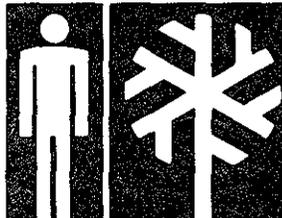


historic structure report
architectural and historical data
april 1980

SLEEPING BEAR DUNES

GLEN HAVEN COAST GUARD STATION



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HISTORIC STRUCTURE REPORT

GLEN HAVEN COAST GUARD STATION

ARCHITECTURAL AND HISTORICAL DATA

SLEEPING BEAR DUNES NATIONAL LAKESHORE

FRANKFORT, MICHIGAN

by
Cornelia Wyma
John Albright

DENVER SERVICE CENTER
HISTORIC PRESERVATION TEAM
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR
DENVER, COLORADO

C O N T E N T S

PREFACE / iii

CHRONOLOGY OF SIGNIFICANT EVENTS / v

I. ADMINISTRATIVE DATA / 1

II. HISTORICAL DATA / 3

- A. Decision to Build the Station, 1832-1899 / 3
- B. Construction of the Station, 1900-1902 / 7
- C. Establishment of the Second Boathouse and the Early Years, 1902-1906 / 13
- D. 1906 to the Present / 24
- E. Miscellaneous Topics / 29

III. ARCHEOLOGICAL INFORMATION / 39

IV. ARCHITECTURAL DATA / 41

- A. Lifesaving Station at Sleeping Bear Point, 1901-1930 / 41
- B. Glen Haven Coast Guard Station, 1931 / 42
- C. Coast Guard Station at Glen Haven, 1977 / 43
- D. General Building and Site Conditions / 56

V. ALTERNATIVES FOR RESTORATION / 65

- A. Alternative 1 / 66
- B. Alternative 2 / 69
- C. Alternative 3 / 69
- D. Cost Estimates / 70
- E. Conclusions / 74

VI. ENVIRONMENTAL IMPACTS / 77

VII. RECOMMENDATIONS FOR FURTHER STUDY / 79

APPENDIXES / 81

- A. Original List of Articles of Outfit for the Sleeping Bear Point Lifesaving Station, Twelfth District, June 24, 1901 / 83
- B. Specifications for Lifesaving Stations at Sleeping Bear Point and South Manitou Island, Michigan, 1901 / 129
- C. Specifications for Boathouse #2, 1902 / 139
- D. Initial Crew at Sleeping Bear Point Lifesaving Station, 1902 / 145
- E. Materials Used by Crew in Constructing the Lookout Tower at Sleeping Bear Point Lifesaving Station, 1905 / 146

- F. Sample Logbook Pages, Sleeping Bear Point Lifesaving Station / 147
- G. Extract From 1899 Lifesaving Service Regulations / 157
- H. Specifications for Flagstaff and Drill Pole, 1902 / 171
- I. Miscellaneous Construction Documents, 1902 / 173
- J. Recommendations for Maintenance Work on Boathouse #2 / 193

BIBLIOGRAPHY / 197

ILLUSTRATIONS / 203

HISTORIC MAPS AND PLANS / 223

SKETCHES / 247

MEASURED DRAWINGS / 257

P R E F A C E

The onsite research for this historic structure report was carried out in late June 1977 by John Albright, historian, and Cornelia Wyma, historical architect. It was a pleasure to work in and explore the Sleeping Bear Dunes National Lakeshore with its sparkling white sand and clear water. The Glen Haven Coast Guard Station, which is only a small component of the park, is a vivid reminder of the importance of Lake Michigan in the development of the area. Though the station was designed in New York, it is a sensitive, solid example of building traditions in Michigan and has a great potential to become an invaluable asset in the development of the park.

This historic structure report was initiated without the base parkwide historic resource study. In light of further developments contemplated for the park and also the requirements mandated by National Park Service policy and legislation, management should reserve funding for this study in the near future.

