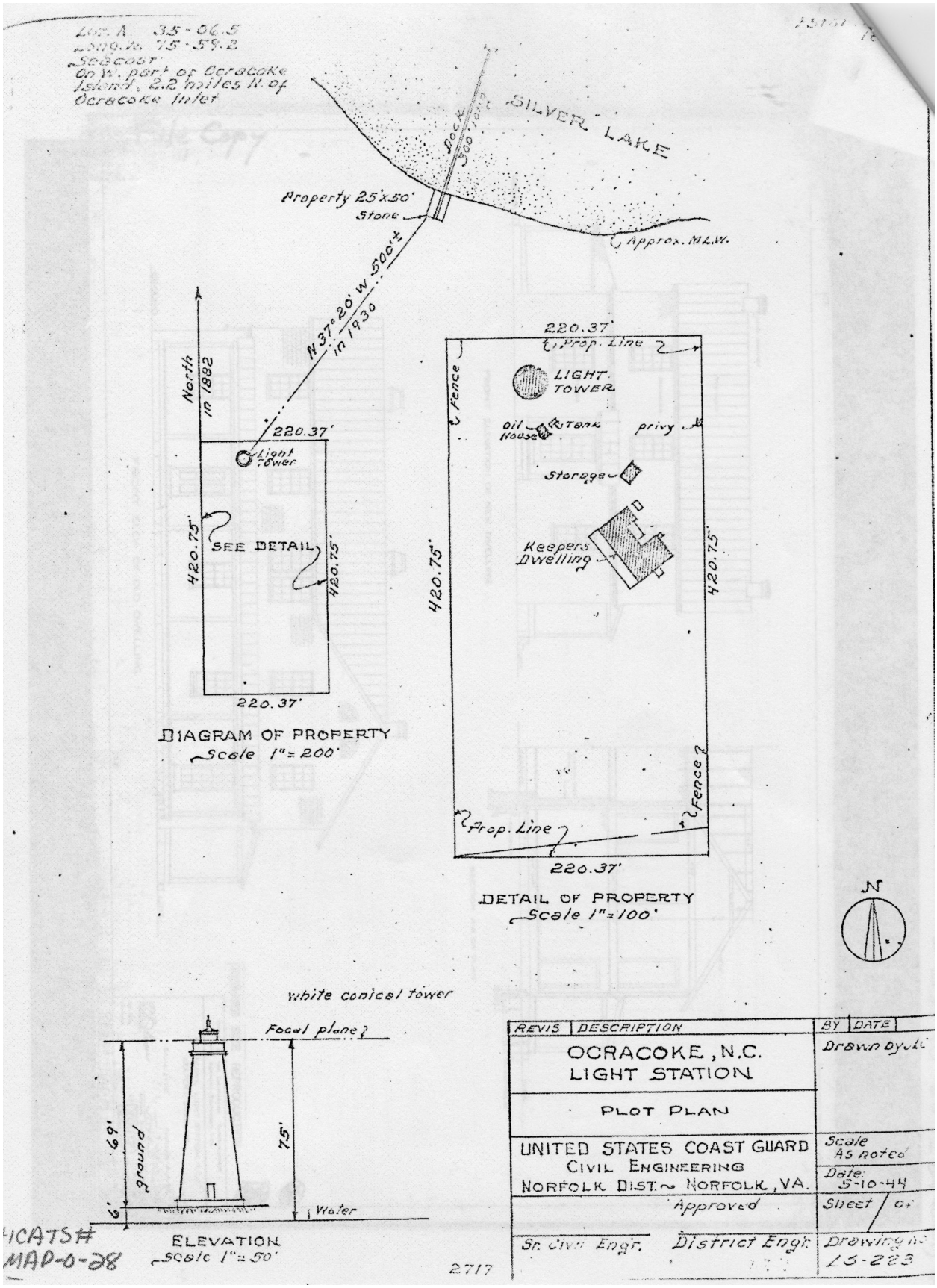


FIGURE B-15. Plot plan of the light station showing a dock and boathouse on Silver Lake, 1944. (NPS/CAHA Collection)

