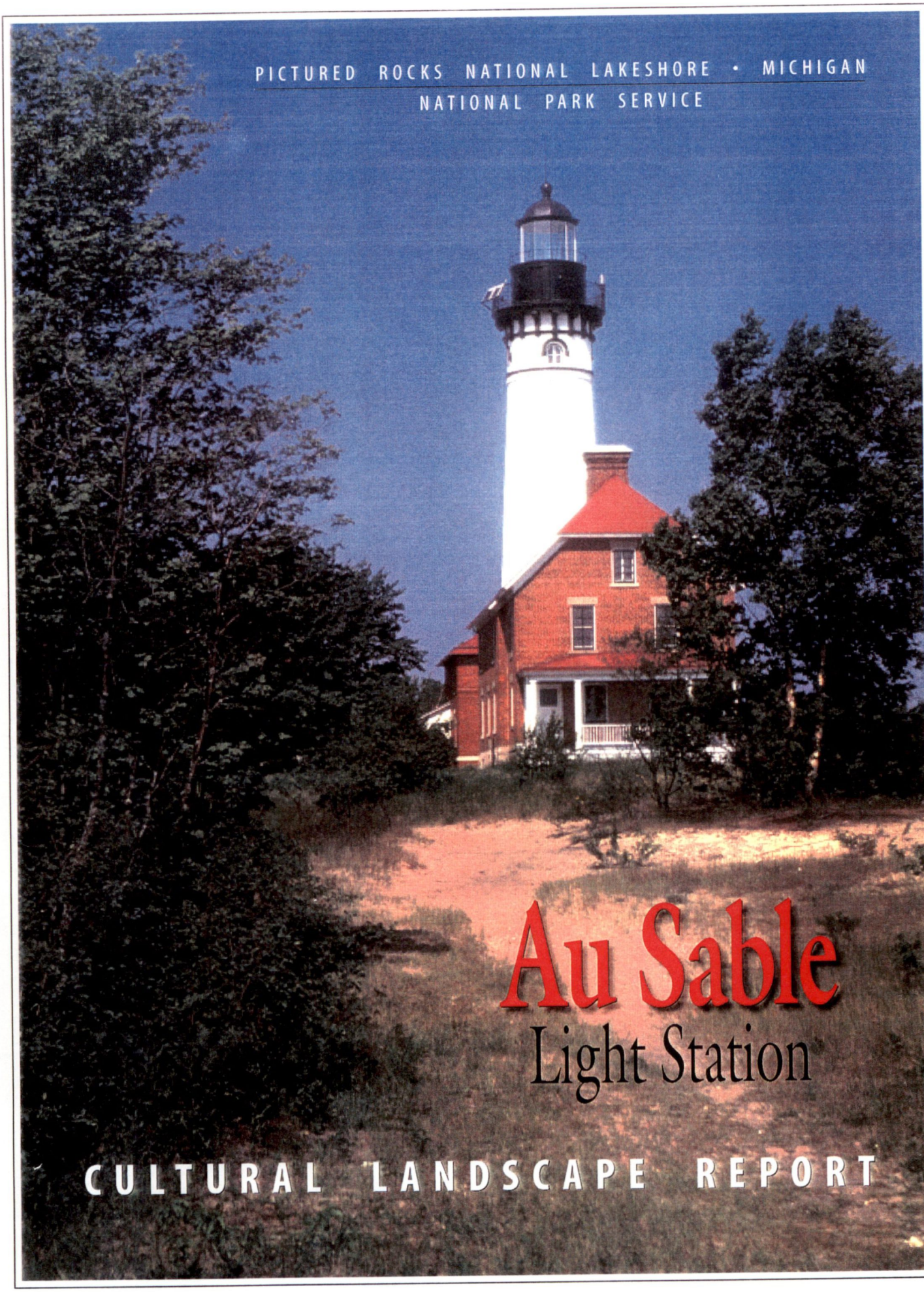
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NATIONAL PARK SERVICE



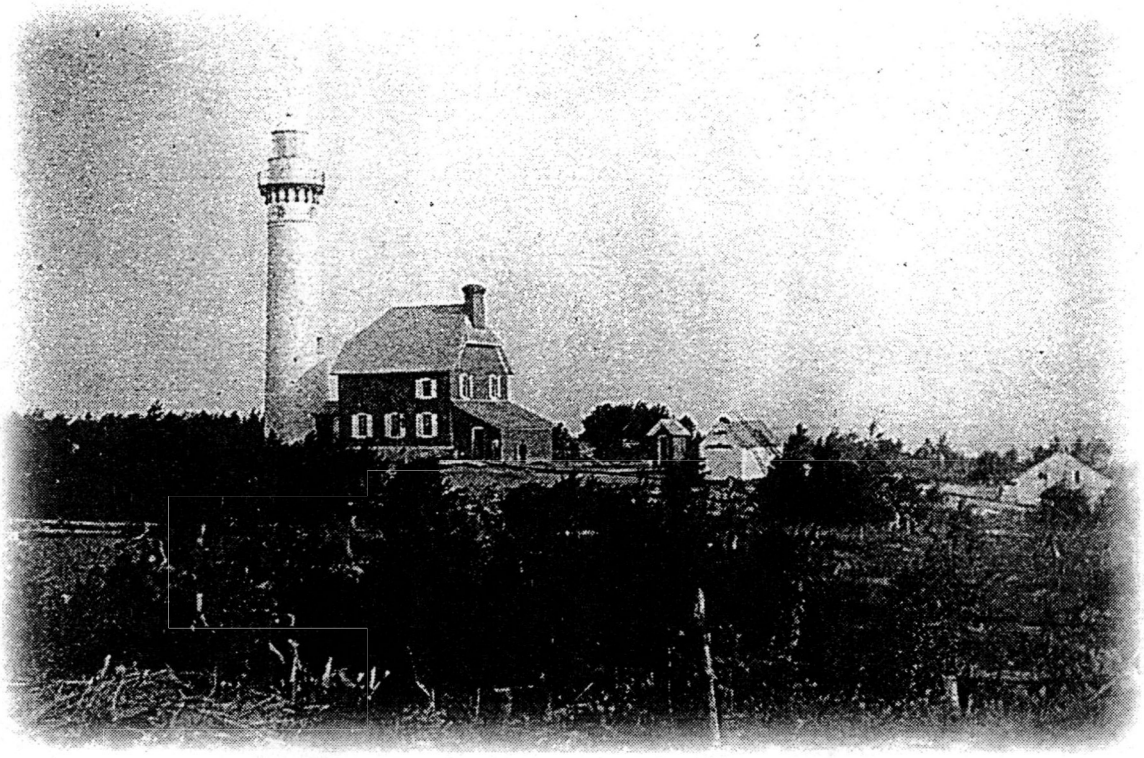
Au Sable Light Station

CULTURAL LANDSCAPE REPORT

PICTURED ROCKS NATIONAL LAKESHORE, MICHIGAN

NATIONAL PARK SERVICE

AU SABLE LIGHT STATION
Cultural Landscape Report



October 1998

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Administrative Data

Administrative Data

Introduction

The Au Sable Light Station, located within the Pictured Rocks National Lakeshore, is a relatively intact nineteenth-century lighthouse station on the south shore of Lake Superior. The station lies in an area considered treacherous for navigation and sometimes called the "graveyard coast" because of the frequency of shipwrecks in the area. Following repeated calls for navigational aids along this stretch of shoreline, the United States Light-House Board approved the construction of a light tower on Au Sable Point in 1872; the station became known as "Big Sable." The station grew through the years, with major construction and site development occurring during the late-nineteenth and early-twentieth centuries. Currently the property includes ten extant buildings and structures: a light tower and attached passageway, two dwellings, a boathouse, a fog signal building, two privies, a brick oil house, a metal oil house and a garage. The site also includes significant landscape features and characteristics. The most important character-defining qualities and features of the landscape—the edge definition of the Lake Superior shoreline and bluff; a densely vegetated forest edge; the verticality and visual prominence of the light tower; the site arrangement of two distinct but interrelated clusters, the lighthouse/residential cluster and the waterfront/industrial cluster; and the internal sidewalk system—are still present today.

Property Description and Boundaries

The Au Sable Light Station is located approximately thirty miles northeast of park headquarters at Munising, Michigan, and approximately 12 miles west of Grand Marais, Michigan *(Figure 1)*. The light station occupies the northern tip of Au Sable Point, west of the Grand Sable Dunes. The shoreline along Lake Superior is primarily sandstone, dropping 1-15 ft. to the lake.[1] The property is located on sandy soil, referred to as "Shelldrake sand."[2] Along the shoreline, sand washes away to expose a bedrock shelf of Jacobsville sandstone, which extends under the light station.[3] Boundaries for the study area have been defined as the historic light station property.

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[1]Douglas J. Frederick and Lawrence Rakestraw, "A Forest Type Map of Pictured Rocks and Apostle Islands National Lakeshores from the Original General Land Office Survey Records," produced for the Department of the Interior, National Park Service, Midwest Region, Houghton: Michigan Technological University, 20 December 1976, 70.

[2]"Soil Survey of Pictured Rocks National Lakeshore," United States Department of Agriculture, Soil Conservation Service, Department of the Interior, National Park Service, 1993.

[3]James L. Carter, "Au Sable Light, Sentinel of the 'Great Sands,' " *Inland Seas* 33 (2) (Summer 1977), 97.

Scope of Work

The goal of this project is to produce a Cultural Landscape Report (CLR) for Au Sable Light Station that provides preservation treatment recommendations and preliminary design plans for phased implementation of the treatment recommendations. The scope of work for the CLR also includes documentation of the physical history of the site, a graphic site chronology, analysis of the history of the site over time, documentation of existing conditions, and an integrity assessment of the site.

Management Summary

The National Park Service (NPS) acquired the Au Sable Light Station from the U.S. Coast Guard (USCG) in 1968 and incorporated it into the Pictured Rocks National Lakeshore which had been established in 1966.[4] The site had been in federal ownership since its acquisition in 1872 for development of a light station on this site. The site had not been occupied or staffed on a regular basis since 1958 when Coast Guard personnel were reassigned and the site operated entirely by automation. Prior to that time the station had been occupied continuously during its annual season of operation since the first operation of the light in 1874.

NPS initiated the CLR process for the Au Sable Light Station in response to the need for clear guidance on how to manage the landscape of the site. The CLR is being developed in a parallel process to a Historic Structures Report for the Au Sable Light Station being undertaken concurrently by Quinn Evans / Architects of Ann Arbor, Michigan. The CLR has been undertaken primarily in response to management needs and concerns relating to the appropriate treatment of the landscape which has received little attention since the site ceased to operate as a staffed light station in 1958.

The CLR provides information that can be consulted in developing future plans for meeting visitation, shoreline protection, access needs, and other site needs without damaging cultural landscape values and resources. The site currently has no provision for visitors traveling by automobile to visit the site. Access is available by parking in the adjacent Hurricane Campground lot and hiking to the station, a distance of 1.5 miles. The absence of a CLR has hindered efforts to evaluate the effects of future actions designed to meet contemporary site needs.

Investigation Methodology

This study provides an overview of the evolution of the Au Sable Light Station. Particular attention focused on the addition, maintenance, and removal of cultural resources from 1872 to 1997. This site history is based in large part on the 1994 historical data section developed by Rachel Franklin Weekley for use in a CLR for the Au Sable Light Station. With the intention of building on—rather than duplicating—previous efforts, NPS provided Land and Community Associates (LCA) with the

[4]Although NPS now owns the light tower, USCG maintains access rights for their annual maintenance of the light and photovoltaic equipment.

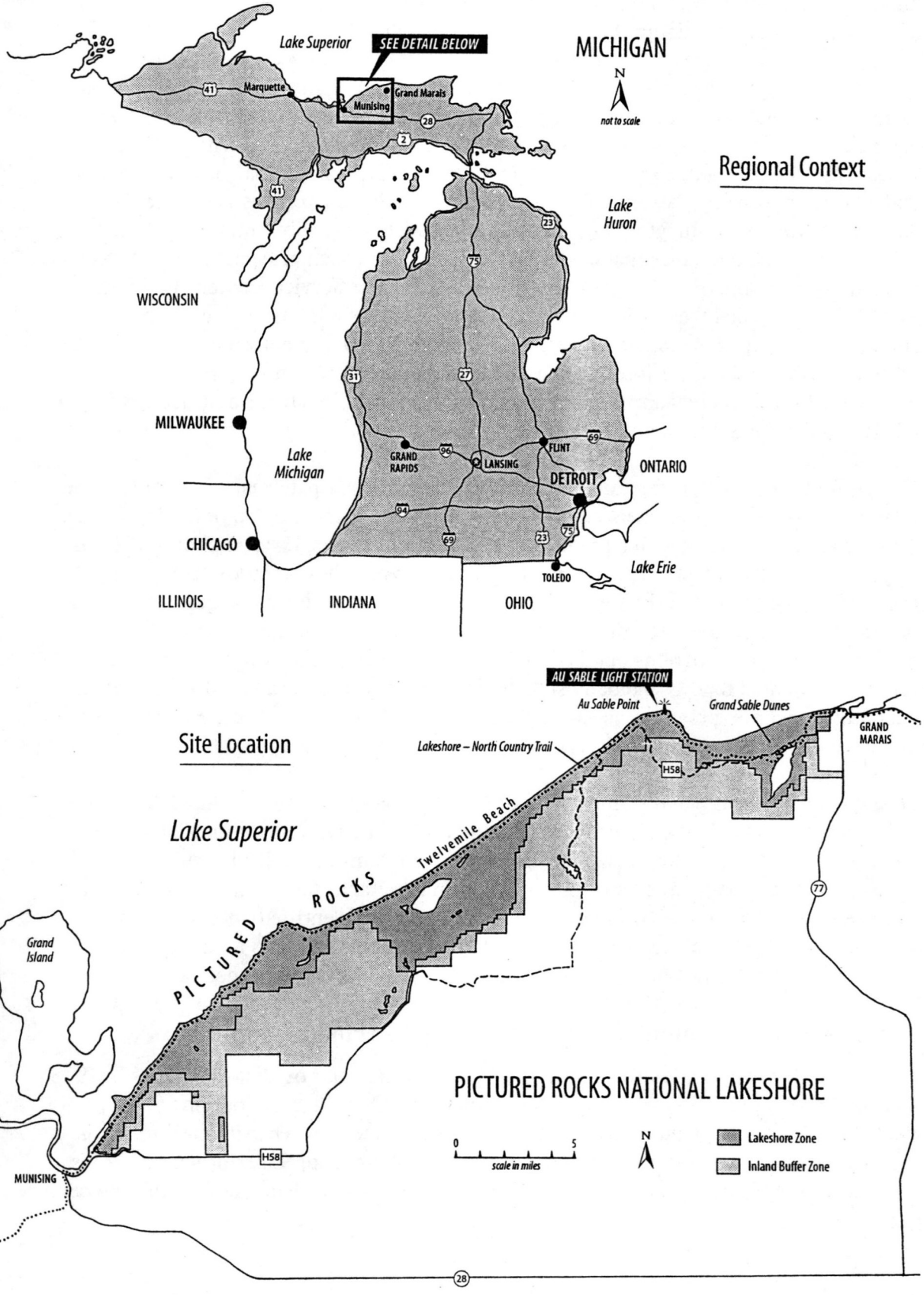


Figure 1. Context and Location

Franklin Weekley report on disk. That document, which provided the basis for the site history, has been revised and supplemented to meet the current scope of work and to be consistent with current findings and additional research.

Research during the summer of 1994 by Rachel Franklin Weekley involved site investigations, examination of secondary sources and primary documentation of human activity on Au Sable Point, oral history interviews with individuals associated with the light station, and the use of historic maps and photographs. The search for information led to collections on Michigan's Upper Peninsula and the National Archives and Records Administration in Washington, D.C. Franklin Weekley made substantial use of the previous research and investigations of David Snyder, historian at Apostle Islands National Lakeshore, and Louis Torres, formerly with NPS's Denver Service Center. In September 1995 LCA continued these efforts at the National Archives, identifying surviving correspondence from Au Sable keepers to the Lighthouse Board between 1884 and 1898. LCA was assisted in this effort by Quinn Evans / Architects which was the prime contractor for this project and which was conducting a parallel Historic Structures Report (HSR) for the Au Sable Light Station.

Most information on construction, maintenance, and land use patterns at Au Sable came from former residents. Keepers recorded daily activities in the light station's log books. These documents, along with administrative inspection reports, historic photographs and maps, comprise the most valuable primary sources. While these records provide an intricate record of daily activities at Au Sable, the record contains some gaps in information which have been difficult to close. The result is that the site is well-documented for most periods but the information is sometimes incomplete. In addition, reliance on annual reports and daily station logs provides considerable information, but generally concerning many of the same topics on a regular basis. Specific information about certain aspects of the landscape, such as vegetation, is scarce.

Onsite investigations and documentation of existing conditions were conducted in June 1995 and June 1997 by LCA, using a site map prepared by NPS based on a June 1994 cultural landscape inventory conducted by Sherda Williams of the Midwest Regional Office. LCA personnel took existing conditions photographs, noted the configuration, materials and condition of landscape features, located and identified additional site vegetation, and made observations of views to and from the site. No topographic or measured field survey of the light station site was conducted at that time.

Summary of Statement of Significance and Period of Significance

The Au Sable Light Station was listed in the National Register of Historic Places in 1978. The Au Sable site is eligible under both criteria A and C for its contributions to the navigational history of the Great Lakes and for its architecture. The site has historical significance because of its importance to navigation along Lake Superior's treacherous southern shore (Criterion A). The site also represents an "excellent example of 19th century

lighthouse architecture"[5] (Criterion C). The period of significance has been identified as spanning the entire development and operation of the light station from 1873 through 1958. The site was largely abandoned from 1959 to 1968, at which time it was acquired by NPS.

Summary of Findings and Recommendations

The Au Sable Light Station possesses a landscape that is a significant representation of a late-nineteenth- and early-twentieth-century Great Lakes light station. The CLR addresses current conditions and needs, including access for both visitors and NPS personnel, an enhanced visitor experience, and strategies to deal with shoreline erosion. This CLR recommends landscape rehabilitation as the most appropriate preservation approach. The intent of landscape rehabilitation, however, is to enhance NPS ability to meet contemporary needs while still retaining the station's remote, isolated character. Where achieving improved access and amenity would result in making the station appear less remote, priority has been given to preserving its historic, isolated character. Although the landscape is significant and retains considerable cultural landscape integrity, its integrity is diminished to some degree by the loss of small-scale features and structures associated with the station during its 1873–1958 period of significance. It appears that interpretation rather than physical landscape treatments can be effective in mitigating the effects of those losses.

Treatment recommendations address a variety of resources and concerns, including shoreline erosion and protection, site access and general circulation, vegetation management, building rehabilitation and reconstruction, site furnishings, and interpretation. Among the major landscape treatment recommendations addressed by the preliminary design and treatment plan are

- determining the extent of shoreline and sand bank erosion both at the light station site and along the Coast Guard road; prioritizing the urgency of implementing appropriate protection measures
- giving preference to effective shoreline and sand bank protection strategies that have minimal visual impact on the site's scenic and historic character
- considering alternatives for visitor access using either the Coast Guard road, a new visitor approach road, and/or boat access to the station
- providing for service vehicular access within the site
- repairing and/or replacing broken or missing concrete walks
- clearing of second-growth vegetation in the historic cleared area
- adopting a landscape maintenance approach that emphasizes the station's utilitarian character
- reconstructing the pier, boathouse boatway, and keepers' woodsheds
- rehabilitating the boathouse and the garage
- limiting the use of exterior lighting at the station
- relying on informal, unstructured seating rather than providing benches within the site
- encouraging visitors to remove their own trash from the site, and
- relocating interpretive waysides to the site entrances and along the Coast Guard road.

[5]David Koenig, National Register of Historic Places Inventory -- Nomination Form for Au Sable Light Station, October 21, 1976, continuation sheet 2.

Site History

Site History

Summary

The U.S. Lighthouse acquired the Au Sable Point property adjacent to Lake Superior in 1872 for development as a light station. The establishment and subsequent expansion of the station were in response to the growing importance of commercial navigation on Lake Superior. During the prehistoric period Native Americans had burned woodland in the Au Sable vicinity and valued the Pictured Rocks as a place of special importance. By the early seventeenth century, French explorers, missionaries, and fur traders were present in the region. With Michigan statehood in 1837, the discovery of iron ore in Marquette County in 1844, and the completion of the Soo Locks in 1855, navigation on Lake Superior increased significantly. Consequently, the need to establish a light station to serve the Au Sable vicinity became more pressing.

The light tower and original dwelling developed soon after site acquisition, and the station was fully staffed and operational by 1874. Other early structures included a wharf and a brick oil house. A site of both industry and residence, the station represents the tangible evidence of a comprehensive federal effort to protect navigation on the Great Lakes through the nineteenth and twentieth centuries. The station at various times possessed a diverse assemblage of buildings and structures that have included the imposing tower as well as dwellings for keepers and other personnel, specialized structures such as seawalls, tramways and boatways, and utilitarian structures such as privies and dog kennels. By 1908 the station was a complex site with two distinct clusters, a waterfront/industrial area immediately adjacent to Lake Superior and the lighthouse/residential area on the high land more visible from the lake and safer from flooding. Site development continued through the twentieth century with the station growing in response to its utilitarian needs.

Throughout its history, the station—known until 1910 as the Big Sable Light Station—was isolated and subject to the harsh weather conditions of the Lake Superior Upper Peninsula. The domestic landscape associated with the station was of a functional character, with fruit-bearing trees and vines predominating over any ornamental vegetation. Over time, a network of walks and paths developed to connect major site buildings with auxiliary structures and the lakefront. Considerable construction was undertaken to modernize the site between 1909 and 1938: boardwalks were replaced with concrete walks, a metal oil house was built, vehicular access was improved, the fog signal's dependence on steam was discontinued when the air diaphone system was installed, the dock was extended, a telephone line was installed, and a new keeper's dwelling was built. From 1939 to 1958 modernization of the station continued, with

replacement of buildings and structures damaged in storms and changes necessary to accommodate residential life at the station. By the late 1950s the transition to an automated system was underway and many site features were removed or abandoned as their uses were discontinued. The most significant site change came in 1958 as a result of the virtual abandonment of station operations when the transition to automation was completed. From 1959 to 1966 the abandoned site was neglected, and site features became deteriorated and damaged or were lost entirely. In 1968 the light station property was transferred from the U.S. Coast Guard (USCG), successor of the U.S. Lighthouse Service, to the National Park Service (NPS) and became part of the Pictured Rocks National Lakeshore.[1]

For most of its history, the light station was managed in a quasi-military manner that resulted in a well-maintained—but remote and isolated—landscape. Yet throughout its existence the Au Sable station site also has been subjected to the destructive effects of erosion and storms, and various strategies have been implemented to protect the site from the natural forces of water, wind, and eroding sand. The lakefront, in particular, has been vulnerable, although the bluff also has eroded substantially. Lighthouse personnel were posted at the light station continuously from 1874 until 1958, although usually only seasonally. With the installation of an automatically-operated light, however, regular staffing of the station was discontinued. The station has been in continuous federal ownership since 1872 although there have been administrative and operational changes as lifesaving and coastal security policies and operations have evolved.

Historical Periods

The site history of the Au Sable Light Station has been subdivided into the following seven historical periods related to the development, use, and management of the site:

Pre-1873	Indigenous Use and European/American Exploration *(Exhibit 1)*
1873–1895	Initial Development of the Light Station *(Exhibit 2)*
1896–1908	Industrialization and Technological Improvement *(Exhibit 3)*
1909–1938	Expansion of the Light Station *(Exhibit 4)*
1939–1958	Final Period of Operation and Automation *(Exhibit 5)*
1959–1967	Abandonment *(Exhibit 6)*
1968–1997	Administration and Maintenance by NPS *(Exhibit 7)*

[1]USCG maintains a presence at the site and control of the automated light and associated photovoltaic equipment.

Pre-1873 Indigenous Use and European/American Exploration

The history of the site for the pre-1873 period is associated with Native American use, the Radisson expedition of 1659, the Carver expedition of 1766, the Cass/Schoolcraft expedition of 1820, the William Burt survey of the area in the 1840s, the 1867 request for construction of a light station for the "graveyard coast" between Marquette and Whitefish Point, and the 1872 purchase of the property by the U.S. Lighthouse Service. These events and the activities associated with them preceded the light station's establishment and development, leaving little tangible evidence on the Au Sable site. Prior to 1873, the major landscape features of the site were its natural characteristics—native forests, the Grand Sable Banks and the dunes perched atop them, and the lakeshore itself.

Native Americans were well acquainted with the Lake Superior coastline.[2] They are known to have revered *Gitchee Nagow* (now Grand Sable Dunes) as a holy place where spirits rested and protected the golden sands. The Pictured Rocks were also of cultural importance to indigenous populations. Prehistoric burning practices which are associated with Native American use in the Au Sable vicinity were studied in the 1980s. In a study conducted during the summer months of 1984 and 1985, Walter L. Loope, NPS Research Ecologist, investigated prehistoric burning patterns within the boundaries of Pictured Rocks National Lakeshore. He found that the incidence of fire increased in vegetated areas dominated by pine. Loope identified the burned areas within the lakeshore as west of Au Sable Point "near stream mouths with immediate access to Lake Superior. These sites are believed to be the places that native people occupied on a seasonal basis prior to European settlement." None of these burn areas occur within the Au Sable study area.[3]

French explorers, such as Etienne Brule, aide to Samuel de Champlain, visited the area in the early seventeenth century. Brule traveled westward from New France in the 1610s and 1620s to the future site of Sault Ste. Marie and across Lake Superior to the current area of northern Minnesota. Missionaries and fur traders followed Brule's route into Sioux, Assiniboin, Cree, and Chippewa lands over the next two hundred years. These early explorers, who called the dunes "Les Grandes Sables," identified and renamed places and geological formations. Maps developed to document the French explorations of the region began to use this name as well. The area became known in this period for its extremely dangerous storms. Pierre Esprit Radisson, who explored the region with his brother-in-law, Medard Chouart, Sieur des Groseilliers, also wrote descriptions of Sault Ste. Marie, the Pictured Rocks, and other sites on Lake Superior in the late 1650s.[4]

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[2]This CLR, which does not include an archeological component, precludes an analysis of indigenous populations that lived along the shores of Lake Superior.

[3]Walter L. Loope, Research Ecologist, National Biological Service, conversation with Rachel Franklin Weekley, 8 June 1994. At the time of his study, Mr. Loope was a research ecologist for NPS. Quote taken from Walter L. Loope, "Interrelationships of Fire History, Land Use History, and Landscape Pattern Within Pictured Rocks National Lakeshore, Michigan," *Canadian Field-Naturalist* 105 (1), 23.

[4]Bruce Catton, *Michigan: A Bicentennial History*, (New York: W.W. Norton & Company, Inc., 1976), 3-11 and Grace Lee Nute, *Lake Superior*, The American Lakes Series (New York: The Bobbs-Merrill Company, 1944), 19-36.

Landscape Chronology Pre-1873

Prehistoric era
- Pictured Rocks assigned cultural importance by Native Americans
- Woodland burning practiced by Native Americans in Au Sable vicinity
- *Gitchee Nagow*, Ojibwa name for Grand Sable Dunes, east of future light station site

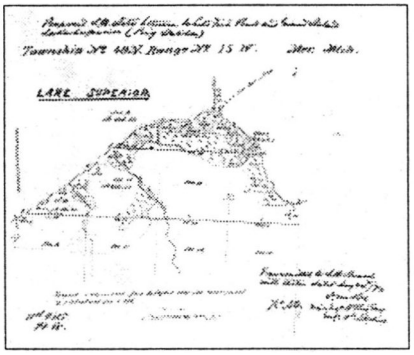
Early 17th century
- Lake Superior coast visited by French explorer Etienne Brule
- Grand Sable Dunes identified and named by missionaries and fur traders

Late 1650s
- Pictured Rocks and other Lake Superior sites visited by Pierre Esprit Radisson and Medard Chouart, Sieur des Groseilliers

1820
- Expedition along s. coast of Lake Superior led by Lewis Cass, governor of Michigan territory, accompanied by Henry Schoolcraft
- La Pointe La Grand Sable named by Schoolcraft

1837
- Michigan statehood

1841
- First steamships enter Lake Superior
- Future Alger and Schoolcraft counties surveyed by William A. Burt



O.M. Poe's 1872 Survey (Fig. 2)

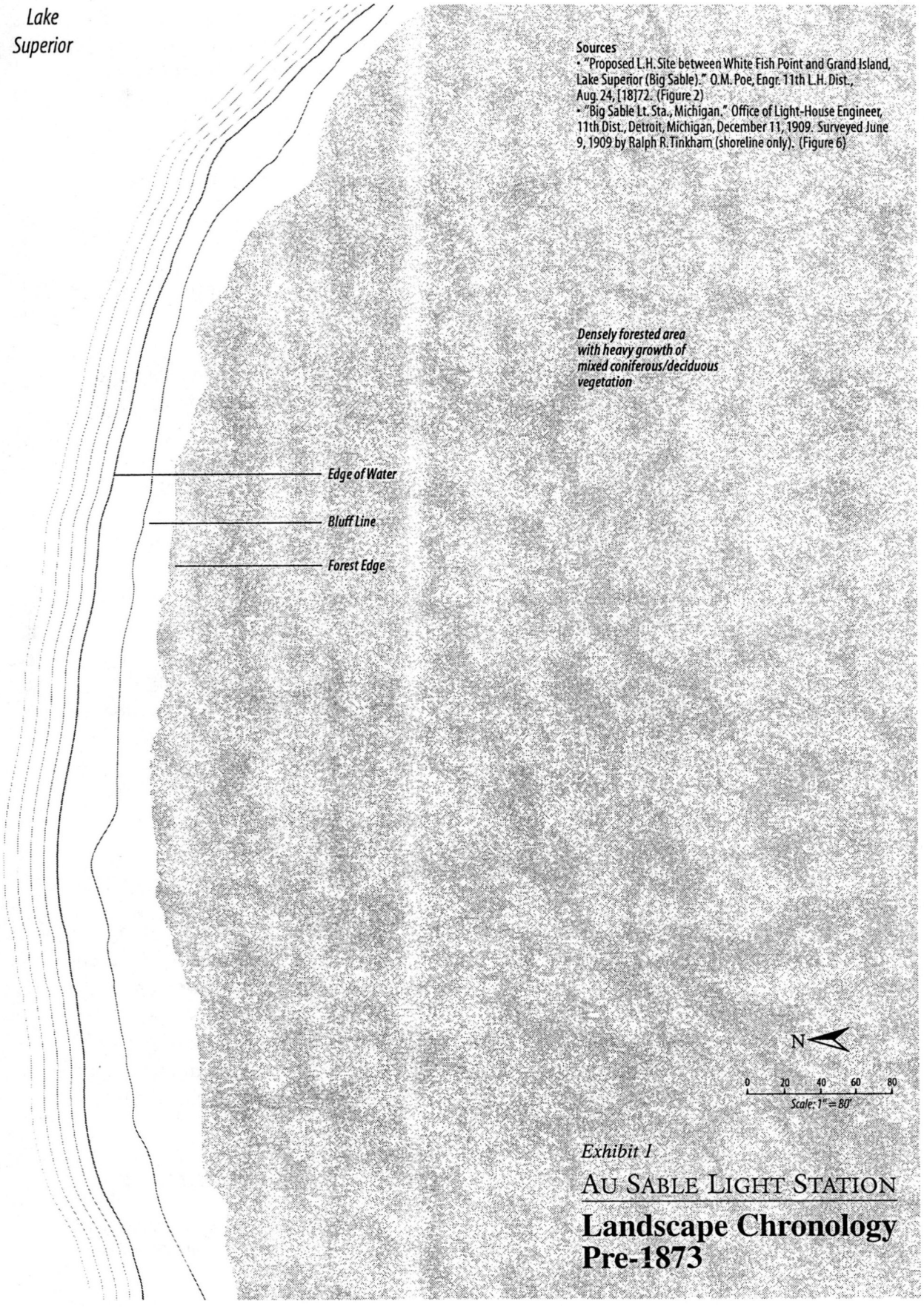
1844
- Iron ore discovered in Marquette County

1852
- U.S. Lighthouse Service reorganized by Congress, creating a nine-member board

1855
- Soo Locks opened

1867
- U.S. Lighthouse Board recommends construction of lighthouse on south shore of Lake Superior between Whitefish Point and Grand Island harbor

1872
- Property purchased by U.S. Lighthouse Service


Lake
Superior
Sources
• "Proposed L.H. Site between White Fish Point and Grand Island, Lake Superior (Big Sable)." O.M. Poe, Engr. 11th L.H. Dist., Aug. 24, [18]72. (Figure 2)
• "Big Sable Lt. Sta., Michigan." Office of Light-House Engineer, 11th Dist., Detroit, Michigan, December 11, 1909. Surveyed June 9, 1909 by Ralph R. Tinkham (shoreline only). (Figure 6)
Densely forested area with heavy growth of mixed coniferous/deciduous vegetation
Edge of Water
Bluff Line
Forest Edge
N
0 20 40 60 80
Scale: 1" = 80'
Exhibit 1
AU SABLE LIGHT STATION
Landscape Chronology
Pre-1873

British Captain Jonathan Carver, who led expeditions into the interior of the continent in 1766, 1767, and 1768, recorded his experiences and described indigenous cultures and flora and fauna of what is now the northern United States. Carver did not focus on the specific area within present-day Pictured Rocks National Lakeshore. Carver's most relevant comment concerns the tempestuous weather in Lake Superior: "This Lake is as much affected by storms as the Atlantic Ocean; the waves run as high, and are equally as dangerous to ships."[5] Later observers also emphasized the hazards of travel on "the inland sea."

Even though the area had been occupied and explored during the previous two hundred years, Americans documented the area in the early nineteenth century, as if they were the first to discover its potential riches. Lewis Cass, governor of the Michigan territory, led an expedition in 1820, accompanied by Henry Schoolcraft, whose journal of the expedition provides significant information on the geological formations and substrata along Lake Superior's southern coastline. Schoolcraft recounted the expedition's passage of Au Sable Point, writing

> On passing along the coast of the Grand Sable, we observed, through the water which is very transparent, large tabular rocks, in situ, at the bottom of the lake beneath our canoes, and on encamping a short distance west of the termination of these sand banks, at *La Pointe La Grand Sable*, we found, apparently, a similar rock, jutting out upon the shore of the lake, and rising to an elevation of eight or ten feet above the water.

Schoolcraft continued by describing the bedrock and sand on the point and listing the cedars, pines, hemlock, birch, beech, oak, and maple growing in the alluvial deposits. Schoolcraft provided information on the western reaches of the Au Sable property, commenting that the group

> encamped on a beach of sand, near the entrance of a small creek, which, from a violent storm that raged during the night, was called Hurricane creek.[6]

Schoolcraft called the dunes "La Pointe La Grand Sable," and other English-speaking explorers used variations of the French name "Les Grandes Sables." Eventually the area became more generally known as "Au Sable." Descriptions left by mid-nineteenth century explorers, sightseers, and entrepreneurs emphasize the natural beauty and monumentality of the Grand Sable Dunes and Pictured Rocks of Lake Superior's southern shore. European and Americans traveling through the area often commented on the majesty of the geological formations. Charles C. Trowbridge, who traveled with the

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[5]J. Carver, Esq., *Travels Through the Interior Parts of North America, in the Years 1766, 1767, and 1768* (Minneapolis: Ross & Haines, Inc., 1956), 141.

[6]Henry R. Schoolcraft, *Narrative Journals of Travels from Detroit Northwest Through the Great Chain of American Lakes to the Sources of the Mississippi River in the Year 1820*, American Environmental Studies (New York: Arno Press, Inc., 1970), 149.

Cass/Schoolcraft expedition wrote, "It is only 12 miles from La Grand Sable [dunes] to the Pictured Rocks, one of natures works of grandeur and sublimity."[7]

A number of demographic and technological events in the second quarter of the nineteenth century influenced the development and expansion of the Michigan Territory. Publicity from the Cass/Schoolcraft expedition and accounts of the valuable stores of timber, iron ore, and copper that lay beyond the Pictured Rocks lured entrepreneurs to the Upper Peninsula to pursue money-making ventures. With the admission of Michigan as a state by the U.S. Congress in 1837, and the discovery of iron ore in Marquette County in 1844, settlement increased as the former territory became more attractive to U.S. citizens. On the technological front, the opening of the Erie Canal in 1825 provided a water route between Lake Erie and the east coast of the United States and demonstrated the potential for increased navigation on the Great Lakes. By 1840, federal support was garnered for construction of a canal and locks on the St. Mary's River, the only water connection between Lake Superior and the other Great Lakes. Construction of the Soo Locks was begun in 1853 by the Fairbanks Scale Company, a firm with mining interests in the upper peninsula.[8] Completion of the locks two years later was especially significant since continuous navigation at last became possible between Lakes Superior, Huron, and Michigan. Logging and mining entrepreneurs found this passage to be a viable water route to eastern markets. Despite its profitability, however, shipping on Lake Superior was, by necessity, a seasonal activity since the lake was frozen during the harsh winters.[9]

Land surveys had been conducted in the Michigan Territory since 1815 at an approximate rate of 9.5 miles per year. Statehood provided an impetus to undertake the land surveys needed to establish township boundaries. William A. Burt surveyed lands in present-day Alger and Schoolcraft counties in 1841, laying out township lines in that year. Survey notes from the 1840s state that in the northeastern section of the township,

> the timber is Northern hardwoods-sugar maple-beech type, with some red maple, yellow birch, hemlock and fir. The undergrowth is the same. The soil is 2nd rate, sandy. The swamp along the Lake extends back to a ridge 150-300 ft. high. The timber is very thick cedar, tamarack, spruce, fir and paper birch. The undergrowth is the same. The soil is 3rd to 4th rate, sandy.[10]

Surveying parties had added section lines in the northeastern part of Alger County by 1851. Work progressed slowly because of the dense forests and thick underbrush.

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[7]Quoted in Grace Lee Nute, *Lake Superior,* (New York: The Bobbs-Merrill Company, 1944), 73-74.
[8]"The History of the Soo Locks," U.S. Army Corps of Engineers Detroit Publications Soo Locks website (http://sparky.nce.usace.army.mil/SOO/soohmpg.html).
[9]Catton, *Michigan*, chapters 6 and 7.
[10]Douglas J. Frederick and Lawrence Rakestraw, "A Forest Type Map of Pictured Rocks and Apostle Islands National Lakeshores from the Original General Land Office Survey Records," produced for the Department of the Interior, National Park Service, Midwest Region, Houghton: Michigan Technological University, 20 December 1976, 71.

Surveyors used solar compasses since mineral deposits made magnetic compasses unreliable.[11]

The new era of settlement and extraction depended upon reliable navigational systems along Lake Superior's rocky shores. Increased traffic along the inland waterways of the United States and the economic development of the Upper Peninsula called attention to the dangers of navigation along Lake Superior's notorious "graveyard coast." The incidence of shipwrecks along the dangerous southern shoreline led to calls for the construction of a light station between Grand Island harbor and Whitefish Point, a distance of eighty miles along which there was no light to guide and warn boats traveling along this hazardous shoreline.

In 1852, Congress had authorized the reorganization of the U.S. Lighthouse Service, creating a nine-member board to oversee the agency. The plan divided the country into twelve districts, with an inspector in charge of each, and a depot established as a supply center for the district's lighthouses. The board controlled aids to navigation and established rules and regulations for the proper operation of light stations. Inspectors supervised the keepers within their districts, enforcing the rules and regulations of the U.S. Lighthouse Board. Each lighthouse was classified according to lamp type and intensity, and the Fresnel lens was adopted for lighthouses constructed after 1853.[12]

The 1867 Annual Report of the U.S. Lighthouse Board noted,

> The distance between White Fish Point and Grand Island harbor is about eighty miles, at present unmarked by a light. Vessels always follow the south shore except in a few remarkable cases, and the absence of a light for this very considerable distance has been seriously felt.[13]

This stretch of coastline had become known as the "graveyard coast" because of its treacherous navigation and high number of shipwrecks. Annual reports for the U.S. Lighthouse Board, dating from 1869 to 1871, repeatedly recommended an appropriation of $40,000 for construction of a light in this area.[14] By 1871 the eighty-mile distance from Whitefish Point to Grand Island was described as "dreaded by the mariner."[15] Congress finally appropriated funding in 1872 for the construction of a light station between Whitefish Point and Grand Island Harbor.

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[11]LeRoy Barnett, "U.P. Surveyors," Michigan History 66 (5) (September/October 1982), 25-26, 28.
[12]Francis Ross Holland, Jr., *America's Lighthouses: Their Illustrated History Since 1716* (Brattleboro, VT: The Stephen Greene Press, 1972), 35-36.
[13]"Annual Report of the Lighthouse District (hereinafter referred to as Annual Report) 1867," Record Group 26: Records of the U.S. Coast Guard, National Archives and Records Administration, Washington, D.C. Quote taken from Louis Torres notes, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan.
[14]Ibid.
[15]James L. Carter, "Au Sable Light, Sentinel of the Great Sands," *Inland Seas,*(summer 1977), 97.

Upon receiving the congressional appropriation, the U.S. Lighthouse Service purchased a tract of land on "Pointe au Sable" on 6 September 1872 for $407.41.[16] It comprised 325.93 acres in the northern half of Township 49 North, Range 15 West[17] and included lots one and two of Section One; lots one through four of Section Two; and lots one and two of Section Three *(Figure 2)*. This location fell in the jurisdiction of the inspector for District Eleven, which was supplied by the Soo Depot. The board originally named the property, "Big Sable Light Station," a name that it carried until it was changed in 1910 to "Au Sable." The 1872 deed conveying the property to the United States Lighthouse Service and maps from the late nineteenth century refer to Au Sable Point as a cedar swamp outlined by a sandy shoreline.

1873–1895 Initial Development of the Light Station

The period 1873–1895 saw the initial site development of the light station. Major site development occurring during this period included construction of temporary quarters for workers and a wharf in 1873; completion of the lighthouse tower, original keeper's dwelling, connecting passageway between the dwelling and the tower, and installation of the Fresnel lens, all in 1874; construction of the original privy ca. 1873–1874, and of the brick oil house in 1895. It is likely that a boathouse was built between 1875 and 1879; the first indication of a boathouse on the site, however, occurs on a 1887 survey of the site by George Wisner *(Figure 4)*. A barn/shop may have been constructed sometime prior to 1884. Full-time operation of a staffed site began in 1874. The site developed as a utilitarian site of both residence and industry. Events and activities, such as storms, fires, the initiation of logging operations, fruit tree plantings, and sidewalk installation, also affected the appearance and operation of the site during this period.

A letter to the Office of Light House Engineer, 12 July 1873 "No. 691 Big Sable, Lake Superior" announced the impending construction activities at the Au Sable location:

> It is intended to commence by the early part of July the erection of quarters for the men and construction of a wharf and approaches for landing the materials for the Light House at this station. After this work is completed the excavation for the foundation will be entered on and the work advanced as rapidly as possible ... .[18]

Another letter dated 7 August 1873 noted that "Quarters for the men and the wharf and approaches have been constructed and the excavation of the foundation begun." The language of this correspondence—for example the use of the term "quarters"—implies the quasi-military character of the site and its function.

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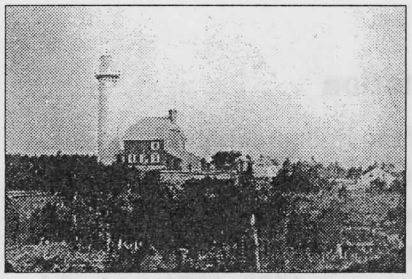
[16]Snyder, David L., comp. "A Compendium of Written Communication of the Light House Board for the Twelve Light Stations of the Midwest Region, National Park Service, 1839-1881." United States Department of the Interior. National Park Service. Midwest Region. 1992, 157.
[17]Snyder, 238.
[18]Snyder, 172.