It became necessary in the course of writing this combined report to agree on certain terminology and spelling. The designation of boathouse #1 and boathouse #2 is based on their chronological dates of construction. These are nonhistorical titles given by the authors of this report because historically both structures are referred to as "boathouses," and it was decided that the more descriptive term "thirty-four foot lifeboat boathouse" used repetitively would, at best, be awkward. The authors would like to emphasize that the park is free to change these designations if other names are preferred. Also, the spelling of certain words such as boathouse, lifesaving, and lifeboat caused some difficulties because various forms are used in the source materials. Therefore, it was finally

decided to use Webster's Second Unabridged Dictionary as a reference for the text.

We would like to extend our appreciation to all the members of the park staff, especially Acting Superintendent Don Brown and Ray Kimple, Chief Naturalist Charles Parkinson, District Ranger Dean Einwalter, and Chief of Maintenance Merline Schlange. Other long-time residents and members of the community, particularly Mrs. Agnes Kelderhouse, Mr. Charles Bennett, Mr. and Mrs. Louis Warness, and Mr. Bill Day, were generous with both their time and reminiscences.

CHRONOLOGY OF SIGNIFICANT EVENTS

SLEEPING BEAR POINT LIFESAVING STATION

- 1871 - U.S. Lifesaving Service, part of the Treasury Department, was founded. Sumner I. Kimball, who would be its only head, is named general superintendent.
- 1877 - The Lifesaving Service decides to emplace a station at Sleeping Bear Point.
- 1894 - Land is set aside for the station.
- 1901 - April: Bids are requested for building Sleeping Bear Point and South Manitou lifesaving stations.
May: Robert Newcombe of Manistee, Michigan, wins the contract to build the stations.
June: The sites are surveyed, and Newcombe is shown where to build the stations. The superintendent of construction from the Lifesaving Service is appointed to oversee the construction.
July: Work begins on both stations. Some modifications are put into both sites.
November: South Manitou Island job is completed, inspected, and accepted by the Lifesaving Service.
December: Final work is done on the Sleeping Bear Point station.
- 1902 - January: Sleeping Bear Point station is completed, inspected, and accepted by the Lifesaving Service. At the same time the initial survey is made for a second boathouse near the D. H. Day pier at Glen Haven.

February: A keeper is appointed for the station.

June: The flagstaff and drill pole are completed; bids are requested on the second boathouse.

July: Work begins on the second boathouse at South Manitou, with Sleeping Bear Point to come next. Wharf work is done first.

August: The Lifesaving Service asks for bids on cement walks; crew signs on.

1902 - The wharf at South Manitou Island collapses, and work is transferred to Sleeping Bear Point.

1903 - April: A site for the wharf and second boathouse is chosen at South Manitou Island.

October: Both boathouses built for the 34-foot lifeboat are completed and turned over to the keepers.

December: Storm windows are ordered for the station.

1904 - March: Telephones are installed at the station as are patrol posts.

December: Consideration is given to moving the new boathouse.

1905 - May: Materials arrive for the lookout tower and work begins.

July: The crew begins building a fence enclosing the site and completes the work in September.

September: Work begins on a storm shed, probably the enclosed shelter atop the lookout.

December: The well house has been constructed.

1906 - The second boathouse (the one used for the 34-foot lifeboat) is moved 300 feet.

1914 - The steel signal tower (the "flagtower") is erected at the site.

1931 - The station is moved to its present location, and all buildings are consolidated at one location; the second boathouse becomes a garage.

1942 - (Approximate). The station ceases active operations.

I. ADMINISTRATIVE DATA

This project is identified as the Glen Haven Coast Guard Station and consists of the dwelling (HS-18), boathouse #1 (HS-20), fire cache (HS-21), boathouse #2 (HS-19), and signal tower (no assigned number).

The 1900 vintage station complex will be the principal location to interpret the Maritime and U.S. Lifesaving Service story to 1,500,000 annual visitors. Funding has been provided for its planning and temporary stabilization. Subsequent follow-up is needed to provide preservation and maintenance of the historic integrity and to provide for interpretation of the complex.

Four buildings (two-story main station structure, boathouse #1, laundry shed, and garage), walks, parking area, and marine railway to Lake Michigan will be restored. Museum displays, artifact storage, and related historic/interpretive facilities will be provided for visitor use and enjoyment.

The Great Lakes Maritime collection, donated to the national lakeshore by a private source and valued at \$12,000 (1972), will be stored and exhibited in the complex.