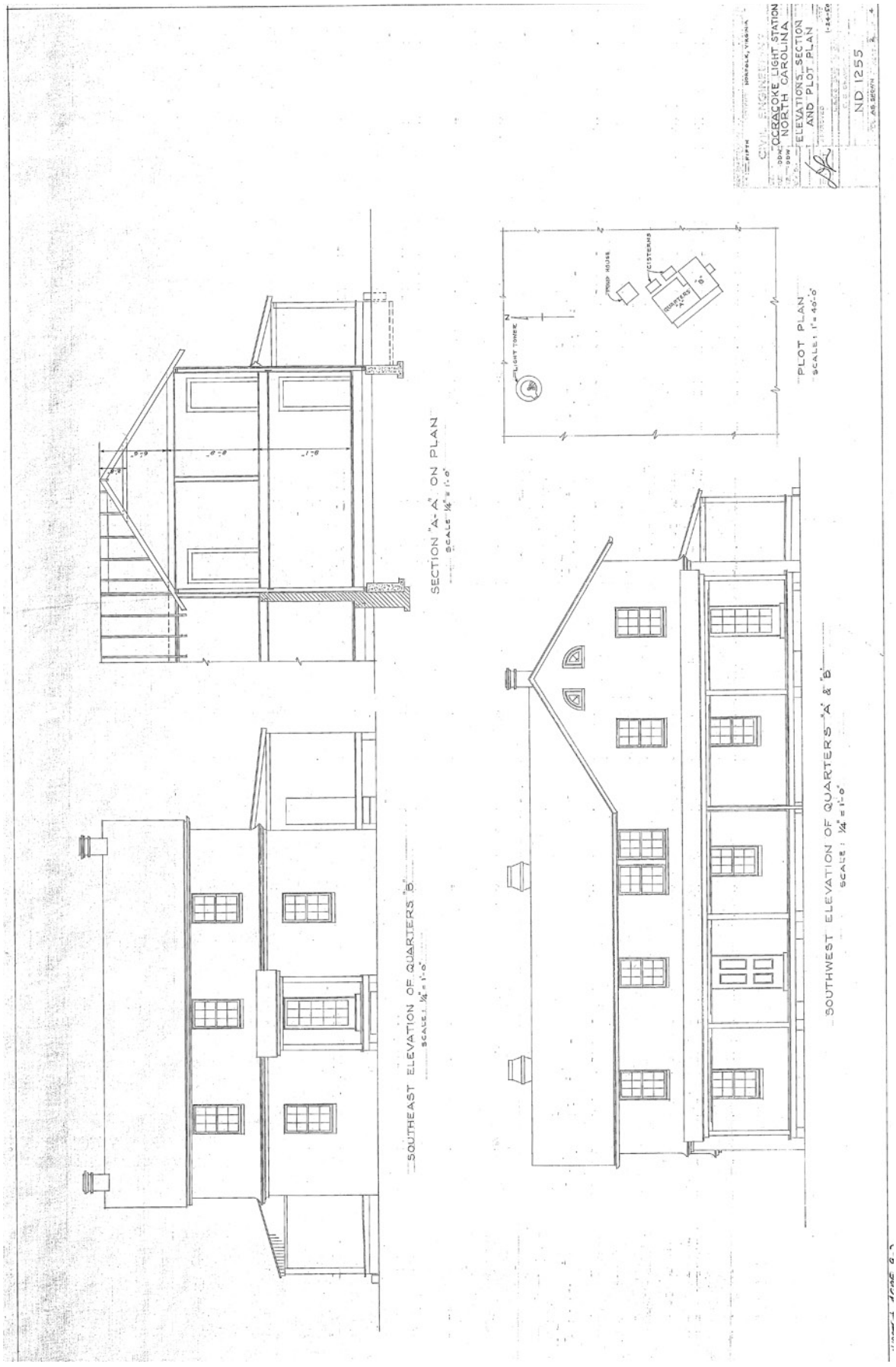


FIGURE B-16. Elevations that accompanied work of 1950. (NPS/CAHA Collection)