Landscape Chronology 1873-1895

1873 • Wharf built
• Temporary workers' quarters built
• First privy built (ca. 1873-74)

1874 • Tower, passageway built
• Fresnel lens installed
• Original keeper's dwelling with woodshed addition built
• Freestanding woodshed built (ca. 1874-75)
• Log slide trail developed (ca. 1874-95)

1877 • Boathouse built (ca. 1877)

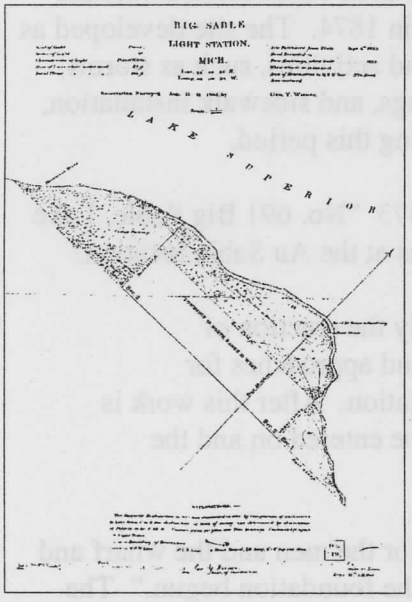


Au Sable light station in 1884 (Fig. 10)

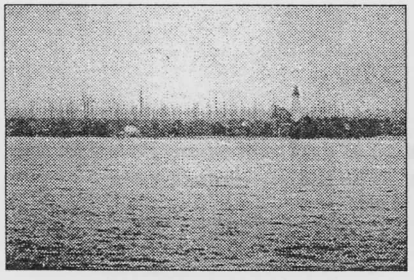
1881 • 12 cherry, 12 apple trees planted

1884 • Barn/shop built (before 1884)

Geo. Y. Wisner's 1887 Survey (Fig. 4)



1891 view from Lake Superior (Fig. 11)



1895 • Brick oil house built

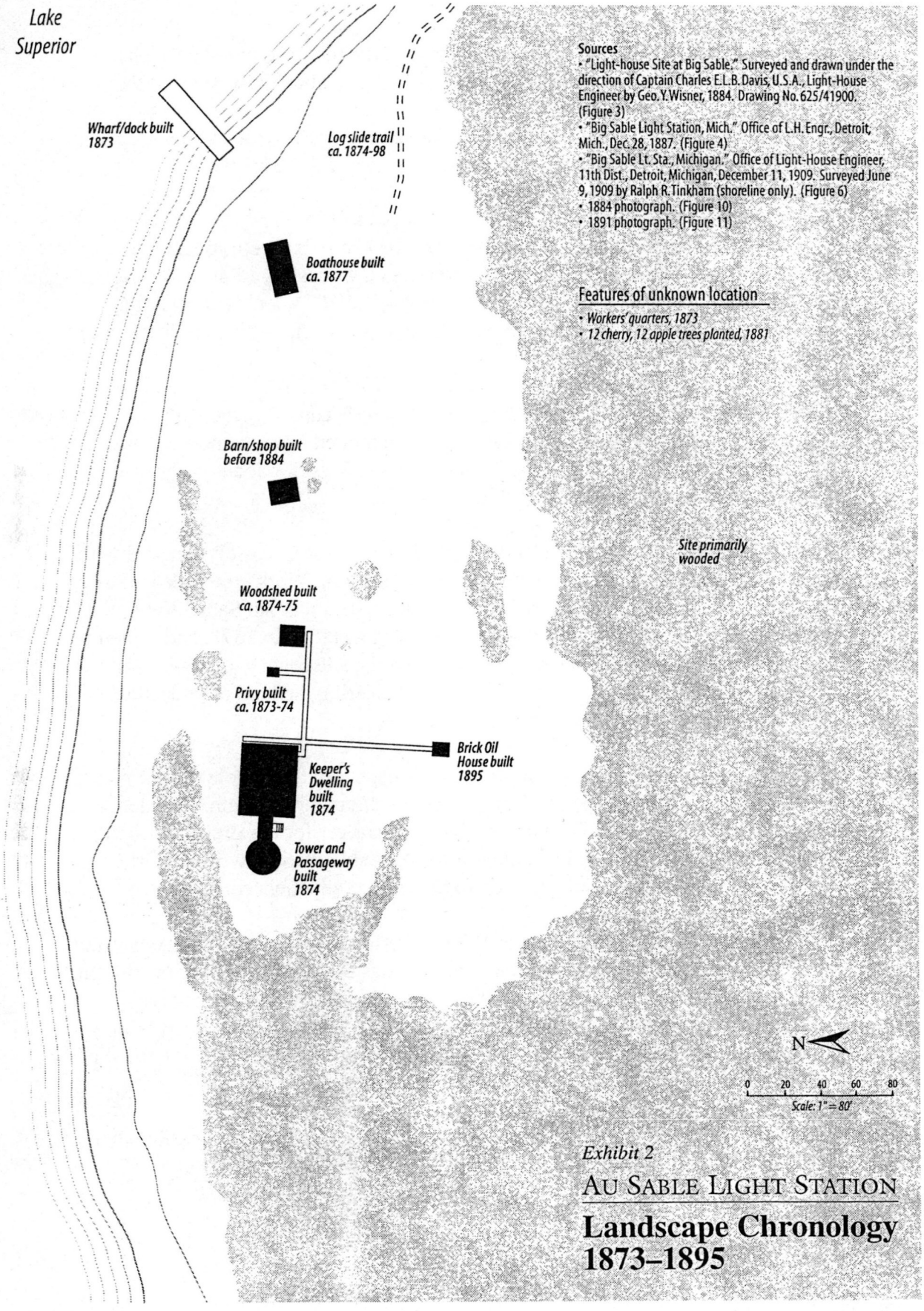


Exhibit 2

AU SABLE LIGHT STATION

Landscape Chronology 1873–1895

Construction of the early buildings of the station is well-documented in letters to the Office of Light House Engineer. A letter written on 11 November 1873 reported that,

> The dwelling, passageway, and woodshed are entirely enclosed, and the tower carried up to 5_ feet above the cutstone water table. This work is closed for the season.

The passageway provided direct connection between the keeper's dwelling and the light tower. Entrance to the dwelling was on the east through a woodshed addition (converted to a kitchen ca. 1898). Work on the station resumed in June 1874, and by July initial construction was complete.[19] Mariners were notified soon thereafter that the light would begin operation the following month:

> Notice is hereby given that on or about the night of Wednesday the 19th day of August 1874 a fixed white light will be exhibited from the new brick tower at Big Sable Point, south shore of Lake Superior about seventy miles west of White Fish Point.[20]

When construction began on the light station in 1873, the area was densely forested with a heavy growth of mixed coniferous and deciduous vegetation. Work crews cleared a small area of land to accommodate construction, but it appears that Au Sable Point remained densely forested through construction of the light station in 1873, and remained so even after construction was completed in 1874 when the site became operational. Apparently, only a small area was cleared initially and clearing the land of undesirable vegetation continued for some time.

Since Lake Superior was the primary transportation route to Au Sable Point, the station's wharf was an important component of the site's historic circulation system. A letter dated 19 September 1873 from G. Weitzel, Major of Engineers for the Eleventh Light-House District, mentioned landing difficulties at the Au Sable Station, writing "Great difficulties in landing materials, and getting it to the site are experienced here … ."[21]

Initial construction of the wharf occurred in 1873 to facilitate development and operation of the site; additional work might have been in progress as the station's early construction occurred. Both personnel and supplies were brought to the site by boat in the early period since there were no roads or trails on the station site. Inspector McCann, who visited the station in 1874, filed a report stating that "there are no roads or trails and that is a densely wooded country rendering communication extremely difficult."[22]

Although McCann reported that there were no roads or trails in 1874, it is possible that the trail known as the log slide trail was developed sometime between 1874 and 1895

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[19]See Snyder, 169-178, 191, and 194 for specific information on construction.
[20]Snyder, 233-235.
[21]Snyder, 176.
[22]Snyder, 211.

since there is documentation that it existed by 1898. If it developed in the 1873-1895 period, however, no date of construction can be determined, given the existing available documentation.

From the beginning of the station's operation, boatways and docks were important in facilitating necessary travel to and from Munising and Grand Marais via Lake Superior for supplies and mail. Boats brought the keepers and their assistants weekly provisions from Munising during the first few years of the station's existence. Overland transportation was inconvenient and inefficient for this remote site during this period.

Docks provided site access for ships such as the lighthouse tender *Dahlia* that regularly brought supplies and inspectors. Crews on the *Marigold, Amaranth*, and *Dahlia* also delivered construction materials, coal, and oil to the station by way of the dock. A letter dated 24 August 1875 from W.P. McCann, a Commander in the U.S. Navy and lighthouse inspector aboard the U.S. Light House Tender *Dahlia*, compared the relative efficiency of water travel to land travel for lighthouse personnel:

> Provisions are procured [for the station] at Munising, 32 miles direct by water and two days travel by land in winter.[23]

In his 1875 inspection report, McCann also related an incident illustrating the logistical difficulties of supplying the site, recalling that when the *Dahlia* arrived, "Keepers had been without meat for two months ... During the winter the Keeper tried to reach Munising with a sled and dogs. The dogs gave out, provisions were lost, when the keeper received assistance from men repairing the telegraph ... ."[24] This reference probably refers to telegraph repair away from the site since correspondence from 1875 indicates that the Lighthouse Board had declined telegraph service for the Au Sable station. The board had rejected "... the application of the Western Union Telegraph Company for permission to run their wires into the light house at Big Sable ... ."[25]

A boathouse was essential to support the function of the light station but one does not appear to have existed in August of 1875 when the annual report noted the station's need for a "boat house, ways, and winch."[26] It is likely that the boathouse was built sometime during 1877 since the station log for 24 June of that year contains the entry, "Captain Scott deliver to this station material to build boat house at Big Saubel [sic]."[27] By 1879, an inspector's report mentioned several needs, including alteration of the boatways, but

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[23]Snyder, 225.
[24]Snyder, 225
[25]Letter from the Engineer Secretary to the 11th District, Light-House Board, 15 December 1875, Record Group 26: Records of the U.S. Coast Guard, National Archives and Records Administration, Washington, D.C.; notations by Louis Torres, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan.
[26]Snyder, 206.
[27]Napoleon Beedon, "Journal of Light-house Station at Big Saubel," June 1877, Volume 1 (October 1, 1876 – September 30, 1892), Record Group 26: Records of the U.S. Coast Guard, Records of the Light-House Service, National Archives and Records Administration, Washington, D.C.

did not mention a boathouse or the absence of one.[28] The dock, boatways, and their immediate area were repaired and altered throughout their existence. The 1875 report stated that the keeper had been directed to repair the boat landing which had been established just two years before. From 1875 on there are constant references to repair and rebuilding the dock or wharf as a result of the water and wind assaulting the station's Lake Superior waterfront.

Keeping the site clear of vegetation was also a major activity for station personnel during this period. In August 1879, Napoleon Beedon, Principal Keeper of the Light Station for the period 1876 to 1879, wrote terse comments in his daily journal bemoaning his status as an unappreciated employee; he wrote,

> During the time I have been in the imploy [sic] of the government I have cleared up many an acher [sic] of land for the government ... that I found in a state of wilderness.[29]

Beedon requested extra compensation for the manual labor he performed in 1879. His request was relayed to the board of the U.S. Lighthouse Service for consideration. An official responded with the following,

> It will be seen that Mr. Beedon states that he has made improvements in the nature of clearing the land around the lighthouse structures at the station where he has been employed, thus saving the public property from destruction when the surrounding forests have been on fire, for which service he thinks he is entitled to compensation.[30]

The Light-House Board rejected Beedon's request, but its response points out the value of clearing undesirable vegetation to limit the potential effects of forest fires burning near the station. George Wisner's 1884 plat for the "Light-House Site at Big Sable" also indicates a lack of cleared area on Au Sable Point well into the 1880s. This drawing shows the tower, original keeper's dwelling, and two outbuildings located in Lot 1, Section 2 amidst dense timber and brush *(Figure 3)*. These graphic and textual sources provide evidence of the densely wooded and isolated nature of the site in the late nineteenth century.

Storms and wild fires, as well as human activity, affected vegetation on the site. According to the journal entry by Keeper Napoleon Beedon for 8 December 1876, there was at "P.M. 5 o'clock almost a hericane frightfull [sic] storm it blew down 50 trees or more close by the light house." The threat of forest fire was alarming given the station's remote and isolated wooded site. Historic photographs, official correspondence, and

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[28]Snyder, 641.

[29]Napoleon Beedon, "Journal of Light-house Station at Big Sable," August 1879, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan.

[30]Letter from Engineer Secretary to the Chairman of the Light-House Board, 9 July 1879, Record Group 26: Records of the U.S. Coast Guard, National Archives and Records Administration, Washington, D.C.; notations by Torres, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan.

daily log entries kept by the lighthouse keeper in the station's journal, and historic photographs provide evidence of the fires that occasionally threatened Au Sable.

Three historical graphic sources, two photographs from 1884 and one from 1891, have been identified for this period. One 1884 photograph *(Figure 9)* is primarily of the original keeper's dwelling and tower and their immediate environs. The other photograph *(Figure 10)*, provides a view of the developing station's buildings from the southeast, and gives an indication of the station's cleared area and its vegetated edge. Boardwalks linking various parts of the station are discernible. A number of low shrubs remained scattered within the area that had been cleared for construction; the edge of the station appears to have been surrounded with dense forest vegetation. Major buildings and structures visible in the photograph include the original keeper's dwelling, tower, and passageway. Three other buildings are shown also: the original brick privy east of the dwelling, a woodshed, and a wood frame structure that was perhaps a barn/shop. This latter structure has been thought by some to be the boathouse, but closer examination of the photograph makes this assumption less plausible.[31]

Little is known about the building supposed to have been the station's barn/shop. There are brief documentary evidence references (although from later dates) to such uses and the terms "barn" and "shop" may refer to the unidentified wood frame structure in the 1884 photograph. A journal entry for 16 June 1900 noted that the crew was "Whitewashing the Barn and Cleaning yard." An entry for 14 October 1901 recorded "making a door for the shop," and another for 10 June 1902 reported that the shop was whitewashed.[32] To date, archeological investigations have revealed no physical evidence of this building which is visible in the 1884 photograph.

In 1884, the Light-House Board authorized a salary of $420.00 for the Keeper of the Au Sable Light Station.[33] At the outset, the board believed that one keeper was sufficient at the Au Sable Station since the lamp was a fixed beam light, rather than a revolving one. By the end of the first season, however, inspectors agreed that the remoteness of the site necessitated an assistant since, as one letter noted,

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[31]Although the wood-frame structure shown at the right side of the 1884 photograph is sometimes identified as the boathouse, its location as shown in the photograph is much closer to the dwelling than the known boathouse location. It does not appear to be at a sufficiently low enough elevation to have been sited at or near the lakeshore, and trees that appear in the photograph behind the building likewise suggest that the building shown was sited at some distance from the water's edge. This building appears to be wider than it appears in 1891 and 1920 depictions of the boathouse.

[32]"Journals of Light-house Station at Big Sable," (hereinafter referred to as Journals, PIRO), Pictured Rocks National Lakeshore, Munising, Michigan.

[33]Letter to the Light-House Inspector, 11th District, U.S. Light-House Board, 4 April 1884, Record Group 26: Records of the U.S. Coast Guard, National Archives and Records Administration, Washington, D.C.; notations by Torres, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan.

> The station is 30 miles distant from the nearest Post Office and not a [soul?] lives between the two. The station [is?] just as isolated as if it were thirty miles from land.[34]

The 1884 photograph of the station indicates that an internal circulation system had been developed by that date. Boardwalks connecting the original keeper's dwelling, the woodshed, and the privy are clearly visible. It is likely that other walks may have been installed to link the dwelling with the other structures within the developing light station. It is not clear whether walks were developed during the first years of operation or whether they were developed over time as the need arose.

Several logging camps operated in the area over the years, beginning during the logging boom of the 1880s. Apparently no operations were carried out at the location of the light station, however, and there is no extant evidence of logging operations on the light station site. Journals mention a lumber camp in the general area in the late nineteenth century.

Little is known about the domestic landscape of the station during this period. No references to gardening have been found, but gardening most certainly could have occurred. Given that all foodstuffs brought to the site came by boat or were carried by travelers on foot or using dog sled, it would have been prudent for the keepers to have maintained at least a small garden plot for vegetables. There is documentation, however, of orchard development in the early 1880s. Keeper Frederick W. Boesler made the following entry in the station logbook: "I the Keeper grafted 24 fruit trees 12 of cherry and 12 of apples the first part of May 1881."[35] The exact locations of the fruit tree plantings are not known, but it is logical to assume that the fruit trees were planted within the clearing created for the light station.

The last available documentation for this period is the 1891 photograph of the Au Sable Point *(Figure 11)*. The photograph shows trees that appear burned, but research to date has failed to reveal other documentation of a fire in the area for that year. However, George Wisner's surveys from 1884 and 1887 *(Figures 3 and 4)* bear the notation "dead timber and bushes" for the area south of the light station. A small, white, gabled building is visible at the lakeshore. There appears to be a structure between the building and the lakeshore. Assuming this is the boathouse and that the structure is a pier and/or boatway, the photograph is the first known visual documentation of the boathouse and associated features. The photograph also shows the woodshed that appeared in the 1884 photograph of the light station but provides no evidence of the building thought to be the barn/shop.

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[34]Letter from the Office of the Light-House Inspector, 11th District to the Chairman of the Light-House Board, 15 December 1874, Record Group 26: Records of the U.S. Coast Guard, National Archives and Records Administration, Washington, D.C.; notations by Torres, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan.

[35]David A. Clary, "Au Sable Light Station, Pictured Rocks National Lakeshore: The Life of the Keepers as Reflected in their Official Journals," United States Department of the Interior, National Park Service, Midwest Region, Omaha, Nebraska, April 1975.

Site development during this period related to concerns about safety and expansion of the station operations. Construction of a separate structure for storing oil reflected the growing awareness that flammable substances should be removed from the original keeper's dwelling where they had been stored previously. Consistent with upgrading safety, the Lighthouse Board authorized construction of an oil house at Big Sable early in 1894. It rescinded the order in March, however, and eventually re-instated it in December 1894. The board stipulated that construction was not to exceed $500.00.[36] Work commenced in 1895 with construction materials and a work crew brought to the site in May: "Steamer Warrington arrived at the Station on the 14th of May with Matarial [sic] for Oil house, also two mens for errecting [sic] the same. Mens finished work on the Oil house on the 22d of May."[37] The annual report for 1895 reported that the project was complete: "Big Sable, Lake Superior, Michigan— A brick oil house with metal roof, door, and shelving was built."[38]

1896–1908 Industrialization and Technological Improvement

The period 1896–1908 was one of industrialization and technological improvement. The light station also experienced considerable site development during this time but remained primarily a wooded site into the early part of the twentieth century. Many features needed for the operation of the station and the comfort and convenience of station personnel were added as the light station developed into a larger complex of buildings and structures.

The most significant of these additions to the station was the construction of the fog signal building. Annual reports of the 11th Lighthouse District, 1892–1895, had called for the construction of a fog signal building to complement the light beacon at the station during bad weather or smoky conditions.

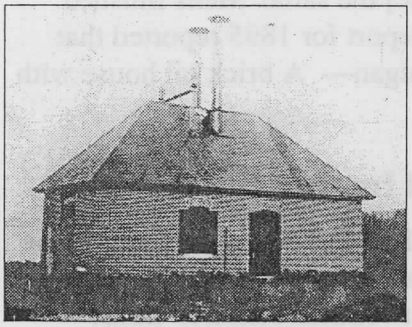
> Big Sable, Lake Superior, Michigan— This important light-station is on the southern shore of Lake Superior, about halfway between Marquette and White Fish Point. The entire traffic of Marquette, which, it was stated, was some 1,772,400 tons in 1890, passes close to this station, and in time of southerly gales the whole commerce of Lake Superior hugs the south shore. A steam fog signal is required to complete the satisfactory equipment of the station.[39]

Inspectors recommended the appropriation of $5,500 for the construction of a fog signal building and it was approved on 15 February 1893. Inspection reports for the following five years mentioned the appropriation for the signal, but no action was taken until 1896 when the board accepted construction bids.

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[36]Letters from the Engineer Secretary to the Light-House Board, 11th District, 5 February 1894, 31 March 1894, and 14 December 1894, notations by Torres, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan.
[37]Clary, 4.
[38]Annual Report 1895; notations by Torres.
[39]Annual Report(s) 1892-1895; notations by Torres.

Landscape Chronology 1896-1908



Fog signal building in 1904 (Fig. 14)

1897
- Fog signal building built
- First seawall built
- Boatway, well and crib on dock built
- Brick aprons at tower and keeper's dwelling built (ca. 1897)

1898
- Hoisting engine and tramway track installed
- Boardwalks built (thru 1901)
- Woodshed addition on keeper's dwelling converted to kitchen (ca. 1898)

1899
- Tramway extended, turntable added

1901
- Boathouse moved, roller boatways built
- Sewers installed

1903
- Dog kennel built (by 1903)
- Woodshed south of keeper's dwelling built
- Fog signal well dug
- Barn/shop removed (after 1903)

1904
- Garden on hill cleared
- Hennery built
- Iron smokestacks on fog signal replaced by brick chimney
- Cistern at fog signal built

1905
- Rough road built two miles away

1906
- Flagpole installed (before 1906)
- Rubblestone seawall built
- Ell added to dock

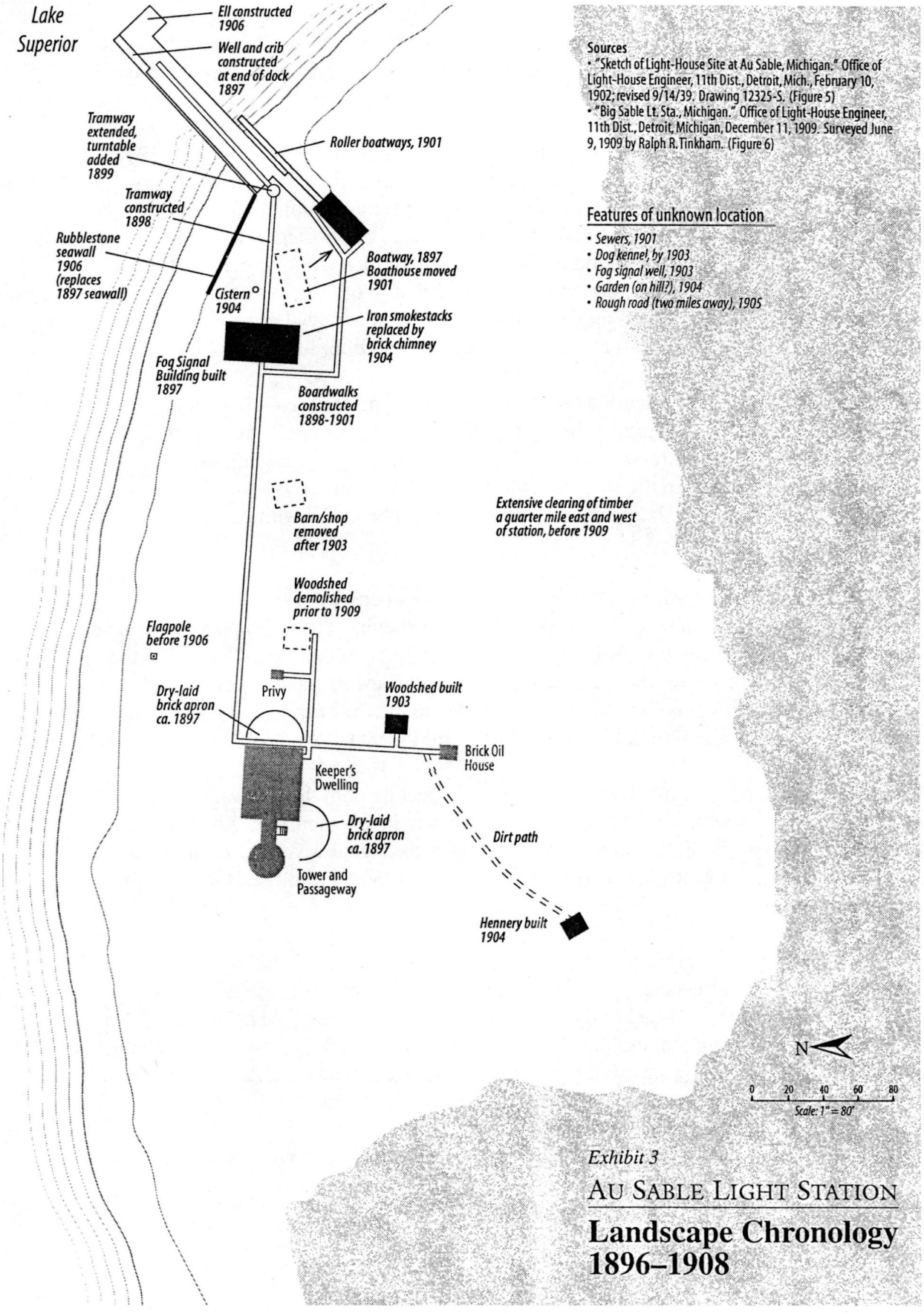


Exhibit 3

AU SABLE LIGHT STATION

Landscape Chronology 1896–1908

A letter from the Naval Engineer to the 11th District, dated 8 July 1896, gave specifications for the ten-inch steam whistle which was to give blasts of 3 seconds with a 17-second interval between each blast. The letter referred to these specifications as the "characteristics for the fog-signal."[40]

A letter from the Engineer Secretary to the Engineer, 11th District, on 27 January 1897, approved the hiring of day laborers to build the fog signal building.[41] Journal entries from 1897 document the progress of the developing fog signal building. On 13 May 1897 the journal entry read: "The Amaranth stopped hear [sic] on her way up and unloaded a Fog Signal for this Station ... We have twelve men working here Putting in Fog Signals." On 21 May 1897, the journal reported that "The Amaranth finished unloading her cargo of Brick and lumber for the Fog Signal to day at six o'clock." On 10 June 1897, there was a notation that, "The men finished the floor in the Fog Signal."

The entry for 28 June 1897 recorded that "The Steamer Armanth arived [sic] at this Station with the Boilers and Engine for the Fog Signal (at 5:30 a.m.)." According to the *Annual Report of the 11th Lighthouse District, 1897,* "The [fog signal] building was completed in June 1897, and the structure was prepared to receive the boilers and machinery." The fog signal began operation on 1 September 1897 with its signal boilers, pipes, and machinery installed.[42]

Operating the fog signal increased the responsibilities and chores of the light station personnel. The journal entry for 23 April 1898 recorded that, "The assistant and me have been working all day filling the Boiler We had to Cary [sic] all the watter [sic] from the lake and put it in the tank for the Hand Pump would not draw it." The keeper reported that he was able to fill the boiler and fire one engine on the following day although the pump worked slowly and it took him four hours to fill the tank.

The operation of the fog signal had a tremendous impact on both the daily activities and the character of the station. Its operation was extremely labor-intensive. Although not as visually dominant as the light shining from the tower, the signal was just as important to the effective function of the station to warn navigators of the proximity of the often foggy lakeshore.

In 1898–1899 a tramway which ran from the dock to the fog signal building was installed; the length of the original track is not known. A turntable in the middle was added in 1899, as were 55' of additional track. The turntable turned the car about 45° in the direction of the fog signal building. The crew used the tramway car to carry supplies from the dock to the fog signal building. Journal entries indicate that the crew "wheeled" coal from the dock, a task accomplished with the aid of the tramway. According to

[40]Letter from the Naval Engineer to the 11th District, July 8, 1896; notations by Torres, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan..
[41]Letter from the Engineer Secretary to the Engineer, 11th District, on 27 January 1897; Record Group 26: Records of the U.S. Coast Guard, National Archives and Records Administration, Washington, D.C.; notations by Torres, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan.
[42]Annual Report 1897; notations by Torres.

William Lacombe, Second Assistant in the late 1930s, the tramway ran through the fog signal building and was used to carry coal from the lighthouse tender to the coal bins in the two dwellings.[43] Operation of the tram relied upon a hoisting engine which was installed in the fog signal building. On 30 November 1898, "Mr. Miller and Son and one other man arrived at this Station at 5:45 p.m. for to put up the Hoisting Engine." They continued their work through the first week of December. Keeper Weeks wrote that, on 5 December 1898, "Mr. Miller the Engineer is getting one [sic] finely Putting in the Hoisting Engine and laying the Track Considering the Weather." And on 7 December 1898, Weeks commented that, "Mr. Miller the Engineer got through Putting in the Hoisting Engine today."[44] The "Annual Report of the 11th Lighthouse District, 1899" mentioned the project in the following entry: "A hoisting engine was installed, 55 feet of track were laid from the signal house to connect with existing track, the turntable was completed, and the work in connection with the hoisting engine was finished."[45] It has not been determined whether the track extended onto the dock during this period or not.

About this time a new boatway evidently was needed, when the keeper noted that a crew was "putting in Boatway."[46] The journal entry for 11 June 1897 also reported, "Mr. Brest and men are Putting in a Crib at the End of the dock today." That year's annual report described that "[a] new crib was built and sunk in position, filled with ballast stone, and a well box was placed in it for fog signal water supply." The report also mentioned that the landing pier was refilled with ballast stone and raised 1' 3".[47]

Major work occurred on the lakefront throughout the summer of 1901. Mechanics made improvements to the tramway and other site features in July 1901, but the nature of that work is not known other than that track was laid and some work was done on the turntable. It also is not known if the track laid was to replace damaged track or to extend the length of the track. Other work involved the boathouse. A journal entry for 18 July—"The crew were working at Dock and moving Boathouse."—may imply that either the existing boathouse was moved or that a new boathouse was built on a different location. Other entries for July of 1901 report construction of a rollway for the boathouse and hauling stones for the dock.[48] Sidewalks and dug sewers also were installed at the light station in 1901.

In 1903 a new woodshed was constructed south of the original keeper's dwelling and adjacent to the brick oil house. A well was dug, probably near the fog signal building. An underground brick cistern was built in 1904 in front of the fog signal building to

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[43]William Lacombe, site visit and interview with Rachel Franklin Weekley, 7 June 1994, Au Sable Light Station, Pictured Rocks National Lakeshore; and Louis Torres, "Historic Structure Report: Historical Data, Au Sable Light Station, Pictured Rocks National Lakeshore, Michigan," Department of the Interior, National Park Service, Denver Service Center, Denver, Colorado, November 1981 (hereinafter referred to as HSR 1981), 38.

[44]Journals, PIRO.

[45]Annual Report 1899; notations by Torres.

[46]Journals, PIRO.

[47]Annual Report 1897; notations by Torres.

[48]Journals, PIRO.

supply it with water.[49] The rough road developed to connect the station to the public highway via Grand Sable Dunes, a distance of 2 miles, was completed in 1905. Although offsite, the road did make the station somewhat less isolated. The stone and concrete retaining seawall was constructed in 1906.

Graphic documentation available for this period reveals little about the landscape. There are 1904 photographs of both the original keeper's dwelling and the fog signal building *(Figures 12, 14)*, but neither photograph includes much of the surrounding landscape. The 1902 survey, "Sketch of Light-House Site at Au Sable, Mich.," *(Figure 5)* which has been annotated for later periods, only indicates feature locations at the site for 1902. The eight individual buildings are identified as symbolic representations and not by name or footprint. It is likely that the features depicted on the plan are the lighthouse, original keeper's dwelling, the original privy, the woodshed, the fog signal building, the boathouse, and the dock; the final feature may indicate the location of the barn/shop, as discussed for the previous period.

The lakeshore had been subject to erosion throughout the station's occupation of the site. In 1897 the Lighthouse Service took action to try to arrest this coastline erosion. The Annual Report for 1897 reported that, "A sea wall was built on the front and both sides [of the fog signal building] ... ."[50] Undoubtedly, this action was related to the protection of the fog signal building which, by necessity, was located precariously close to the lakeshore. Since the signal's operation was critical to the successful working of the station and its function required a lakefront location, a seawall was constructed to protect it and its equipment. The threat and extent of erosion are evident in the journal entries of keepers and annual reports which note efforts to repair the seawall once it was constructed. This stone and concrete wall apparently did not endure, since a new wall was built in 1906. It is likely that the new investment in the fog signal building and its equipment precipitated the move to construct a protective retaining wall.

Documentation, primarily from the station's journals, suggests that the site remained wooded throughout this period. Logging camps cut timber in the vicinity of the light station but did not harvest trees within the boundaries of the Au Sable property. "Journals of the Light-house Station at Big Sable" contain accounts of individuals finding refuge from the surrounding woods at the light station. The woods apparently were so dense that travelers were often lost in the woods near the station. One entry recorded by the keeper on 1 July 1897 states, "We had two men here for Dinner to day they had been lost in the Woods for 12 hours."[51] The woods, despite their danger for fire, provided an essential source of fuel through the nineteenth century. Only the immediate area of the light station was clear of trees; personnel used the surrounding woods for fueling the fog signal and heating the dwellings until the station converted to coal fuel in the early twentieth century.

[49]Annual Report 1904.
[50]Annual Report 1897; notations by Torres.
[51]Journals, PIRO.

Wood-cutting and sawing at the station were major activities but the Au Sable docks also were kept busy with wood being brought to the station. Apparently, wood prepared on site was supplemented by wood brought to the site by boat and by dog sled. The operation of the fog signal building increased the station's need for firewood. Perhaps the construction of the fog signal building in 1897 was responsible for the need to bring wood to the site by boat. On 2 July 1897, Keeper Weeks noted, "I was Boating Wood to day and Swamped the Scow with a load of wood and lost half of my wood." There is another notation from 14 July 1897 stating, "Boated up 4 boat loads of Wood to day."[52] This wood apparently supplemented that cut from the site or salvaged from the beach.

The journal entry for 16 October 1899 described the routine task of cutting wood for the station, "We have been Sawing Wood in the Woods." On the following day, the keeper wrote, "We have been Piling up wood along the Beach for the Fog signal." Station personnel cut wood on or around the site and then sawed it into smaller pieces for lumber and fire wood. The beach provided a ready site for wood preparation. On 11 April 1900, the keeper cut wood and on the following day he wrote, "I have been Drawing Wood with the Dog Team to day." The journal entry for 13 August 1901 noted, "We were splitting wood on the beach for fog Signal." And again, on 22 October 1901, the keeper wrote, "I have been Sawing Wood on the Beach and Doing the Duties of the Station."

During most years, the station closed in mid-December and opened in mid-April, during the time when Lake Superior was closed to shipping because of ice. The precise schedule varied according to weather conditions on the lake. The following journal entry from 16 December 1899 provides an indication of the schedule, "We Layed [sic] up the Boiler and Engine in the Fog Signal and Closed down the Light for the Winter." The station opened the following spring on 9 April 1900, when the keeper recorded, "My Self and My Assistant arrived at this Station at 12:20 P.M. there are not much signs of navagation [sic] there are Ice in the Lake as far as one can See." In some years, the station opened early, during the month of March. Journal entries often note the thickness of the ice on the docks, wells, and lake when the keeper arrived in spring to open the station. For example, on 13 April 1900 the keeper wrote, "We have Been trying to locate the Well on the Dock and we cut through 10 feet of Solid Ice before we found the Well."[53]

The station developed as an institutional but utilitarian site during this period. Daily activities were associated with the site's distinctive land use pattern which supported the seasonal operation of the light station. In addition to wood cutting and transport, there was, of course, watch duty in the light tower. Maintenance of the Fresnel lens and lamp consumed many hours each day. Crews painted the buildings almost yearly and were responsible for site maintenance. They also undertook construction and repair of small structures such as the wood and coal storage shed constructed in 1903.[54] Maintenance of the tramway apparatus, fuel tanks, and engines, pipes, and boilers in the fog signal

[52]Ibid.
[53]Ibid.
[54]Journals, PIRO; notations by Torres for 20, 22–24, 28, and 30 October 1903.

building kept personnel busy. By the 1890s keepers regularly traveled to Grand Marais and Munising for food, mail, and other supplies. Because of the station's remoteness, such duties occupied considerable time. Keepers and assistants also used the surrounding woods for hunting game, particularly during the months of October and November.[55]

The log slide trail, extending from Au Sable towards the Grand Sable Dunes to the east, provided an early entry point for the station, and improved its access somewhat. When the waters of Lake Superior were too rough or icy, there was a route to Grand Marais via the log slide trail. It is not clear exactly when the trail was developed but it is known to have existed by 1898. An entry by Keeper Weeks for 8 December 1898 illustrates the importance of the log slide trail:

> The Engineer and Son William Miller and my self went over to the Slide on top of the Sable Banks with a Load of about five hundred pounds on a hand Sleigh Where Mr. Miller expected a Team there for to meet him and the Snow was Drifted on the Banks and in the Trail in some Places about ten feet high We had a very hard time getting over there and then the Team did not come so Mr. Miller and the Rest of the me[n?] had to come back to the light House they got here about dark.[56]

Either the county or the State of Michigan funded construction of a rough road connecting the station to the log slide on Grand Sable Dunes. The road extended eastward from the trail, which became an even more important transportation route because it then provided access to the public highway. Even if individuals had to walk a distance of two miles via the log slide trail to reach the new road, its presence alleviated some of the remoteness of the site. According to the "Annual Report of the 11th Lighthouse District, 1905," "A roadway to the public highway was cut through the woods on the reservation."[57]

Walkways provided an important internal circulation network within the light station. Walks at this time were made of wooden planks and connected the original keeper's dwelling to its privy and woodshed, the boathouse, the fog signal building, and dock.[58] Daily logs and inspection reports indicate that the evolution of walkways followed the pattern from wooden to concrete but it is not clear if any concrete walks existed during this period. The first mention of walkways in this period comes from an 1897 inspection report noting that during the previous year "a proper sidewalk was laid."[59] Since walks had existed in the earlier period, it is possible that "a proper sidewalk" could have meant a concrete or brick walk, but this interpretation is not at all certain. Perhaps the evaluation of "proper" applied to a more finished construction technique. The keeper and his assistant built a walk from the original keeper's dwelling to the dock, as reported in

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[55]Ibid.
[56]Ibid.
[57]Annual Report 1905; notations by Torres.
[58]HSR 1981, 36.
[59]Annual Report 1897; notations by Torres.

the journal entry for 16 May 1898: "the assistant and I was building a walk from the house to the Dock today." The same walks were repaired in late July 1901. Later that year, the keeper and his crew extended the network, as indicated by the daily entry for 23 September 1901: "We have made 27 feet of walk around the outside of kitchen." Another entry, written a day later, says "Building a side walk around the Station."[60] By 1901 it is clear that walks connected the main buildings and structures of the cluster to the dock area and the fog signal building.

Archeological investigations by NPS's Midwest Archeological Center in 1989 and 1990 discovered the existence of a semi-circular brick apron on the eastern, front side of the original keeper's dwelling (HS-11). Since these features appear to pre-date the concrete sidewalk, they may date from the period ca. 1897–1898. Since log books and a 1909 description of the light station premises mention the replacement of wooden walkways with concrete ones, the purpose of the segment of brick is not well understood. Archaeologists also located a similar segment of dry-laid brick pavement located 20' south of the passageway. According to Bruce A. Jones of the Midwest Archeological Center, these brick areas, however, should not be mistaken as a walk. According to Jones, the brick paving was "clearly a substantial undertaking and may have represented a concerted attempt to control the movement of sand across the site. The pavement would also have provided a stable surface for work parties moving materials in and out of the white frame shed visible near the brick privy ... or, conversely, for outdoor staff and family activities."[61] A conversation with archeologist Bruce Jones about these features led to queries about possible references to bricklaying in the light station's journals. An entry for 1 June 1897 reported that, "The Brick layers finished the brick laying at 2 o'clock." There was no notation, however, to reveal the nature of this project.

A clipping in the Marquette Historical Society files indicates that there were also dog kennels at the station in 1903; presumably the kennels were of wood construction since the article mentions whitewashing them.[62] The location of the kennels has not been identified nor has their period of origin. Since the station records often mention dog sleds and dogs, it is not surprising that there would have been kennels. It is entirely possible that there were kennels in various locations on the site from time to time. It is known that the light station also included a hennery. The station logs of 1904 for September and October include entries about building a chicken house or chicken barn, presumably that shown on a site plan of the station dated 1909 *(Figure 6)*.

The "Annual Report of the 11th Lighthouse District, 1904," reports additional modifications to the fog signal building: "The iron smokestacks of the fog-signal boilers were

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[60]Journals, PIRO; notations by Torres.

[61]Bruce A. Jones, "Evaluative Investigations at the Au Sable Light Station, Pictured Rocks National Lakeshore, Michigan, 1990," Midwest Archeological Center, Technical Report No. 32, United States Department of the Interior, National Park Service, Midwest Archeological Center, Lincoln, Nebraska, 1994, 14-15 and 21. Some information also came from a telephone conversation between Rachel Franklin Weekley and Bruce A. Jones, 27 July 1994.

[62]Clipping file, Marquette County (Michigan) Historical Society, entry for June 18, 1903; notations by Torres.

replaced by a brick chimney 40 feet high." This change in appearance is documented by 1904 and 1920 photographs of the fog signal building *(Figures 14 and 15).*

According to the 1906 Annual Report, the seawall constructed in that year was "68 feet long and 4 1/2 feet high ... built of rubblestone laid in cement mortar." The wall ran along the eroding bank line below the fog signal building and was intended to prevent the bank from loosening and falling into the lake.[63] Efforts to maintain and strengthen the seawall would continue through the next period. Other work at the waterfront in 1906 included a 16' extension of the boat landing and fog signal water-supply pier and addition of a 14' by 32' crib with a wave break extending to the east to protect the boatways.[64]

1909–1938 Expansion of the Light Station

Several changes during the 1909–1939 period affected the administration and development of the light station. In 1910 the name of the station was changed to Au Sable Light Station as part of the administrative change from the U.S. Lighthouse Service to the Bureau of Lighthouses.

In many ways, this period was one of expansion for the light station. It expanded in size and number of features; existing buildings were altered and new buildings and structures added to upgrade site operations. A number of changes occurred at the station in and around 1909. The most visible and dramatic was the construction of the new keeper's dwelling which was built as a detached brick building west of the light tower. Located to the south of this dwelling were a new privy and woodshed. Also in 1909, the kitchen addition was removed from the original keeper's dwelling and the building renovated to serve as a duplex dwelling for the assistant keepers. A new privy serving this dwelling was located to its south. The resulting residential cluster of dwellings and outbuildings also included the 1904 hennery located farther to the south between the two residences. Other changes occurred to the site about this time: there was a major site clearing effort, new trails were cut west along the shore, and trees were planted in front of the new keeper's dwelling. In 1915, a metal oil house was added to the outbuilding cluster south of the assistant keepers' duplex/dwelling, a small garage was constructed two miles from the station in 1925, and the launchway was extended in 1931. This period also saw the first installation of telephone lines on the site, as well as the transition from wooden to concrete walks and the expansion of the walkway network.

An examination of records for this period indicates a substantial amount of repair and maintenance for all buildings, structures, and features. There were numerous repairs reported for the tramway, dock, seawall, and various sections of sidewalk. A major administrative change occurred in 1939 when President Franklin D. Roosevelt placed all structural aids to navigation, which included the Au Sable light station, under the auspices of the USCG. This period closed with completion in 1939 of the "Coast Guard road" which had been planned and under construction for much of this period.

[63]Annual Report 1906; notations by Torres.
[64]Ibid.

There are a number of graphic sources for this period which include photographs from 1914, the 1920s, 1931, 1935, and 1938, as well as three site plans, originally 1909 and with later revisions (1935 and 1944) and (1935, 1944, and 1959). The original 1909 plan *(Figure 6)* appears to have accompanied an inspection report of the same year, "Description of Buildings, Premises, Equipment, Etc. at Big Sable Light Station, Michigan, June 7, 1909;" the remaining two 1909 plans *(Figures 7 and 8)* each contain later revisions. The 1909 drawing, in particular, shows what is presumably the western terminus of the Coast Guard road. The 1920 photograph gives the best representation of the waterfront as it developed in this period *(Figure 15)*, while Figures 13, 16, 17, and 18 provide good views of the spatial relationships among the station's primary buildings during this period of development and expansion. Figure 13 provides the best representation of groundcover and low-lying vegetation. Figures 19 and 20 show the dock and tramway in 1931 and undergoing repairs in 1935; Figure 21 provides a picturesque view of the station from the lake.

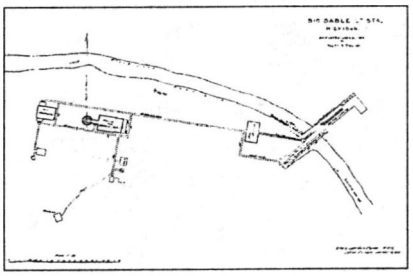
The 1909 inspection report provides a precise description of the station's waterfront features for this period: "Boatlanding 99' x 19' with an ell at the end 14' x 38 1/2' all of the cribs filled with stone. A crib breakwater is built on W. side of landing at outer end [?] 2 ft. long, 5 ft. wide, and 40' high. A log bulkhead continues along remainder of W. side to shore. The deck is of 3" x 10" plank and 4 ft. above water." The boat landing is described as "Boat landing 19' x 99'; 3 log cribs held together with an L 38'x 14' across the end, the whole filled with stone."

Shoreline protection continued to be a concern throughout this period. According to the 1909 inspection report, the seawall had been constructed once again and was described: "A retaining wall of rubble masonry 5 ft. high & 67 1/2 ft. long extends from the SW corner of the boat landing westward, resting on sandstone rock and holding the sand bank in front of fog signal." All three site plans of this period indicate the location of the seawall.