Steps were being taken while this report was in preparation to nominate the Glen Haven Coast Guard Station to the National Register of Historic Places. The complex is included on the List of Classified Structures, and projects affecting it must therefore comply with regulations for the "Protection of Historic and Cultural Properties" (36 CFR 800), established by the Advisory Council on Historic Preservation in accordance with section 106 of the National Historic Preservation Act of 1966 and sections 1(3) and 2(b) of Executive Order 11593.

An environmental analysis of the scope of this report has already been prepared and approved by the Midwest Regional Office (August 1977). This document recommends the rehabilitation of the station for adaptive use and states that the implementation of this proposal is not a major federal action that will significantly affect the quality of the human environment within the contemplation of section 102(2)(C) of the National Environmental Policy Act of 1969 (P.L. 91-190, 83 Stat. 852). Therefore, an environmental impact statement will not be prepared.

Most of the research materials used in this report will be sent to the park at the time of distribution of the report. When this material is added to the documents, maps, and photographs on hand at the park, it will form the core of a historical collection that can serve future research and management needs. If the park is able to purchase microfilms of the station logbooks, they would add immeasurably to this collection.

II. HISTORICAL DATA

A. Decision to Build the Station, 1832-1899

The Black Hawk War of 1832 brought about the real beginning of steam navigation on the Great Lakes.¹ Tentative and experimental use of steamboats preceeded this war, and routine use of steamers followed it, so that by 1860 about one-fourth of the registered ships plying the Great Lakes trade routes were steam powered.²

With increased steam navigation came increased coastal shipping, in bad as well as good weather, and this in turn brought more shipwrecks, groundings, and sinkings. By 1854 the need for better rescue service for ships and crews had begun to be felt, and a few lifesaving stations had been established. The stations seldom had regular crews or systematic organization, and provisions for lifesaving and rescue services remained informal until 1871.³ Pressure had been building before the Civil War for a more effective lifesaving organization, and the severe winter of 1870-71, with an attendant large number of shipping disasters, finally brought about some congressional action. By the spring of 1871, Congress had created the United States Lifesaving Service, and Sumner I. Kimball had been appointed to run it.

An inveterate organizer, Kimball removed incapable and inefficient officers from the Service, had stations

1. Milo M. Quaife, Lake Michigan, the American Lakes Series (New York: Bobbs-Merrill Company, 1944), p. 140.

2. Ibid., p. 164.

3. T. Michael O'Brien, Guardians of the Eighth Sea: A History of the U.S. Coast Guard on the Great Lakes (Washington, D.C.: Government Printing Office, 1976), p. 33.

repaired, equipment replaced and issued a new series of regulations which established the responsibilities of crew members and made every one subject to discipline. He established qualifications for admission into the Service through examination, appointed inspectors to periodically check the stations for efficiency and instituted a systematic method for maintaining the stations. Reports and log books were required, a patrol system devised and an effective code of signals established.⁴

The newly organized lifesaving service--the USLSS or LSS as it came to be called--wasted little time in providing at least some services to the Sleeping Bear area. By 1876, the LSS had established a lifeboat station at North Manitou Island, one of two islands near Sleeping Bear Point.⁵ The island figured prominently in the legends of the Chippewa Indians, who inhabited the area prior to settlement. They tell of a mother bear and two cubs who tried to swim across Lake Michigan. As they approached shore, the cubs tired and disappeared [sank] as the mother made shore. Climbing a nearby dune, the weary mother lay down to await her cubs. The cubs never came, but they became known as the two Manitou Islands, and the mother became known as the Sleeping Bear Dune.

While it is more than likely that the two islands were formed more by geological and less by zoomorphic processes, the

4. Ibid., p. 34.

5. United States Life-Saving Service (hereinafter cited as USLSS), Annual Report of the Operations of the United States Life-Saving Service For the Fiscal Year Ending 1876 (Washington, D.C.: Government Printing Office, 1876), p. 20.

fact remains that the two islands--North Manitou and South Manitou--created a passage for north-south shipping in the vicinity. That passage, however well it might shelter a ship from a storm, required careful navigation. To that end, one of the earliest lighthouses on the Great Lakes began operating on South Manitou Island in 1838.⁶ By 1876 one lifeboat station and one lighthouse served the often stormy and always challenging Manitou Passage.