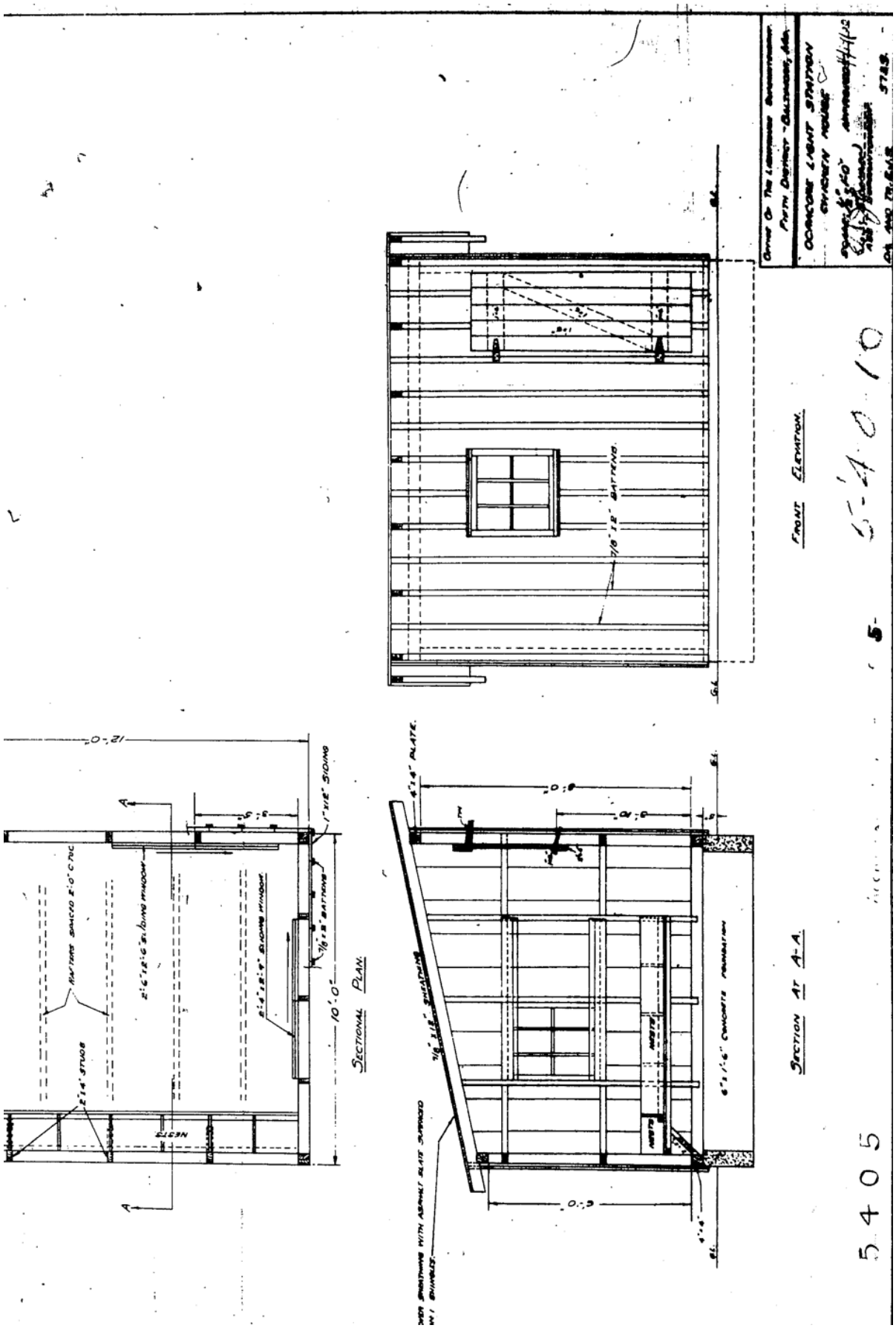


FIGURE B-17. Plan of chicken house, ca. 1950. (NPS/CAHA Collection)