Maintaining a seawall was a constant struggle; keeping the wall required an ongoing effort over the years, and the wall was frequently subjected to the forces it was designed to repel. Because of the site's vulnerability to the unrelenting forces of wind and water, protection of the fog signal building and its accessory features was essential to the mission of the station. Lake conditions even interfered with construction and repair of the wall, making the entire process of wall creation and maintenance difficult. Particularly at the end of the period—in the late 1920s and 1930s—lighthouse documents make frequent references to seawall construction and repair. Apparently there was substantial damage to the seawall in 1929. The journal entry for 19 August 1929 reported that "Assts going to grand marais to get cement for sea wall," and on 20 August 1929 that personnel were "Working on sea wall filling big holes," and that they were working on it again on 28 August.[65] The log entry for 28 July 1930 reported that there was activity onsite, "Digging out foundation for Sea wall." On the following day the work crew screened gravel and made a platform for mixing cement. On the 30th and 31st,

[65]Journals, PIRO; notations by Torres.

Landscape Chronology 1909-1938



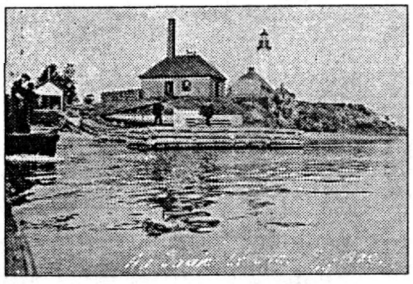
Ralph R. Tinkham's 1909 survey (Fig. 6)

1909 • Original freestanding woodshed demolished (before 1909)
• Extensive clearing of timber 1/4 mile east and west of station (before 1909)
• Original keeper's dwelling renovated as assistant keepers' duplex/dwelling
• New keeper's dwelling built
• Keeper's privy built
• Replacement of boardwalks with concrete walks begun
• First privy removed (ca. 1909)
• Assistant keepers' privy built (ca. 1909)
• Keeper's woodshed built (ca. 1909)

1910 • Name changed from "Big Sable" to "Au Sable"

1915 • Metal oil house built

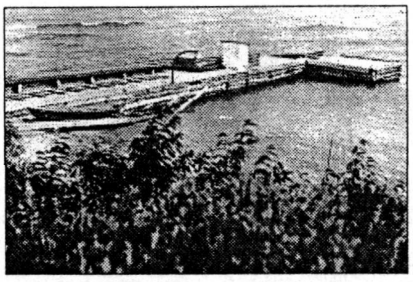
Light station waterfront in 1920 (Fig. 15)



1922 • Walks repaired

1923 • Sand cherries naturalize near keeper's dwelling (before 1923)

1925 • Garage built two miles away



1928 • Fog signal changed from steam whistle to air diaphone; dormer added to roof

1930 • Turntable rebuilt
• Walks installed near boathouse (thru 1934)

Dock and tramway in 1931 (Fig. 19)

1931 • Dock extension launchway built
• Trees planted near keeper's dwelling

1933 • Trail west along lakeshore developed
• Boat launchway extended again

1935 • Telephone line installed
• Replacement concrete walks installed
• Dock repaired

• Tramway extended through fog signal building to keepers' dwellings (ca. 1930s)

1938 • Coast Guard road built (thru 1939)

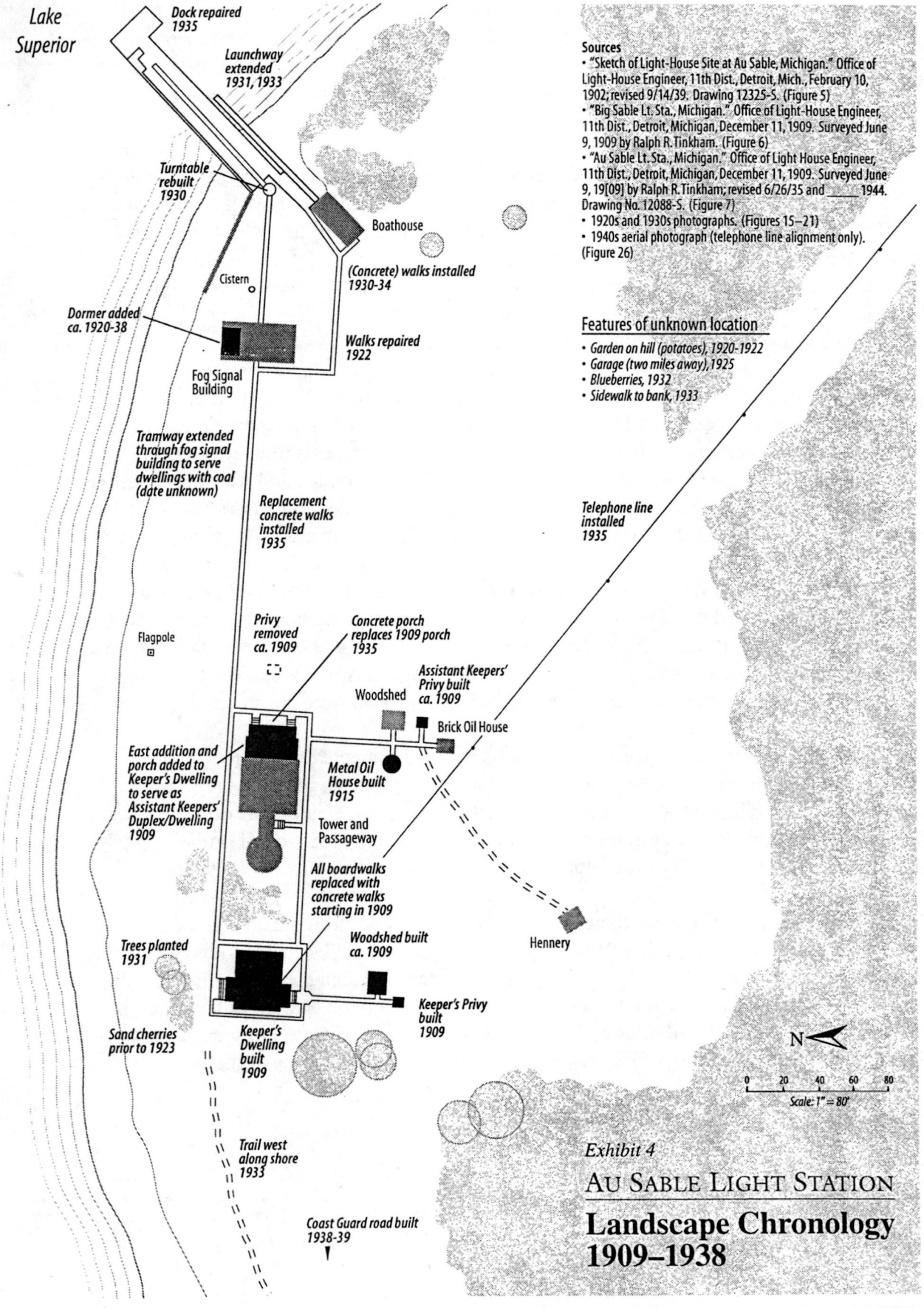


Exhibit 4

AU SABLE LIGHT STATION

Landscape Chronology 1909–1938

the crew hauled "stone from shore to dock for seawall." Work continued through August; on 29 August, the keeper noted that there was "To [sic] much sea to work on Sea wall." The crew resumed work again on 30 August. [66] Maintaining shoreline protection, as the lighthouse records document, was an ongoing and, not entirely successful, responsibility through the 1930s.

The annual report for 1909 also described the recently completed new keeper's dwelling (HS-9): "Season 1909, there was built a new dwelling of natural red brick, metal-slate roof, with 7 rooms, bathroom, and cellar under whole house. Stone water tables, lintels, and sills and porch coping." Its construction signaled the transition of the station from a single residence site into a larger station. A new privy (HS-14) was built for the use of the keeper's dwelling occupants; the report described the privy: "In the rear of the new dwelling are a brick privy, metal slate roof ... ."[67]

In 1909 workers also converted the original keeper's dwelling (HS-13) to a duplex dwelling for the assistant keepers. The woodshed addition to the original keeper's dwelling was removed in 1909 when a two-story addition was added. After this time, the building provided residential space for two assistant keepers and their families and was known as the assistant keepers' duplex/dwelling. The 1909 lighthouse inspection report noted the changes: "Same season the old dwelling was changed to a double dwelling by change in partitions, and a porch added across the rear." Workers removed the original "lean-to" type of woodshed that had been attached to the original dwelling and built a two-story addition in its place. This added two rooms to each floor of the dwelling as well as a stairway to the cellar under the addition.[68] An additional privy also was built about this time for the use of the occupants of the assistant keepers' duplex/dwelling. It is likely that the original privy built ca. 1873–1874 was removed when the two new privies were constructed.

The 1909 inspection report gives considerable information concerning the station's vegetative conditions.[69] Used in conjunction with the 1909 site plan, this report is helpful in identifying some site features and conditions for the early part of this period. The 1909 site plan of the station *(Figure 6)* also indicates the location of outbuildings and small-scale features, such as the hennery and flag pole.

According to the 1909 report, there was substantial clearing during the early part of this period to improve the visibility of the light by restoring an unobstructed view of it from Lake Superior. The report notes that "The main point on which the light house stands has been cleared of timber for a quarter mile each way from the station to facilitate the visibility of the light to the E't and W'd. This clearing has grown up to second growth—small stuff." The clearing of this semi-circular area on the lakeshore north of the light

[66]Ibid.
[67]Ibid.
[68]"Description of Buildings, Premises, Equipment, Etc., at Big Sable Light-Station, Michigan, June 7, 1909," (hereinafter referred to as "Description") United States Department of Commerce and Labor, Light-House Establishment, NPS files, Pictured Rocks National Lakeshore, Munising, Michigan. A copy of the report may also be found in Torres, "Historic Structure Report: Historical Data."
[69]Ibid.

tower was essential for the station to serve its intended function. The 1909 plan of the station *(Figure 8)* also addresses the clearing of the station site. The plan bears the notation "maintain clear visibility of light" in a geographic area denoted by an arc of about 120 degrees on each side of due north.

Also according to the 1909 lighthouse service report, about 300 acres of the site remained "in timber or shrubbery." The 1909 report also provides a description of the site's topography that is consistent with the original site descriptions of the 1870s: "The premises and along the shore line is sand on sandstone bed rock. Practically all the remainder of the reservation is cedar swamp."[70]

The appearance of the landscape changed in 1909 when station personnel began to replace wooden walkways with concrete ones. The concrete walks gave the station a more regular geometry and gave emphasis to the site layout. The inspection report for that year noted that "A board walk (to be replaced with cement 1909) leads to the wharf ... ." Under the heading 'Paths or walks on the premises,' the report describes "Present walks of plank, from dwelling to all outbuildings, boathouse, fog signal and dock." The 1909 plan gave the concrete walkway dimensions to be 18" to 2½' wide.[71] The concrete walks required regular maintenance. Reports for the remainder of this period consistently mentioned adding and repairing walks. The following selected report entries indicate the importance of internal circulation to this entirely pedestrian site and the level of attention given to providing and maintaining walks within the light station:

25 August 1922: "Repairing side walks at Boat house."
26 August 1922: "Cleaning up around Boat house cutting up old plank for house wood."
3 June 1929: "Cutting stringers for side walk and taking them to station."
4 June 1929: "Laying stringers for side walk and working and laying sidewalk."
3 September 1930: "Put in forms for Sidewalk west side Boat House."
24 July 1931: "Putting cement corner in Sidewalk at Signal."
26 August 1931: "Put in section of Side-walk East Side of Signal ..."
7 September 1931: "Repairing corner in Side walk."
1 August 1932: "Getting Gravel off Beach for Sidewalk."
2 August 1932: "Running Cement in Sidewalk."
3 August 1932: "Finished Cement Sidewalk."
22 October 1932: "Putting in forms in front of Boathouse for cement Sidewalk."
24 October 1932: "Putting in cement in front Boathouse."
16 August 1933: "Makeing Sidewalk to Bank."
22 June 1935: "Concrete walks are installed from the dock, past the fog signal and to the light tower and quarters."
17 and 19 August 1936: "Putting in cerment [sic] blocks," no location for the project.[72]

[70]Ibid.
[71]Ibid.
[72]Au Sable Journals (hereinafter referred to as Journals, NARA), Record Group 26: Records of the U.S. Coast Guard, National Archives and Records Administration, Washington, D.C.

It appears that administrative changes between 1910 and 1916 had little effect on the operation or appearance of the site. In 1910 the light station's name "Big Sable Light Station" was changed to "Au Sable." In that same year, Congress disbanded the U.S. Lighthouse Board and created the Bureau of Lighthouses in its place. The bureau functioned as a civilian agency, in contrast to its predecessor, which had been under the auspices of the Department of Commerce.[73] The Life-saving Service joined with the Revenue-Cutter Service to form the nucleus of the U.S. Coast Guard in 1915 with the Coast Guard assuming responsibility for all U.S. life-saving operations. The U.S. Lighthouse Service operated as a complementary agency with these to safeguard shipping along the nation's coastal waterways.[74]

In 1915 a second oil house (HS-12)—this time of metal construction—was added to the site, indicating both the station's increasing use of oil for fuel and concerns for appropriate and safe fuel storage. Its presence indicated site compliance with the changing safety practices instituted to reduce the threat of fire when flammable substances were stored in a keeper's dwelling. Although presently located across from the assistant keepers' privy, the cylindrical iron structure originally may have been installed opposite the assistant keepers' woodshed and placed on a concrete slab.[75] According to Bill Lacombe, the metal oil house was moved from Grand Marais.[76]

Despite the clearing that occurred during this period, fires continued to be a problem for the station. The policy of Au Sable lighthouse keepers was to sound the whistle in the fog signal building as a warning for ships when smoke from area fires impeded clear vision. The keeper recorded brush fires in the area in log entries for 8 and 10 October 1923, and the crew sounded the signal for smoke on both days. Approximately ten years later, from 3–5 September 1933, the keeper sounded the fog signal for smoke, probably indicating the presence of fires in the area. Log books also indicate that personnel stationed at Au Sable burned grass clippings and periodically burned the light station grounds to "clean up" the area.[77] It appears that the grass that was kept cut and burned was never a planted, cultivated variety, but instead a combination of native grasses and other low herbaceous plant materials. The best available documentation of the character of that vegetation in the cleared area comes from contemporary photographs *(Figures 13, 17, and 18).*

Throughout this period, the staff remained fairly isolated at Au Sable, with the only communication coming when they traveled to Grand Marais for mail and messages. The

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[73]Holland, 37.

[74]Michael O'Brien, *Guardians of the Eighth Sea: A History of the U.S. Coast Guard on the Great Lakes* (Washington, D.C.: U.S. Government Printing Office, 1976), 3-9.

[75]The 1909 plan *(Figure 6)* bears a penciled notation for a circular oil house opposite the woodshed. A later version of this plan with 1935 and 1944 revisions actually show the oil house in this location *(Figure 7)*; however, by the 1959 revision of this plan *(Figure 8)*, the location of the metal oil house has been moved to a location opposite the privy for the assistant keepers' duplex/dwelling.

[76]William Lacombe, site visit and interview with Rachel Franklin Weekley, 7 June 1994, Au Sable Light Station, Pictured Rocks National Lakeshore.

[77]Journals, NARA.

station did not have a radio until 1930.[78] There were few amusements at the Au Sable Light Station. The site's fruit-bearing vegetation apparently attracted some visitors. The landscape provided an opportunity for recreational activities, such as fruit picking. Occasionally there would be visitors to the light station to pick blueberries. Other visitors came to see the light tower and to picnic. Keepers routinely mentioned these guests in their daily records. The light-station log books contain limited references to the fruit that grew on the site, such as the following:

> "Keeper and 1st asst picking berries at landing." (27 August 1920),
> "2nd asst went picking berries." (5 September 1920),
> "Keeper and 2nd asst picking sand cherries in after noon ... ." (13 August 1923), and
> "Picked Two Quarts Blueberrys this AM." (1 October 1932)[79]

There is also limited documentation for planting ornamental vegetation in this period but there is no information regarding the species or location of these trees. Relevant journal entries include the following:

> "Painting front Porch on Keepers Dwelling and Planting Trees in front." (15 May 1931; more trees were planted on the 17th; however, the exact location and species are not specified in log entry), and
> "Planting Small trees coald [sic] Wet Day." (9 May 1932)[80]

Records for the 1920s document some garden planting, tending, and harvesting. No specific produce is mentioned by name except potatoes. It is likely that there were garden plots throughout the history of the site given its rural and isolated location and the self-reliant nature of households during the nineteenth- and early twentieth-centuries. No documentary evidence for gardens in other periods has been identified, however. Keeper John Brooks and his assistants planted potatoes and referred to a garden in a journal entry in the early 1920s. An entry for 1922 identified a garden location on a hill. The log entry for 5 May 1920 reported that: "1st asst planting potatoes." Other references to the garden and potatoes, in particular, include the following:[81]

> 23 September 1920: "Went after potatoes to the burry cane."
> 4 July 1921,: "Working in garden."
> 24 September 1921: "Working in garden diging [sic] potatoes."
> 27 November: "Keeper diging potatoes."
> 5 October 1921 "Working in garden diging potatoes."
> 7 October, Keeper Brooks "cutting wood and whealing [sic] potatoes."
> October 1922 "went to the garden on the hill for potatoes."

[78]Journals, PIRO; notations by Torres.
[79]Journals, NARA.
[80]Ibid.
[81]Ibid.

The crew at the light station also maintained the grounds regularly. Station personnel had made a grindstone frame on 18 May 1922 to sharpen scythes used for grounds maintenance. Throughout the summer months, staff regularly cut grass, cleaned grass and weeds from sidewalks, raked the grounds, and burned both standing and cut grass, sprouts, and weeds. The following journal entries reveal some information concerning how the grounds were kept during this period:

> 27 May 1922: "Clearing out turf from edges of side walks."
> 17 June 1930: "cutting Sod longside of Sidewalk."
> 10 July 1933: "Cuting Sods Around Buildings."[82]

The fog signal underwent extensive renovation in 1928 when the signal was changed from a steam whistle to an air diaphone system and the original steam-driven apparatus was replaced by a diesel mechanism. The station received a new boiler, air compressor, fuel tank, and engines for the fog signal in the summer of the same year. Keeper Hamringa tested the new engine and compressor on 18 October 1928. He officially placed the new signal "in commission" on 20 October and spent some of the day "practisen to get uset [sic] to new signal." Hamringa recorded in the journal on 3 November 1928 that he was "blowing of boiler for the last time."[83]

Lighthouse keepers continued to lack vehicular access to the station for most of this period. As a result, the log slide trail, extant in the nineteenth century and the best-documented trail on the property, remained an important circulation route through the 1930s. It was essential for the crew to maintain the trail because it provided the most direct land route between Au Sable and Grand Marais. On 16 September 1935, the station crew worked "Fixing Mud Holes on Trail to Hills." By the 1930s, however, there may have been other trails extending from the station. A cryptic entry from 14 November 1930 notes that, "Assts cutting trail South West of Station." Three years later, Keeper Arthur Taylor wrote on 22 September 1933, "Assts cutting trail West along Shore." These entries, which come very late in this historic period, are the first indication that trails also extended westward from Au Sable.[84] Despite these changing patterns from east to west, the log slide trail endured along the southern shore of Lake Superior. The log slide trail and the lake provided the only direct routes to the site until well into the twentieth century.

Automobile traffic became increasingly more popular and accessible throughout the United States in the nineteen tens and twenties. Eventually the popularity and convenience of the automobile brought vehicles to the Au Sable Light Station, ending the extreme isolation and remoteness that had characterized the site since its establishment in 1873. The Federal Highway Act of 1916 provided incentives for road construction by

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[82]Ibid.

[83]According to (unidentified NPS reviewer), "blowing of boiler" most likely referred to the daily blowing down of the boiler water to remove sediment scale and other debris that collected in the boiler. This was a maintenance function that was probably performed as part of a shutting down procedure of the boiler. It is not what most would think was the blowing of the fog signal itself.

[84]Journals, NARA.

offering federal dollars to match state funds raised to construct "rural post roads" and other highway projects. Such an opportunity may have enhanced Alger County's efforts to build public roads that made travel to and from the Au Sable station a much easier undertaking.[85]

The vehicular age was acknowledged at the station with the construction in 1925 of a garage that was built two miles from the station at an undetermined location. The log entry for 27 July 1925 recorded the event: "Keeper and 1st asst putting up a small Garage on the hill 2 miles from station." The growing acceptance and availability of the automobile and the presence of a garage provided light station staff with more personal freedom than had heretofore been possible, although the garage was built for the temporary storage of a vehicle and supplies. With this addition, keepers and assistants no longer had to walk the entire distance to Grand Marais on their weekly treks for supplies and mail. After 1925, the daily logs record trips made by car rather than by foot. The regular walk to Grand Marais for supplies and mail had finally ended.[86]

The issue of roads leading the entire distance to the site is not entirely clear. Light-station journals kept during the 1920s mention road surveys and maintenance, but it is not clear if this work was done on the road two miles away, or on a road leading to the site. Typical entries for the 1920s include the following:

> 26 September 1923: "Supervisor at the station to day looking over the road and is in a bad shape."
> 22 June 1924: "the Road Commissioner was at station yesterday looking over the road see rout [sic] can be done."

Since keepers and their assistants continued to walk to Grand Marais for supplies and mail in the early 1920s, it is likely that a road did not enter the station grounds in that period.

It appears that vehicular use brought with it increased maintenance responsibilities associated with road upkeep. The year 1925 marked an increase in entries related to station personnel clearing "the road" of grass, brush and trees. For example, on 30 July 1925, the crew were "Working on road cutting grass and brush." Crew also cut brush on the road on 20 and 21 August 1925. Two months later, on 21 October 1925, trees were mentioned, perhaps in relation to storm damage to the road. Keeper Klass Hamringa wrote, "Working on Road cutting trees out of the way." And, on 23 October, "Assts working on Road chopping out trees lot of them Blowing down." Again, it is unclear as to whether the work mentioned was on a road leading to the site or on the road within two miles of the site.[87]

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[85]Information provided by Dr. Donald Stevens, Research Historian, National Park Service, Midwest Regional Office, Cultural Resources Division.
[86]Journals, NARA.
[87]Ibid.

Keeper Arthur Taylor left more specific records in the early 1930s concerning maintenance of the public road beyond the log slide. He wrote on 24 August 1931, "Cutting Sprouts around Grounds and cutting Brush on Road to Garage." A few days later, on 30 August, the journal notation reads, "Asst Shelley and Keeper Taylor went over the Road after the Storm [which had occurred the previous day]." On 6 September 1934 Taylor wrote, "Cutting trees off Road from station to Hill." Crews routinely cut weeds and sprouts along "the road" during summer months since it had become a valuable circulation route to Grand Marais.[88]

Apparently 1935 was a year in which the remote station improved its access to offsite destinations and its communication capabilities. It was the year that the keeper began to have a car in the station's garage and in which a telephone was installed in the new keeper's dwelling. The keeper recorded in the log on 1 May 1935: "Keeper bringing his car to Garage." The distance of the garage from the station, however, was a definite deterrent to leaving the site. On 24 October 1936, the log entry read, "Keeper very Sick cannot get into town to [sic] much Sea for small boat could not walk to garage." Indeed, the station was still a very isolated outpost. The USCG filed an inspection report on 22 June 1935 remarking on the still-remote and largely inaccessible light station site:

> Grand Marais is the nearest town (12 mi.) where mail is received. Keepers have a car on the road 2 miles from the station and walk over a trail through the woods and swamp to reach the car. Power boat used when going for provision but hard to launch as now arranged.[89]

Perhaps, the installation of a telephone alleviated the remoteness somewhat. In a 1994 interview with Rachel Franklin Weekley, Former Second Assistant Keeper Bill Lacombe related that the USCG put in the telephone line to connect the Au Sable station with the one in Grand Marais. He also said that it was a Corps of Engineers project carried out with WPA labor, circa 1933-34. This information has not been verified or confirmed by other persons familiar with the site. The installation of the telephone line, which extended east of the site towards the log slide, was mentioned in the light station journals, however. As early as 1919, Keeper Jones wrote, "Two telephone men belonging to the Coast Guard service called at Station looking over route to put line to this station."[90] It appears, however, that the lines were not installed until 1935 when there were references to running the lines and hauling poles, and finally on 18 September 1935 the entry "telephone completed talking over Same."

The telephone lines, like roads and trails, however required attention following storms. On 4 October 1935 there was the typical reference to storm damage on the site but this time in regard to the telephone line: "Storm Blowing out lots of trees on telephone line." Apparently the line was extended to the assistant keepers' duplex/dwelling the next year:

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[88]Ibid.

[89]"Inspection Report, Au Sable Light Station, Michigan, June 22, 1935," NPS files, Pictured Rocks National Lakeshore, Munising, Michigan.

[90]Journals, NARA.

the entry for 29 November 1936 reported that "2 asst. returned to station with Coast Guard lineman with new telephone for assistants quarter. Assisting lineman to install telephone." On the next day, the installation was complete: "Finished installing telephone at 5 pm."

Soon after the 1935 inspection, the USCG built a road (referred to as the "Coast Guard road") extending westward for 1.5 miles from the light station towards Hurricane River. Construction on the road began in 1938. A historic photograph in the collections of the Grand Marais Maritime Museum and dated 13 September 1938, shows Keeper Edward McGregor working on this road. Other photographs dated October 1938 show the road's cleared path. According to later annotations on the 1902 survey *(Figure 5)*, the road construction was completed in 1939. Park staff also believe this date is correct[91]

The revised 1902 survey also indicates on its southwest corner that the "Coast Guard road" connects with a "CCC road" which is presumed to have been developed prior to the Coast Guard road. To date, research efforts have not identified useful information related to the construction of this "CCC road" or of USCG use of the Civilian Conservation Corps (CCC) for the construction of the road leading to Au Sable Light Station. Journal entries provide only scant reference to either. The daily notation for July 1935 says, "Keeper went over CCC road found a fine Road and Bridge." On 5 August 1935, Keeper McGregor wrote, "Mr. Smith Conservation Officer from Newberry and cornstrution [construction] forman [sic] was here today looking over road to station from west." This entry may imply that a road pre-dated the "Coast Guard road."

Station personnel may have already cut a road to the west which the USCG improved in the late 1930s. The record on this is not clear: according to the journal entry for 21 October 1936, "the station (was) surveying site for road." On the following day, McGregor wrote, "Working with Surveyor on road." During these years, the keeper and his assistants continued to use the road located two miles from the station, so at this point the circulation pattern had not changed to the west. Once the Coast Guard road—which extended from Hurricane Campground to the light station's fog signal building—was completed circa 1939, the station crew used that road as the primary vehicular route to and from Au Sable Light Station.

According to the journal entries, the dock, boatways, and tramway *(Figures 19 and 20)* required frequent attention in the 1930s. A journal entry for 28 August 1930 noted, "Makeing [sic] form for Anchor turntable." The entry for 1 September 1930 read, "Labor Day. Put in Anchor Block to turn table." On the following day, the keeper wrote, "Takeing [sic] up turn-table and makeing [sic] new timbers for same." The crew made more timbers for the turntable on September 4.; later in the month, the keeper declared that the "turn-table completed works fine." In 1931 there was work on the dock extension launchway; in June 1936 workers extended the car track on the dock, presumably

[91]Historic photographs and Brian Hoduski, Interpretive Ranger and Curator, Grand Marais Maritime Museum, Pictured Rocks National Lakeshore, Grand Marais, Michigan, conversation with Rachel Franklin Weekley, 4 June 1994.

following repairs made to the dock the preceding fall *(Figure 20)*. A USCG document "Au Sable Light Station, Michigan, June 22, 1935" mentioned other work related to the dock: "Water pipe is laid on dock and runs from intake point 50 ft. offshore [to] air pump in fog signal." The same report continued that "A cistern is located in front of fog signal for overflow cooling water ..." and gave the specifications for the pump.

Additional work occurred on the tramway in 1935 according to this USCG document: "Track and turntable (were) installed with incline to power house where air hoist is located." Later, the report continued that "The air hoist is C.C. Warner Machine Co., Detroit; a single cylinder air-driven engine geared to single drum hoist with foot bracket and is used for handling car over dock to turntable and up the inclined rail to fog signal. Cable is 7/16"." It is assumed that the tramway remained in operation throughout the remainder of this period although its use was discontinued in the 1950s.

1939-1958 Final Period of Operation and Automation

In 1939, agencies providing navigational and life-saving services were united under the U.S. Coast Guard. This historical period is the last during which the site was inhabited. During this time, vehicular access was improved and a garage built on the edge of the light station, electrical service was installed, and the seawall was repaired and extended. The fog signal, once so important to the function of the station, was discontinued in 1957 and the light automated in 1958. The last USCG personnel left the site in 1958.

A 1940s aerial photograph *(Figure 26)* gives the best indication of the appearance and layout of the light station during the early part of this period. With the exception of the 1954 frame garage, the station is complete and many cultural landscape features are visible as well as the site's primary buildings. The dock and the seawall (following its 1942 extension) are evident in the photograph. Both the brick and the metal oil houses are visible in the photograph; to the right of the tower there are two brick privies and at least one of the frame woodsheds south of the dwellings; the dominance of the interconnecting internal walk system is particularly evident. This photograph, more than any other available for the historical periods, indicates the extent of the area cleared of vegetation for the light station. Figure 23 gives an indication of the low-lying shrubs and grasses near the fog signal building. The grasses shown in this photograph appear to be native grasses although the exact species are not identifiable.

Lake Superior continued to take its toll on the seawall through this period. By 1942, 85% of the retaining seawall had collapsed into the lake *(Figure 24)*. To provide better protection for the fog signal building, the wall was repaired extended westward another 63' in 1942, bringing its total length to 130'. The new extension turned off at a slight angle, following the course of the bank line *(Figure 29)*. Despite these efforts, the periodic storms and constant presence of the lake continued to damage the wall *(Figure 30)*. As had been the case since the first efforts to create a seawall in the nineteenth century, Lake Superior was relentless and caused each successive wall to fail.[92]

[92]Journals, PIRO; notations by Torres.

The seawall also required repair in both August 1951 and July 1952. Two holes in the seawall were repaired in 1951 using a cement mixture of sand, stones, and concrete *(Figures 31 and 32)*. The workmanship was rated as "Good."[93] Despite these best efforts, the seawall again needed attention in 1952. The log entry for 23 July 1952 noted that "Robert B. Miller Foreman Mechanic reported this unit with lumber and cement for work on retaining wall." During the next few days, Miller used the lumber to build forms to hold the concrete used to repair holes in the wall. By the mid-1950s, "the sea wall extended well to the west of the fog signal [building], perhaps to about 130 feet."[94]

Electrification of the site was accomplished in 1944 by running underground electric cables from a generator in the fog signal to other buildings. As a result of using the lead armored Parkway cable underground, there was no additional visual effect on the landscape from utility poles and overhead wires within the light station. Telephone poles and wires had already been installed to provide telephone service to the dwellings *(Figure 22)*. After 1944 the Au Sable station's light became a flashing white light instead of the fixed white light it had been since 1874. Electrification of the light had been first considered in 1935.[95]

Also in August 1944, fuel tanks were installed in a location south of the present 1954 garage, as shown on the revised 1909 site plan *(Figure 8)*. The earlier revision to the 1909 site plan *(Figure 7)* shows another 1500 gallon fuel tank to be located south of the fog signal building.

A 220'-deep well, ostensibly to provide the station with drinking water, was drilled in 1951.[96] Previously, occupants of the light station apparently drank water directly out of the lake. The following journal entry reports on drinking lake water: "Crew turned to take pipes out near fog signal to lake and put pipes away. We are getting water from the well and carring [sic] water to drink from lake until the water is clear in the well."[97]

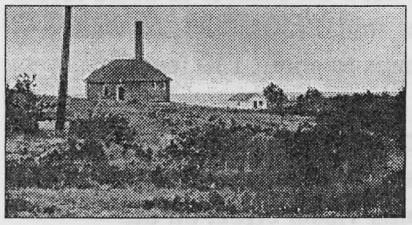
By 1940 the station crew used the "Coast Guard road" as the primary access route to Au Sable. Maintenance and repair activities occurred with frequency. The Coast Guard road was repaired and realigned in 1952, being moved 20' from the mouth of Hurricane River and widened for a distance of 1 1/2 miles. The southerly realignment away from the lake's edge was necessary because of severe erosion. As the bank along Lake Superior has eroded, parts of the former road have fallen away. There are places where the road has been shored up, particularly at points where it crosses small culverts. Cement abutments are currently adjacent to the road in some of these locations.

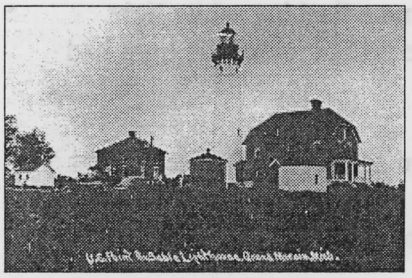
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[93]Journals, NARA; entries provide details of the repair.
[94]Journals, PIRO; notations by Torres; HSR 1981.
[95]Letter from Commander, Ninth Coast Guard District, Cleveland, Ohio to George Robinson, Division of Planning and Interpretive Services, National Park Service, 23 June 1969.
[96]Alice Trevethan, "Life at Au Sable Light," (Part III of series) *The Grand Marais Pilot & Pictured Rocks Review*, Grand Marais, Michigan, 6 November 1974, clipping file at PIRO. Interviews former keeper Toivo W. Linnamaki (1947-1954).
[97]Journals, NARA.

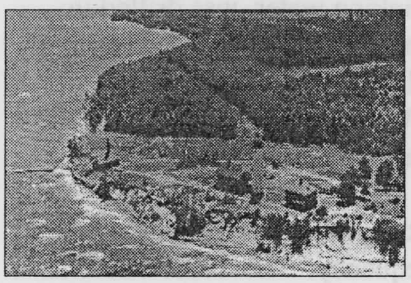
Landscape Chronology 1939-1958

Fog signal and boathouse in 1942 (Fig. 23)





The station in the 1940s (Fig. 25)



Aerial view from the late 1940s (Fig. 26)

- Assistant keepers' woodshed removed (ca. 1940s)
- Clothes line installed (ca. 1940s)

1942
- Seawall repaired and extended

1944
- Two underground fuel tanks installed
- Parkway cable installed (station electrified)

1951
- Well drilled at keeper's dwelling
- Seawall repaired

1952
- Flagpole fell down, replaced
- Seawall repaired
- Septic system installed
- Coast Guard road widened and moved back 20' from shore (thru 1954)

1954
- Flagpole relocated west of tower (?)
- Keeper's woodshed removed
- Garage built
- CG road moved south, shored up, and regraded
- Roses, lilac planted near keeper's dwelling (thru 1956)

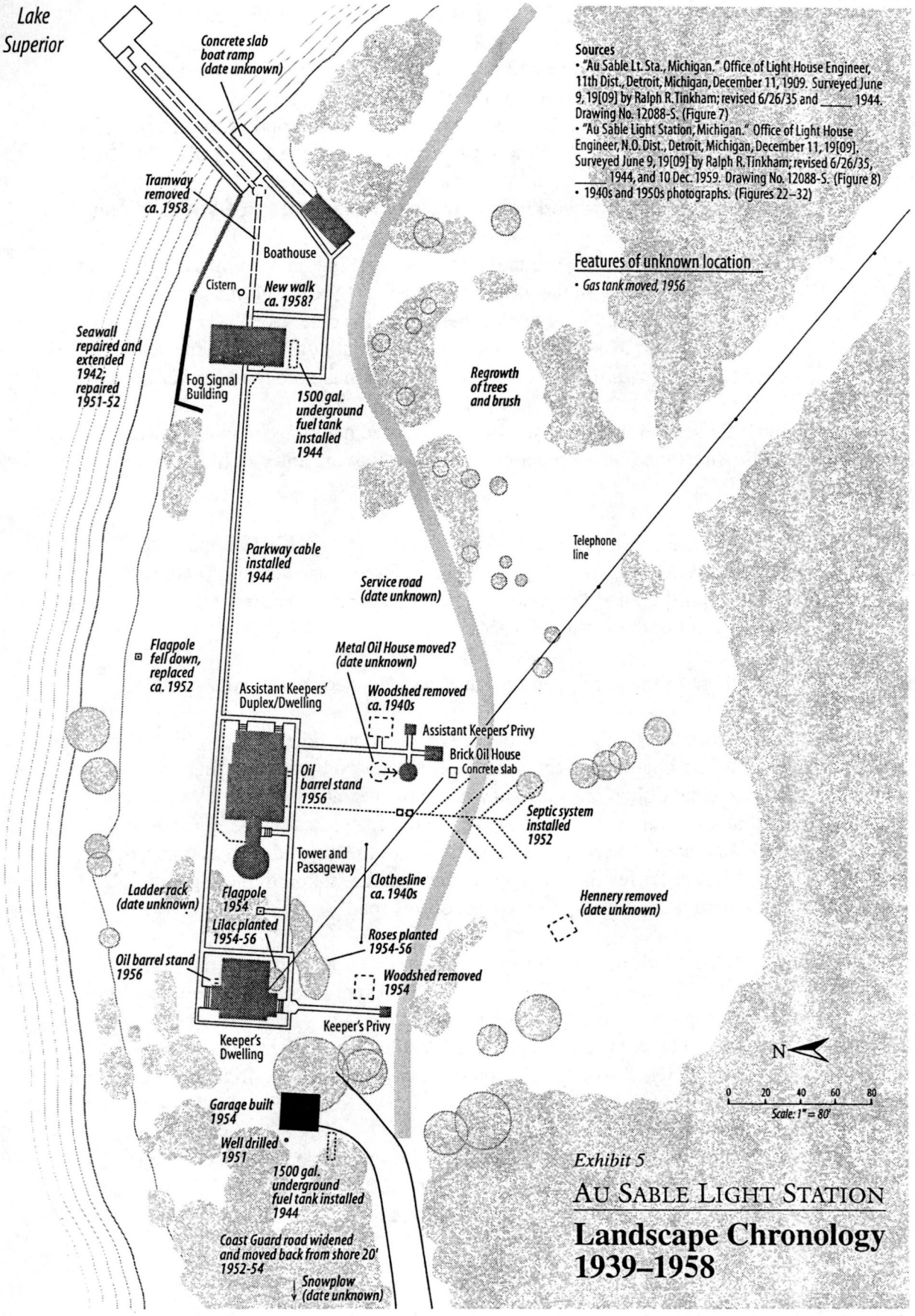
1955
- Fog signal diaphone installed

1956
- Oil barrel stands installed at keepers' dwellings
- Gas tank moved (locations unknown)

1957
- Use of fog signal discontinued

1958
- Automated bulb changer installed in light tower
- Bell buoy placed offshore
- USCG personnel vacate light station
- Tramway removed (ca. 1958)

- Hennery removed (ca. 1950s)
- Concrete slab boat ramp built (ca. 1950s)


Lake Superior
Concrete slab boat ramp (date unknown)
Tramway removed ca. 1958
Boathouse
Cistern
New walk ca. 1958?
Seawall repaired and extended 1942; repaired 1951-52
Fog Signal Building
1500 gal. underground fuel tank installed 1944
Regrowth of trees and brush
Parkway cable installed 1944
Service road (date unknown)
Telephone line
Flagpole fell down, replaced ca. 1952
Metal Oil House moved? (date unknown)
Assistant Keepers' Duplex/Dwelling
Woodshed removed ca. 1940s
Assistant Keepers' Privy
Brick Oil House
Concrete slab
Oil barrel stand 1956
Septic system installed 1952
Tower and Passageway
Clothesline ca. 1940s
Ladder rack (date unknown)
Flagpole 1954
Lilac planted 1954-56
Roses planted 1954-56
Hennery removed (date unknown)
Oil barrel stand 1956
Woodshed removed 1954
Keeper's Privy
Keeper's Dwelling
Garage built 1954
Well drilled 1951
1500 gal. underground fuel tank installed 1944
Coast Guard road widened and moved back from shore 20' 1952-54
Snowplow (date unknown)
Sources
• "Au Sable Lt. Sta., Michigan." Office of Light House Engineer, 11th Dist., Detroit, Michigan, December 11, 1909. Surveyed June 9, 19[09] by Ralph R. Tinkham; revised 6/26/35 and ____ 1944. Drawing No. 12088-S. (Figure 7)
• "Au Sable Light Station, Michigan." Office of Light House Engineer, N.O. Dist., Detroit, Michigan, December 11, 19[09]. Surveyed June 9, 19[09] by Ralph R. Tinkham; revised 6/26/35, ____ 1944, and 10 Dec. 1959. Drawing No. 12088-S. (Figure 8)
• 1940s and 1950s photographs. (Figures 22–32)
Features of unknown location
• Gas tank moved, 1956
N
0 20 40 60 80
Scale: 1" = 80'
Exhibit 5
AU SABLE LIGHT STATION
Landscape Chronology 1939–1958

Various journal entries though the 1950s document some of the road repairs:

> 5 November 1951: "Crew returned to work on road to fixed [sic] up three bit holes that the sea wash away in storm."
> 6 November 1951: "Crew returned to work on road cutting poles to make a bridge over the hole in the road." (Six days later they filled the large hole with sand; apparently the bridge idea didn't work.)
> 20 November 1951 "Crew working on road cutting trees near road to get around hole."
> 28 July 1952: "ECV 10507 [vehicle] and crew working on road moving the road back about 20 feet from the mouth of HURRYCAN [sic] river is all widen to the light one mile and a 1/2 need some gravel in some spots."
> 29 July 1952: "Made inspection of shore line to mouth of river and the sea is eating away the bank from light to river so we had to make the road farther back."[98]

Throughout the 1953 season, the crew worked on the road hauling gravel and filling holes in the road. An exasperated keeper entered the following entry in his daily journal on 18 December 1953,

> Secured Au Sable Light Station at 1530 and crew with T-13019 departed to Grand Marais Michigan. all doors locked. Need work done on road as it is brakeing [sic] up and the banks are falling in to the lake so we may not have no road in the spring of 1954.

But, the road was there in the spring, and routine maintenance continued as usual.

A road extended across the southern side of the station at one time, perhaps from the Coast Guard road to the boathouse. Such a road is suggested by the fact that the south side of the site was accessible to cars, as shown in a photograph from the 1940s *(Figure 26)*. It appears that a road may also have curved to the east, towards the log slide trail. According to Bill Lacombe, the road never continued to the log slide. This contradicts the information of Louis Torres that the road connected the station to the log slide. No documentation confirms the construction or use of this road.

During this period the location of the station's flag pole was moved from the bluff edge on the northern side of the property *(Figure 27)* to its current location between the light tower and the new keeper's dwelling. From the station logs it is not clear when this relocation took place. The entry for 2 April 1952, made shortly after reopening the station for the season, notes, "Wooden flag pole broke off at the bottom and fell down on the ground some time last winter. Will get a new flagpole from the woods." Later that month, it was noted "crew working on flag pole making a new one," presumably of wood. On May 7, the log entry reads, "Crew putting up new flag pole all completed by 1430 pm; put concrete base under flag pole made out of 2 1/2-inch pipe." This is presumably refers to the remnant concrete foundation presently located at the edge of the

[98]Ibid.

bluff. The relocation, in fact, may have taken place several years later, as these log entries might indicate:

> 27 Oct. 1954: Crew turned to removing and painting flag pole.
> 28 Oct. 1954: Crew turned to pouring cement base for flag pole.
> 29 Oct. 1954: Crew turned to putting up flag pole.[99]

A new concrete base may be indicative of a change in the flag pole's location, given that the previous foundation was only two years old. The fact that the pole was removed and repainted may suggest that the 1952 wood pole was not replaced with a metal one until a later date.

Limited site construction and demolition were still occurring during this last period of operation. A septic system was installed in 1952. Routine maintenance and repair also occurred. According to a journal entry for 23 April 1954, the woodshed for the new keeper's dwelling was demolished. The woodshed for the assistant keepers' duplex/ dwelling apparently was removed sometime during the 1940s. The metal oil house may have been located at the same time to its present location opposite the assistant keepers' privy.[100] A garage was constructed and wired for electricity in 1954. The wood frame structure on concrete footings which was built to accommodate two vehicles was completed in July 1954.[101] The station was equipped with propane in 1955.[102] During the summer of 1956 the station crew engaged in making oil barrel stands.[103]

Richard and Carol Miller, who resided at the station between 1954–1956, have been interviewed about life at Au Sable. Their recollections provide some glimpse into life at the station during its final years of operation *(Figure 25)*. Carol Miller related that "We liked the quiet. You picked all the blueberries you wanted." A native of nearby Grand Marais, Carol Miller "loved to keep the grounds of the light station bright with flowers."[104] A telephone conversation with her revealed that she planted geraniums and the lilac shrub in front of the new keeper's dwelling, and roses along the sidewalk between the dwelling and its privy. The roses were probably planted on the site of the second woodshed which was demolished in 1954. Mrs. Miller also related that sand cherries still grew wild on the north (lake) side of the dwelling during her occupancy. Toward the end of this period, successional vegetation began to encroach on the cleared area south of the tower.

A log entry for 12 July 1956 reported that the "Crew turned to painting flag pole, clothes line poles and fences."[105] This entry is the only known reference to a clothesline or to fences although clothesline poles are apparent in some historic photographs *(Figures 22 and 25)*.