Yet few would agree that the two facilities filled the entire need. Sleeping Bear Point often experienced dangerous weather, and ships frequently needed help near the point. By 1877 the LSS had decided to place a lifesaving station at Sleeping Bear Point but had done little else except to make this decision.⁷ The entry in the LSS's 1877 annual report noting that a station would be placed at Sleeping Bear Point also carried the note: "not yet built." The next two years likewise noted that it was not yet built, although the 1879 report showed that a station had been put on North Manitou Island, "near Pickard's Wharf."⁸ This meant that North Manitou's lifeboat station had been upgraded to a lifesaving station, a more extensive facility. Sleeping Bear Point's lifesaving station remained in the not yet built status. Matters remained that way through the 1880s and 1890s as shipping increased on the Great Lakes. From time to time, a letter would come in to the LSS's offices in Washington from D. H. Day of Glen Haven, Michigan, requesting that a station be built on the land already set aside for it. However, no station was built.

6. "Records of the U.S. Coast Guard," South Manitou Island Clipping File, Record Group 26, National Archives Building (hereinafter cited as RG and NA).

7. USLSS, Annual Report - 1877, p. 134.

8. USLSS, Annual Report - 1879, p. 158.

In 1894 land was formally set aside and a proposed site established as "Lot 2 of fractional section 18, township 29 north, range 14 west, Michigan."⁹ The general area for the station was chosen at the same time and is shown on historic plan 1. The station would be built at the point where both the Manitou Passage to the north and the shoreline to the south could be observed. From a nautical and rescue viewpoint, this was the commanding position. However, no station went in during 1894 or the years immediately following, and yet the idea obviously remained an active one. The regional commander of the 11th District of the LSS at Grand Haven, Michigan, and the LSS headquarters exchanged letters debating what kind of station should be constructed. By August 1898, General Superintendent Kimball had apparently decided that a station would be built because he had the LSS hydrographer and topographer examining the kind of station to be constructed. They recommended the Quonochontaug pattern of station for the site because it had been in use for almost ten years and had proven successful.¹⁰ Yet neither the Quonochontaug nor any other kind of station went in during 1898 or 1899. The continued absence of a station did not escape the attention of D. H. Day, the man who had been prodding the LSS since 1878 for a station at the point.

In August 1899, Day again reminded Kimball about the need for a station. He reported that the steam-barge Toltec and

9. Secretary of the Interior Hoke Smith to Secretary of the Treasury, July 19, 1894, Letter Sent, Site File (hereinafter cited as 131 File), Sleeping Bear Point Lifesaving Station (hereinafter cited as Sleeping Bear Point), RG 26, NA.

10. USLSS, General Superintendent Sumner I. Kimball (hereinafter cited as Kimball), to Assistant Inspector, 11th District, August 24, 1898, Letter Sent, 131 File, Sleeping Bear Point, RG 26, NA.

her consort Mixtec recently grounded at Sleeping Bear Point "exactly abreast of the proposed station" and needed help to get free from the sand. Day continued, though not too gently, writing:

I sincerely hope the station will be built this fall for this is a very bad point catching a number of boats each year, [and] it is a mystery to me that there has not been more loss of life, and I am daily in fear that it will not always turn out that way, hence my anxiety to see the station built.¹¹

On August 14, 1899, Kimball replied in a somewhat curt letter, revealing some irritation at this latest example of Day's badgering on an issue that was at that moment being actively considered. "The matter of constructing the station is receiving due consideration," he replied.¹² And so it was, for within a year the process initiating the advertising, bidding, and construction for the station began. Awaiting a lifesaving station since 1877, Sleeping Bear Point would at last have one.