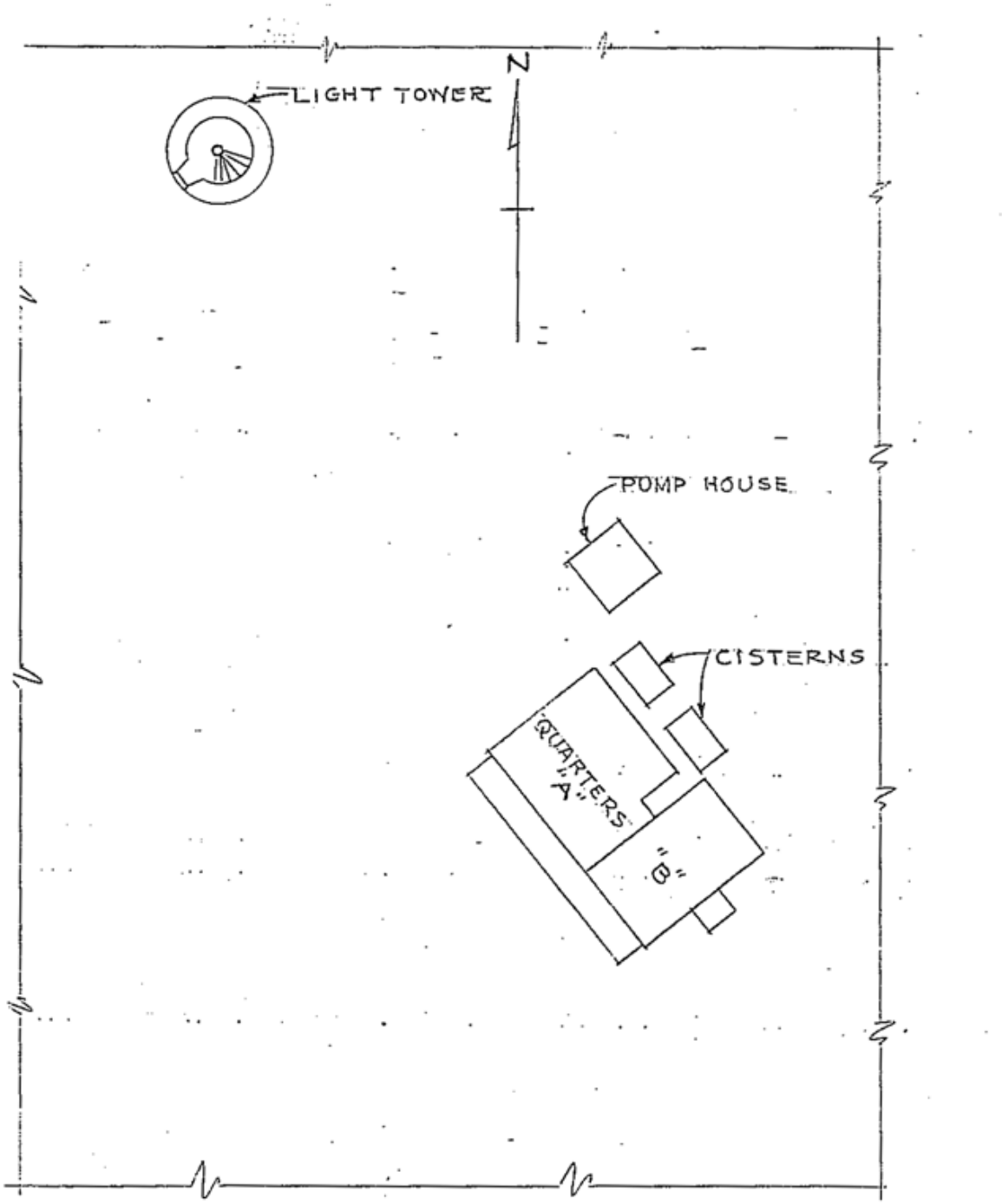
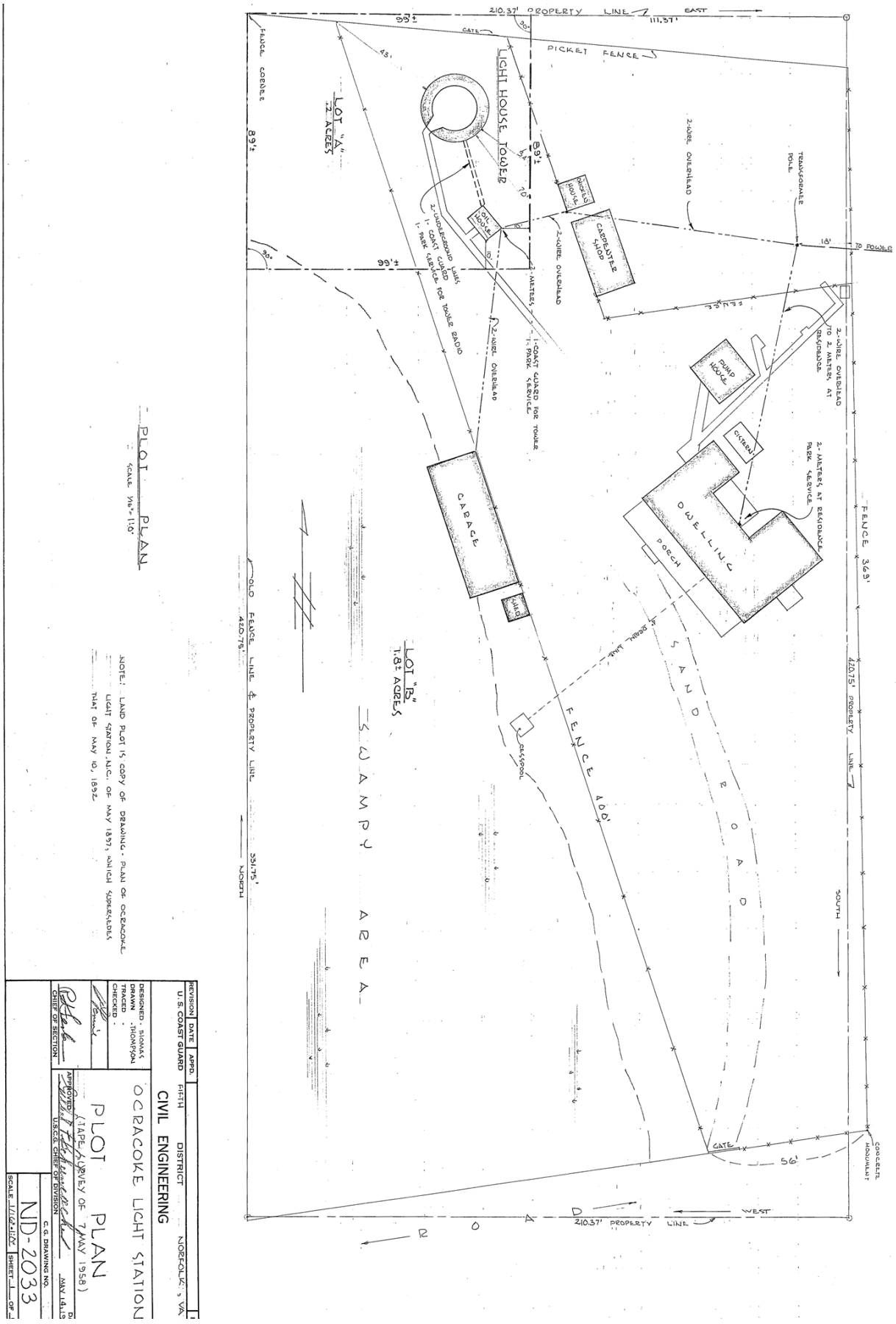