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[99]Ibid.
[100]See footnote 74.
[101]Journals, NARA.
[102]Ibid.
[103]Ibid.
[104]Janet Downs, "Millers recall lighthouse life," *The Mining Journal,* Marquette, Michigan, located in clipping file at Marquette County (Michigan) Historical Society.
[105]Journals, NARA.

A new diaphone was installed in the fog signal building in 1955. A photograph from the 1950s illustrates the still-utilitarian character of the site in its final phase of operation *(Figure 28)*. Walks traverse the fog signal building environs to provide circulation to and from the residential part of the station and the boathouse. Two years later in 1957, the fog signal was removed, bringing the sixty-year fog warning function on this site to an end. Other changes were taking place. According to Richard Miller, the track for the tramway was still in place 1954–1956, but it was no longer used. A date for its discontinuation has not been determined.

The most dramatic change, however—the one that resulted in vacation of the site—occurred in 1958 when an automatic bulb changer was installed in the light tower and a bell buoy placed offshore.[106] With these modernizations in place, the U.S. Coast Guard abandoned the station. Although the light remained operational, for the first time since the nineteenth century there was no reason for personnel to be stationed at Au Sable. As a result, USCG personnel were reassigned to other stations in 1958. It is likely that the Coast Guard removed the track and any remaining tramway equipment at this time.

At the same time, the NPS completed a Great Lakes shoreline recreation area survey, and identified the Pictured Rocks area, including the Au Sable Light Station as "one of five areas that contained features of national significance ... " and recommended it for "consideration as an addition to the National Park System ... ."[107]

1959–1967 Abandonment

This period marks the end of dependence on human-operated light stations and of changes influenced by modern technology and modernization. Lake Superior continued to be important for shipping in this period, particularly for iron ore. During this period, there were annual inspections and the light unit was serviced as needed. The site was virtually abandoned, however, with only USCG checks and the annual site inspections beginning in 1959. After 1958 the site was allowed to revegetate and cultural features were vulnerable as a result of abandonment and non-use. Changes after this time were largely a function of neglect and abandonment. In 1961 the station site was declared excess property by the USCG. Vegetative regrowth began to reclaim the southern portion of the area once kept cleared as a result of abandonment and the loss of regular maintenance. Buildings, structures, and other features were left to deteriorate. The hennery was removed sometime during this period. In the late 1950s, NPS conducted a Great Lakes Shoreline Recreation Area Survey along the southern shore of Lake Superior, which included the scenic and well-known Pictured Rocks. The survey team recommended 118 miles for potential inclusion in the national park system. Various attempts to create a national lakeshore were

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[106]Enviroscience, Inc. "Historic Structures Report, 95% Submittal, Au Sable Lighthouse Complex, Pictured Rocks National Lakeshore, Michigan." Prepared for the U.S. Department of the Interior, National Park Service, Office of Planning and Resource Preservation, Division of Cultural Resources Management, Omaha, Nebraska (Eden Prairie, MN: 1991), lll-1.

[107]U.S. Department of the Interior, National Park Service, Denver Service Center, *General Management Plan, Pictured Rocks National Lakeshore, Michigan* (Denver, CO: September 1981) (hereinafter referred to as GMP 1981), 4.

unsuccessful, however, until October 15, 1966, when the 89th Congress passed Public Law 89-668 creating Pictured Rocks National Lakeshore to preserve it for future generations. The legislation defined three distinct zones: the shoreline zone (33,550 acres), established primarily to preserve the Lakeshore's scenery and outstanding natural features; the inland buffer zone (37,850 acres), established to stabilize and protect the Lakeshore's character and land uses as they existed in 1964; and the historic zone, spread throughout the Lakeshore, established to preserve, protect, and interpret the Lakeshore's historic structures.[108]

1968–1997 Administration and Maintenance by NPS

On 12 January 1968 the Government Services Administration transferred the Au Sable Light Station and property, comprising 325.93 acres, from USCG to NPS to become part of the Pictured Rocks National Lakeshore. The property transfer, however, excluded the light tower, which was to be leased to NPS for a 99-year term. USCG retained ownership of the tower along with a 30' x 30' square around the tower's base for continued use as a navigational aid.[109] In 1972, the Fresnel lens was crated up by USCG for shipment to storage and replaced with a 300mm acrylic lens. NPS learned of this and secured the return of the Fresnel lens to Pictured Rocks National Lakeshore, where it initially was displayed at park headquarters in the former Munising Coast Guard Station at Sand Point. It was later moved to the Grand Marais Maritime Museum located in the former Grand Marais Coast Guard Station. It was returned to its original location in 1996, following renovation of the Au Sable Light Station tower.

The Au Sable Light Station was listed in the National Register of Historic Places in 1978 for its historic and architectural significance. The National Register nomination recognizes the significance of the Au Sable Light Station for its use as a navigational aid on the "graveyard coast," and as "an excellent example" of nineteenth-century lighthouse architecture. Additionally, the nomination describes this station as " ... the most accessible of the Park Service's Great Lakes Lighthouses [and] it is also an excellent example of a complete lighthouse complex from oil storage sheds to [the] fog signal building."[110]

In September 1981, the National Park Service completed a general management plan for the lakeshore. Management goals included identification of three different management zones—natural, historic, and park development—to "set forth major differences in management emphasis for lands and waters under sole or primary jurisdiction of the National Park Service."[111] The Au Sable Light Station is one of several historically significant cultural resources included within the historic zone for which "Management emphasis will be on [the] preservation, protection, and interpretation of these resources and their settings and on appropriate adaptive use of these structures."[112] More

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[108]Ibid.

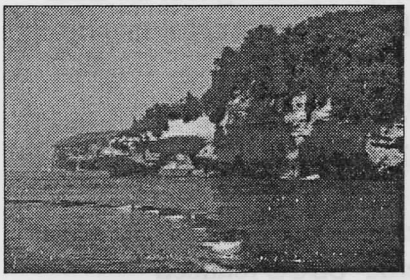
[109]The 1959 annotation of the 1908 site plan *(Figure 8)*, delineates this 30' x 30' parcel of the USCG.

[110]David Koenig, "Big Sable Light Station," National Register of Historic Places Nomination, United States Department of the Interior, National Park Service, Midwest Region, Alger County, Michigan, 23 May 1978, Sections 7 and 8.

[111]GMP 1981, 23.

[112]Ibid., 24.

Landscape Chronology 1959-1967

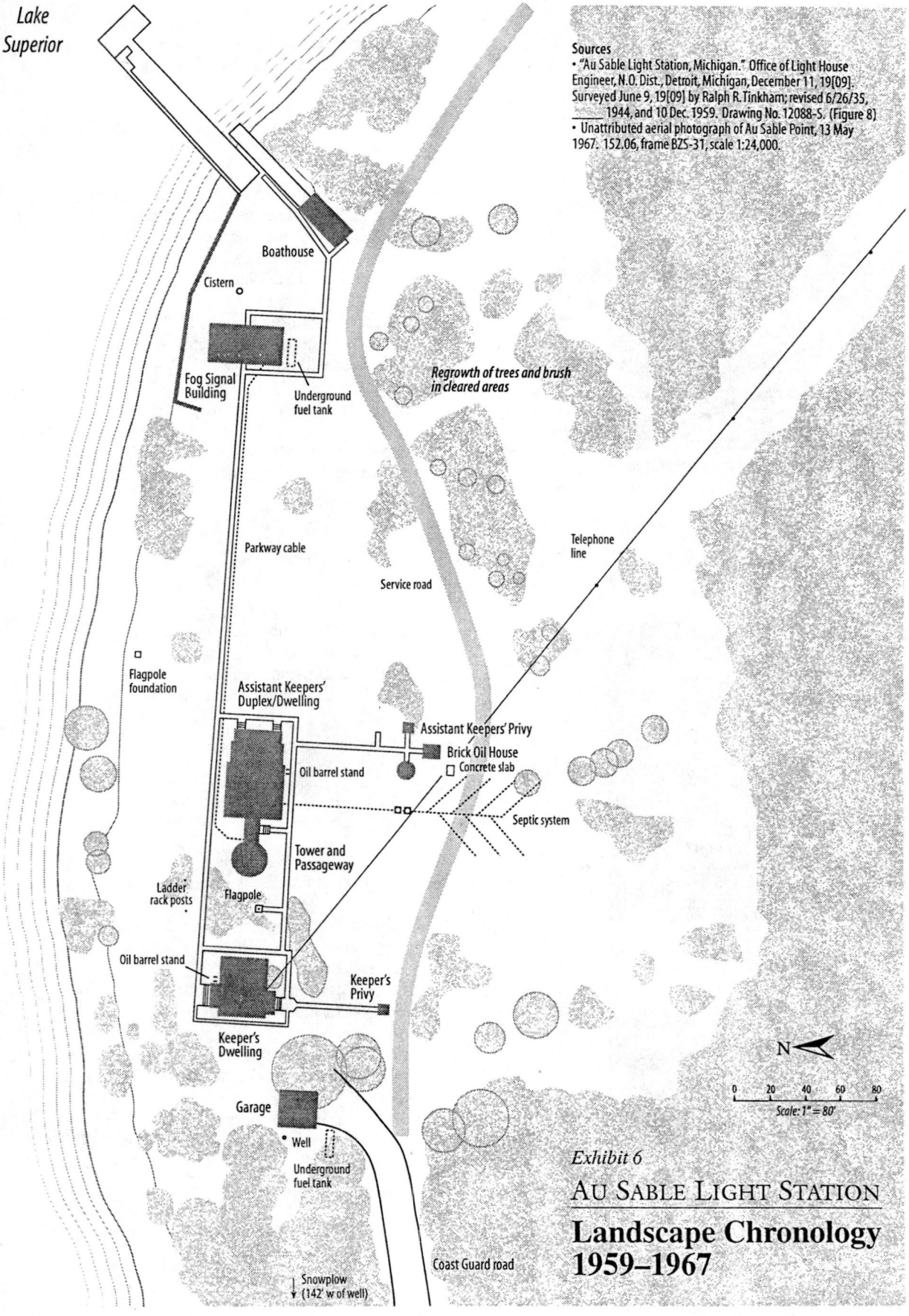


Pictured Rocks National Lakeshore

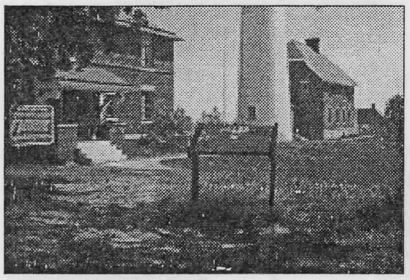
1959 • Great Lakes Shoreline Recreation Survey conducted by NPS (late 1950s)

1961 • Au Sable Light Station declared excess property by USCG

1966 • Pictured Rocks National Lakeshore established


Lake Superior
Sources
• "Au Sable Light Station, Michigan." Office of Light House Engineer, N.O. Dist., Detroit, Michigan, December 11, 19[09]. Surveyed June 9, 19[09] by Ralph R. Tinkham; revised 6/26/35, ____1944, and 10 Dec. 1959. Drawing No. 12088-S. (Figure 8)
• Unattributed aerial photograph of Au Sable Point, 13 May 1967. 152.06, frame BZS-31, scale 1:24,000.
Boathouse
Cistern
Fog Signal Building
Underground fuel tank
Regrowth of trees and brush in cleared areas
Parkway cable
Telephone line
Service road
Flagpole foundation
Assistant Keepers' Duplex/Dwelling
Assistant Keepers' Privy
Brick Oil House
Concrete slab
Oil barrel stand
Septic system
Tower and Passageway
Ladder rack posts
Flagpole
Oil barrel stand
Keeper's Privy
Keeper's Dwelling
Garage
Well
Underground fuel tank
Snowplow (142' w of well)
Coast Guard road
N
0 20 40 60 80
Scale: 1" = 80'
Exhibit 6
AU SABLE LIGHT STATION
Landscape Chronology 1959–1967

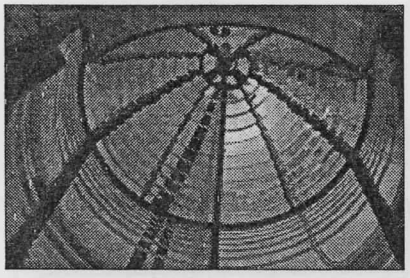
Landscape Chronology 1968-1997



NPS interpretation of the light station



Assistant keepers' duplex/dwelling with restored porch



Restored Fresnel lens

1968 • Au Sable Light Station (excluding tower) transferred from USCG to NPS, becomes part of Pictured Rocks National Lakeshore

1972 • Fresnel lens replaced with 300mm acrylic lens by USCG. Fresnel lens secured by NPS and displayed at park headquarters; later moved to Grand Marais Maritime Museum of Pictured Rocks National Lakeshore

1976 • Light station buildings stabilized by park maintenance under direction of MWRO
• Timber seawall built

1977 • NPS survey markers installed

1978 • Au Sable Light Station listed in the National Register of Historic Places

• NPS wayside exhibits, signs and trail markers installed (ca. 1980s)
• Telephone line removed (ca. 1980s)
• Black firs fill in telephone right-of-way (ca. 1980s)

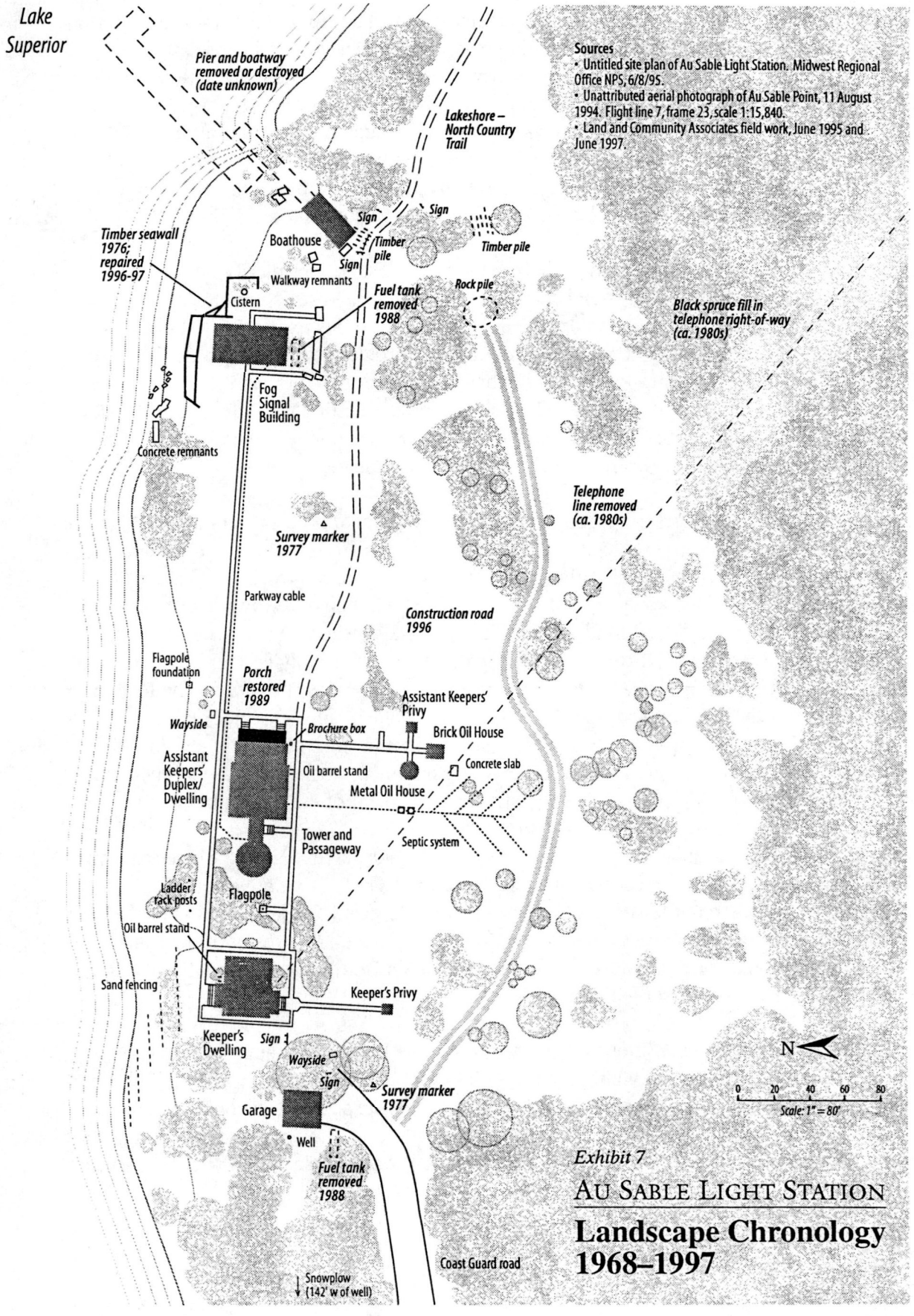
1988 • Underground fuel tanks removed

1989 • Midwest Archeological Center conducts investigation of east porch at assistant keepers' duplex/dwelling
• Porch on assistant keepers' duplex/dwelling restored to 1909 appearance

1990 • Architectural and archeological investigations undertaken in conjunction with Enviroscience report

1994 • USCG transfers ownership of light tower to NPS

1996 • Fresnel lens returned to original location following renovation of tower
• Timber seawall repaired (through 1997)


Lake Superior
Pier and boatway removed or destroyed (date unknown)
Lakeshore – North Country Trail
Sources
• Untitled site plan of Au Sable Light Station. Midwest Regional Office NPS, 6/8/95.
• Unattributed aerial photograph of Au Sable Point, 11 August 1994. Flight line 7, frame 23, scale 1:15,840.
• Land and Community Associates field work, June 1995 and June 1997.
Sign
Sign
Timber seawall 1976; repaired 1996-97
Boathouse
Timber pile
Sign
Timber pile
Walkway remnants
Cistern
Fuel tank removed 1988
Rock pile
Black spruce fill in telephone right-of-way (ca. 1980s)
Fog Signal Building
Concrete remnants
Telephone line removed (ca. 1980s)
Survey marker 1977
Parkway cable
Construction road 1996
Flagpole foundation
Porch restored 1989
Assistant Keepers' Privy
Wayside
Brochure box
Brick Oil House
Assistant Keepers' Duplex/ Dwelling
Oil barrel stand
Concrete slab
Metal Oil House
Tower and Passageway
Septic system
Ladder rack posts
Flagpole
Oil barrel stand
Sand fencing
Keeper's Privy
Keeper's Dwelling
Sign 1
Wayside
Sign
Survey marker 1977
Garage
Well
Fuel tank removed 1988
Coast Guard road
Snowplow (142' w of well)
N
0 20 40 60 80
Scale: 1" = 80'
Exhibit 7
AU SABLE LIGHT STATION
Landscape Chronology 1968–1997

specifically, the *General Management Plan* states that "The Au Sable Point Light Station complex will be restored and stabilized to protect and enhance these historically significant structures."[113] Furthermore, it was determined that "the light station complex will be the focus for maritime interpretation."[114] This decision was based on a survey of the Great Lakes lighthouses and lifesaving stations conducted in the summer of 1978 by the NPS Harpers Ferry Service Center. The report "indicates that the Au Sable complex should have first priority for development; it is the most accessible of the NPS Great Lakes lighthouses and is an excellent example of a complete complex."[115]

NPS efforts to manage and preserve the site have been focused primarily on protection of the station's principal buildings and structures. Buildings and structures were stabilized by NPS park maintenance staff under the direction of the Midwest Regional Office. NPS installed a timber seawall in 1976 to aid primarily in protection of the fog signal building. Seawalls had been built throughout the history of the station to protect its shoreline and vulnerable buildings and structures. The double-tiered retaining wall of wooden planks supports the soil under the fog signal building. In 1989 the porch of the assistant keepers' duplex/dwelling was restored to its 1909 appearance.

Several landscape changes occurred during the early years of NPS ownership. NPS survey markers were installed in two locations at the station in 1977. In 1988 underground fuel tanks adjacent to the fog signal building and the garage were removed. NPS also developed and introduced a system of site signage which included wayside exhibits, informational signs, and trail markers for the existing Lakeshore–North Country Trail. The telephone line was removed sometime during this period, probably ca. 1980. As a result, there was a regrowth of black spruce in the former telephone right of way. The formerly cleared area of the site south of the station's building cluster also has experienced a successional regrowth of vegetation which has resulted in some encroachment into the site's historically cleared area. This regrowth was neither planned nor discouraged since NPS has had no specific policy for vegetative management of the station landscape.

In 1994 the USCG transferred the tower and the 30' x 30' parcel to NPS. Since that time, NPS has had responsibility for the entire light station. The USCG, however, still maintains a presence at the site with its responsibility for and annual servicing of the automated light unit and associated photovoltaic equipment. As a result of the transfer, NPS began to plan for the restoration of the Fresnel lens to the tower. In August 1996, the Fresnel lens was reinstalled in the tower.

Shoreline stabilization continues to be a priority at the light station site. In 1996, repairs were made to the timber seawall, continuing into 1997. In conjunction with such work, a temporary construction road was developed across the site south of the building clusters from the Coast Guard road to the vicinity of the boathouse. Stockpiles of timber and rock have been sited at the eastern end of the construction road in association with this effort.

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[113]Ibid., 32.
[114]Ibid., 39.
[115]Ibid.

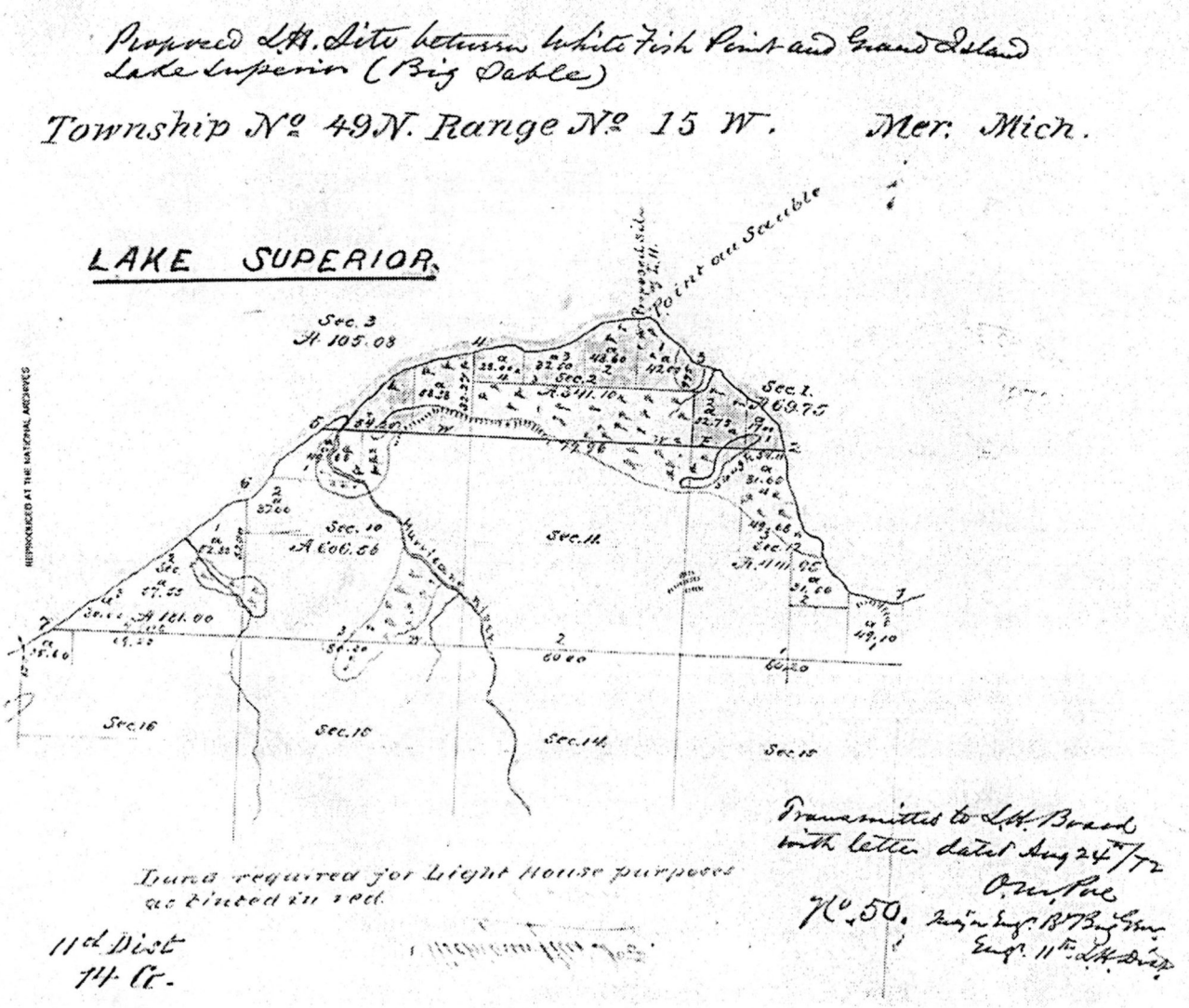


Figure 2. O.M. Poe's 1872 survey, "Proposed L.H. Site between White Fish Point and Grand Island, Lake Superior (Big Sable)."

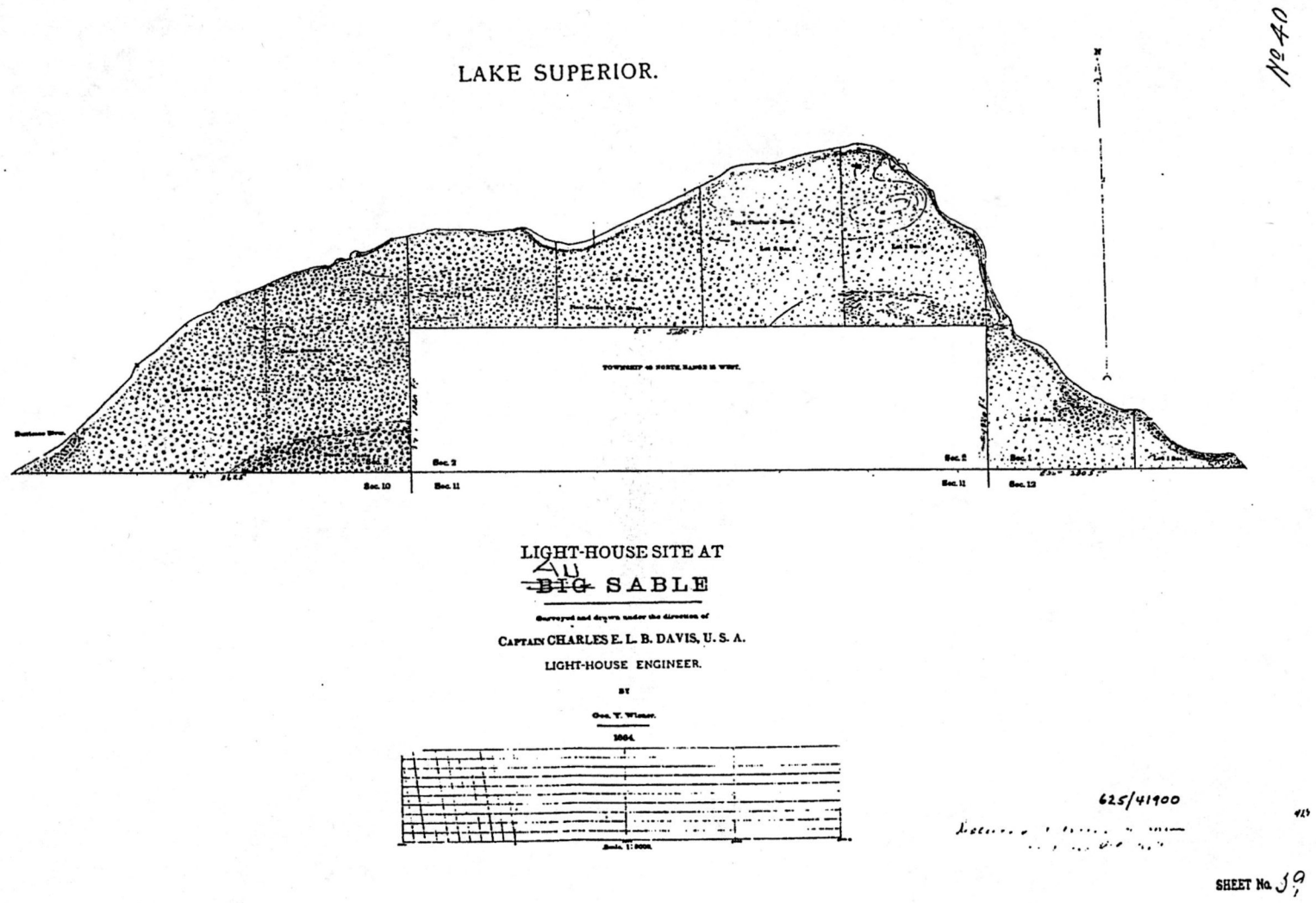


Figure 3. Geo. Y. Wisner's 1884 survey, "Light-House Site at Big Sable."

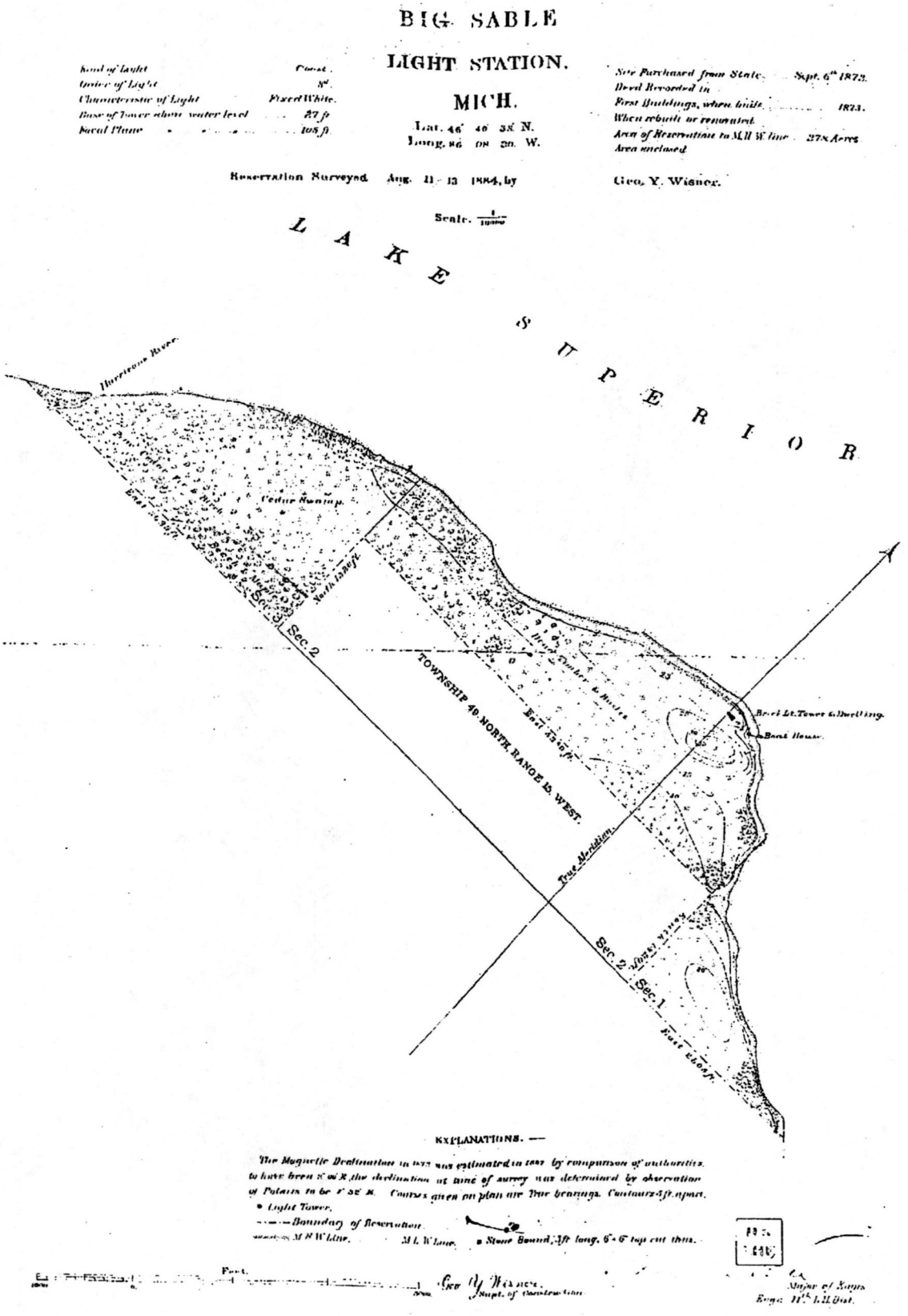


Figure 4. Geo. Y. Wisner's 1887 reservation survey, "Big Sable Light Station, Mich."

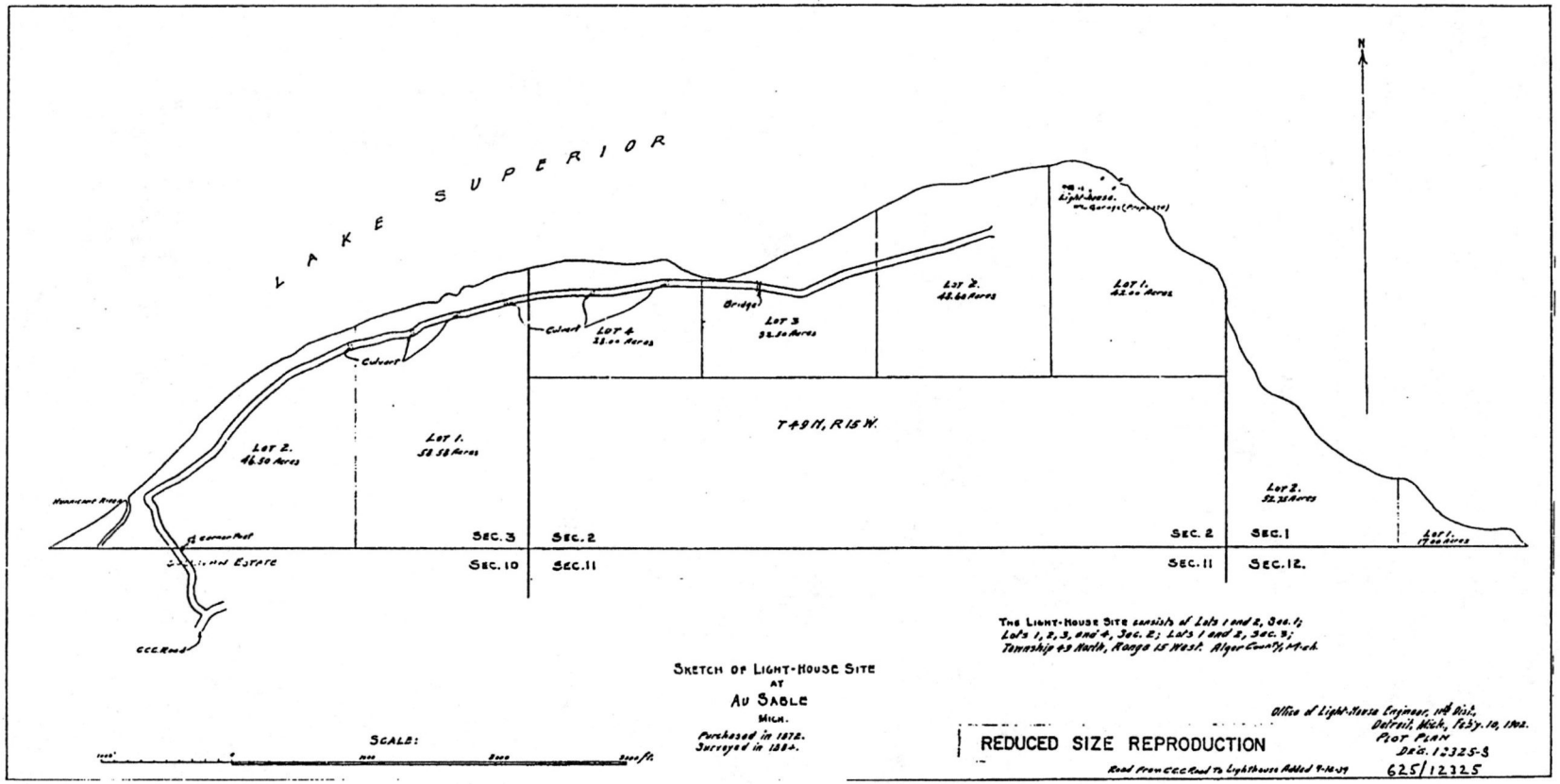


Figure 5. 1902 survey, "Sketch of Light-House Site at Au Sable, Mich.," with 1939 revisions.

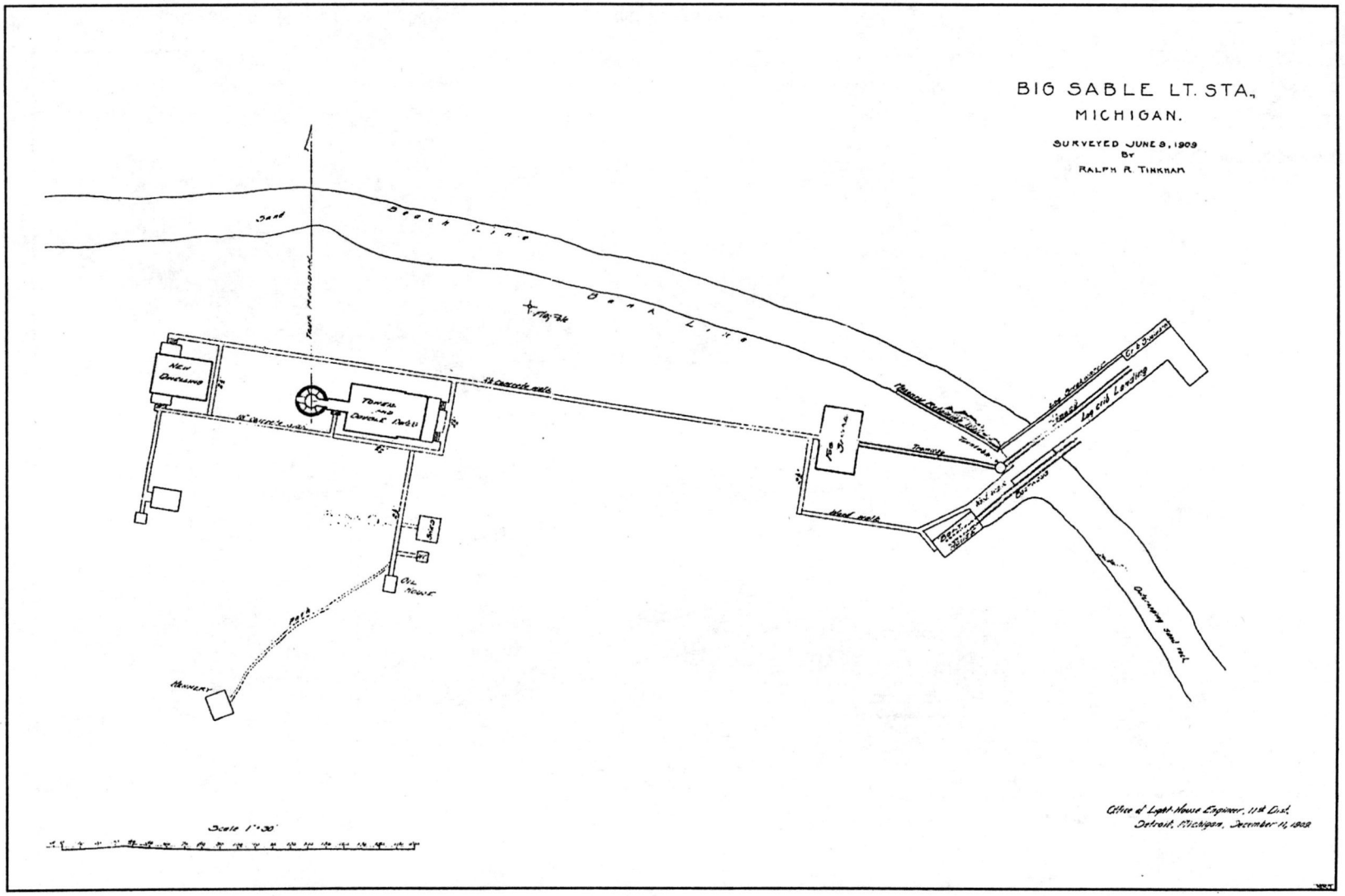


Figure 6. Ralph R. Tinkham's 1909 site plan, "Big Sable Lt. Sta., Michigan."

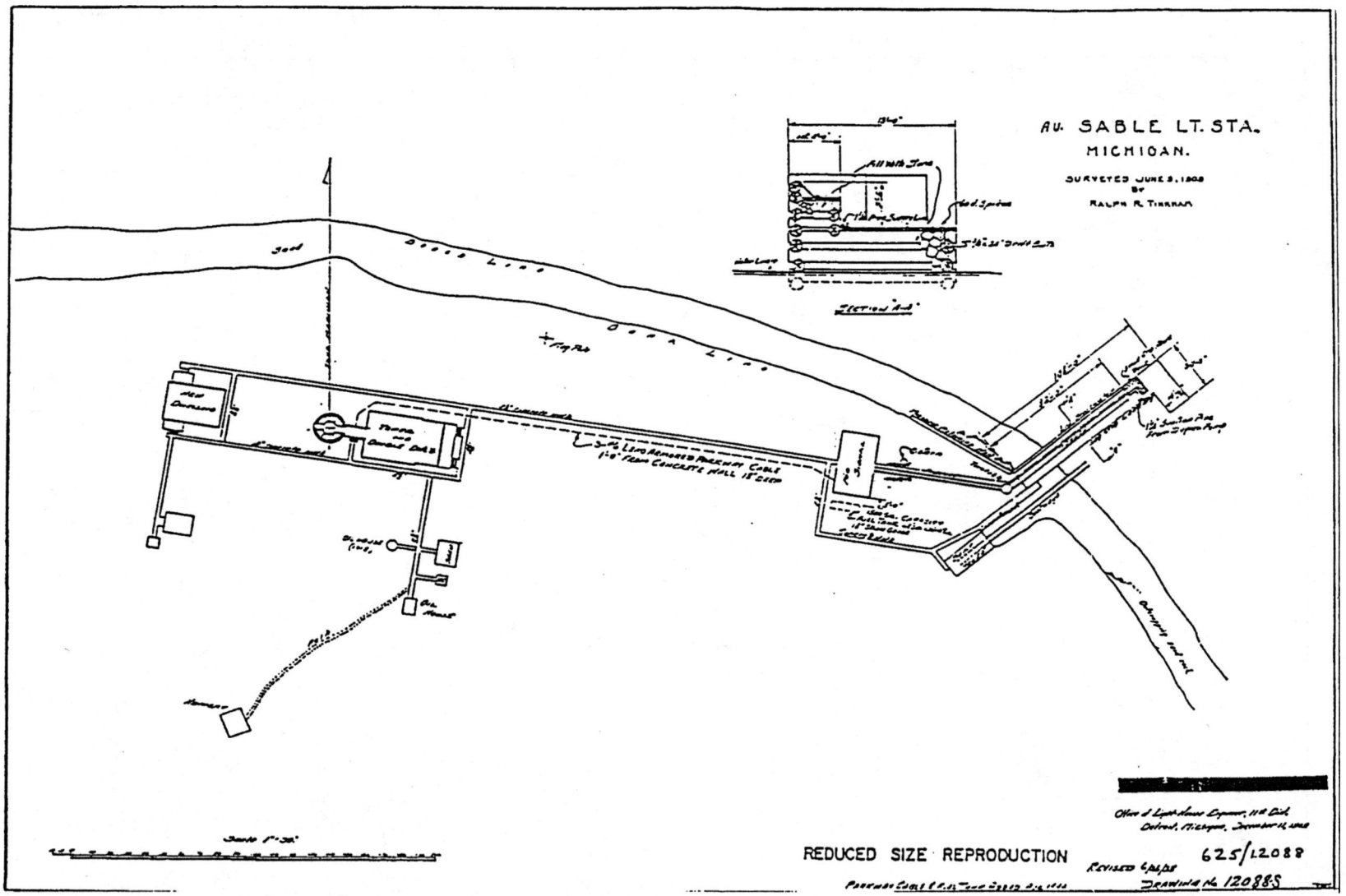


Figure 7. 1909 site plan, "Au Sable Lt. Sta., Michigan," with 1935 and 1944 revisions.

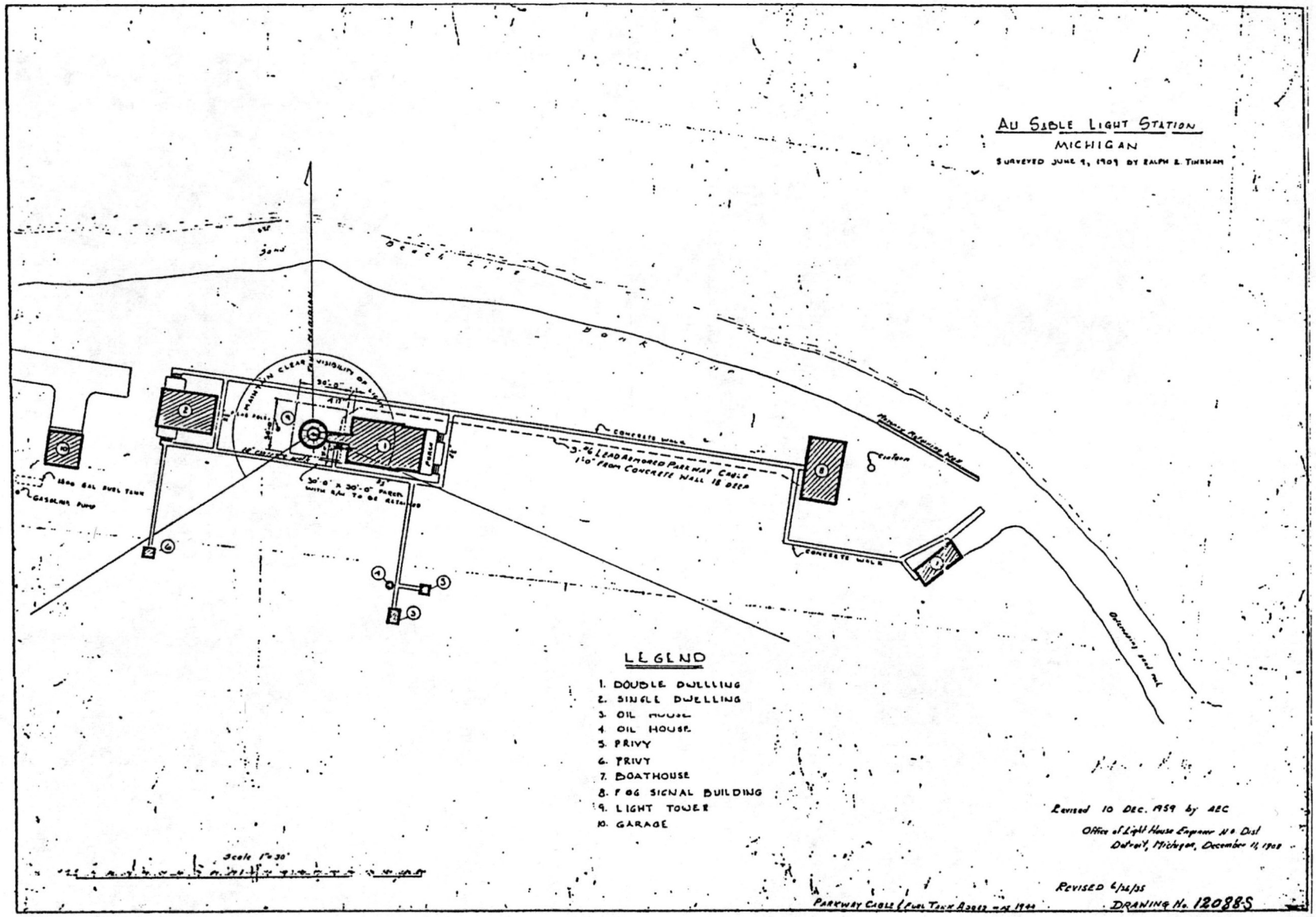


Figure 8. 1909 site plan, "Au Sable Light Station, Michigan," with 1935, 1944, and 1959 revisions.



Figure 9. 1884 photograph of the attached dwelling, view from the northeast.

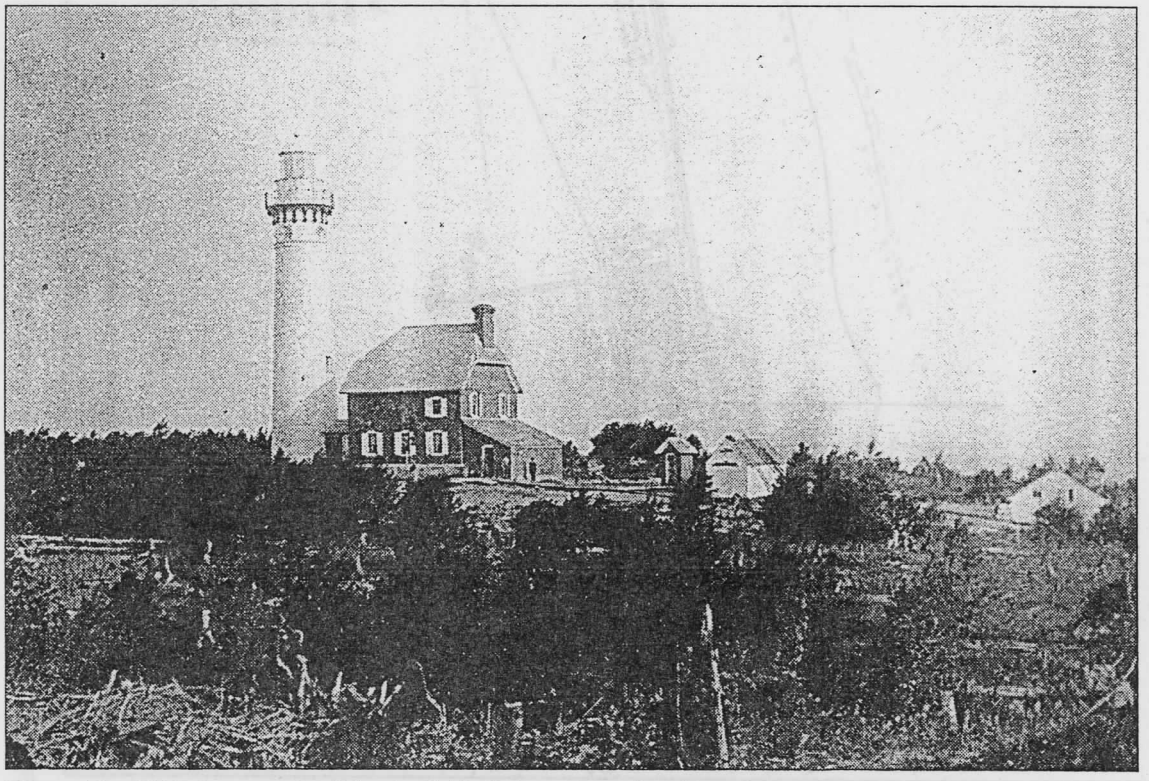


Figure 10. 1884 photograph of the Au Sable light station, view from the southeast.

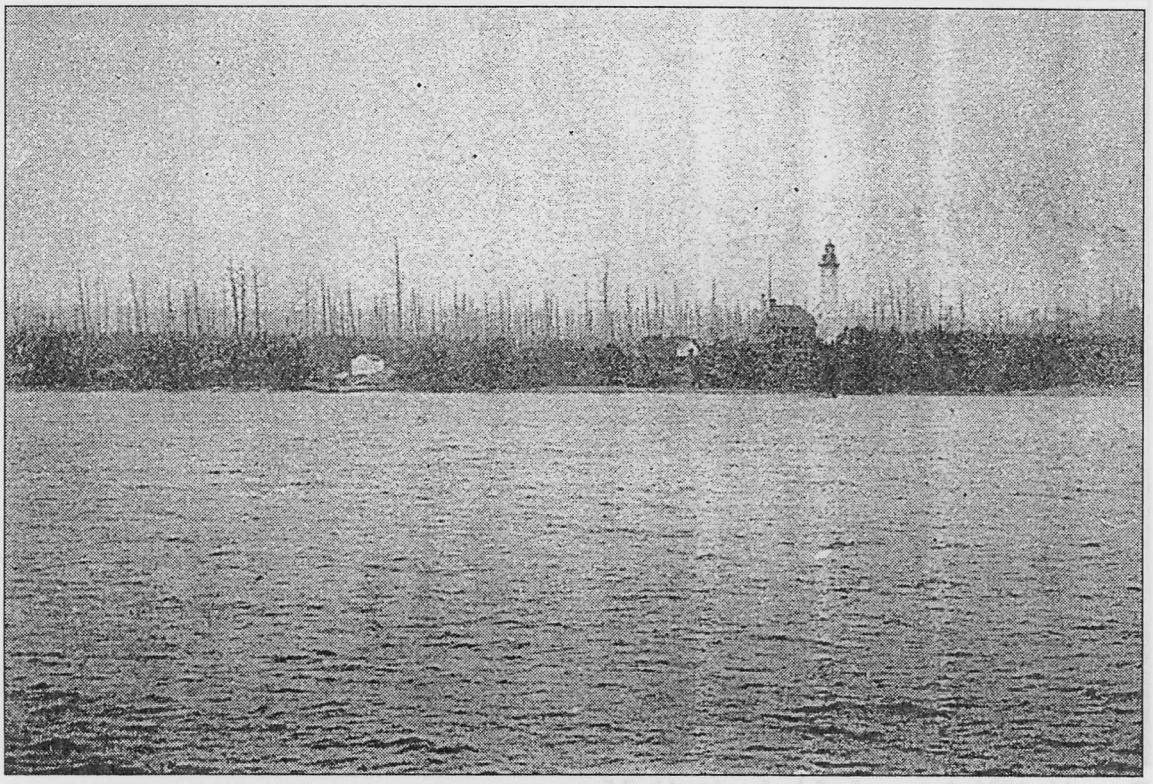


Figure 11. 1891 photograph of the light station seen from Lake Superior.

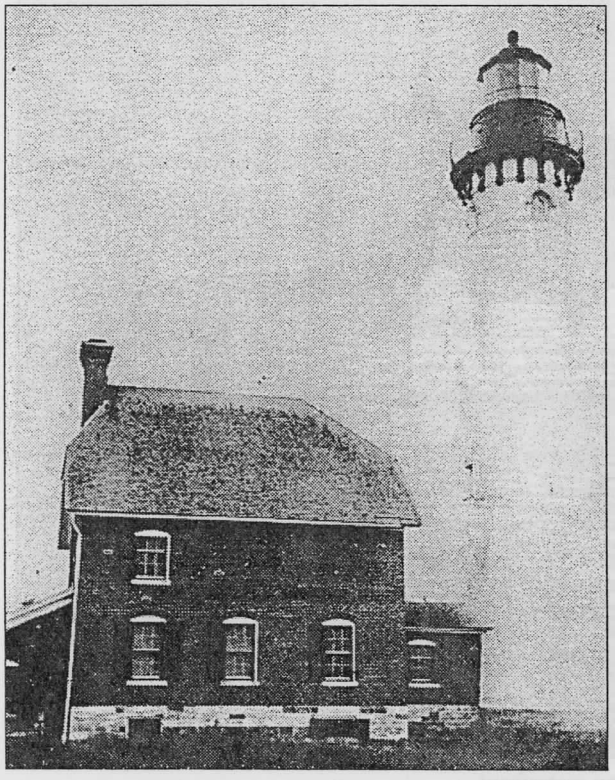


Figure 12. 1904 photograph of the attached dwelling, view from the north.



Figure 13. June 9, 1914 photograph of the lighthouse and keepers' dwellings.

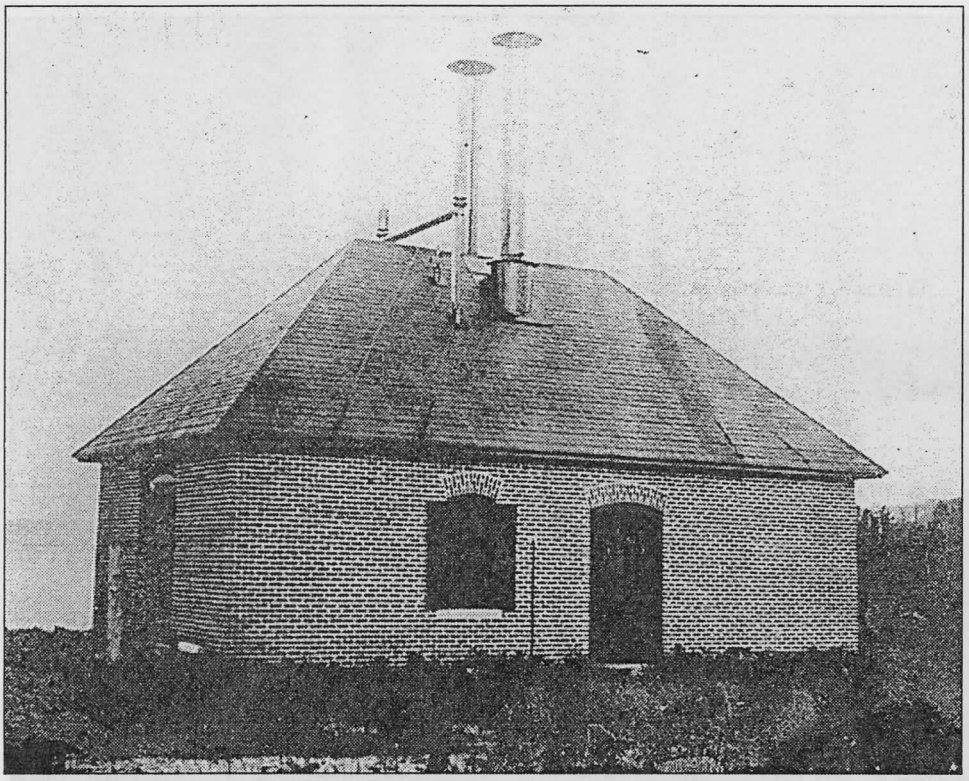


Figure 14. 1904 photograph of the fog signal building.



Figure 15. June 14, 1920 photograph of light station waterfront.



Figure 16. June 14, 1920 photograph of the fog signal building, lighthouse, and keepers' dwellings.

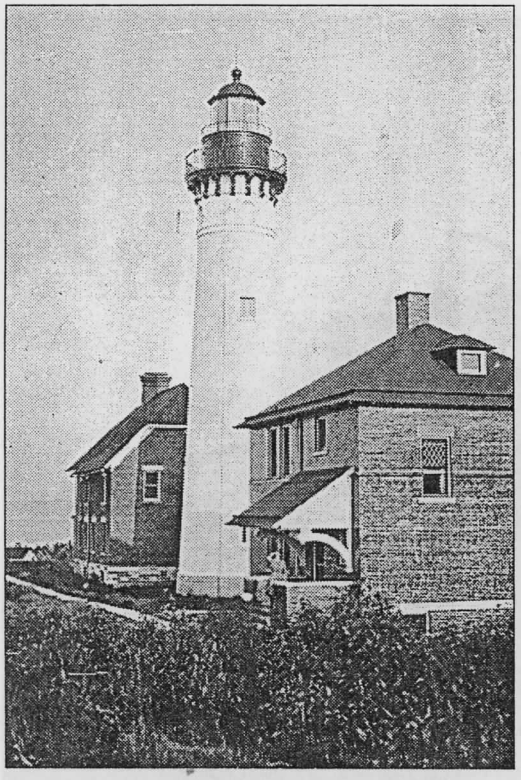


Figure 17. June 14, 1920 photograph of the lighthouse and keepers' dwellings.

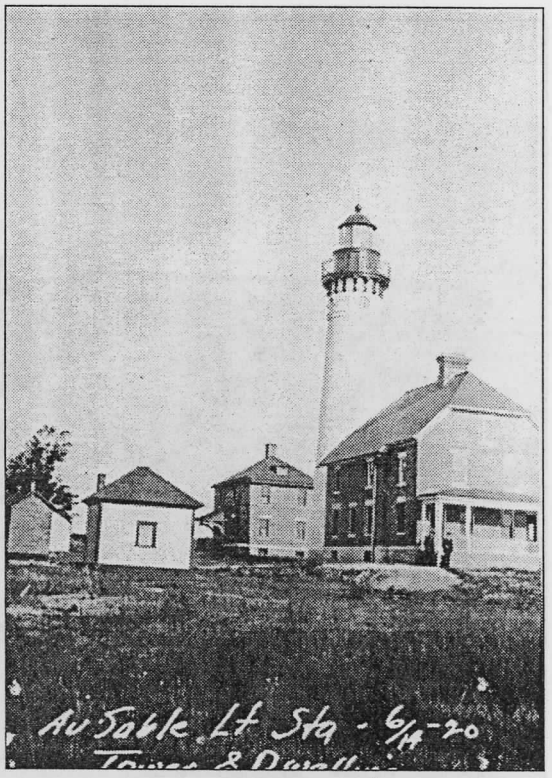


Figure 18. June 14, 1920 photograph of the lighthouse, keepers' dwellings, and outbuildings.

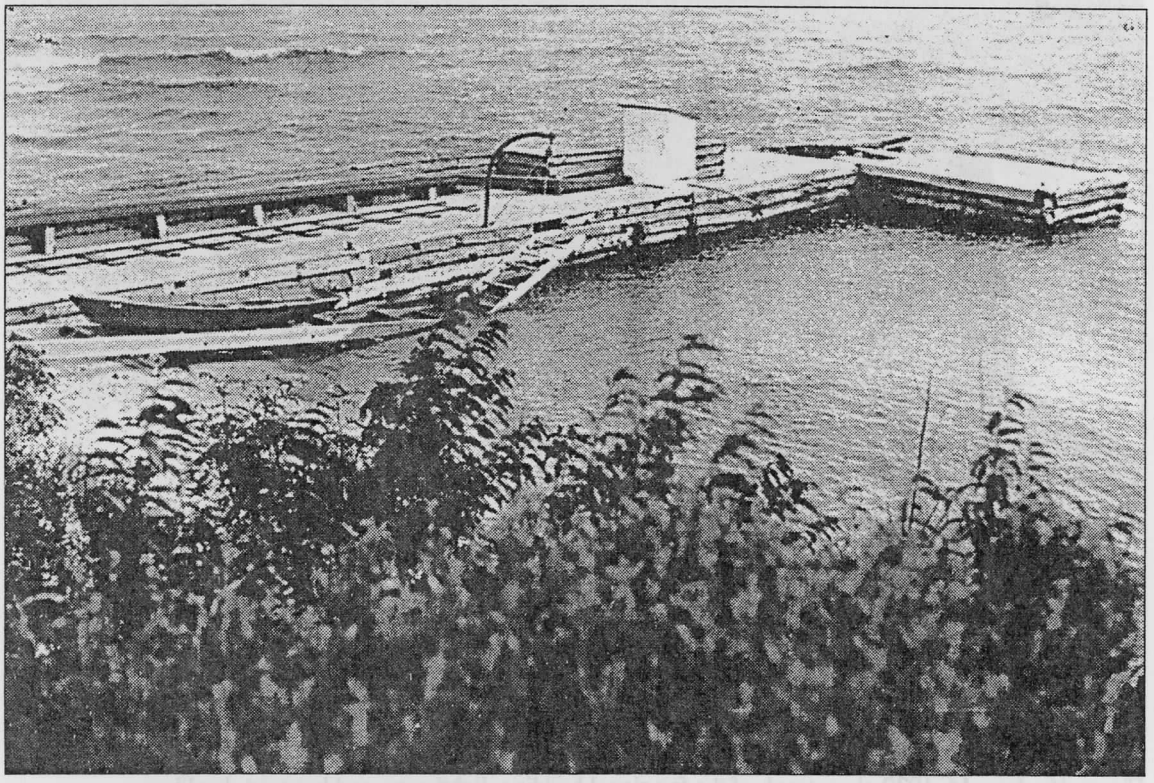


Figure 19. July 1931 photograph of the dock and tramway.

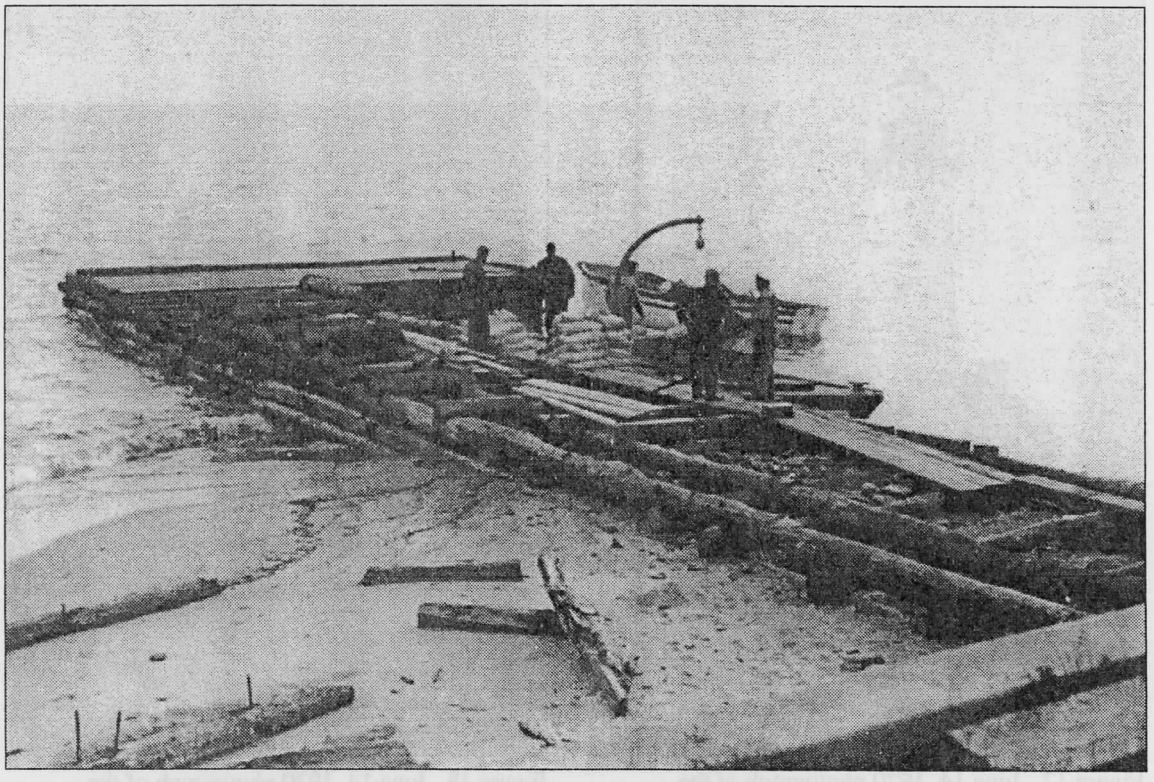


Figure 20. September 1935 photograph of the dock during repairs.

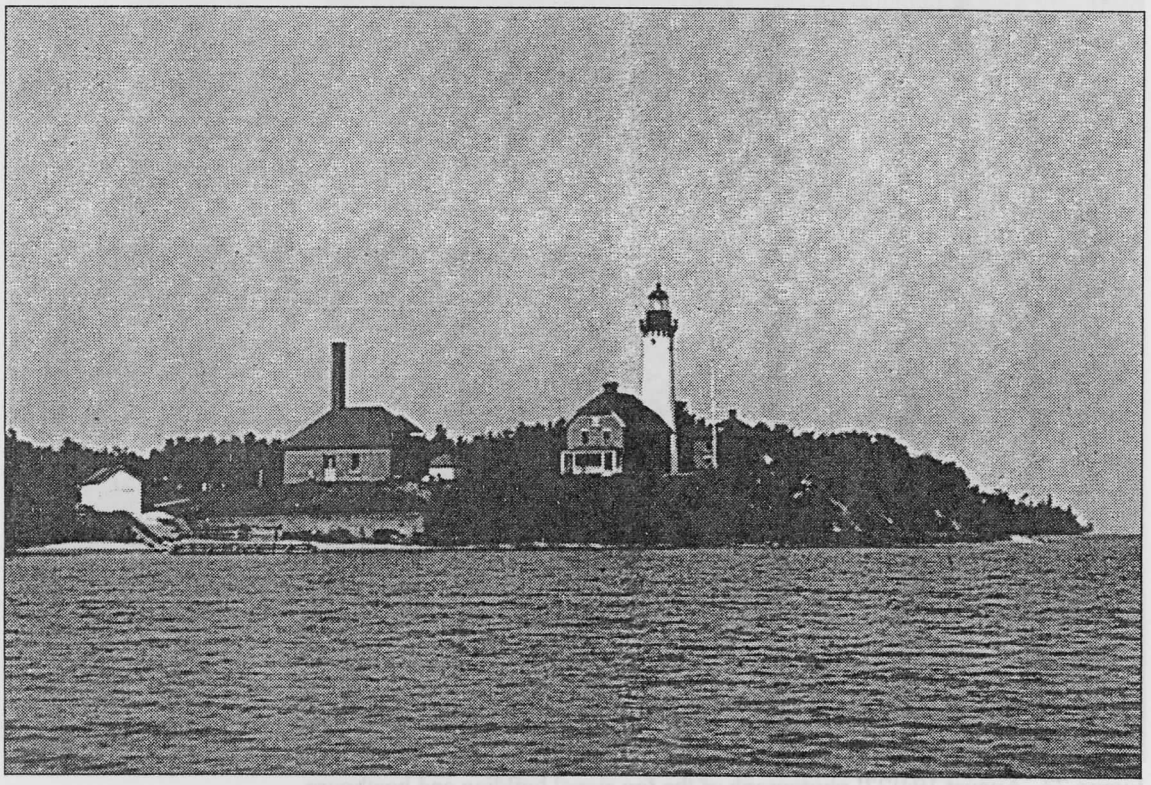


Figure 21. June 21, 1938 photograph of the light station seen from Lake Superior.

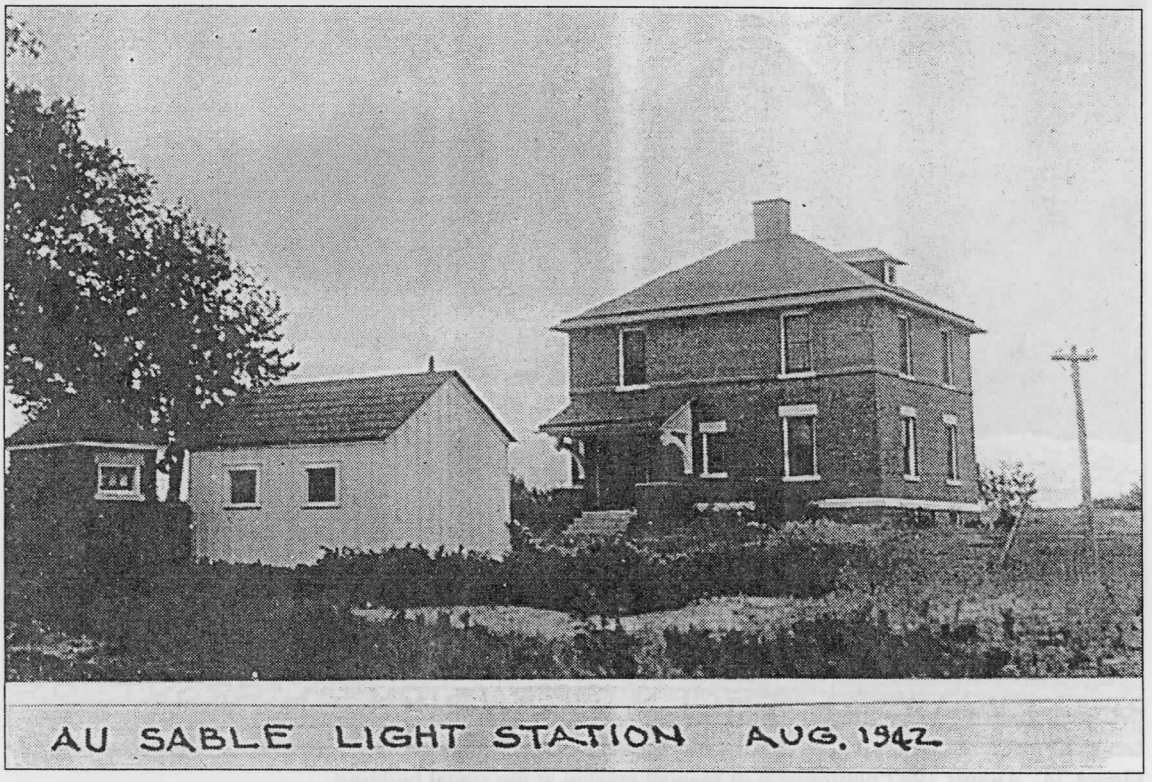


Figure 22. August 1942 photograph of the keeper's dwelling and outbuildings .

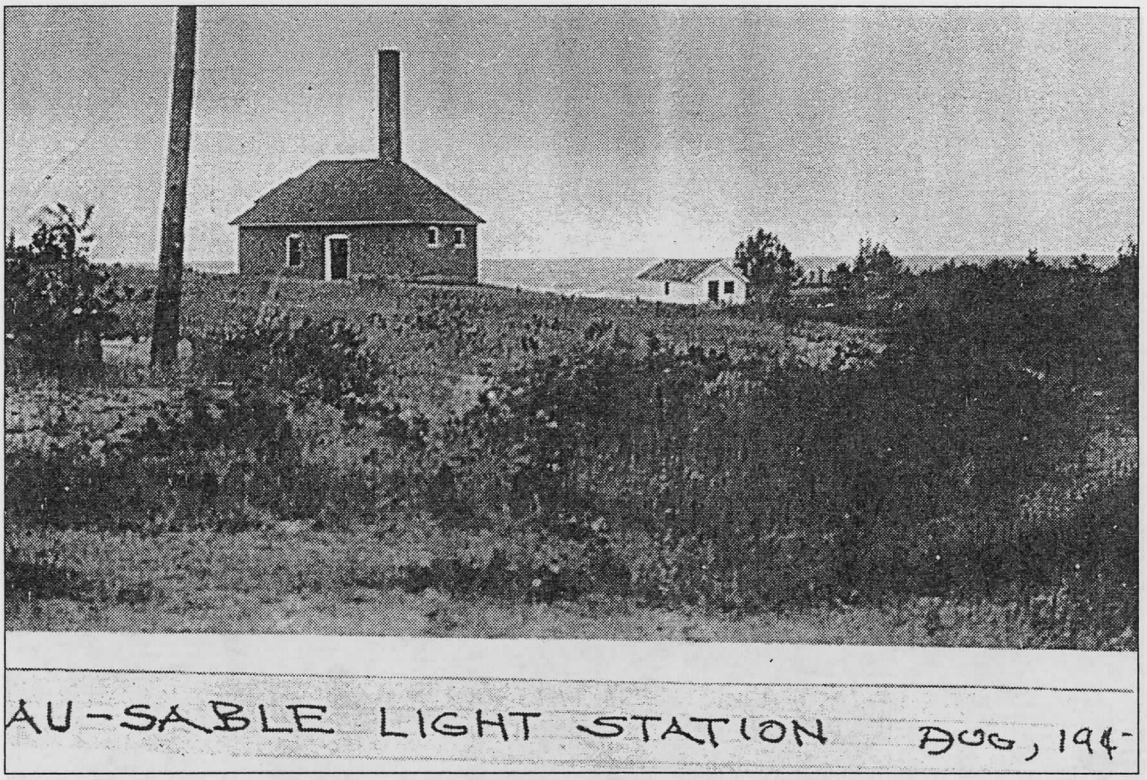


Figure 23. August 194[2?] photograph of the fog signal building and boathouse.



Figure 24. August 1942 photograph of seawall erosion at fog signal building.



Figure 25. Circa 1940s photograph of the lighthouse, keepers' dwellings, and outbuildings.



Figure 26. Late 1940s aerial photograph of the Au Sable light station.



Figure 27. 1950 photograph of the lighthouse, keepers' dwellings and flagpole *(Louis Torres)*.

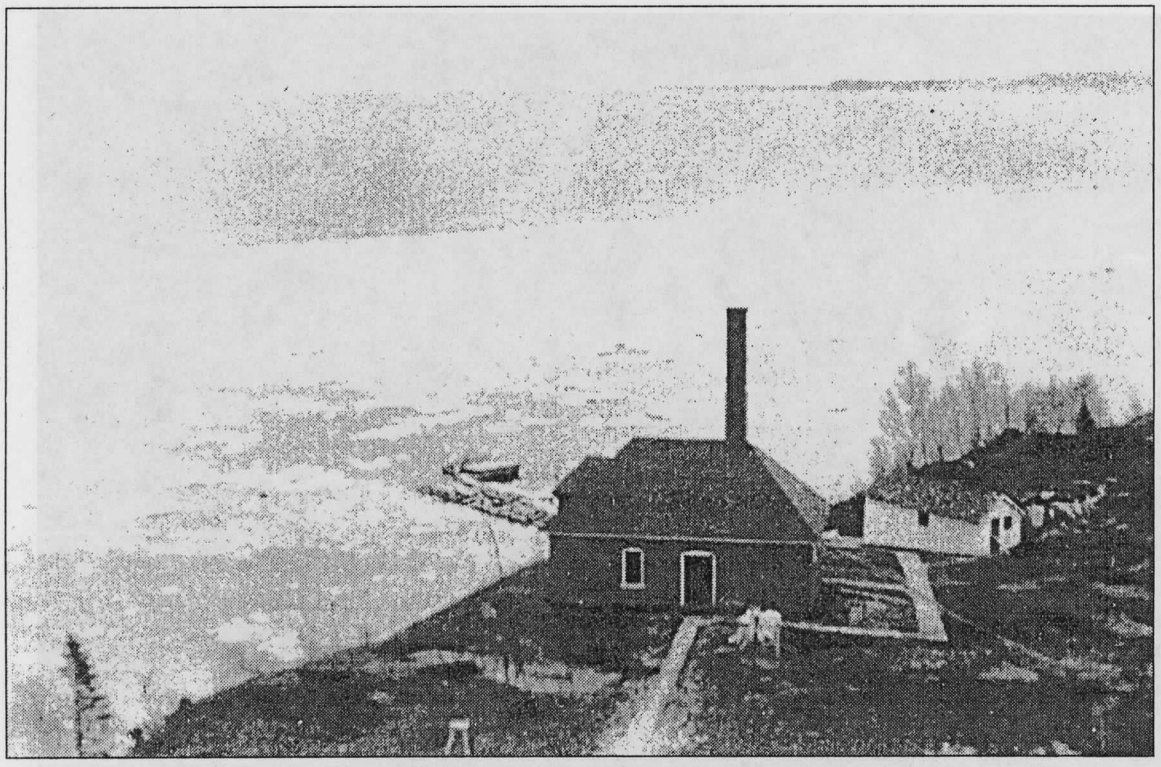


Figure 28. 1950s photograph of the fog signal building and boathouse seen from the tower *(Louis Torres)*.



Figure 29. 1950s photograph of shore protection at the fog signal building, showing 1942 seawall extension *(Louis Torres)*.

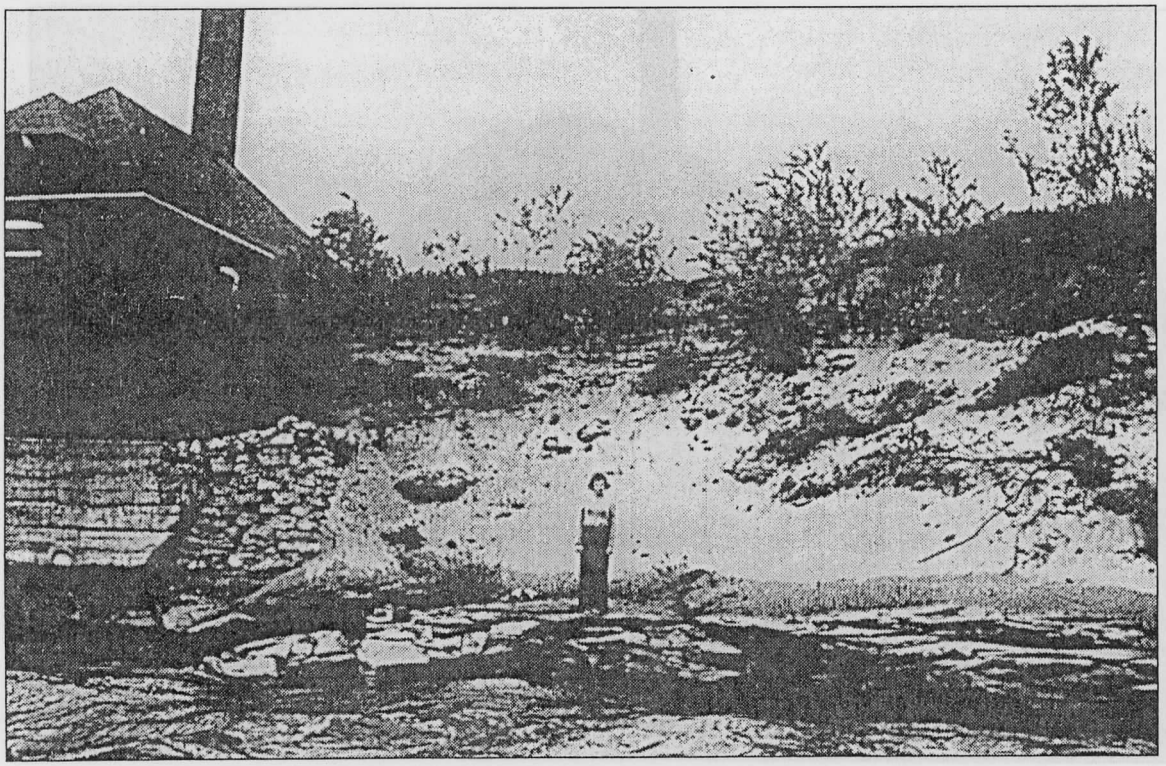


Figure 30. 1950s photograph of erosion west of fog signal building *(Louis Torres)*.

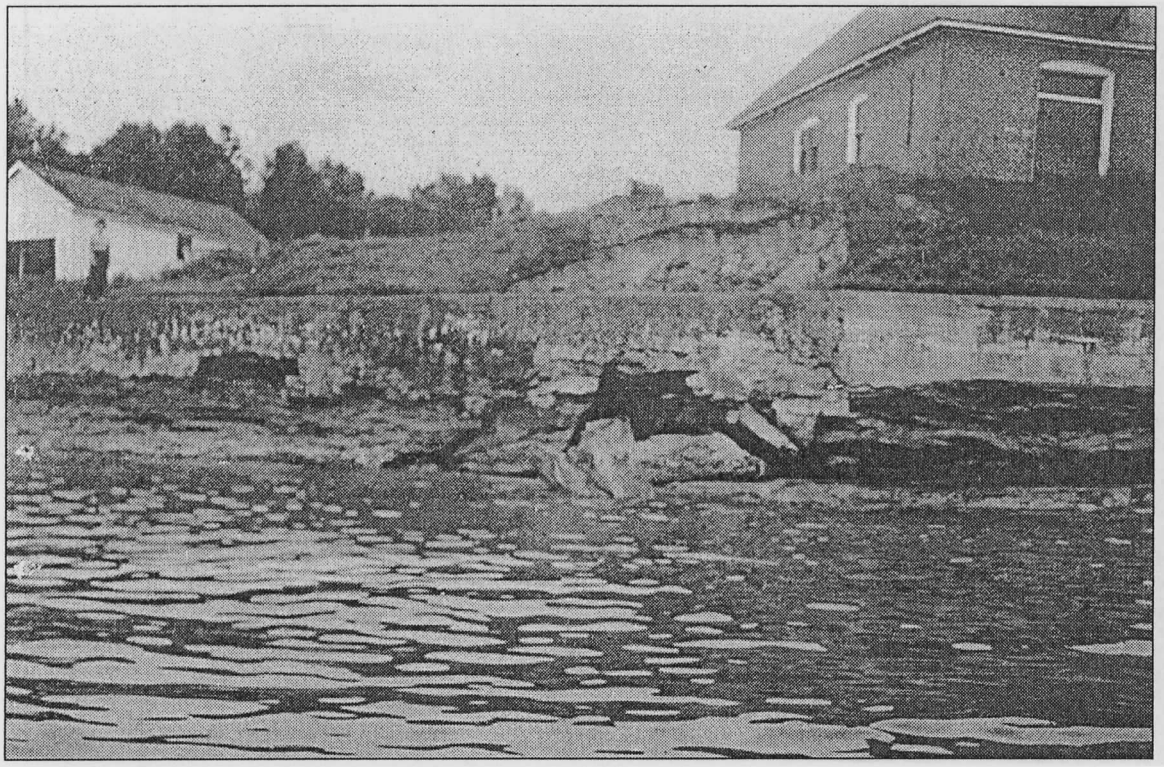


Figure 31. 1950s photograph of deteriorated concrete seawall with boathouse and fog signal building *(Louis Torres).*

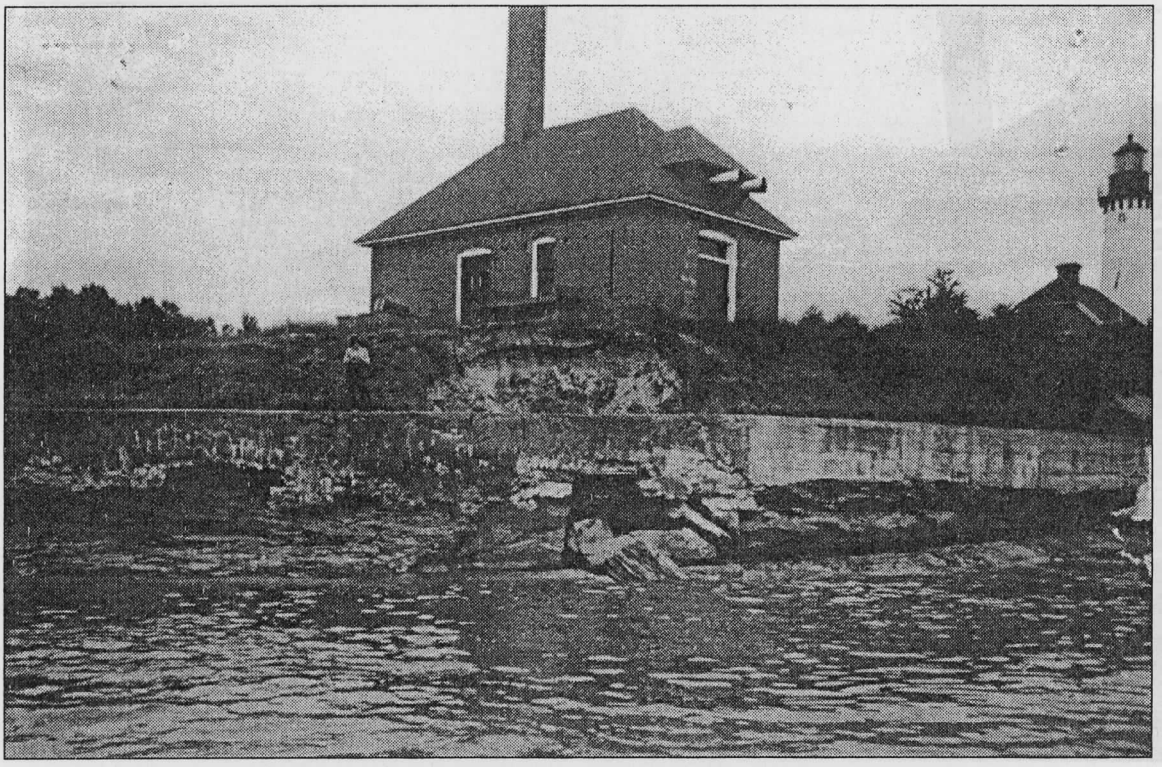


Figure 32. 1950s photograph of fog signal building with deteriorated concrete seawall and 1942 extension *(Louis Torres).*

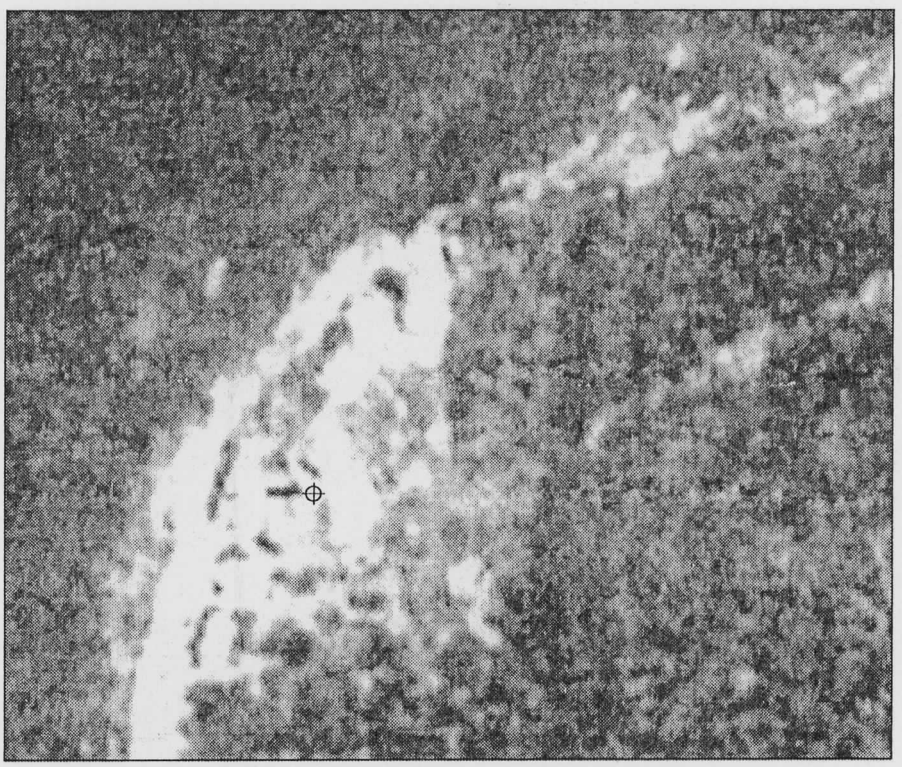


Figure 33. May 13, 1967 aerial photograph of Au Sable Point (detail). [⊕ denotes lighthouse.]