FIGURE B-18. Plot plan, 1950, NTS. (NPS/CAHA Collection)



PLOT PLAN
SCALE 1/16"=1'0"

NOTE: LAND PLOT IS COPY OF DRAWING - PLAN OF OCRACOKE LIGHT STATION, N.C. OF MAY 1897, WHICH SUPERSEDES THAT OF MAY 10, 1892

REVISION	DATE	APPD.

U.S. COAST GUARD FIFTH DISTRICT NORFOLK, VA.

CIVIL ENGINEERING

OCRACOKE LIGHT STATION

DESIGNED - THOMAS
DRAWN - THOMPSON
TRACED
CHECKED

PLOT PLAN
(TAPE SURVEY OF 7 MAY 1958)

APPROVED: CHIEF OF SECTION
APPROVED: U.S.C.G. CHIEF OF DIVISION
MAY 14, 19

C. G. DRAWING NO.
ND-2033

SCALE 1/16"=1'0" SHEET 1 OF

FIGURE B-19. Site plan showing the addition of several new outbuildings, 1958. (NPS/CAHA Collection)

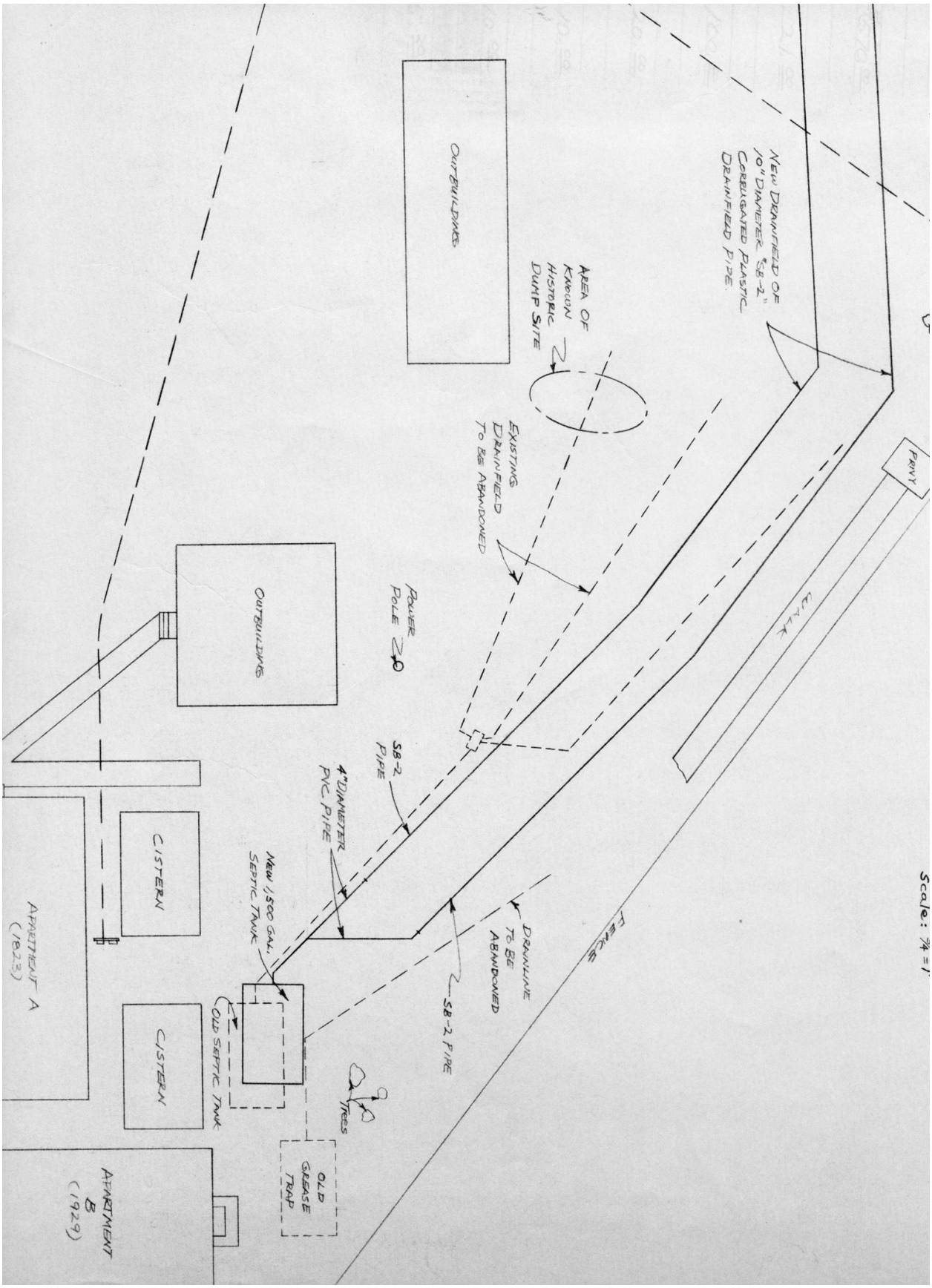


FIGURE B-20. Drain field plan, 1987. (NPS/CAHA Collection)