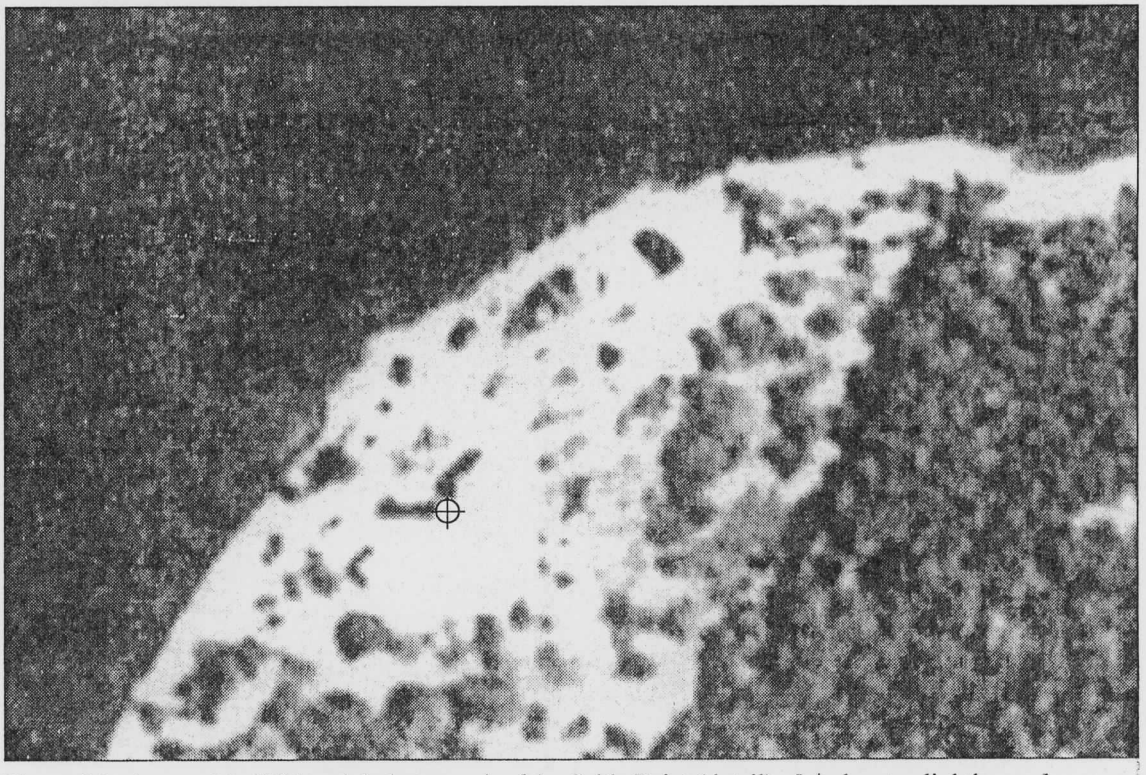


Figure 34. August 11, 1994 aerial photograph of Au Sable Point (detail). [⊕ denotes lighthouse.]

Existing Conditions

Existing Conditions

Environmental Context and Setting

The Au Sable Light Station is located in the north central portion of Michigan's upper peninsula, on the southern shore of Lake Superior. Occupying Au Sable Point within the Pictured Rocks National Lakeshore, Alger County, Michigan *(Figures 35, 36)*, the light station is approximately 11 km (7 mi.) west of Grand Marais at the east end of the national lakeshore, and 50 km (31.25 mi.) northeast of Munising, the national lakeshore headquarters. The light station is accessible on foot from the Lakeshore–North Country Trail which runs through the site, as well as being both visible and accessible from the Log Slide. Controlled vehicular access to the station is from the Hurricane River campground 2.4 km (1.5 mi.) to the west via the trail along the unpaved Coast Guard road. The Au Sable Light Station was listed in the National Register of Historic Places on May 23, 1978.

The Pictured Rocks National Lakeshore landscape was formed by Cambrian and early Ordovician sandstones, later covered during the Pleistocene epoch with glacial debris.[1] The area around Au Sable Point consists of a bedrock shelf of Jacobsville sandstone overlain primarily by well-drained sand of the Shelldrake soil series. These soil layers, deposited by the retreating glacier whose meltwater produced Lake Superior, take the form of extensive sand banks along the lakeshore. The light station is situated atop such a sand bank, approximately twenty to thirty feet above the level of the lake *(Figure 37)*. Sand fencing and timber cribbing adjacent to the light station on the north attempt to retard the process of sand bank erosion. Coastal forest, consisting of northern hardwoods, white pine, balsam fir, hemlock, and spruce, lies to the east, south and west of the light station site. Farther east lies a larger area of sand deposition known as Grand Sable Dunes *(Figure 38)*.

Site Description

The Au Sable Light Station occupies the northernmost portion of the original lighthouse site, an irregular 325.93-acre parcel consisting of Lots 1 and 2, Section 1; Lots 1, 2, 3, and 4, Section 2; Lots 1 and 2, Section 3, all within Township 49N, Range 15W in Alger County, Michigan. The extent of the present-day site, however, is visually perceptible as a much smaller area of approximately four-and-a-half acres, consisting of the sand bank upon which the light station buildings are located, the scrubby open area to the south, and the adjacent lakeshore beach to the north. Although the sand bank falls off steeply to the north adjacent to the lakeshore, the upland areas slope generally to the southeast. A

[1] Walter L. Loope, "Interrelationships of Fire History, Land Use History, and Landscape Pattern Within Pictured Rocks National Lakeshore, Michigan," *The Canadian Field-Naturalist*, 105:18.

swale extends into the site from the lakeshore at the northeast portion of the site, providing a topographic transition between the upland and lakeshore areas.

The light station consists of four major buildings and six accessory or outbuildings. The major buildings—the keeper's dwelling, the lighthouse tower and passageway, the attached assistant keepers' duplex/dwelling, and the fog signal building—are sited in a linear arrangement from west to east along the top of the sand bank. These buildings and their arrangement provide the dominant architectural expression of the site *(Figure 39)*. To the east at a lower elevation and closer to the lakeshore is the boathouse; to the west of the keeper's dwelling is a garage. Four outbuildings are located south of the major buildings. Three of these—a brick privy, a brick oil house, and a cylindrical metal oil house—are associated with the assistant keepers' duplex/dwelling; the fourth is a similar brick privy associated with the keeper's dwelling. The site also includes a network of concrete walks linking the major buildings, a more informal series of earthen paths and trails, and miscellaneous small-scale features that relate to either the site's original lighthouse functions or its more recent visitor interpretation use.

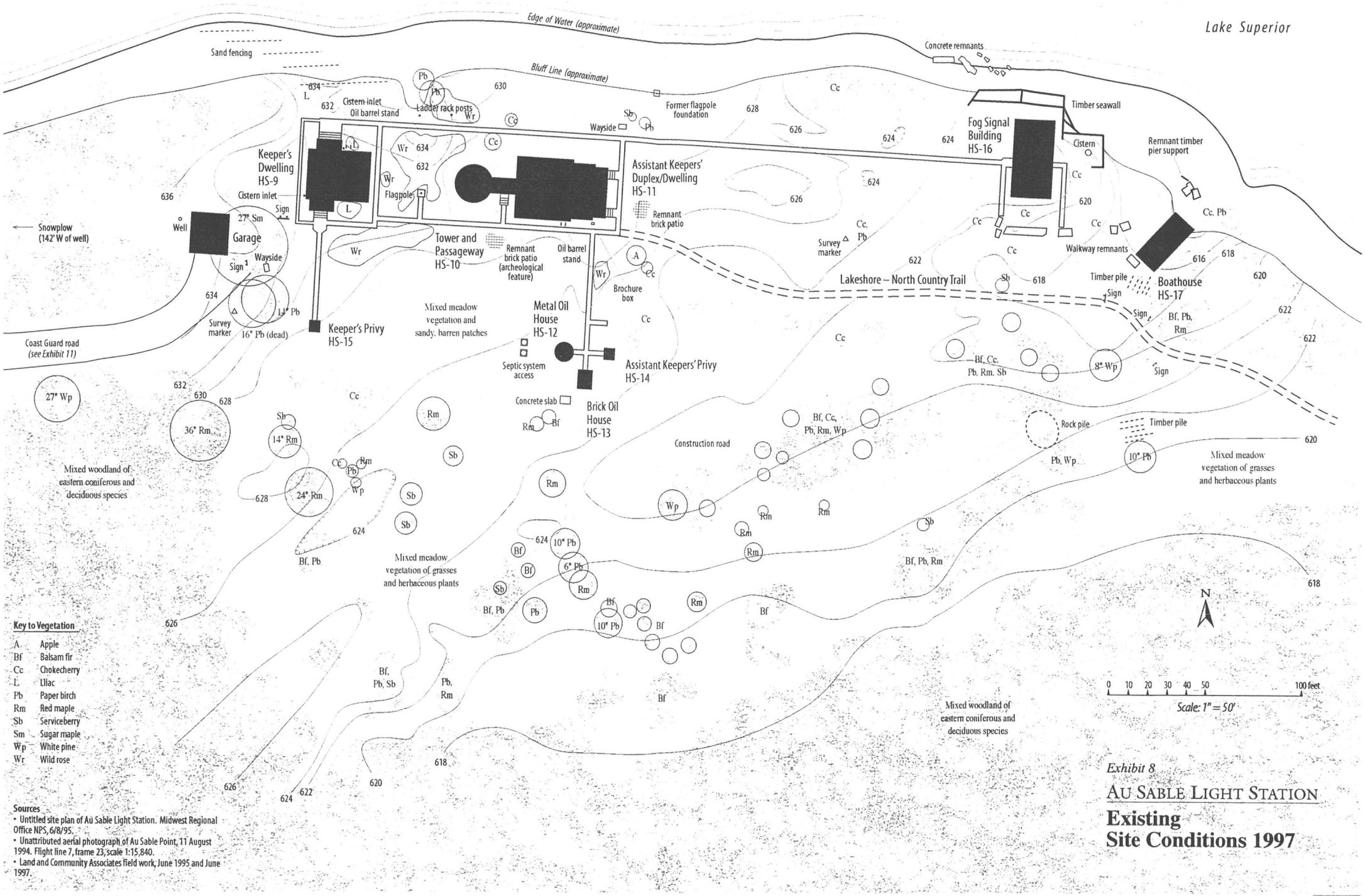
Land Uses and Activities

The light station still serves a navigational function, although this is provided by an automatically-controlled light located north of the tower's lantern on the encircling railing. During the station's period of operation, land use was multifaceted, with both residential and industrial uses coexisting on the site. Historic land uses are represented today through the surviving buildings and structures that were developed over time to meet the changing technologies of light station operation. The lighthouse continues to function as a well-known visual point of identity, and remains a highly visible landmark from Lake Superior and the lakeshore trail during daylight hours *(Figure 40)*.

Visitor interpretation is another significant contemporary land use of the light station. Site tours and/or programs led by NPS personnel have been provided in the past and are anticipated for the future *(Figure 41)*. Two wayside exhibits, one southwest of the keeper's dwelling at the western entrance to the site, and another northeast of the assistant keepers' duplex/dwelling, provide site interpretation. Public access to the tower and the interiors of other buildings is currently limited to scheduled guided tours provided by NPS staff. The Lakeshore–North Country Trail which traverses the property makes the site available for recreational uses.

Overall Landscape Organization and Patterns of Spatial Organization

The site was organized along a linear axis adjacent to Lake Superior to take advantage of long water views and lakefront access. The Au Sable station site is defined by the lake, the forest edge, the cleared area, the light tower, and the network of sidewalks that outline and connect the station's buildings. Site organization was influenced by the need for the staff to monitor both the lake and the rest of the station and move easily and efficiently—often in extreme weather conditions—throughout the site. By necessity the 87'-tall tower was designed to be the dominant feature of the site. The overall landscape organization of the light station consists of a series of linear, parallel zones extending inland from the lakeshore—the beach, the sand bank face, an upland area atop the sand bank, and a



Key to Vegetation

A	Apple
Bf	Balsam fir
Cc	Chokecherry
L	Lilac
Pb	Paper birch
Rm	Red maple
Sb	Serviceberry
Sm	Sugar maple
Wp	White pine
Wr	Wild rose

Sources
- Untitled site plan of Au Sable Light Station. Midwest Regional Office NPS, 6/8/95.
- Unattributed aerial photograph of Au Sable Point, 11 August 1994. Flight line 7, frame 23, scale 1:15,840.
- Land and Community Associates field work, June 1995 and June 1997.

Exhibit 8

AU SABLE LIGHT STATION

Existing Site Conditions 1997

scrubby open area. The site's major development occurs in the upland area where visibility to and from the lake is at its greatest; the light tower and dwellings occupy the high ground above the bluff while the boathouse and the fog signal building occupy the lakefront area with immediate access to Lake Superior. Three buildings—the keeper's dwelling, the lighthouse tower, and the attached assistant keepers' duplex/dwelling—are sited along an axis running approximately east-southeast/west-northwest, generally parallel to the edge of the sand bank *(Figure 42)*. The buildings reinforce the linear relationship of parallel walkways immediately adjacent to the north and south. The northern walkway extends 200' westward to form the axis of the fog signal building *(Figure 43)*. Additional orthogonal walks link the north and south walks and provide access both to major buildings and outbuildings.

Two accessory buildings—the boathouse and a garage—are located at opposite ends of the linear network of major buildings and walkways, although their relationship to these features is not axial. The boathouse is located southeast of the fog signal building at a lower elevation, in a swale leading from the upland area to the beach *(Figure 44)*. The boathouse orients to the lake along a southwest/northeast axis which formerly continued to the northeast as a boat ramp. At one time a pier and one leg of a tramway were located parallel to this axis to the northwest. At the west end of the site, a garage is located southwest of and orienting the same way as the keeper's dwelling.

Four outbuildings are located in the scrubby open area south of the upland area, and are related to the two dwellings by walks leading from the buildings' entrances set perpendicular to the south walk. The walk from the assistant keepers' duplex/dwelling leads to a brick oil house, flanked at right angles by a brick privy and a cylindrical metal oil house *(Figure 45)*; the walk from the keeper's dwelling leads directly to a brick privy. The open scrubby area is defined on the south and west by the surrounding forest. Groupings of trees and remnant woodlands create a series of landscape "rooms" or "corridors," particularly in the eastern portion of this area.

Response to Natural Features

The siting of the lighthouse tower atop the sand bank overlooking Lake Superior represents the most significant response to the natural features of the site. The station was sited on an advantageous and prominent point in Lake Superior to meet a long-standing need for a light station along this portion of the treacherous "graveyard coast." From this location, the 87'-tall tower could project a steady stream of light 17 3/4 miles across an arc of 270°. In response to the sandy soil of this location, the tower's foundations extend down to bedrock. The keeper's and assistant keepers' dwellings are located adjacent to the tower, partially for convenience but presumably also to provide viewpoints for lake activity and conditions. While this siting afforded excellent visibility, it also imposed a high degree of exposure to lakeshore winds. The internal connection between the assistant keepers' duplex/dwelling (originally the keeper's dwelling) and the lighthouse itself is a clear response to the periodic harsh conditions of this exposed site.

The sand bank location also provided the fog signal building with an elevated site free of trees and other obstructions that might otherwise attenuate or muffle its warning blasts.

Because of its prominent site at the east end of the sand bank and somewhat removed from the residential structures, additional efforts were necessary to stabilize the bank against wind and water erosion. Consequently, the north and east sides of the bank are retained by one or two tiers of heavy timber cribbing forming a seawall that rises in height as much as fourteen feet *(Figure 46)*.

East of the fog signal building, the siting of the boathouse represents a different response to the site's natural features, namely that of providing direct access to the lake while maintaining accessibility from the rest of the light station. The choice of a site for the boathouse at the foot of a swale—an area of transitional topography—met both these needs.

The functions of the outbuildings—privies and hazardous material storage—dictated their siting in proximity to but removed from the lighthouse and dwellings. The necessity of using such buildings in all weather conditions as well as at night make this more-sheltered—not to mention less precipitous—location away from the top of the sand bank a logical response, given the function and natural characteristics of the site.

The linear configuration of walks and the axial relationship to the fog signal building may have been a response to a windblown, sand-covered landscape where circulation patterns were utilitarian and kept as straightforward as possible *(Figure 47)*. Given the wider north-south dimension of the new keeper's dwelling as compared to the original keeper's dwelling, and the desire to site the later building between the already-established north and south walks, it may be that the consequent jog in the walk occurred on the south where there was less likelihood of windblown sand covering the walk.

The historic clearing of the site was a response not only to the need for visibility for the light tower, but also to the abundance of timber provided by the surrounding forest. Much of this was used for firewood, either to provide heat for the dwellings or to operate the steam boilers in the fog signal building. Some, however, was cut as building material; there is record of station personnel getting "a new flagpole from the woods." It is not unlikely that some of the timber for various docks, boatways, boardwalks, and even outbuildings may have come from the adjacent woodland.

Over the years, the light station has experienced numerous construction and rebuilding efforts, many in response to the same forces of wind and water that gave rise to the need for the light station initially. Features that were essential to the operation and maintenance of the station such as the dock, tramway, boatways, and seawall frequently received the brunt of nature's fury. The consequent maintenance, repair, and even replacement of these features influenced the development of the site by encouraging the design and construction of durable buildings and site features. The response of the light station's occupants and caretakers to the harshness of the natural environment is evident in almost all of the station's identifying characteristics and is a key component of the site's character. As a result of their defensible attitude toward the light station's infrastructure, its resources have survived to the extent that they capable of being preserved.

Cultural Traditions

No significant traces of cultural traditions associated with individual keepers and their families have been observed. The vulnerability of this site to harsh weather conditions, eroding shores, seasonal operation, and the changing tenure of keepers may have contributed to the absence of personal and cultural expressions in the landscape. It also appears that the Au Sable light station had a more institutional landscape than smaller stations where a single keeper and his family resided. The dormitory-like accommodations for assistant keepers and the scale of operations at Au Sable may have influenced its development as a more institutional than domestic setting. Alterations to the site almost always related to improving efficiency or adding new functions and equipment. Buildings, structures, and other features were added, removed, or modified to meet the needs of the station, to conform or comply with governmental policies, to adapt to the changing technologies associated with the safe and efficient operation of a Great Lakes light station, and less frequently, it appears, to satisfy the aesthetic desires and leisure time pursuits of its inhabitants.

Views and Viewsheds

The view of the station and its light from Lake Superior and the ability to monitor views of Lake Superior from the station, particularly the tower, are essential character-defining features of the site. The present vistas, for the most part, resemble those of the historic period. The lighthouse tower is a prominent feature of the Au Sable Point lakeshore, and is visible for a considerable distance from Lake Superior. Although the forested areas to the west prevent views of the entire tower, the base of the tower is visible at the end of the approach from the Coast Guard road *(Figure 48)*. It appears that forest cover has always obscured portions of the view towards the tower from the west.[2] Good views of the lighthouse and keepers' dwellings are obtained from the scrubby open area to the south. A memorable, distant view of the lighthouse is available from the log slide, 3 km (1.9 mi.) to the southeast along the Lakeshore–North Country Trail *(Figure 49)*. Views from the site are primarily to the north to Lake Superior. The panorama from the tower reveals a dramatic view of the Grand Sable Banks to the east-southeast *(Figure 50)*. Views to and from the lighthouse are important characteristics because they are related to its original function and role in Great Lakes navigation.

Circulation Systems

A limited access road extends to the station from the Hurricane River campground 2.4 km (1.5 mi.) to the west and terminates at the garage at the site's west end. Vehicular use is restricted to authorized park vehicles only. This road built by the Coast Guard during 1938–1939 also serves as the main pedestrian access to the site; it forms part of the Lakeshore–North Country Trail in this portion of the site. In the past, there was boat access to the light station at the east end of the site. Freighters and other lake transport routinely stopped at the light station's pier to deliver supplies or personnel. Prior to the

[2]There is only scant documentation for this view historically. Figure 21 (1938) shows a generally wooded area west of the light station; Figure 26 (ca. late 1940s) shows the cleared area at the west end of the light station but does not extend as far as the adjacent woodland. As a result, there is not conclusive evidence about the degree to which vegetation obscured views of the light tower from the west historically.

advent of the automobile, boat access was the only means of reaching the site other than by foot. Rescue efforts that originated from the station embarked from and returned to the station's pier. Within the site, a tramway from the pier to the fog signal building—and perhaps as far as the dwellings—was operational at one time.

Although vehicular circulation was introduced late in the operational period, pedestrian circulation has always been an important site characteristic. Walks, paths, and trails provided the basis for internal site circulation and ingress and egress for the station landscape. Landscape features such as walkways provided primary rather than secondary circulation. The site's pedestrian circulation system also enhances an understanding of the internal workings of the site and the overall patterns of land use and daily activity when the station was in use.

Historically, the approach to the site came from the east, via the log slide trail extending from the Grand Sable Dunes. Keepers walked to the site via this trail prior to 1939. New construction occurred on the western side of the light station, with the addition of the new keeper's dwelling and outbuildings in 1909, and the garage in 1954. The 1939 Coast Guard road dramatically changed the orientation to the west by changing the approach to the site. Continual maintenance problems have plagued this road through the years and it has been moved farther south, away from the lakeshore, as a result of erosion.

Pedestrian circulation is primarily of two types—concrete walks that form a rectilinear network linking buildings and other landscape features, and informal earthen paths and trails. The majority of the concrete walks are 30" wide, 3"-4" thick, and appear to have been cast in place. They have an exposed, fine aggregate surface and noticeable lateral striations. Such walks occur to the north of the lighthouse and residential buildings, running east-west on axis with and extending to the fog signal building (north walk). The same type of walk occurs southeast and southwest of the fog signal building, east of the keeper's and assistant keepers' dwellings, and immediately south of both dwellings including the walks to the outbuildings *(Figure 51)*. The balance of the south walk lying between the two dwellings, as well as a spur to the station's flagpole, is of unstriated concrete that may represent later construction *(Figure 52)*. Portions of the north walk and the walk to the keeper's privy are covered by windblown sand. Concrete walks 18" in width, both striated and unstriated, occur southwest, west, and northwest of the keeper's dwelling. South of the fog signal building, a 46"-wide walk of unstriated concrete continues as isolated slabs to the boathouse. This walk is the only portion of the walkway system that departs from the rectilinear grid. Aside from steps adjacent to walkways leading into buildings, the two steps at the southeast corner of the fog signal building are the only ones within the walkway network. Small sections of unstriated concrete occur throughout the walkway network—usually at corners or intersections of two perpendicular walks—and may indicate later repairs in areas of heavy traffic. The condition of the concrete walkways ranges from fair to poor, with some sections uneven, cracked, broken, or missing.

The Lakeshore–North Country Trail, an important contemporary recreational feature, crosses diagonally from the wayside exhibit at the west end of the site to the concrete

walk system in front of the keeper's dwelling. It follows the walk to the southeast corner of the assistant keepers' duplex/dwelling, where it continues as a dirt/sand trail *(Figure 53).* Although less rectilinear, here the trail is roughly parallel to the north walk until it reaches a point southwest of the boathouse where it takes several bends and leads eastward out of the site. The width of the trail varies within the site from 3' to 12'.

There are no other developed trails or paths within the site. A number of informal paths are apparent in several places at the edges of the woods. According to park staff, visitors often walk into the woods at these points because there are no developed toilet facilities at the site. A two-track vehicular path is visible through the meadow south of the station's building cluster; this path, presumably temporary, is associated with NPS repairs to the timber seawall during 1996–1997 *(Figure 54).*

Boundary Demarcations

Au Sable Light Station's most significant boundaries are the expansive, natural features of its surroundings. The vast presence of Lake Superior forms the northern boundary of the station, and the dramatic Grand Sable Banks are prominent on the eastern horizon *(Figure 55).* Forested lands still lie beyond the southern limits of the 4.5-acre developed portion of the light station, but the extent of this clearing is smaller than in the historic period. Forests also still adjoin the site to the east and west. Many dumpsites are interspersed within the forest edge. Other than the overriding presence of Lake Superior and the defining dense wooded edge around the station, boundary demarcations do not appear to have been particularly important. Only one reference to fencing has been found.

The present-day landscape of the light station has much the same character as that depicted in an 1884 photograph of the site. The open, scrubby character of the landscape at that time appears not to have been delineated by boundary demarcations. The only existing boundary demarcations at the light station site were built to stabilize the sand bank rather than to define space. Several rows of sand fencing step down the bank face north of the keeper's dwelling *(Figure 56).* There is evidence that erosion of the sand bank is continuing in this area, as indicated by a growing intrusion in the bluff line just east of the sand fencing. At the fog signal building, where erosion threatened the building's foundations, a more elaborate seawall system of timber cribbing was constructed in 1976. Aside from these features, the boundaries of the light station site are largely defined by the lakeshore on the north, and the forest edge on the east, south, and west.

Vegetation

Vegetation consists of both native and non-native species of trees, shrubs, and herbaceous plants. Both deciduous and evergreen plant materials are represented. The overall vegetative character of the site is of clusters of shrubs and small trees, punctuated by several groupings of larger trees, set against a wooded backdrop of the coastal forest *(Cover).* Naturalized masses of roses suggest a somewhat domesticated landscape around the lighthouse and keepers' dwellings. There are few trees in the developed portions of the site, the notable exceptions being a maple and a pair of birches at the west end of the light station. Wild strawberries and two varieties of blueberries are plentiful.

The area north of the major buildings atop the sand bluff is sparsely to thickly covered with scattered in-growth plant materials. The ground cover is predominately brome and poa grasses, with naturalized roses occurring north of the tower. Saplings and small cherry and serviceberry trees abound. Northeast of the assistant keepers' duplex/dwelling, there are two major groupings of paper birch. The terrain is a rolling, sandy dune.

The area south of the station's major buildings consists of open meadow dominated by brome, poa, and bluestem grasses interspersed with barren, sandy patches located primarily south of the tower and assistant keepers' duplex/dwelling. Roses have naturalized through much of the area east and southwest of the keeper's dwelling; knapweed is common throughout the site. Also southwest of the keeper's dwelling are the large sugar maple and pair of white birches flanking the wayside exhibit. One of the birches has died; the other is dying.

Beyond the line of outbuildings, the meadow continues to be dominated by the grasses, but also by low blueberries, bracken fern, and reindeer moss. Clusters of chokecherries occur south of the keeper's dwelling and tower, and east and southeast of the assistant keepers' duplex/dwelling. A particularly large, lozenge-shaped grouping of trees occurs south of the open space between the assistant keepers' duplex/dwelling and the fog signal building on a low, sandy ridge. Along the south portion of the cleared area, approaching the present woodland edge, islands of successional trees and shrubs punctuate the meadow *(Figure 57)*. These groupings are characterized by birch, white pine, balsam, red maple, and serviceberry. Some species, such as balsam, represent outgrowths of woodland vegetation into the adjacent meadow. Strawberries are a conspicuous groundcover at the east end of the site south of the trail.

The role of vegetation in the historical development of this site is complex. In fact, absence of vegetation in the most-used areas of the site and within important sight lines was desirable. From the earliest development of the station with its original keeper's dwelling/passageway/tower cluster, dense vegetation has defined the edges of the station. The extent of the cleared area has varied throughout different periods but the presence of a vegetative edge has been constant. Vegetation was to be discouraged and removed from the site so that the station could be developed and have the necessary degree of visibility from Lake Superior. Vegetation, primarily mixed species of coniferous and deciduous trees and shrubs, also was removed to allow efficient circulation within the confines of a limited site. Trees within and adjacent to the station also provided an important source of fuel during the wood-burning era, although wood was also brought to the station by ship from offsite locations. Thus, vegetation was important to the function of the site as well as an impediment to meeting its utilitarian objectives. The site reflects only limited evidence of efforts to personalize and beautify the landscape. Similarly there are limited historical accounts of ornamental or garden plantings. Vegetation also has had historic and scenic value in providing the landscape setting for the station. Views of the station from Lake Superior have always been of the lighthouse and associated buildings with a background of trees and foliage. These views have existed throughout the history of the station and contribute to its character and setting.

Master Plant List

Plants identified at the light station site include

Trees	
American mountain-ash	*Sorbus americana*
Apple	*Prunus malus*
Balsam fir	*Abies balsamea*
Balsam poplar	*Populus balsamifera*
Black spruce	*Picea mariana*
Chokecherry	*Prunus virginiana*
Dogwood	*Cornus alternifolia*
Hemlock	*Tsuga canadensis*
Jack pine	*Pinus banksiana*
Juniper	*Juniperus communis*
Paper birch (white birch)	*Betula papyrifera*
Pin cherry	*Prunus pensylvanica*
Red maple	*Acer rubrum*
Serviceberry (shadbush, sugar plum)	*Amelanchier arborea*
Sugar maple	*Acer saccharum*
White cedar	*Thuja occidentalis*
White pine	*Pinus strobus*
White spruce	*Picea glauca*
Yellow birch	*Betula alleghaniensis*

Shrubs	
Bearberry	*Arctostaphylos uva-ursi*
Bush honeysuckle	*Diervila sp.*
Canada blueberry	*Vaccinium myrtilloides Michx.*
Ground cherry	*Prunus pumila*
Ground-pine (clubmoss)	*Lycopodium obscurum*
Lilac	*Stringa vulgaris*
Low blueberry	*Vaccinium augustifolium Ait.*
Red raspberry	*Rubus strigosus Michx.*
Sand cherry	*Prunus x cistena*
Serviceberry	*Amelanchier sanguinea*
Wild rose	*Rosa acicularis*
Wintergreen	*Gaultheria procumbens*

Herbaceous Plants	
Beach grass	*Ammophila breviligulata*
Blue bead lily	*Clintonia borealis*
Bracken fern	*Pteridium aquilinum*
Bunchberry	*Cornus canadensis*
Canada dogwood (dwarf cornel)	*Cornus canadensis*
Canada mayflower	*Maianthemum canadense*
Common mullein	*Verbascum thapsus*
Common plantain	*Plantago major*
Common St. John's-wort	*Hypericum perforatum*
Curled dock	*Rumex crispus*
Dandelion	*Taraxacum officinale*
Evening primrose	*Oenothera parviflora*
Fringed brome grass	*Bromus textorum*
Horsetail rush	*Juncus equisetum*
Little bluestem	*Andropogon scoparius Michx.*
Orange hawkweed	*Hieracium aurantiacum*
Orchard grass	*Dactylis glomerata*
Poa grass (Bermuda grass)	*Poa annua*
Prince's pine (pipsissewa)	*Chimaphila umbellata*
Reindeer moss (lichen)	*Cladonia sp.*
Sedge	*Cymophyllus sp.*
Sphagnum moss	*Sphagnum sp.*
Spotted knapweed	*Centaurea maculosa*
Starflower	*Trientalis borealis*
Timothy	*Phleum prateuse*
Wild strawberry	*Fragaria virginiana Duchesne*
Yarrow (milfoil)	*Achillea millefolium*

Cluster Arrangements of Buildings and Structures

Ten extant buildings occupy the light station site, the majority arranged in linear or perpendicular relationship to each other. In general, major buildings are located at the northern edge of the site east to west atop the sand bank where visibility or access to the water is greatest. Correspondingly, outbuildings or accessory buildings generally occupy less prominent—and less exposed—locations farther to the south sited orthogonally to major buildings. Both major and auxiliary buildings are organized into two distinct building clusters, defined and connected by a series of concrete walkways.

Eight of the buildings comprise a somewhat extended yet formal lighthouse/residential cluster at the west end of the site, centered on the 1873 painted-brick lighthouse tower *(Figures 58, 59)*. The two-and-a-half story, red-brick assistant keepers' duplex/dwelling of the same date is linked to the east side of the tower by a short, enclosed brick passage *(Figure 60)*. The reconstructed 1909 porch orients the dwelling to the east. The two-story 1909 keeper's dwelling with its smaller north and south porches is located 50' to the west of the tower along the same axis *(Figure 61)*. Forty feet southwest of the keeper's dwelling stands a more recent, two-bay clapboard garage which is oriented to the south *(Figure 62)*. Four outbuildings complete this cluster. A red brick privy, located 50' south of the keeper's dwelling, is mirrored to the east by a red-brick oil house, flanked at right angles by a second red-brick privy and a cylindrical metal oil house painted yellow, located 50' south of the assistant keepers' duplex/dwelling *(Figure 63)*.

A second building grouping with a less regular layout, the waterfront/industrial cluster at the east end of the site consists of the 1897 red-brick fog signal building and, fifty feet to the southeast, the circa 1910 boathouse sheathed with wood siding *(Figure 64)*. Despite the difference in the buildings' elevations, historically they had a close functional relationship. A boat ramp extended from the boathouse to the northeast, flanked on the northwest by a parallel pier and tramway. One leg of the tramway ascended the sand bank on the axis of the fog signal building, enabling equipment and supplies to be brought to the main portion of the site.

The role of buildings in the light station landscape was clearly defined, although some buildings accommodated a variety of uses. The two dwellings, for example, were used for administration and storage as well as residential life. Generally developed according to light station architectural and engineering prototypes, the buildings and structures are typical of the designs associated with light stations of the late nineteenth and twentieth centuries. Specialized building types, such as the fog signal building and oil houses, as well as simple utilitarian structures, such as privies and woodsheds, were part of a complex and interrelated grouping of brick, wood, and metal structures necessary to carry out the work of the station. New structures were introduced as needed to accommodate a growing staff, as in the case of the new keeper's dwelling; for safety considerations, as in the case of the oil houses; or for a new station responsibility in the case of the fog signal building.

Archeological Resources

A number of known archeological sites exist at the light station. Several of these were identified during a pedestrian archeological survey conducted in 1977 by Audrey R. Marie of the NPS Historic Preservation Division. The sites identified at that time consist of two earth and log structures, three trash dumps, and a disturbed, non-structural site. The earth and log structures, approximately 15' square, may have been dugout shelters, root cellars, or cold storage structures, "perhaps ... the remains of temporary housing for the 1873-1874 construction crew."[3] They currently are each in deteriorated condition,

[3]Peter Hall, cited in Bruce A. Jones, "Evaluative Investigations at the Au Sable Light Station, Pictured Rocks National Lakeshore, Michigan, 1990," (Midwest Archeological Center, National Park Service, U.S. Department of the Interior, Lincoln, NE, 1994, photocopy), 4.

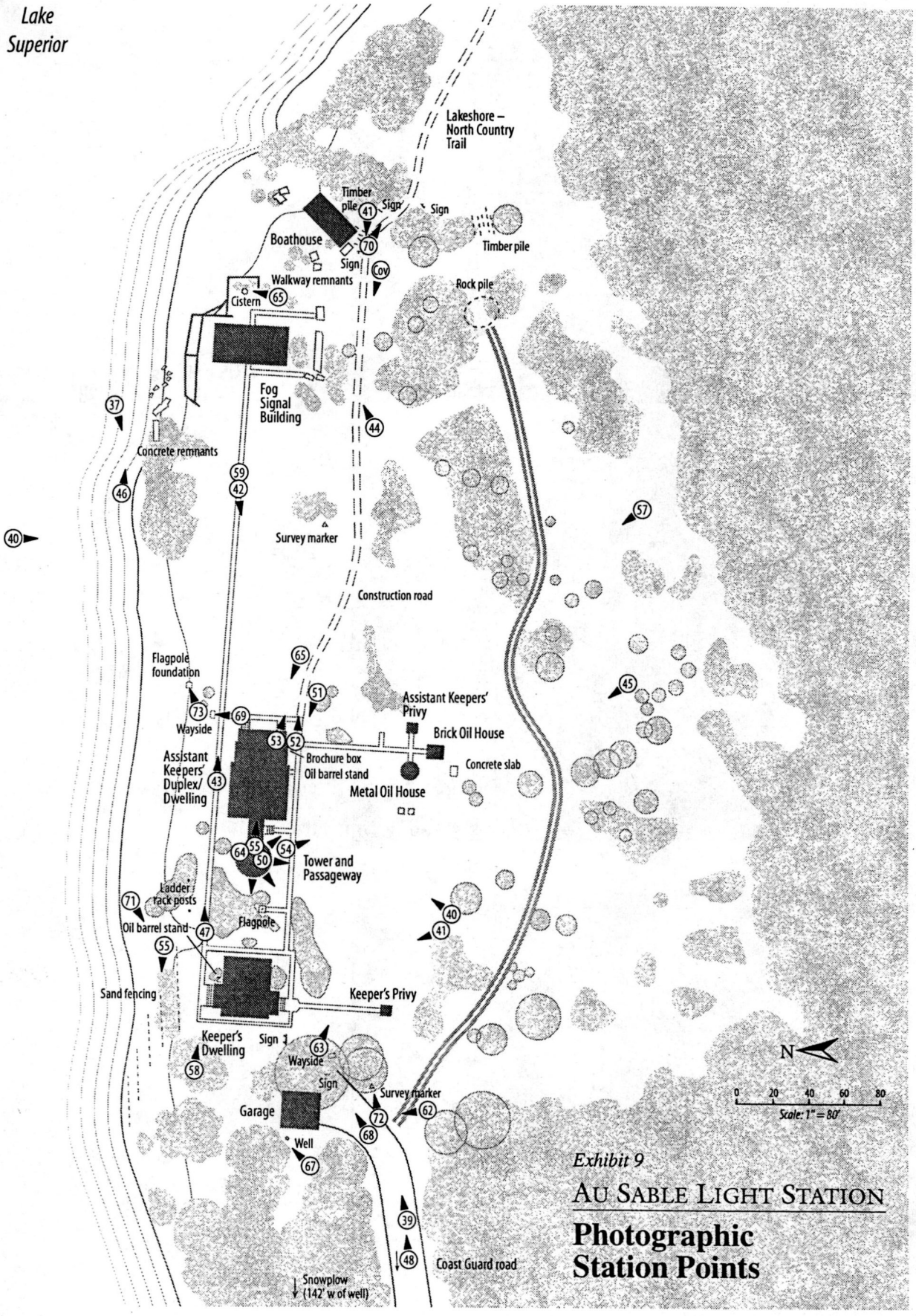
with a round earth mound in the interior rising several feet above the adjacent grade. Park staff, however, have indicated that these earth and log structures may have been developed for use as automotive service pits for changing oil, and may be more recent than 1873–74. Two of the three dump sites "appear not to be related to historic use of the lighthouse, [assistant] keeper's duplex, and associated structures."[4] The third, while in use during the 1950s by the U.S. Coast Guard, may also be the site of the historic trash dump for the light station. The non-structural site is not a trash dump, but was reputed to be a spot disturbed relatively recently by bottle collectors.

Additional archeological sites were identified and excavated in 1990 by an NPS Midwest Archeological Center team headed by Bruce A. Jones. The sites identified and excavated include areas of dry-laid, broken brick paving and a brick privy east of the assistant keepers' duplex/dwelling *(Figure 65)*, and a probable frame shed south of the keeper's dwelling. A core drilling undertaken at the same time indicated the presence of a similar brick paving area just south of the assistant keepers' duplex/dwelling.

Small-scale Features

Although small-scale features were once an important aspect of the utilitarian landscape and essential to the successful operation of the station, there are only a few small-scale elements surviving today that date from the operational period of the station. These include a cistern at the fog signal building *(Figure 66)*, cistern inlets at north and west sides of keeper's dwelling, a well at the west side of the garage *(Figure 67)*, oil barrel stands at the keeper's and assistant keepers' dwellings, manhole covers, and remnant timber pier supports. Small-scale features that relate to visitor interpretation or recreation, or provide site protection and stabilization include the trail sign east of garage, NPS signs at the southwest corner of the keeper's dwelling and southwest of the boathouse, two wayside exhibits "Au Sable Light Station" *(Figure 68)* and "The Graveyard Coast" *(Figure 69)*, a brochure box at the southeast corner of the assistant keepers' duplex/dwelling *(Figure 51)*, a trail sign and trail regulatory sign, both south of the boathouse *(Figure 70)*. Sand fencing has been installed north of the keeper's dwelling to protect the site from wind-blown sand and erosion *(Figure 71)*. Other small-scale features include NPS survey markers southeast of the garage *(Figure 72)* and southwest of the fog signal building, the flagpole east of the lighthouse *(Figure 68)*, a snowplow west of the garage, ladder rack posts with projecting spikes, north of the lighthouse *(Figure 47)*, the old flagpole foundation northeast of assistant keepers' duplex/dwelling *(Figure 73)*, and the remnant brick patio east of the assistant keepers' duplex/dwelling *(Figure 65)*.

[4]Audrey R. Marie, "An Archeological Survey at the Au Sable Point Light Station, Pictured Rocks National Lakeshore, Michigan," (Denver Service Center, Historic Preservation Division, National Park Service, U.S. Department of the Interior, Denver, CO, 1977, photocopy), 5-6.


Lake Superior
Lakeshore – North Country Trail
Timber pile
Sign
Sign
Boathouse
Timber pile
Sign
Cov
Walkway remnants
Rock pile
Cistern
Fog Signal Building
Concrete remnants
Survey marker
Construction road
Flagpole foundation
Assistant Keepers' Privy
Brick Oil House
Wayside
Assistant Keepers' Duplex/ Dwelling
Brochure box
Oil barrel stand
Concrete slab
Metal Oil House
Tower and Passageway
Ladder rack posts
Oil barrel stand
Flagpole
Sand fencing
Keeper's Privy
Keeper's Dwelling
Sign
Wayside
Sign
Survey marker
Garage
Well
Coast Guard road
Snowplow (142' w of well)
N
0 20 40 60 80
Scale: 1" = 80'
Exhibit 9
AU SABLE LIGHT STATION
Photographic Station Points

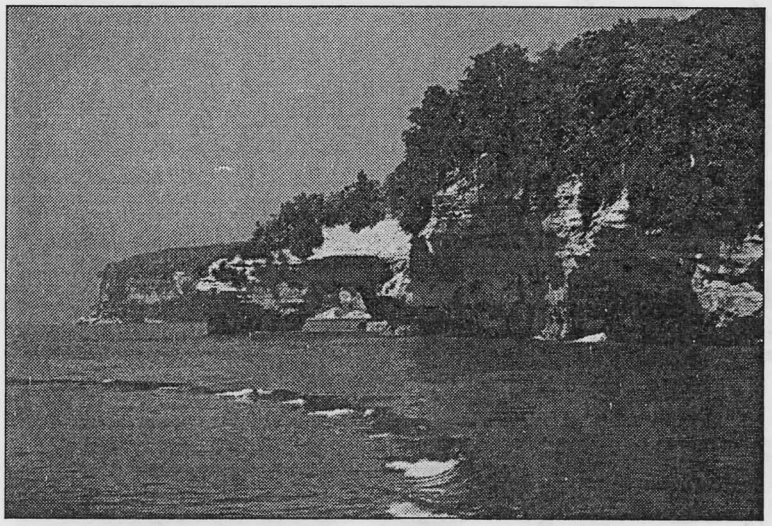


Figure 35. General view of Pictured Rocks lakeshore, showing the Portal. [LCA, 1995]

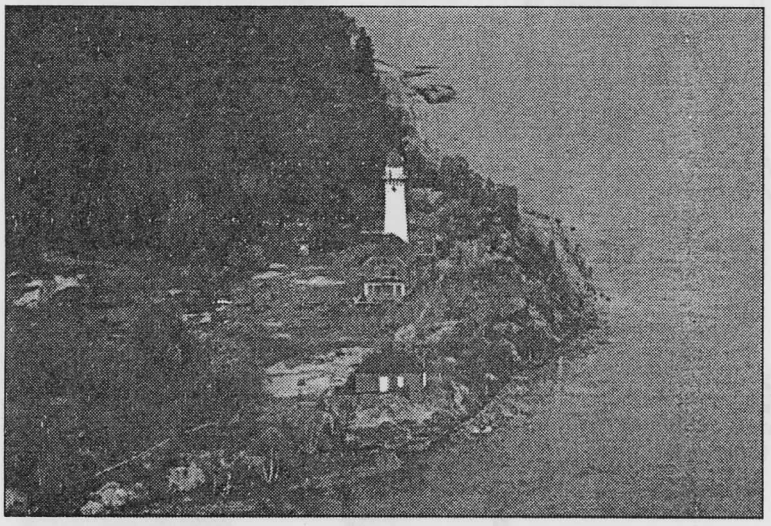


Figure 36. Aerial photo of the Au Sable light station site. [NPS, 1976]

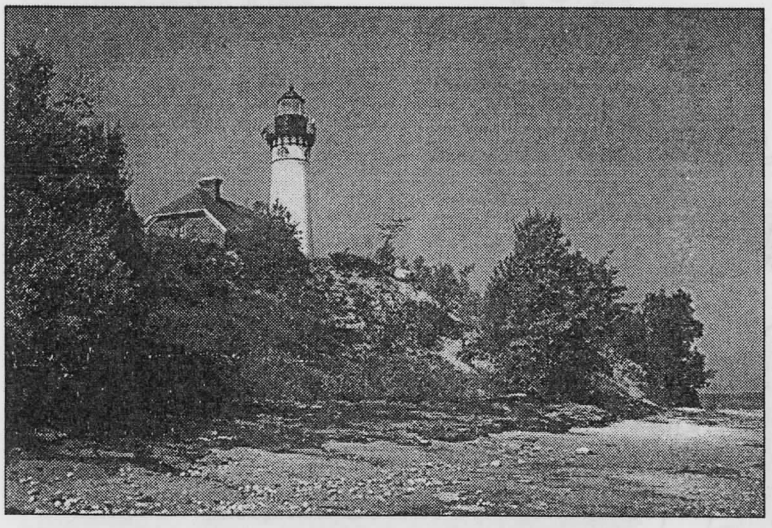


Figure 37. Lighthouse and assistant keepers' dwelling, view from lakeshore (compare with Figure 16, page 67). [LCA, 1995]

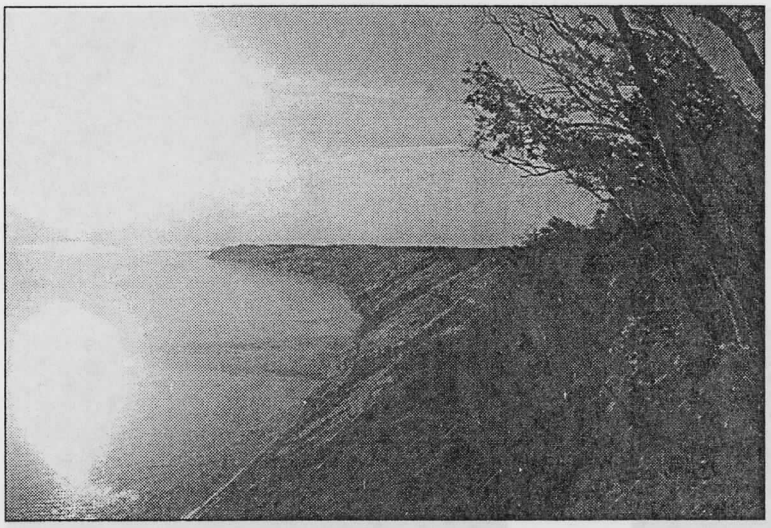


Figure 38. View of Grand Sable Banks from the log slide. [LCA, 1997]

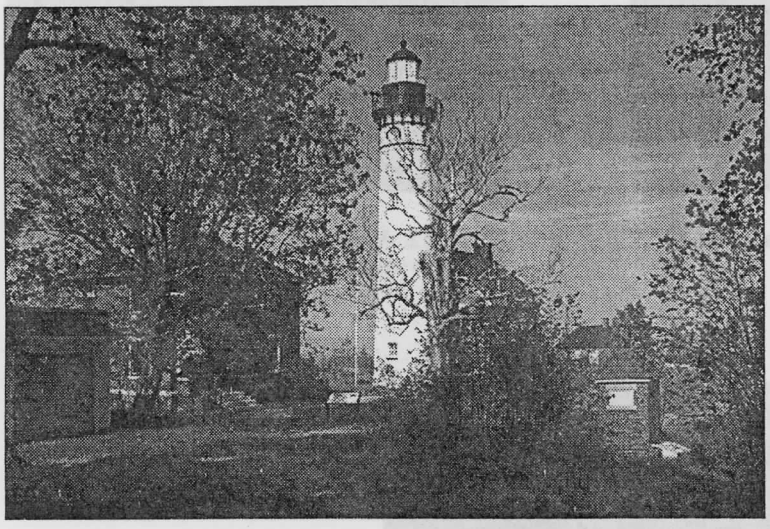


Figure 39. View of light station from end of Coast Guard road. [LCA, 1997]

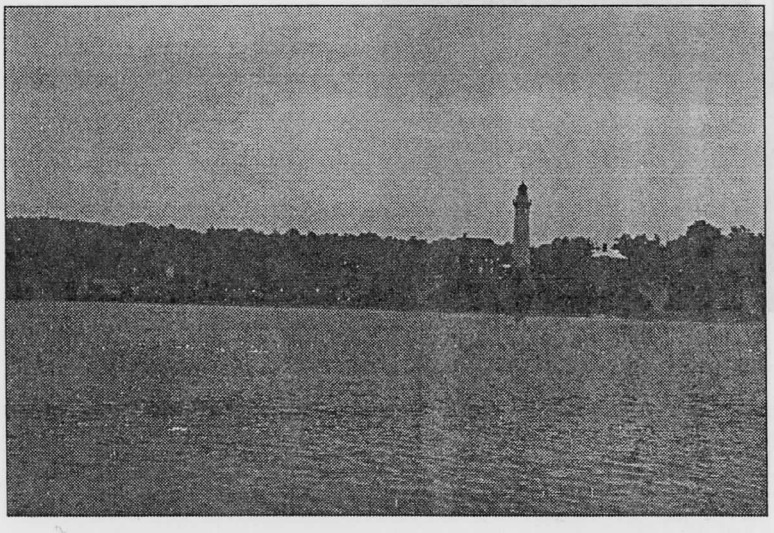


Figure 40. View of light station from Lake Superior. [NPS, 1978]



Figure 41. NPS advisory sign at east side of light station. [LCA, 1995]

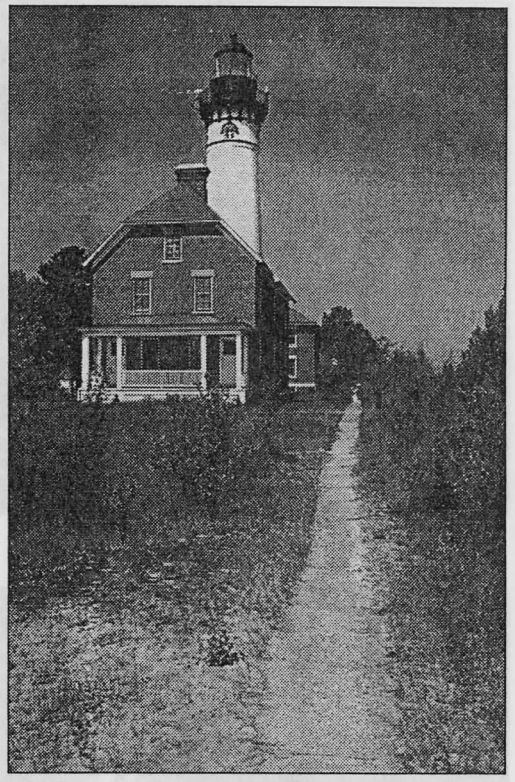


Figure 42. View to west along north walk (compare with Figure 13, page 65). [LCA, 1995]



Figure 43. View to east along north walk, with wayside exhibit. [LCA, 1995]

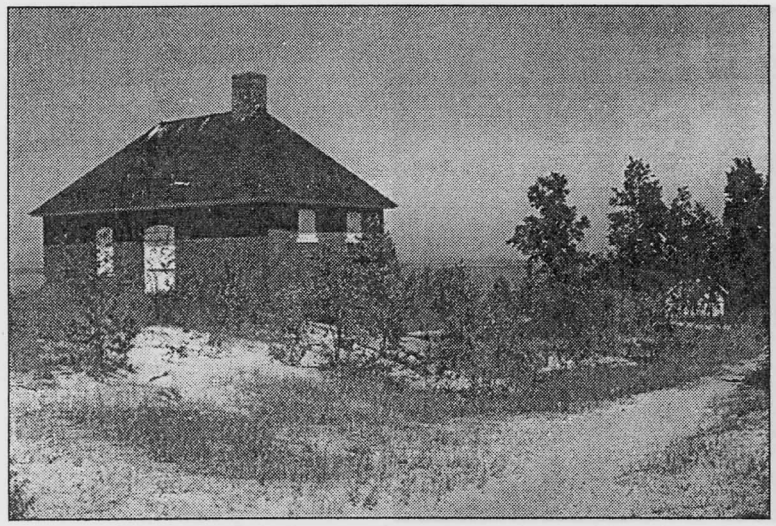


Figure 44. Fog signal building and boathouse, view from southwest (compare with Figure 23, page 70). [LCA, 1995]

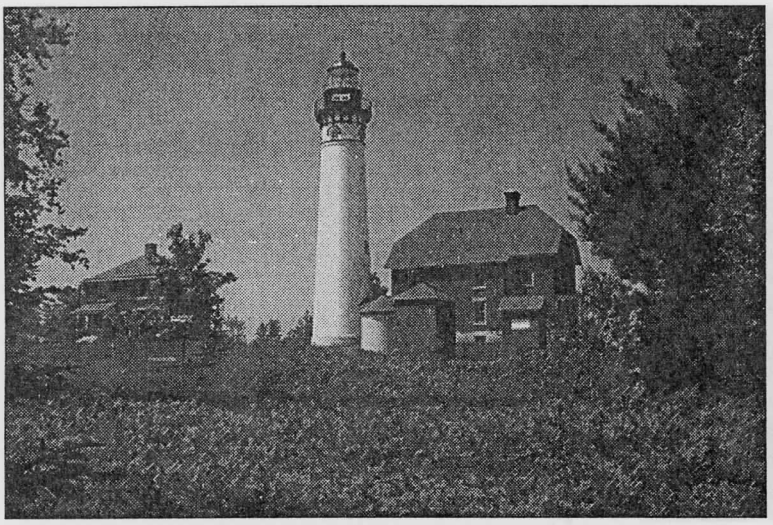


Figure 45. Lighthouse and keepers' dwellings, view from southeast (compare with Figure 25, page 71). [LCA, 1995]

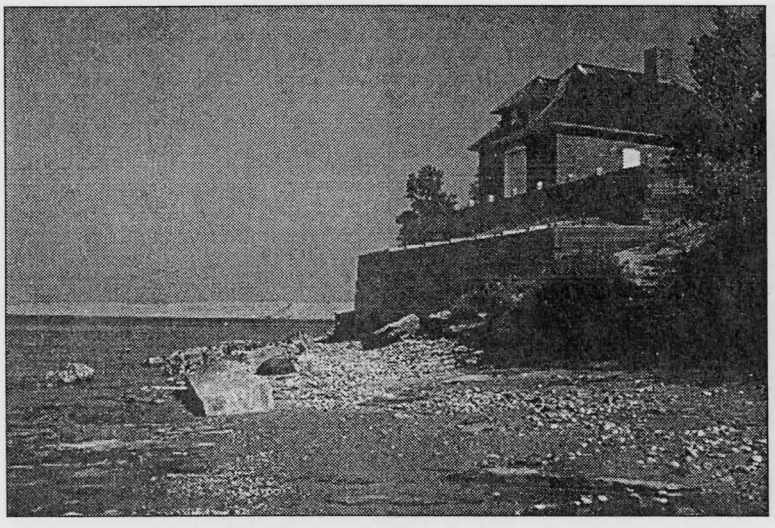


Figure 46. Lakeshore and timber cribbing at fog signal building. [LCA, 1995]

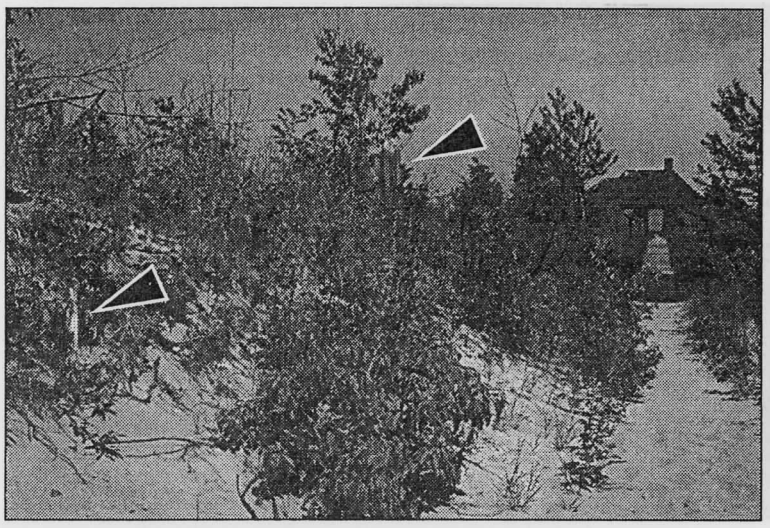


Figure 47. Windblown sand covers the north walk adjacent to the sand bank. Note ladder rack remnants (arrows). [LCA, 1995]

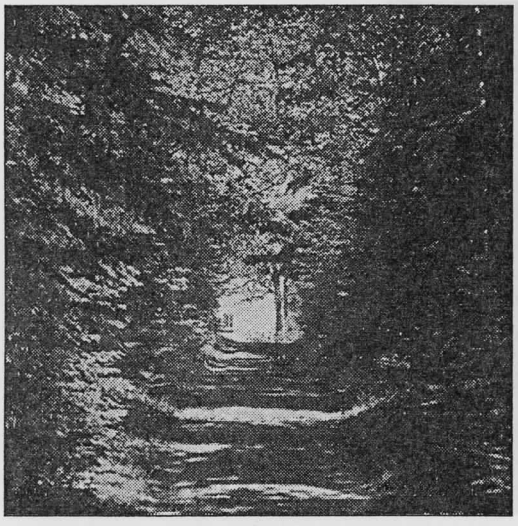


Figure 48. View west toward light station from approach road. [LCA, 1995]



Figure 49. View of Au Sable Point from the log slide. [LCA, 1997]

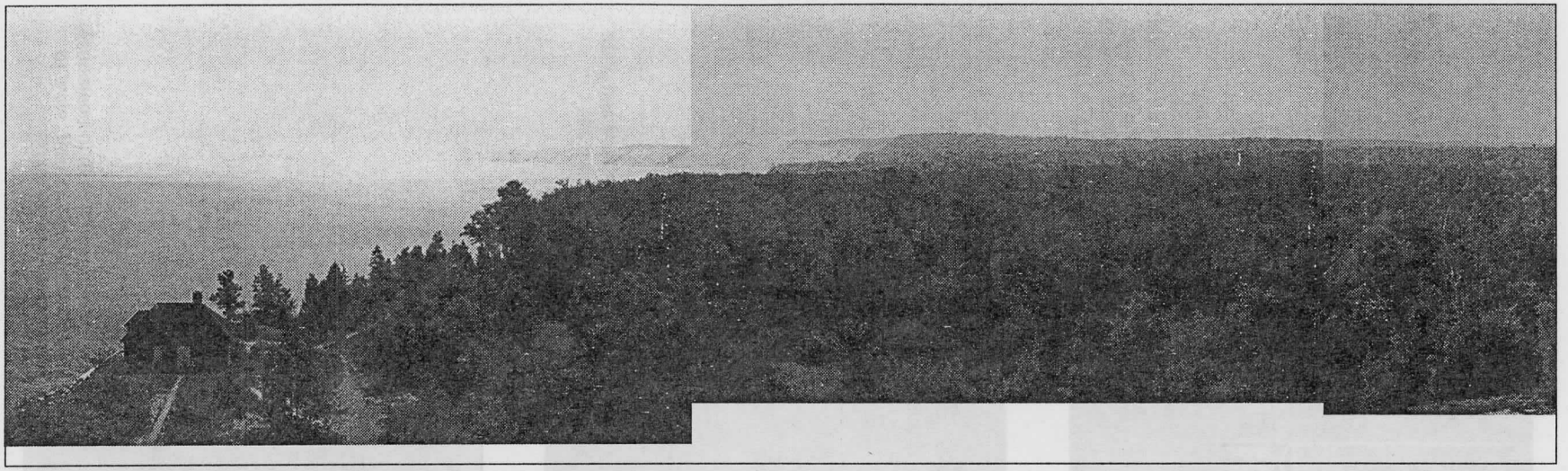


Figure 50a. Panorama from the lighthouse (east section). [LCA, 1995]

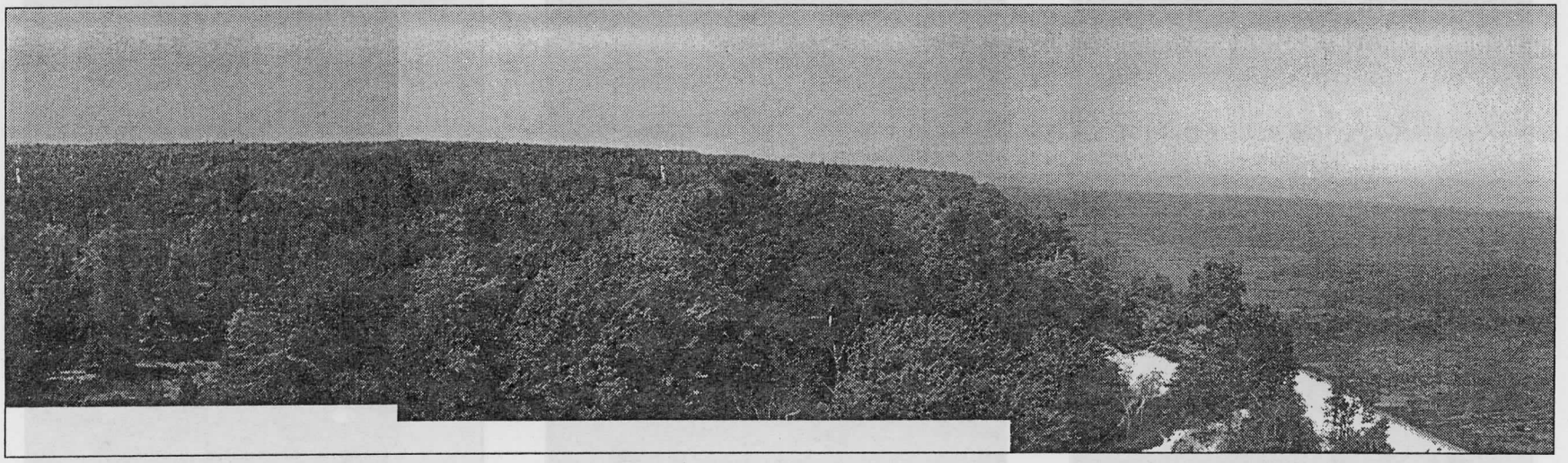


Figure 50b. Panorama from the lighthouse (west section). [LCA, 1995]

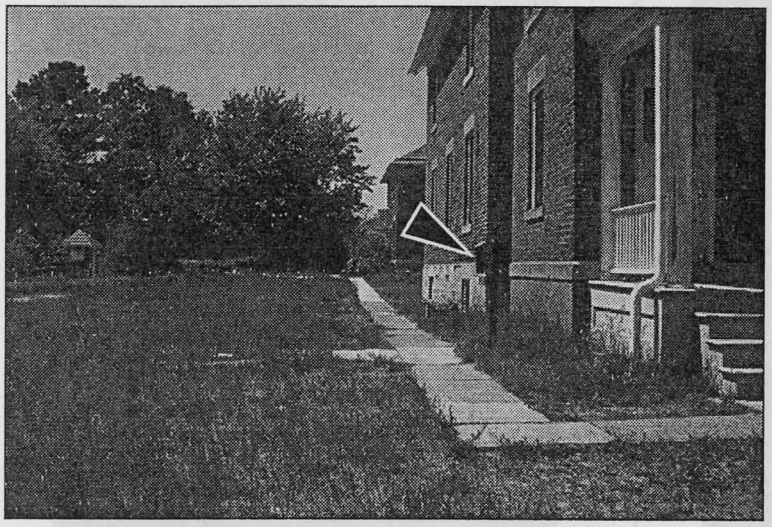


Figure 51. A rectilinear network of walks links the major buildings within the light station site. Note the brochure box (arrow) opposite the walk to the outbuildings. [LCA, 1995]

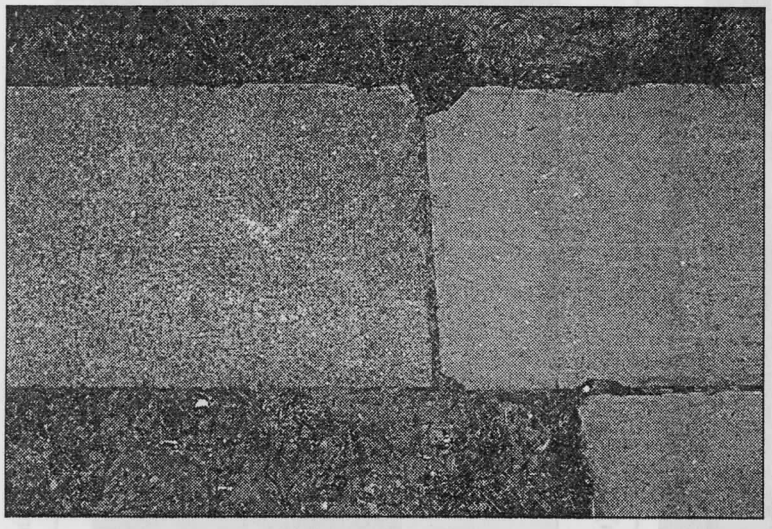


Figure 52. Striated and plain paving at south walk. [LCA, 1995]



Figure 53. Path to boathouse and lakeshore trail, view to east. [LCA, 1995]

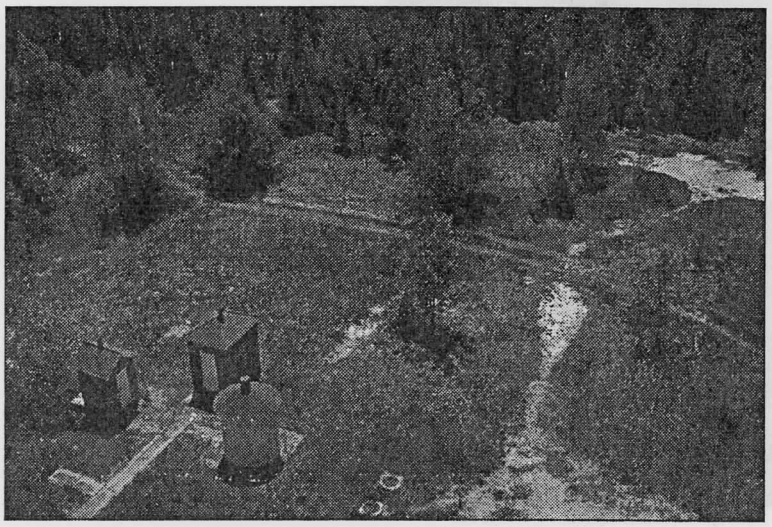


Figure 54. Assistant keepers' outbuildings and temporary construction road. [LCA, 1997]

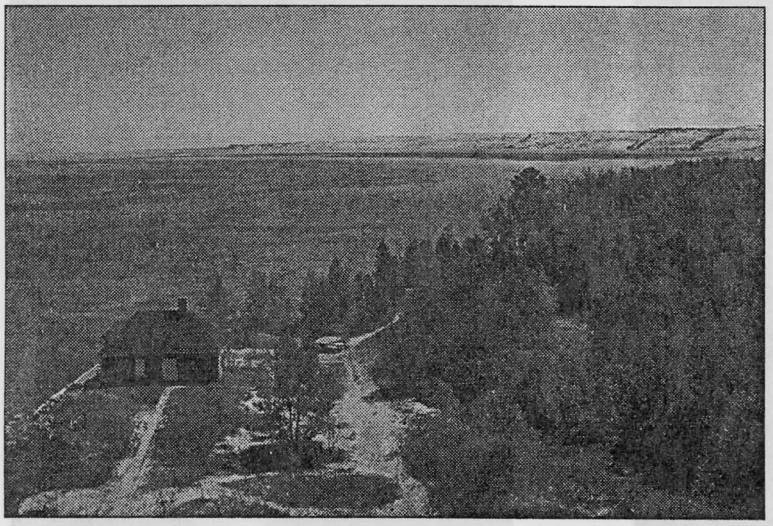


Figure 55. View east from the tower to Grand Sable Banks. [LCA, 1997]

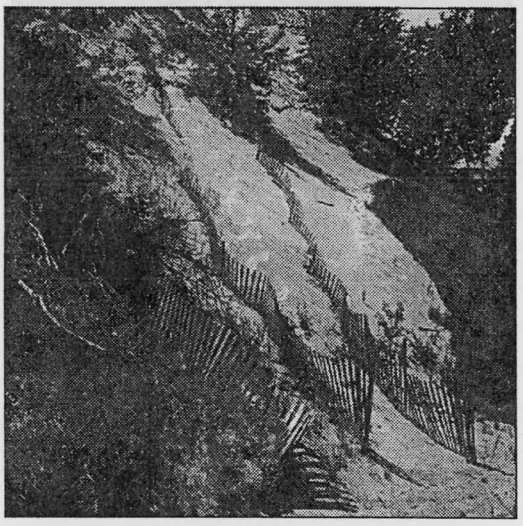


Figure 56. Five lines of sand fencing at bluff north of keeper's dwelling. [LCA, 1995]



Figure 57. Second-growth vegetation south of the light station. [LCA, 1997]

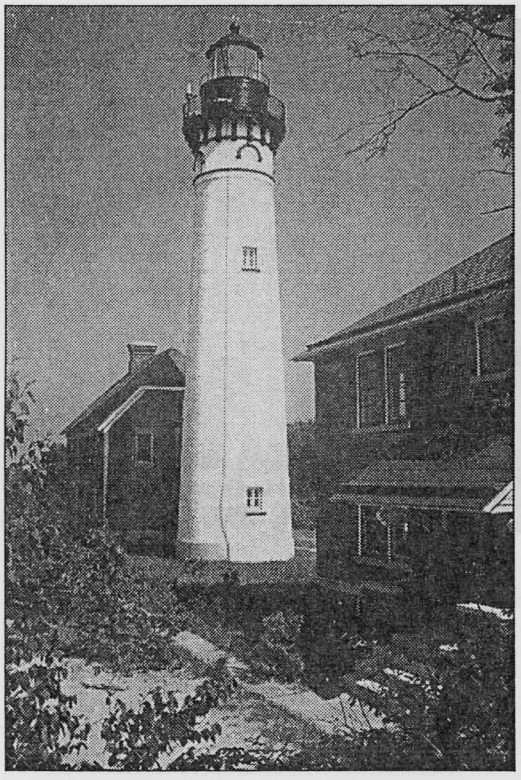


Figure 58. Lighthouse and keepers' dwellings, view from northwest (compare with Figure 17, page 67). [LCA, 1995]

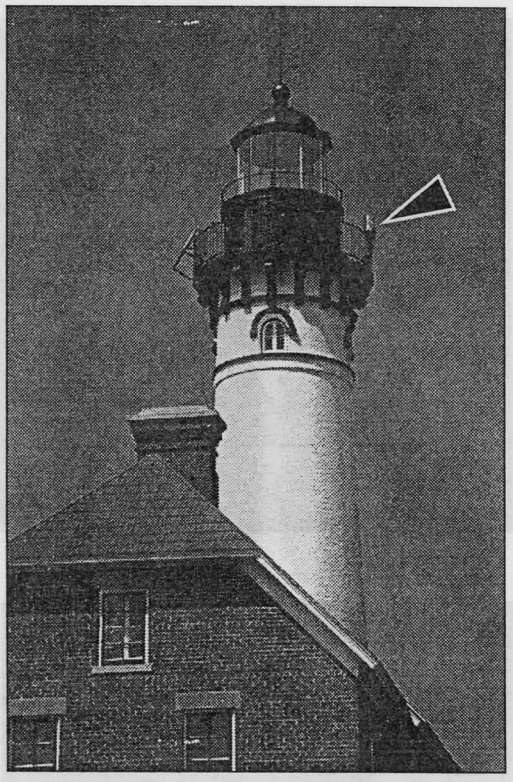


Figure 59. An automatically-controlled light (arrow) on the tower's railing now provides the lighthouse's navigational function. [LCA, 1995]

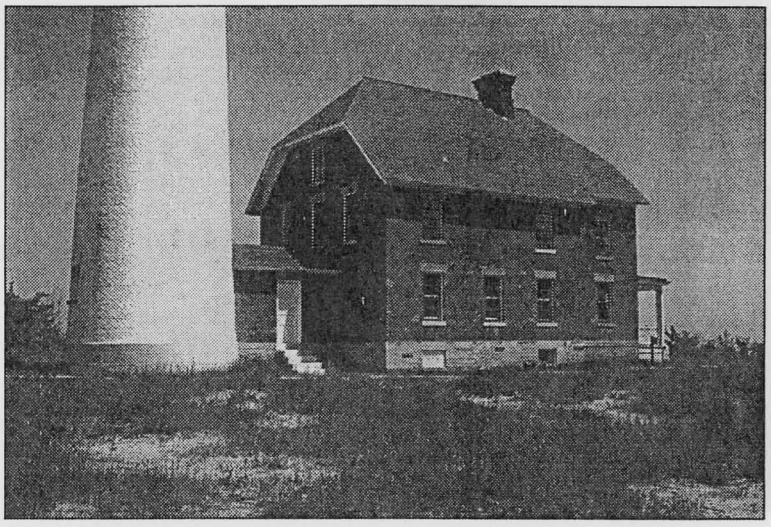


Figure 60. Assistant keepers' dwelling. [LCA, 1995]

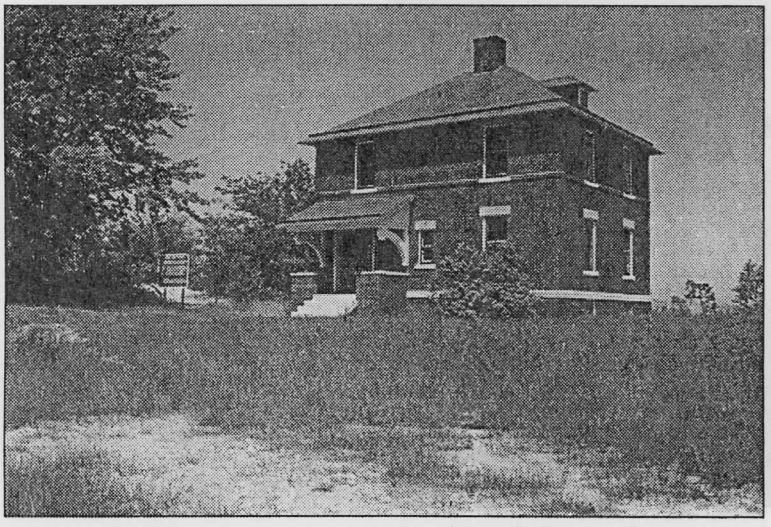


Figure 61. Keeper's dwelling (compare with Figure 22, page 69). [LCA, 1995]

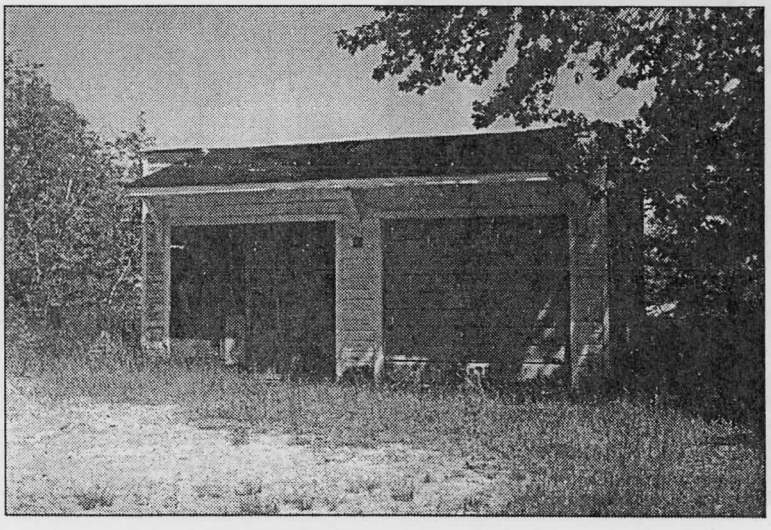


Figure 62. Garage. [LCA, 1995]

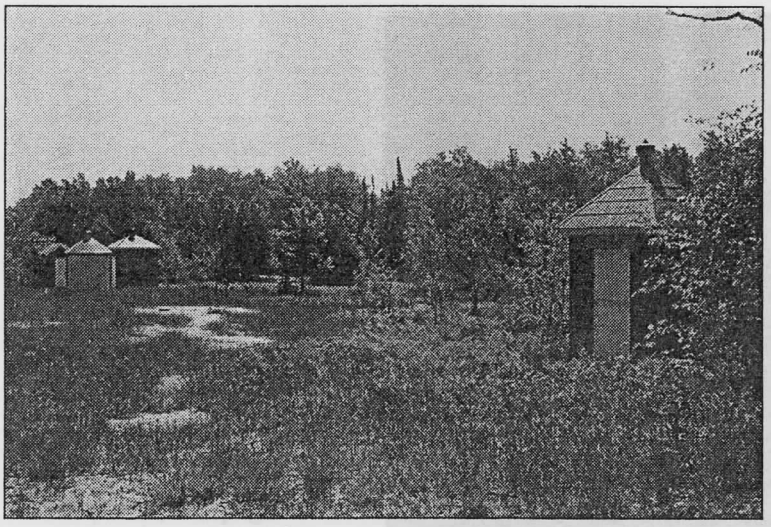


Figure 63. Outbuildings, view from west. [LCA, 1995]

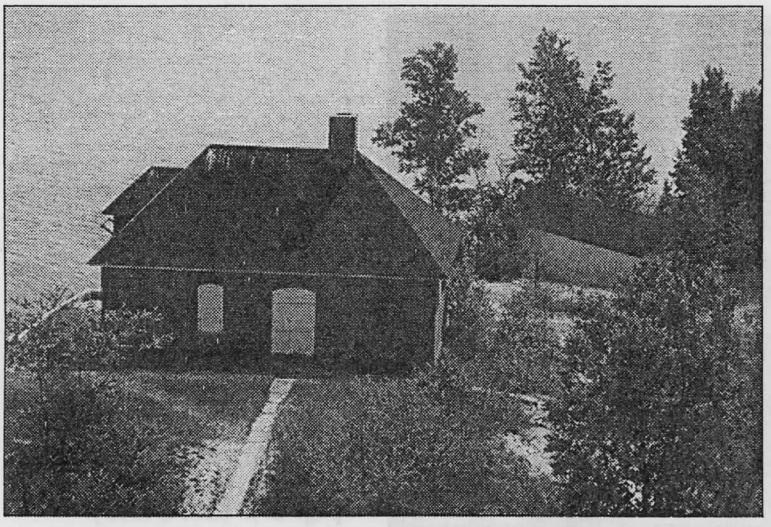


Figure 64. View from lighthouse to fog signal building (compare with Figure 28, page 72). [LCA, 1995]

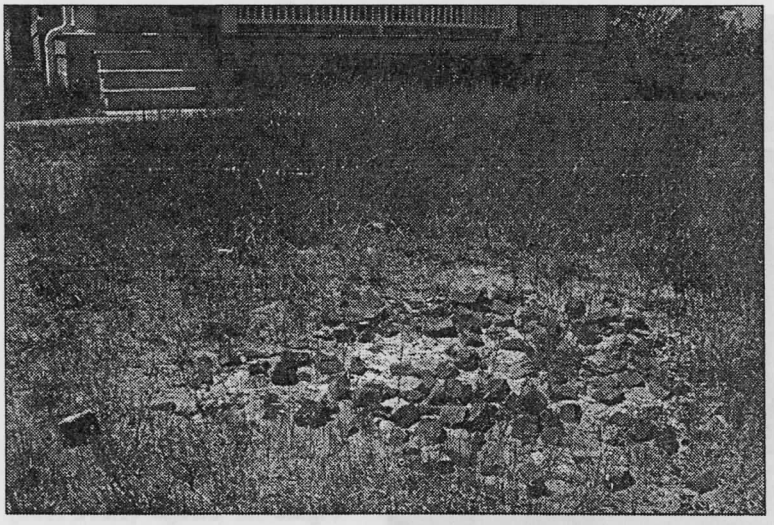


Figure 65. Remnant brick paving east of assistant keepers' dwelling. [LCA, 1995]

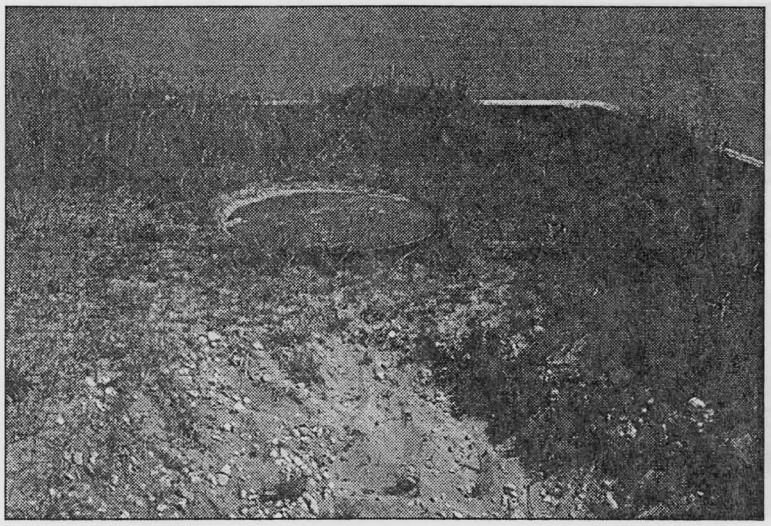


Figure 66. Cistern at fog signal building. [LCA, 1995]

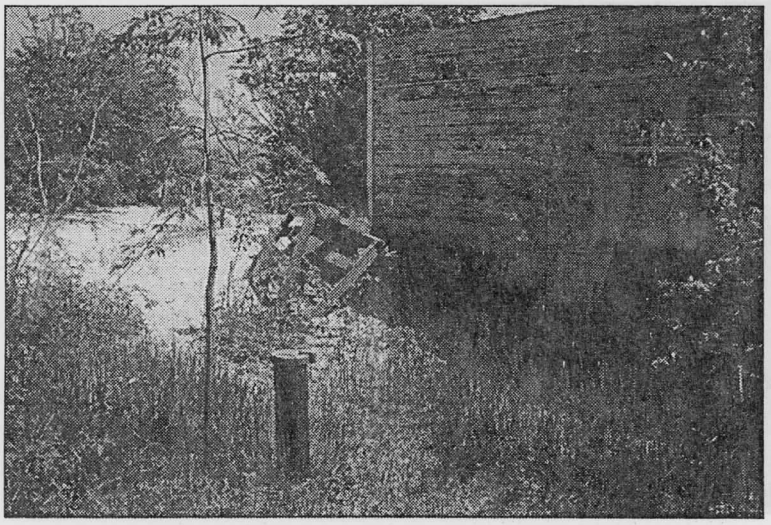


Figure 67. Well at west side of garage. [LCA, 1995]

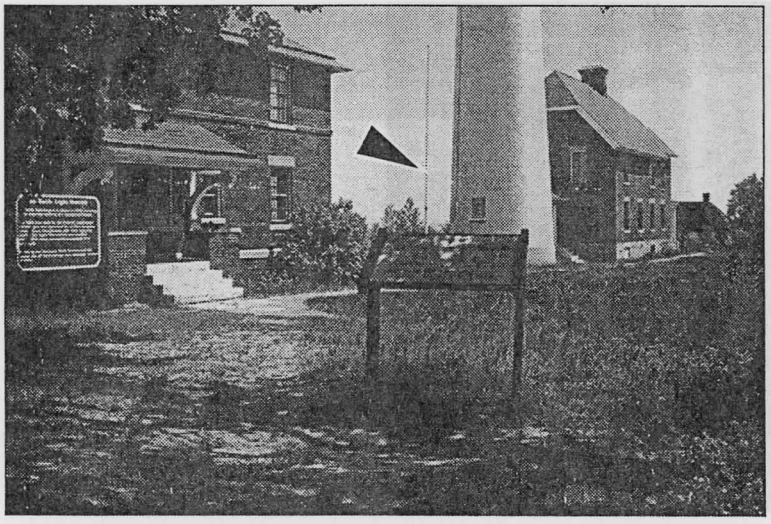


Figure 68. Wayside exhibit and NPS sign at west end of site. Note flagpole (arrow) adjacent to lighthouse. [LCA, 1995]

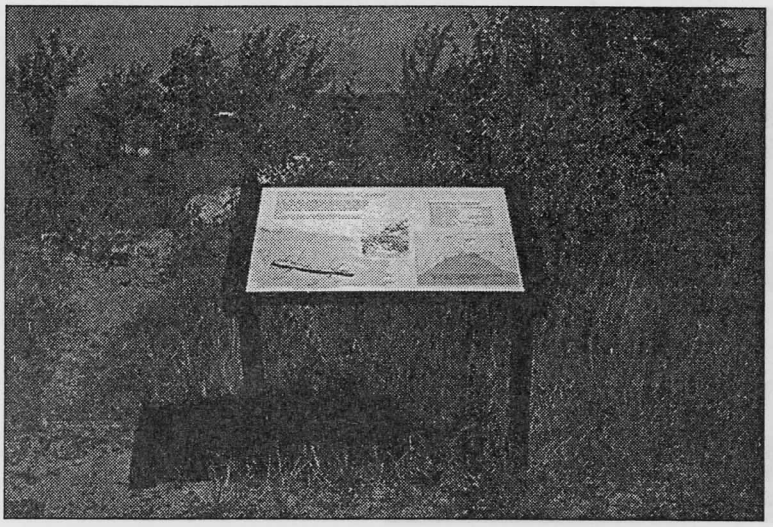


Figure 69. "The Graveyard Coast" wayside exhibit at north walk. [LCA, 1995]



Figure 70. Lakeshore trail marker and regulatory sign. [LCA, 1995]

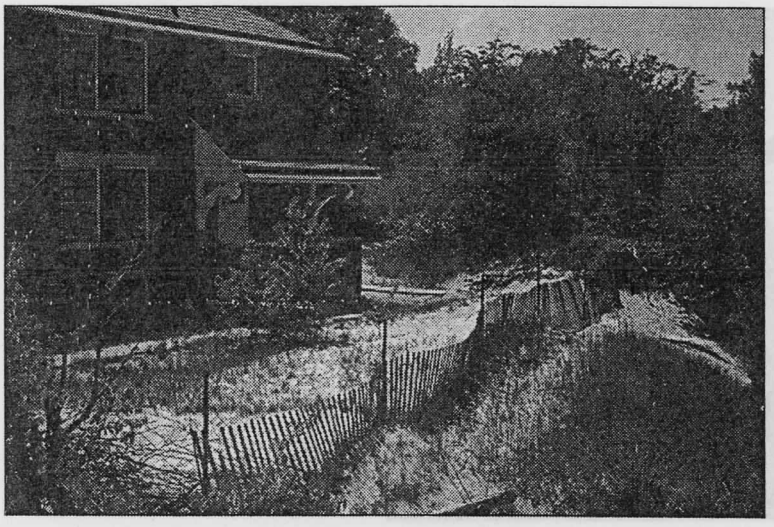


Figure 71. Sand fencing at top of bluff north of keeper's dwelling. [LCA, 1995]



Figure 72. NPS survey marker at west side of light station. [LCA, 1995]

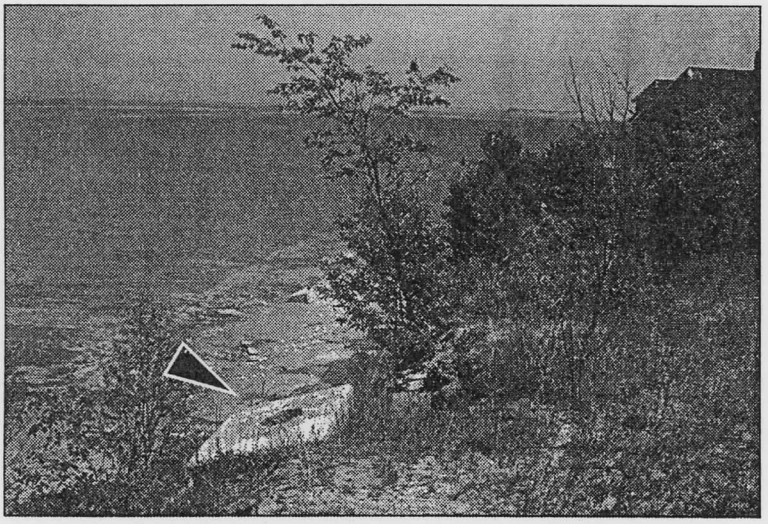


Figure 73. Old flagpole foundation (arrow) at top of bluff. [LCA, 1995]

Analysis

Analysis

Significance

The Au Sable Light Station is a significant historic property listed in the National Register of Historic Places. Au Sable possesses historical significance (Criterion A) for its role as a light station on Lake Superior's dangerous southern coastline during the nineteenth and twentieth centuries. Its presence and vigilance supported the settlement, commercial development, and entrepreneurial activity of its region during this period. The station also possesses design significance for its exemplary and relatively well-preserved collection of buildings and structures characteristic of an important historic property type—the Great Lakes light station (Criterion C). This significance derives not only from the design merit and workmanship of the light station's individual buildings, but also from the spatial organization and site arrangement of its architectural and landscape features, making it characteristic of a late-nineteenth/early-twentieth-century light station.