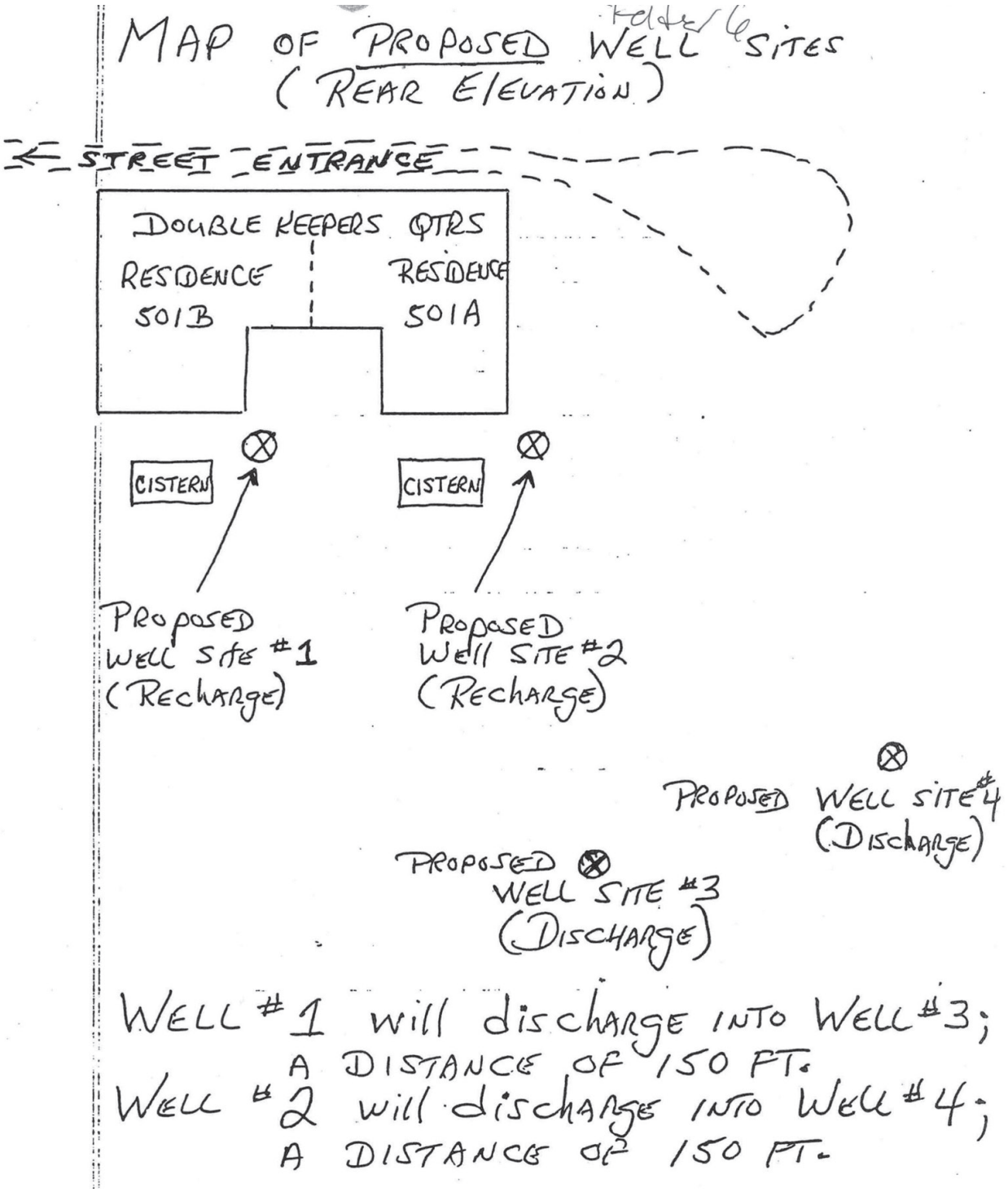


FIGURE B–21. Sketch map of well system, 1993. (NPS/CAHA Collection)

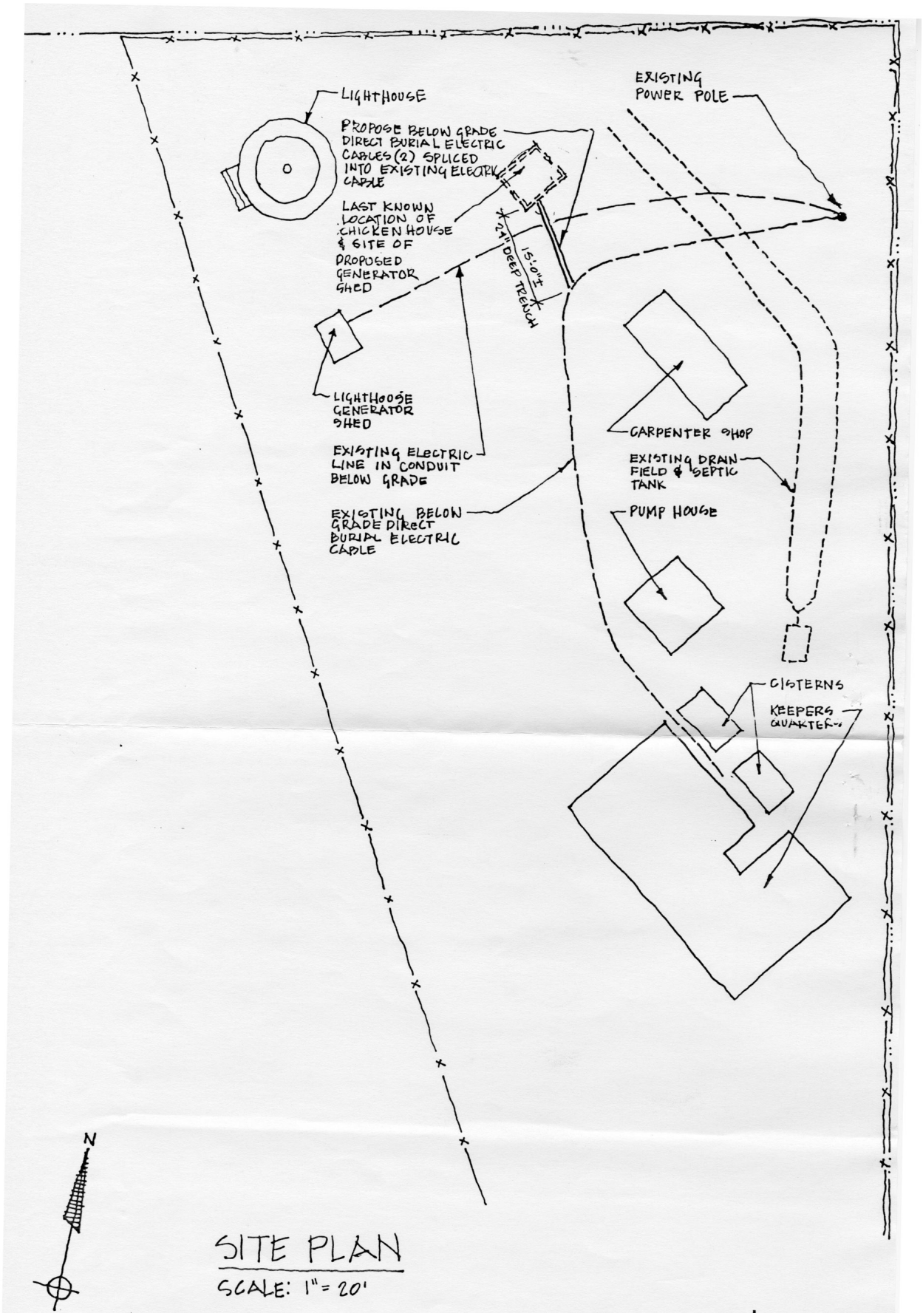


FIGURE B-22. Site plan showing new generator shed in location of chicken house, 1994. (NPS/CAHA Collection)