Period of Significance

The period of significance had been assumed previously to date from 1873 to 1939. This period spans the years from the earliest development of the site through its peak period of physical development and operation. Given the relatively brief interval of time between 1939 and the station's 1958 closing date, this period of significance warrants re-evaluation. The site did not differ substantially in either its operation or its physical character in the 1940s and 1950s than it did through the 1930s. The site as it exists today, however, more closely represents the evolved landscape of 1958 than that of 1939. In addition, the year 1939 did not mark a major departure in the operation of the site. 1958 is a significant date in the history of the station that did result in marked operational and physical change for the site. Extending the period of significance to 1958 would recognize the significance and evolution of the station throughout its entire history—a finite and definable period.

With an extended period of significance individual buildings, structures, and other features retain the ability to represent discrete periods of development or their own evolution over time without loss of integrity. Extending the period to 1958 also would acknowledge the importance of the significant trends and patterns of history in the post-World War II era that resulted in the station's closure. With an extended period of significance, the Au Sable history would encompass the decline of the station in relation to changing trends in navigation, technological changes accomplished through automation, and changing governmental policies as well as its early development and peak period of operation. In addition, survival of historic resources from the entire period of the station's operation support an extension of the period of significance.

In recent years the National Register policy has been to re-examine the well-known "fifty year rule" for certain types of properties and thematic associations. It appears that the special exception criteria of the National Register could be applied to the Au Sable light station to establish a period of significance that would coincide with its entire period of operation.

Period of Interpretation

Currently one of the goals of the Pictured Rocks National Lakeshore is to interpret the Au Sable Light Station site for the period 1909–1910, dates which define the last period of concentrated construction on the site and for which there is considerable documentation. Given the on-going nature of construction and modification at Au Sable and the preceding discussion of the period of significance, the interpretation of such a brief period should be re-examined. This re-examination is warranted, particularly, in light of extant cultural landscape resources and documentation related to 1909–1910.

The site, as it exists currently, more accurately represents the later years of operation than the earlier 1909–1910 period. Many important features associated with that period are no longer extant. There are also significant gaps in information concerning some aspects of the cultural landscape for the period 1909–1910. There are significant implications to this assessment. An interpretive period of 1909–1910 would require development of strategies to address existing site resources that post-date 1909–1910 and perhaps to reconstruct absent features for which there is little or no documentation. Attempting to re-create the historic scene for the years 1909–1910 will mean continued loss and alteration of authentic resources from the later years, resources that have direct associations with the operation of the site and that help to reveal diverse aspects of the history and evolution of the station.

The existing cultural landscape represents an evolved and layered industrial landscape that includes the period 1909–1910 as well as many other periods that are also significant to the history of the station. The concept of change is central to the story of the Au Sable light station. Re-creation of the cultural landscape of 1909–1910 would require a cultural landscape manipulation that is based on conjecture and that will create a false and static sense of history. The site lends itself instead to an overall period of interpretation that tells the complete story of the station from beginning to end, including the period 1909–1910. The existing buildings, structures, and other site features already represent the different periods in which they were built and/or altered. Features that are absent can be interpreted without re-creating them on the site.

Increasingly visitors are interested in the more recent past and in the history of technological change. In a rapidly changing world, it is instructive to remember that places like Au Sable remained isolated through the first half of the twentieth century; that the occupation of lightkeeping became obsolete as a result of technological and other changes, and that decline as well as peak development is part of the story of a place.

Integrity Assessment and Contributing Landscape Features

The site has been evaluated for integrity based on the survival of contributing features from the period of significance and for its ability to represent authentically the character of the site during that period. Contributing features are those that were extant during the period of significance, relate to the significance of the station, and retain the ability to represent the period of significance.

Integrity

The Au Sable Light Station, a representative Great Lakes light station, is a utilitarian complex that experienced change throughout its history. The site developed as a utilitarian and generally standardized light station landscape that responded to the prescribed functions and policies associated with its role in guiding Great Lakes navigation. The site that exists today still reflects that legacy. The site's character changed most dramatically in 1958 when the residential function was discontinued. Changes since that time have included the loss of some features as a result of abandonment and, after 1968, the installation of NPS interpretive features, and construction of the timber seawall. Despite its virtual abandonment for approximately a decade following the reassignment of Coast Guard personnel to other posts in 1958, the site retains most of its essential character-defining features. As a result, the overall site retains integrity as a Great Lakes light station.

The site retains many aspects of integrity of location, design, setting, materials, workmanship, and feeling. The preservation of many buildings and structures in their original locations and in relatively good condition enhances integrity of location, design, materials, and workmanship. Preservation of significant historic views to and from the water and to three forested boundaries enhances integrity of setting and feeling. The traditionally cleared area south of the station has experienced some vegetative succession and does not have as open a character as it did during the period of significance. Despite this ingrowth, the general location, character, and type of the adjacent forest vegetation that still bounds the station on three sides has not changed substantially since the period of significance.

The most significant loss of integrity is associated with non-use of the light station since the absence of resident keepers affects integrity of setting and feeling. The sights, sounds, and even smells of the lighthouse era are gone with the loss of human activity, the change in location of a functioning light, steam boilers, and fog signal. The functional light station of its era would have been a noisy and active place of work with the acrid smells of diesel generators most evident. Other elements of the working landscape—oil barrels, boats, and other features related to the operation of the station—are absent from the contemporary landscape, resulting in a more pristine character than the site had during the period of significance. Today's landscape is a much more tranquil coastal scene that belies the reality of a working station. The absence of small-scale features and the custodial care traditionally associated with this domestic and industrial landscape diminishes integrity of feeling and setting.

Nevertheless, the site arrangement and the continued survival of such features as the two keepers' dwellings, passageway, light tower, fog signal building, oil houses, privies, boathouse, oil drum stands, and concrete walks contribute to site integrity. In many respects the site does not differ markedly from its appearance in the final period of its operation except for its lack of animation and function. In its present state, it reflects the layered site that evolved as a result of its utilitarian uses from 1873 to 1958. Changes during that time were related to increased staffing, repair of storm damage, and changing policies, trends, and technologies in navigation. That pragmatic attitude resulted in changes that were related to site operation. As a result, these layered changes enhance the integrity of the site and its ability to represent its entire period of significance.

Contributing Features

An analysis of the site history of the Au Sable light station reveals the presence of character-defining landscape characteristics and associated contributing features that are inextricably associated with the development and operation of the station and its adaptation to its Lake Superior site. The following features, organized by landscape characteristic, contribute to an understanding of the evolution and function of the site:

Overall landscape organization and patterns of spatial organization

- linear arrangement of buildings and circulation systems along lakeshore
- linear progression of site from lakeshore to bluff to cleared area to forest edge

Natural features

- sand bluff
- Lake Superior and sandstone lakeshore

Views and viewsheds

- view of the station and its light from Lake Superior
- unspoiled view from the station to Lake Superior lakeshore, including Grand Sable Banks and the Log Slide
- view to the south from the lighthouse/residential cluster across undeveloped forest lands

Circulation systems

- linear walkway system of striated concrete [1909, 1935]
- remnant brick patios south and east of assistant keepers' duplex/dwelling [ca. 1897]
- Coast Guard road [1938–1939]

Vegetation

- remnants of domesticated landscape, such as lilacs, rose bushes, and fruit trees
- blueberries and strawberries
- native vegetation at lakeshore and on bluff
- mixed hardwood and coniferous forest along the south, east, and west boundaries
- sugar maple adjacent to garage
- scrub vegetation in cleared area south of the light station buildings

Buildings and structures
- light tower and passageway [1874]
- keeper's dwelling [1909]
- assistant keepers' duplex/dwelling [1874, 1909]
- fog signal building [1897]
- boathouse [ca. 1877]
- keeper's privy [1909]
- assistant keepers' privy [ca. 1909]
- brick oil house [1895]
- metal oil house [1915]
- garage [1954]

Cluster arrangement
- lighthouse/residential cluster
- waterfront/industrial cluster

Small-scale features
- cistern at fog signal building [1904] *(Figure 66)*
- cistern inlets at north and west sides of keeper's dwelling [ca. 1909]
- well at west side of garage [1951] *(Figure 67)*
- oil barrel stands at keeper's and assistant keepers' dwellings [1956]
- manhole covers for septic system [1952]
- remnant timber pier support [date unknown]
- flagpole east of lighthouse [1954] *(Figure 68)*
- old flagpole foundation NE of assistant keepers' duplex/dwelling [1952] *(Figure 57)*
- concrete seawall remnants [ca. 1951]
- snowplow west of garage [date unknown]
- ladder rack posts [date unknown] *(Figure 47)*

1. Site Analysis Plan *(Exhibit 10)*

The most significant character-defining features and qualities of the landscape—the edge definition of the Lake Superior shoreline and bluff; a densely vegetated forest edge; the verticality and visual prominence of the light tower; the site arrangement of two distinct but interrelated clusters, the lighthouse/residential cluster and the waterfront industrial cluster; and the internal sidewalk system—endure. The degree of change associated with each—continued shoreline erosion, vegetative infill in the historically cleared area, changes in the type and intensity of the tower's light, loss of auxiliary buildings and structures, and deterioration and loss of walkways—has not affected their character-defining ability. These characteristics have endured with modifications over time and form the basis for understanding and planning for the site.

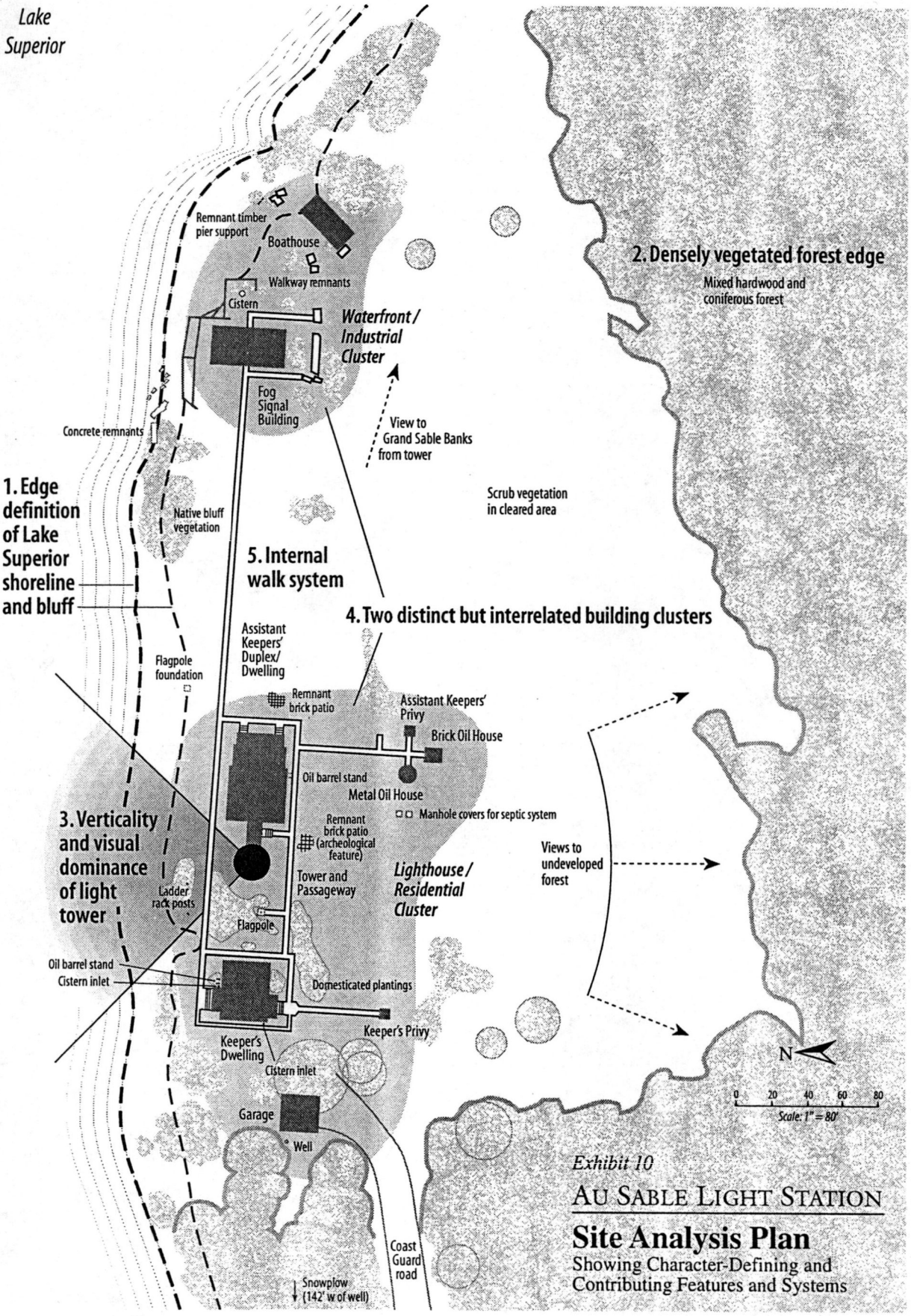
2. Future Research Recommendations

Future research efforts beyond this CLR would benefit from additional investigations of twentieth-century records for Au Sable which have not been available because of an apparent misfiling by the National Archives following lighthouse research in August 1995. These files were unavailable during two separate LCA visits to the National Archives.

There are other areas of research that would be useful in the future and which were not resolved during the course of the CLR because investigated sources did not contain the desired information and the contract research hours had been exhausted. A review of inspection reports, site maps, and official correspondence dating from the U.S. Coast Guard period (1939–1958) may reveal additional information as well. Additional research may be useful in the future to corroborate the chronology of events regarding road construction west of the light station and to clarify some issues associated with possible CCC involvement. There are also unconfirmed references of WPA work on the site. The extent of public works involvement during the 1930s when substantial work was done at Au Sable is not clear. Additional research for that period would be useful.

A telephone query to the USCG Museum in New London, Connecticut, did not uncover any information specific to the Au Sable station relevant to the site between the 1930s and 1980s. Since research travel expenses to this repository were not included in the CLR budget, investigations were limited to the telephone query. This call sought to obtain information primarily concerning the station from *Coast Guard Magazine* during that period. In the future, a visit may be useful since the museum also possesses architectural plans on microfilm, annual reports for the Lighthouse Service, and major Coast Guard reports dating from the 1870s through the 1960s.

Additional information on the sequence of moving buildings, particularly the boathouse and the metal oil house, would be useful. Also, the CLR research has not been able to resolve whether there were two garages on site or just one. Resolving this question would likely reveal additional information related to the construction and alteration of the Coast Guard road. It also would be informative for NPS to acquire additional information related to trail development, particularly the Logslide Trail in the late nineteenth century and the Lakeshore–North Country Trail in the twentieth century. Additionally, undertaking an active oral history and family research effort directed at former station employees and their families may be helpful in filling some research gaps and would be likely to provide an interesting social history component to both cultural landscape investigations and site interpretation.


Lake Superior
Remnant timber pier support
Boathouse
Walkway remnants
Cistern
Waterfront / Industrial Cluster
Fog Signal Building
Concrete remnants
View to Grand Sable Banks from tower
2. Densely vegetated forest edge
Mixed hardwood and coniferous forest
Scrub vegetation in cleared area
1. Edge definition of Lake Superior shoreline and bluff
Native bluff vegetation
5. Internal walk system
4. Two distinct but interrelated building clusters
Assistant Keepers' Duplex/ Dwelling
Flagpole foundation
Remnant brick patio
Assistant Keepers' Privy
Brick Oil House
Oil barrel stand
Metal Oil House
Manhole covers for septic system
3. Verticality and visual dominance of light tower
Remnant brick patio (archeological feature)
Tower and Passageway
Lighthouse / Residential Cluster
Views to undeveloped forest
Ladder rack posts
Flagpole
Oil barrel stand
Cistern inlet
Domesticated plantings
Keeper's Privy
Keeper's Dwelling
Cistern inlet
Garage
Well
Coast Guard road
Snowplow (142' w of well)
N
0 20 40 60 80
Scale: 1" = 80'
Exhibit 10
AU SABLE LIGHT STATION
Site Analysis Plan
Showing Character-Defining and Contributing Features and Systems

Landscape Treatment Recommendations

Landscape Treatment Recommendations

Preservation Treatment Approach

The most appropriate preservation treatment approach for Au Sable is one that is resource-based and that makes effective use of the station's existing landscape resources—both natural and cultural. As a result the preferred preservation treatment approach is one that allows the site as a whole to represent its entire period of significance. This approach uses individual features to portray the site as it evolved through its various historical periods as well as the specific aspects of station life that they represent. The approach acknowledges the site as dynamic and evolving to avoid the creation of a static representation or a false sense of history. In addition the approach accommodates contemporary needs associated with visitor and staff uses and shoreline protection. The preliminary plan acknowledges also the stated desires of both NPS personnel and visitors to retain the feeling of coastal isolation which was an important quality of the site historically and which is still apparent today. A visitor satisfaction study related to recreational opportunities at Au Sable found that historic vistas contribute significantly to the quality of visitor experiences. Individuals enjoyed the 1.5-mile walk from Hurricane Campground to the light station because it conveyed a sense of transition from the modern to historic and provided a sense of the isolation that light station personnel and their families experienced during the period of significance.[1] The plan has been developed to make retention of those isolating qualities a priority.

Landscape Rehabilitation

Rehabilitation of the landscape is an appropriate preservation treatment approach that can incorporate some aspects of the other accepted NPS treatments—preservation, restoration, and reconstruction. When such treatments are applied to individual features, however, treatment needs to be considered within the context of the station as a whole to ensure compatibility of treatment and interpretive intent. Most architectural features will continue to be treated with individual preservation treatment approaches consistent with their intended uses, condition, degree of integrity, and interpretive potential.

Rehabilitation is a flexible treatment approach that not only provides for the protection of extant cultural landscape resources but also allows for the introduction of new uses and

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[1]David G. Pitt, David W. Lime, Thora L. Cartlidge, Matt Mega, Sue Weidemann, Michael S. Lewis, "Characteristics and Use Patterns of Lighthouse Visitors and Their Perceptions of Factors Influencing the Experience at Au Sable Light Station, Pictured Rocks National Lakeshore," prepared for the Department of the Interior, National Park Service, Pictured Rocks National Lakeshore and Midwest Regional Office, December 1993. Readers may also refer to Cartlidge, Weidemann, Pitt, Mega, and Lime, "Issues Affecting Visitors' Satisfaction at Great Lakes Lighthouses in National Parks in the Midwest Region, National Park Service," May 1994.

features necessary to meet the needs of both site protection and visitors and staff. Rehabilitation is a realistic treatment for an evolved, layered landscape such as the Au Sable light station which represents several periods of development within the overall period of significance; which must consider natural resource protection values as well as cultural resource protection; and which must accommodate some degree of site modification to provide interpretation and visitor services, even if they are provided at the most basic level. For these reasons, landscape rehabilitation—rather than preservation, restoration, or reconstruction—has been evaluated as most appropriate for the station landscape.

Rehabilitation is defined in the *Secretary of the Interior's Standards* as "... the process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values."[2] Rehabilitation will retain the Au Sable station's landscape as it has evolved historically by maintaining and repairing historic features while allowing necessary additions and alterations for contemporary and future uses. *Cultural Resource Management Guideline, NPS-28* states, "Rehabilitation improves the quality or function of a cultural landscape, through repair or alteration, to make possible and efficient contemporary use while preserving those portions or features that are important in defining its significance."[3]

In addition to maintenance and repair, landscape rehabilitation can include higher levels of intervention when necessary and appropriate. Comprehensive documentation of any features to be replaced, removed, or altered should precede actual physical work through the defined Section 106 coordination process. All physical work should be undertaken in compliance with Section 106. Possible treatments requiring additional documentation of a specific feature or features generally include the following:

- replacement of an entire feature that is too deteriorated to repair in kind
- replacement of an entire feature that is too deteriorated to repair with substitute materials
- replacement of a vanished feature based on historical documentation
- replacement of a vanished feature with a new feature that is contemporary in design but compatible with the historic character of the landscape
- additions and alterations for new use.

NPS-28 outlines the following rehabilitation standards for historic landscapes:

- Additions, alterations, or related new construction do not destroy historic materials, features, and spatial relationships that characterize the cultural landscape. New work is differentiated from the old and is compatible with the historic materials, features, and massing of the landscape.

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[2]United States Department of the Interior, National Park Service, Washington, D.C. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.* May 1996.

[3]*Management of Cultural Landscapes*, Cultural Resource Management Guideline, NPS-28, 104.

- Additions and adjacent or related new construction are undertaken in such a manner that if removed in the future, the essential form and integrity of the cultural landscape would be unimpaired.[4]

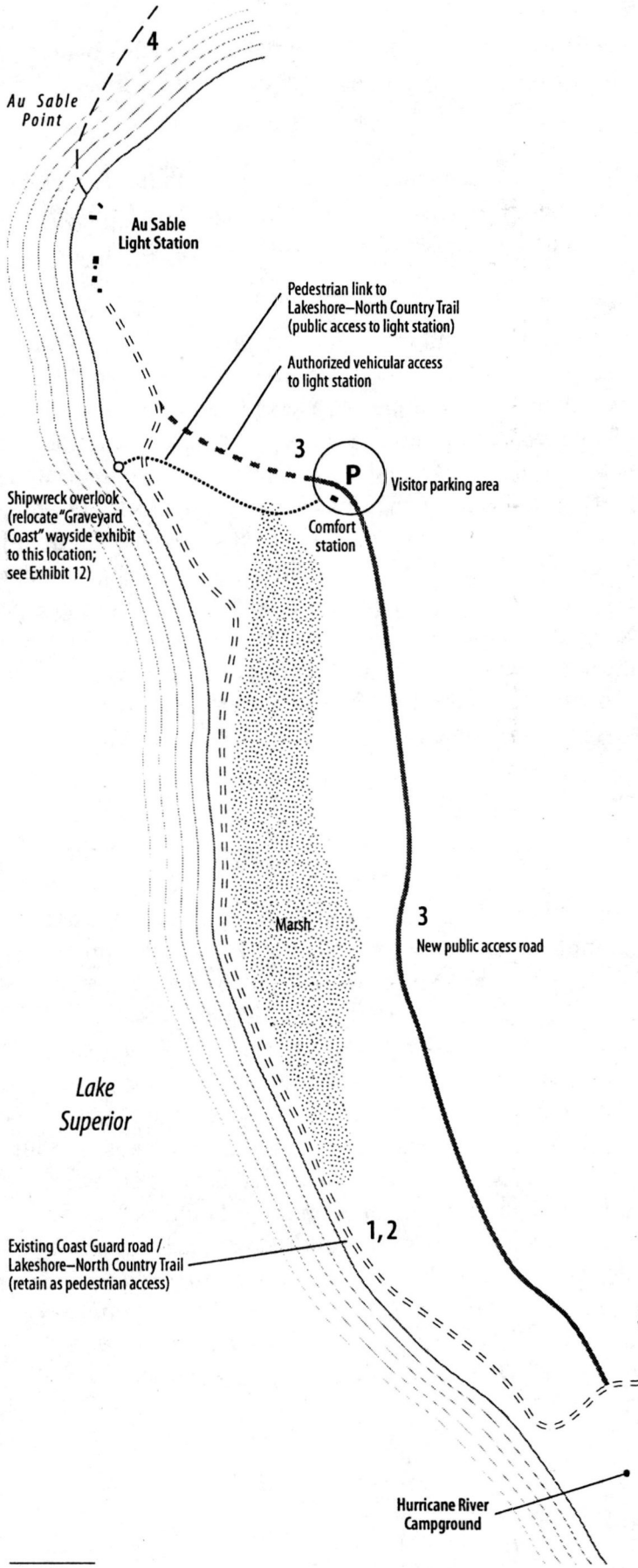
All proposed recommendations should be implemented in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* and the most recent *Cultural Resource Management Guideline, NPS-28.*

Since the Au Sable station occupies a sensitive and fragile site, sustainable planning and design solutions should be explored within the context of landscape rehabilitation. The current NPS sustainability initiative includes an interpretive aspect that is particularly appropriate for a site such as Au Sable where the natural environment is related to the site's cultural resources in a significant way. Any necessary departures from historic precedents should be interpreted to inform the visitor that such changes have been necessary to protect the station's environment. Incorporating sustainability objectives into preservation treatments provides NPS with an opportunity to protect both the natural and cultural resources related to this site and interpret their protection to the public. The site can be interpreted in large part as one that was established and developed in response to the natural environment. The success and failure of attempts to adapt the site to and arrest the natural forces associated with the site provide an interesting case study to interpret to the public. Contemporary efforts to protect cultural resources such as the fog signal building can be monitored and interpreted.

Preliminary Design and Treatment Plan

The preliminary design and treatment plan concept is based on a landscape treatment approach which includes rehabilitation of character-defining features and characteristics and design proposals addressing particularly the needs of staff and visitor use, site access, and shoreline protection. The preliminary site access plan *(Exhibit 11)* and preliminary design and treatment plan *(Exhibit 12)* provide the framework for addressing the station's significant landscape features. The challenge and the goal of developing these recommendations has been to maintain the isolated, remote character and feeling of the site while still providing visitors an opportunity to visit and experience the site. Recommendations for accommodating contemporary visitor use have been integrated into the overall plan. Particular attention has been paid to transitions, viewsheds, overall site circulation, and pedestrian linkages. Design solutions have been developed by taking into account the condition and degree of integrity present within the station as a whole and within the lighthouse/residential cluster and the waterfront/industrial cluster. It is assumed that all work will be undertaken in accordance with *The Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings* and *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.*

[4]Ibid., 104-105.



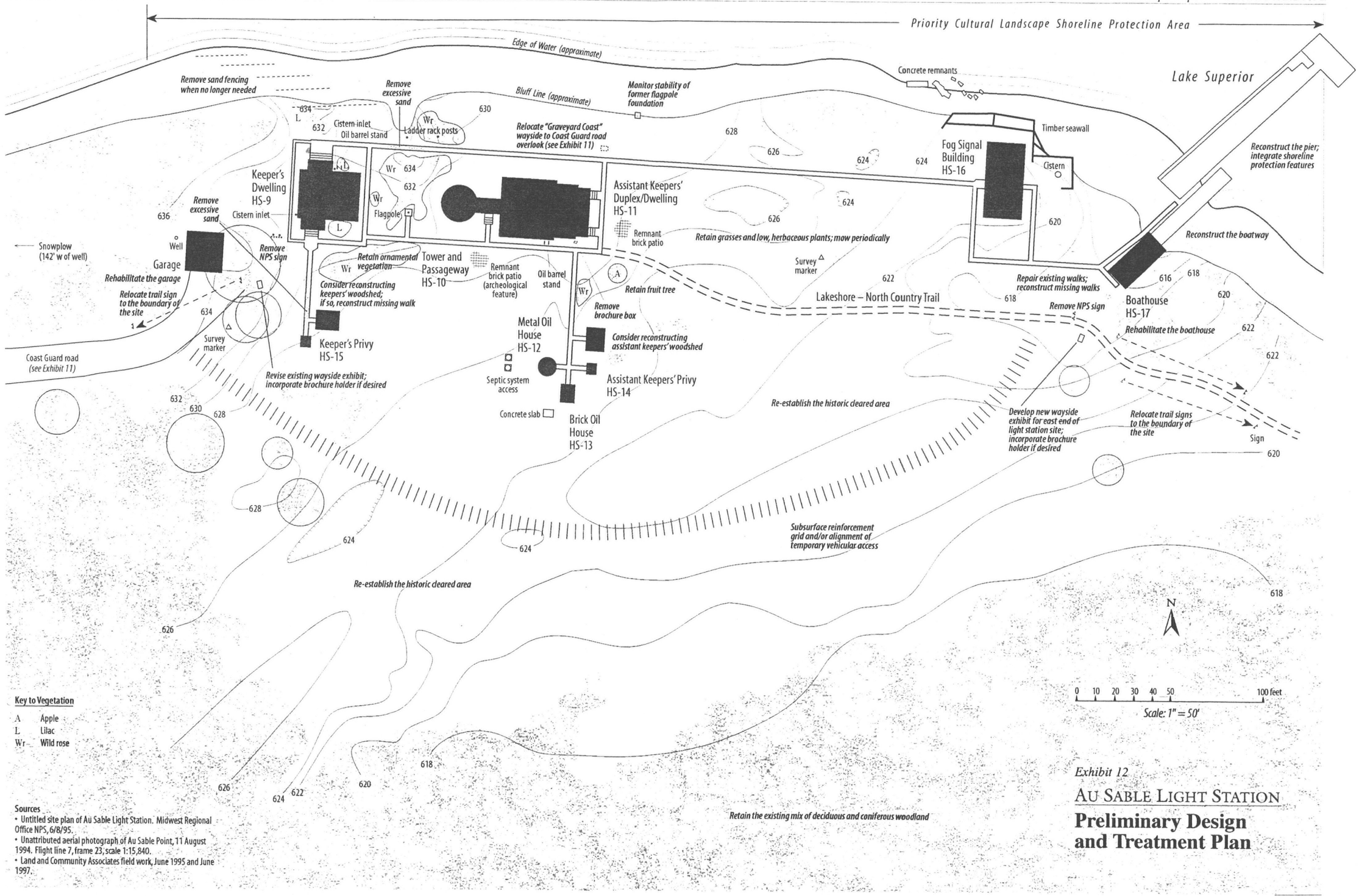
Site Access Alternatives

1. Retain Coast Guard road in current location; provide shoreline protection as necessary
2. Modify alignment of Coast Guard road as shoreline conditions warrant
3. Develop new access road and visitor parking area to within 1/2 mile of light station; provide pedestrian link to Lakeshore–North Country Trail
4. Provide boat access to light station

Exhibit 11

AU SABLE LIGHT STATION

Preliminary Site Access Plan



Key to Vegetation

A	Apple
L	Lilac
Wr	Wild rose

Sources

- Untitled site plan of Au Sable Light Station. Midwest Regional Office NPS, 6/8/95.
- Unattributed aerial photograph of Au Sable Point, 11 August 1994. Flight line 7, frame 23, scale 1:15,840.
- Land and Community Associates field work, June 1995 and June 1997.

Exhibit 12

AU SABLE LIGHT STATION

Preliminary Design and Treatment Plan

Implementation is dependent on careful and conscientious maintenance for the developed portion of the station. Careful maintenance undertaken in a quasi-military fashion characterized the station for most of its period of significance. Station personnel were assigned maintenance tasks as part of their routine duties. The light station's buildings and structures were maintained regularly and kept painted during the period of significance. Typical journal entries included references to such grounds maintenance tasks as clearing turf and cutting sod from the edges of walks and adjacent to buildings. Throughout the summer months, station personnel regularly cut grass, cleaned grass and weeds from walks, raked the grounds, and burned both standing and cut grass, sprouts, and weeds. Continuing this type of careful maintenance is desirable for the station buildings and their immediate environs regardless of the interpretive period that might be selected and implemented.

Design and Treatment Recommendations

Circulation and accessibility

- Evaluate and implement an overall site access strategy. Explore four alternatives for physical access to the station: Alternatives 1 and 4 best preserve the historic characteristic of the site as well as its remote and isolated feeling; alternative 2 preserves the isolate, remote feeling of the site but may alter the historic character of the Coast Guard road; alternative 3 makes the site available to more people but will present the site as more accessible than it was historically and diminish integrity of setting; a fifth alternative of developing a new access road approximately parallel to the Coast Guard road and developing a parking area near the station was considered but omitted from consideration as environmentally inappropriate and because its implementation would have a damaging effect on the integrity of the station.
    1. Retain the historic alignment of the Coast Guard road; provide shoreline protection for the road where it is threatened by erosion. In conjunction with this alternative, continue the present policy of providing the general public with pedestrian access only and limiting vehicular access to authorized users only.
    2. Modify the historic alignment of the Coast Guard road as needed in response to the effects of erosion. Repair and move portions of the road away from the shoreline as necessary to continue to provide vehicular access for authorized users and to provide pedestrian access for the general public. This alternative is not dependent on shoreline protection measures and requires repair, rebuilding, and realignment as damage occurs as a result of storms and other natural processes.
    3. Develop a new access road south of the present Coast Guard road to within one-half mile of the station; provide a small visitor parking area at the terminus of this public access. This alternative provides a vehicular approach for the general public. Develop a pedestrian linkage between the parking area and the Coast Guard road / Lakeshore–North Country Trail. Develop a limited access vehicular link from the parking area to the eastern portion of the existing Coast Guard road for NPS staff and other authorized users.

4. Explore providing access to the station by boat so that visitors approach the site from the water as the lighthouse personnel for much of the period of significance. This alternative could be implemented in conjunction with any of the other alternatives. It is not considered a feasible alternative for efficient, regular access for NPS personnel although it would provide a less intrusive and alternative means of bringing construction materials to the site.

- Continue to use the Coast Guard road alignment component of the Lakeshore–North Country Trail to provide pedestrian access to the site, independent of any vehicular alternatives considered or implemented.
- Retain the existing and historic pedestrian character of the station.
- Retain the existing appearance and proportions of the existing internal walk system.
- Continue the use of concrete walks; do not re-create boardwalks.
- Repair existing walks where possible; replace them in-kind where it is not.
- Reconstruct missing walks, especially within the waterfront/industrial cluster, and in conjunction with any reconstructions, such as the keeper's woodshed.
- Avoid uniform workmanship that would give the existing walks a contemporary feeling. Do not allow the walk network to become overly dominant within the site. The walks are intended to link buildings and structures; avoid making them an overwhelming character-defining feature when historically they were simply a utilitarian, ancillary feature.
- Coordinate all work on roads, walks, and paths with drainage needs.
- Avoid developing new walks and paths within the two historic clusters.
- Explore alternative ways to meet the need for universal accessibility within the site while continuing to provide a remote, almost wilderness-like approach experience for all visitors. Consider such alternatives as providing mobility-impaired visitors with use of an off-road wheelchair that would enable them to traverse unassisted the Lakeshore–North Country trail and other pedestrian linkages within the site.
- Avoid developing new permanent roads or parking areas within the viewshed of the two building clusters or of the tower.
- Consider alternatives for vehicular access for NPS, emergency, and construction vehicles such as installation of a subsurface reinforcement grid along the alignment of the present construction road. Another alternative would be to develop temporary vehicular access as needed for construction projects keeping all vehicles at least 50' away from historic buildings and structures. Develop any temporary access with only minimal topographic or other modifications to the site. Restore the area to its pre-development condition when there is no longer a need for continued vehicular access.

Buildings and structures

- Retain and maintain all existing buildings and structures to preserve the historic feeling of the light station's interrelated resources. Coordinate preservation needs with shoreline protection strategies.
- Continue to pursue plans to reconstruct the pier using available documentation to approximate its historic appearance; at the same time consider the appropriateness of any other alternatives that may contribute to shoreline protection but also that can be effective in interpreting the importance of lake access to the function of the station.

- Consider reconstruction of the woodsheds associated with each dwelling. The importance of burning wood for the function of the station and as a heat source is part of the interpretive story of the site.
- Rehabilitate the boathouse and reconstruct the boatway since boats were an important part of the station's mission during the period of significance and should be interpreted as part of the overall story of the site.
- Rehabilitate the garage; as part of this process, replace the existing doors with wooden doors similar to those used during the period of significance.
- Avoid construction of new buildings and structures within the two historic clusters, within their viewsheds, and within the viewshed from Lake Superior. Also avoid new construction that would be visible from the light tower.

Vegetation

- Foster a sparse approach to the landscape that emphasizes its utilitarian character and quasi-military heritage. Acknowledge that tall trees were removed and discouraged in an arc-like zone between the tower and the lake, and that the area south of the tower was kept as an open, cleared area, free of most trees. Strive to approximate this appearance to the greatest degree practical today.
- Adjacent to and between the two building clusters, retain the existing mix of coastal grasses and low herbaceous plant materials. Keep this area mowed periodically (several times seasonally, but not weekly) to keep the groundcover low, but do not strive for a manicured lawn-like appearance that would be inconsistent with the appearance of this area during the period of significance. Strive for a well-maintained appearance consistent with that of the historic period.
- Keep areas adjacent to walks trimmed as they were during the historic period.
- Avoid the use of mechanical weed-eating equipment that can damage historic materials and finishes near contributing features, including concrete walks.
- Retain existing vestiges of ornamental and fruit-bearing species, such as lilac, wild rose, and apple; consider replacing them in-kind as existing species become damaged or diseased, but do not consider replacement essential; no preservation of genetic plant material is necessary.
- Avoid the use of mulch in maintaining specimen plant materials within the station.
- Avoid ornamental plantings for which there is little precedence and only scant documentation; avoid new planting near buildings and structures to avoid structural and material damage.
- Re-establish the historic cleared area south of the station by removing second-growth trees and shrubs while retaining naturally occurring groundcover. Strive for the appearance depicted in *Figures 10 and 23.* Avoid mowing because it will destroy the low herbaceous plant materials that are desirable to reestablish the appearance of this area during the period of significance. Consider the feasibility, safety, and environmental effects of reestablishing periodic burns to control vegetation in this area. Avoid pruning trees and shrubs along the forest edge to maintain a naturalistic woodland appearance.
- Retain the existing mix of deciduous and coniferous trees in the forested area south of the cleared area and east and west of the station.

- Plant native trees and shrubs in any new parking area that potentially could be developed in conjunction with recommendations for improving circulation and accessibility.
- Remove felled limbs and branches in the cleared area, the building clusters, and along roads, trails, paths, and walks.

Environmental conditions and shoreline protection

- Acknowledge and interpret the ongoing struggle to protect the station's shoreline and the historical precedents for this protection.
- Acknowledge that the goal of shoreline protection is to protect the station's cultural resources; it is desirable, however, to achieve this protection using measures that have the least physical and visual effects on the natural environment as well as on cultural resources.
- Define the priority cultural landscape shoreline protection area as extending from the terminus of the Coast Guard road on the west to 100' beyond the boathouse on the east.
- Consult with environmental scientists and engineers to analyze shoreline erosion in this priority area and develop appropriate proposals to arrest erosion of the sand bank not only at the fog signal building but also adjacent to the entire waterfront/industrial cluster, adjacent to the lighthouse/residential cluster, and along the Coast Guard road. Determine and prioritize the urgency of implementing shoreline protection measures in each of these locations based on the analysis of existing and projected shoreline conditions.
- While it is desirable to protect the station's entire cultural landscape, acknowledge that the following hierarchy of resources, starting with the most significant—the lighthouse/residential cluster, the waterfront/industrial cluster, and the approach along the Coast Guard road—should be recognized when developing protection priorities, and particularly should it become necessary to respond to an emergency situation.
- Using the results of the environmental and engineering analyses, develop a shoreline protection implementation strategy that either addresses the needs of the entire priority area as a whole or that proposes a phased implementation scenario for individual areas within the priority area based on a combination of environmental urgency and cultural resource value.
- In evaluating shoreline protection strategies, consider proposals that will have the least visual and physical effects on the sand bank. Low-scale, water-level protection measures, such as jetties, breakwaters, and revetments, are preferable to higher profile or earth-retaining approaches, such as seawalls and retaining walls, that will affect the appearance and perhaps the actual nature of the sand bank. Ensure that the visual effects of all proposals are considered from viewpoints both within the station and from Lake Superior. Priority should be given to proposals that are likely to be effective and that will be aesthetically acceptable from both viewpoints.
- Consider and resolve any conflicts between cultural landscape goals and other desirable goals, for example, such as improved access or sustainability.
- While developing plans to reconstruct the pier, consider a design that can be integrated into and contribute to the overall shoreline protection plan.
- Evaluate the continued need for sand fencing. Integrate fencing as necessary into overall protection strategies. Evaluate existing temporary fences for environmental resource protection, such as to slow dune erosion or protect endangered nesting birds,

on a case by case basis. Such fences should be removed when the their presence is no longer necessary for resource protection.

- Monitor the extent of wind-blown sand deposition at building foundations and on walks and paths to determine the need for mitigation, such as sand fencing or stabilizing plant material.
- Remove excessive sand deposits from walks and paths.
- Respect the site's existing character when correcting existing drainage problems.
- Avoid allowing drainage treatments to dictate landscape preservation treatments.

Lighting, flagpole, and utilities

- Limit the use of nighttime lighting at the site. Other than the light from the tower which was the principal nighttime feature of the site, there was no little or no exterior lighting. Since there are currently no NPS nighttime activities at the site, there is no need for lighting other than that associated with the buildings and structures. Additional lighting should be minimal and limited to that deemed essential for security and human safety by NPS. Such lighting should be inconspicuous and should not attempt to replicate any historic period or style of lighting.
- Consider establishing a "night sky" policy for exterior illumination, except for the light in the tower, to preserve the historic character of the light station at night.
- Restrict the use of uplighting; illuminate the ground, not the sky.
- When meeting contemporary lighting needs, choose inconspicuous types of fixtures, such as recessed or concealed luminaires. Select fixture locations where lighting will have a minimal visual effect during daylight hours; use concealed or internal wiring rather than surface-mounted conduits.
- If a new parking area is developed in conjunction with a new access road, avoid introducing nighttime lighting. If a decision is made to provide lighting, keep it minimal and make every effort to reduce distant visibility and glare.
- Retain the flagpole in the current location.
- Monitor the stability of the foundation associated with the earlier flagpole location. Stabilize if necessary and remove it when it becomes a threat to human safety.
- In keeping with the historical precedent of the site, install electrical service underground; investigate the feasibility of using the same location as historic telephone lines.
- Avoid obvious use of wind or solar or other alternative energy sources within the viewshed of residential/lighthouse cluster to avoid visual conflicts with the light tower—which should remain the dominant visual element.
- Place any necessary water storage tanks outside the viewshed of the residential/lighthouse cluster.
- Locate septic systems and drain fields in appropriate locations and ensure that they are not perceptible if located within the viewshed of the residential/lighthouse cluster.

Site furnishings and fencing

- Consider the practicality of continuing an informal, unstructured approach to outdoor seating. Currently visitors are observed sitting on porches, steps, rocks, grass, and sand. This informal approach adds to the remote, undeveloped character of the station.

- To preserve the historic character of the site, avoid introducing bench and trash receptacles. Should the decision be made that such features are essential or desirable, keep them to a minimum and avoid placement in architectural voids or in locations that block open spaces or views to and from the lake. Use only contemporary, utilitarian designs that will be inconspicuous. A minimal design, such as a heavy timber (e.g., 8x8) elevated slightly on metal posts, may serve as an appropriate bench prototype that is both contemporary and industrial in character.
- Use fencing only where security and safety concerns make fences essential. Avoid fencing in, adjacent to, and within the viewshed of the light station unless historic precedent is found.
- Avoid compartmentalizing the lighthouse/residential cluster with fencing unless historic precedent is found.

Interpretation and signs

- Avoid a preservation treatment policy intended to interpret and evoke any one particular period within the overall period of significance. Use nonphysical means to interpret specific events and periods to avoid nonessential alteration of the site's contributing resources. Retain and interpret a landscape that reflects the station as it has evolved over time.
- Use cultural landscape information in site interpretation; include the site's recent history and preservation efforts.
- Use historic photographs, site plans, maps, and oral histories to enhance landscape interpretation. The site was far from pristine during the period of significance because it was, first and foremost, a place of work with onsite storage and repair needs as well as the functions of daily residential life. Since those aspects of the site were transitory and cannot be recreated, they are best portrayed through interpretation, and not through actual physical manipulation of the site. If existing buildings are used for interpretive purposes, develop cultural landscape interpretive exhibits.
- Reconstruct landscape features necessary for interpretation only if based on archeological and documentary evidence.
- Relocate the "Graveyard Coast" wayside to an appropriate lake overlook adjacent to the Coast Guard road west of the light station. Develop and maintain a woodland clearing at this location to view the lake and shipwreck remains.
- Retain the present wayside location at the west end of the light station, and revise its interpretative text and graphics to address not only the light station as a whole but also the lighthouse/residential cluster.
- Develop a similar wayside exhibit to be located at the east end of the light station site adjacent to the Lakeshore–North Country Trail that discusses both the light station as a whole and the waterfront/industrial cluster.
- Remove the brochure box located next to the assistant keepers' duplex/dwelling. If self-guiding tour brochures are desired, incorporate a holder for them as part of the west and east wayside exhibits.
- Remove the NPS sign adjacent to the keeper's dwelling. Incorporate this information as appropriate into the west wayside exhibit or self-guiding tour brochure.
- Remove the NPS sign adjacent to the boathouse. Incorporate this information as appropriate into the east wayside exhibit or self-guiding tour brochure.

- Avoid the introduction of other exterior interpretive signs or exhibits to keep the station landscape uncluttered.
- Relocate the Lakeshore–North Country Trail signs beyond the light station site boundaries but still visible from within the site.
- Employ only a minimum of directional and informational signs in conjunction with the internal walk system. Avoid placing signs within important view corridors, near popular photographic points, or where they will obscure cultural landscape features.
- Develop a hierarchy of sign types and a consistent, vandal-proof sign style for use throughout the station.

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