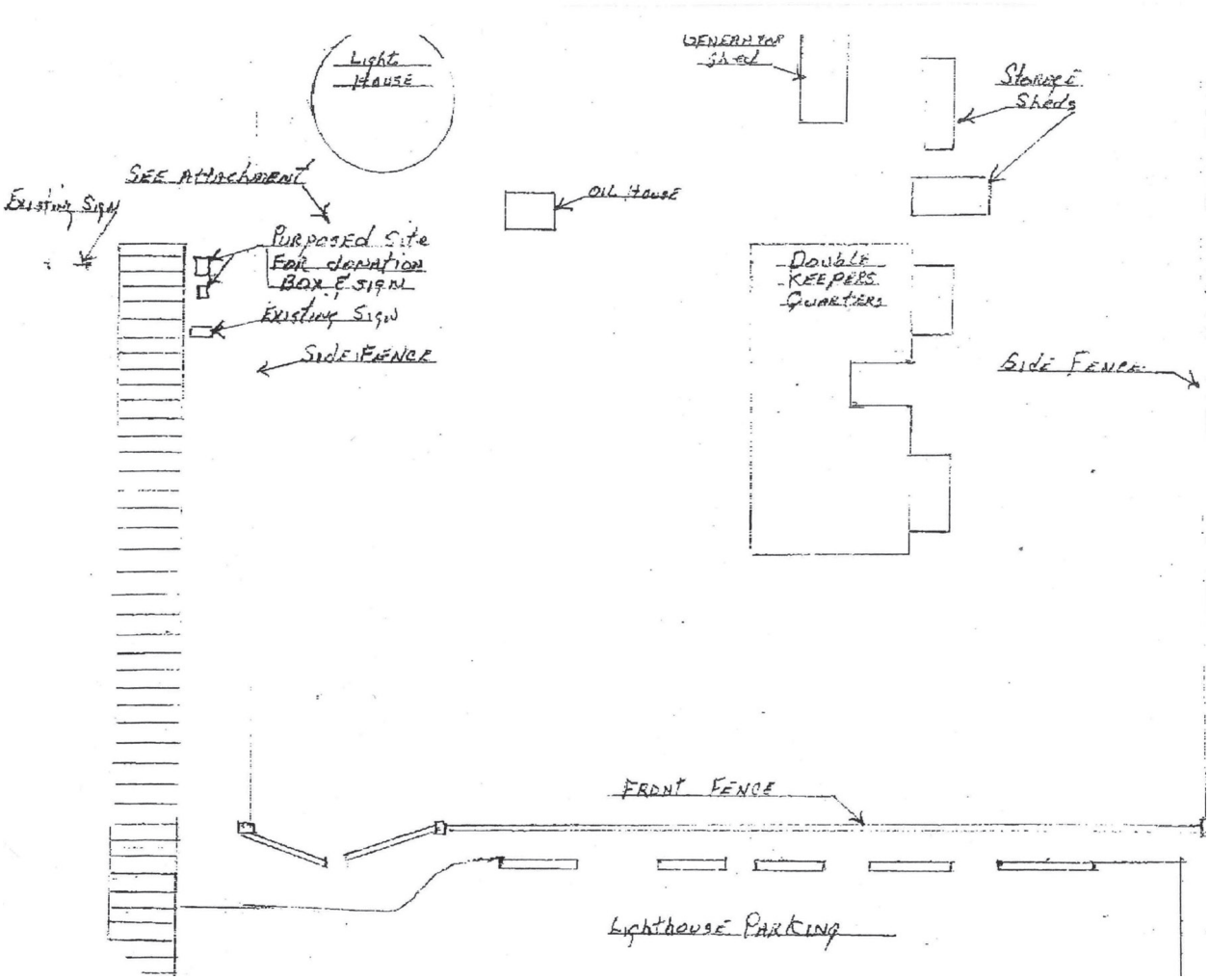


FIGURE B-23. Drawing of donation box location, 2003. (NPS/CAHA Collection)



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



NPS CAHA 603/127306, Janurary 2016
Cape Hatteras National Seashore

Ocracoke Light Station
Cultural Landscape Report

National Park Service
U.S. Department of the Interior

Ocracoke Light Station
Cape Hatteras National Seashore
1401 National Park Drive
Manteo, North Carolina 27954

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