B. Construction of the Station, 1900-1902

The brief advertisement in the Detroit Journal took up less than 2 inches of newspaper column and read as follows:

Sealed proposals will be received at this office until 2:00 o'clock p.m. of Tuesday, April 23, 1901, and then publicly opened for the construction of a life-saving station at Sleeping Bear Point and one at South Manitou

11. D.H. Day to Kimball, August 4, 1899, Letter Sent, 131 File, Sleeping Bear Point, RG 26, NA.

12. USLSS, Kimball, to D.H. Day, August 14, 1899, Letter Sent, 131 File, Sleeping Bear Point, RG 26, NA.

Island, Michigan. Proposals to construct one or both of the stations will be considered.¹³

The LSS had also placed notices in the Construction News and the Tribune in Chicago and in the Abend-Post in Detroit. The notice in the Abend-Post was in German, testifying to the importance that language had in Detroit in April 1901. A notice also appeared in the Record in Traverse City, Michigan.¹⁴

A total of five contractors replied to the notices--two from Rockland, Maine, and three from Michigan. The high bid of \$18,338 was followed by one of \$14,460. Robert J.B. Newcombe of Manistee, Michigan, bid \$11,973.25, with a completion date for both stations of November 1, 1901.¹⁵ By May 29, 1901, the contract had been awarded and sent to Newcombe, along with a letter stating that the sites for both stations would be pointed out to him by the LSS's superintendent of construction appointed to oversee the work.¹⁶ By early June blueprints of the sites had been sent to the proper supervisors so that they could place the two stations on the right spot; by mid-june, D. C. Wickham had been directed to proceed to Michigan to supervise the construction.¹⁷

13. USLSS, May 10, 1901, Voucher for Advertising, Letter Register 74206 (hereinafter cited at LR), RG 26, NA.

14. USLSS, Kimball, to Assistant Inspector, 12th District, April 4, 1901, Letter Sent, LR 74206, RG 26, NA.

15. USLSS, April 23, 1901, Form 7, LR 74206, RG 26, NA.

16. USLSS, Kimball, to Robert J.B. Newcombe, May 29, 1901, Letter With Contract Sent, LR 74206, RG 26, NA.

17. USLSS, Kimball, to Superintendent of Construction, Atlantic and Lake Coast, June 8, 1901, Letter Sent, LR 74206, RG 26, NA.

During the last half of June 1901, the superintendent of construction traveled to Michigan and selected the building sites for contractor Newcombe.¹⁸ This had been promised to Newcombe when he was awarded the contract.¹⁹ By late June or early July 1901 work began.

The contract with Robert Newcombe was to build two identical lifesaving stations. The plans did not come from the Quonochontaug design, as had been recommended in 1898. Rather, the plans and specifications from the Marquette, Michigan, Lifesaving Station were utilized. The Marquette station had been constructed in 1890 and had probably served well enough that the decision makers in Washington decided that the design that worked well at one Great Lake site would do well enough at another. The specifications for Marquette had been prepared in a printed booklet, and quite possibly the design had long been intended to serve as a guide for yet unbuilt stations. If this was the case, the system worked fine for the South Manitou Island and Sleeping Bear Point stations. The specifications were used almost intact except for those structures not built at the two stations in 1901, which had been included in the original one in 1890. The flagstaff and lookout were crossed out on the specifications; they would be built later by the crew. The specifications began with the statement that

the structures to be erected, and which together constitute each life-saving station, are as follows:

18. USLSS, Kimball, to Superintendent of Construction, Atlantic and Lake Coast, June 17, 1901, Letter Sent, LR 74206, RG 26, NA.

19. USLSS, Period of June 17-27, 1901, Form 1817, Expense Statement, LR 74206, RG 26, NA.

Dwelling
Out-building
Boat-house and Incline²⁰

The dwelling was a 1½-story frame structure 50 by 30 feet, designed for a seven-man crew to live in and store their personal gear; it would also serve as the headquarters. The structure's later history and that of the station's other buildings would give ample testimony to its solidity and durability.

The outbuilding, a one-story wood structure about 17 by 12 feet, would serve to house a two-hole privy, oil and paint closet, and a large storage bin for coal and wood. The privy was similar to what had earlier been called an earth closet. A box could be slid under the two privy seats by lifting a hinged ventilator cut into the wall at ground level. The box, filled with soil, would be removed and the soil changed as needed.

The boathouse with its singularly solid, yet attractive nautical style appeared on the 1901 plans as it does in 1977 in its 76th year--utilitarian and strictly functional, yet graceful, softened by its gently flaring roof and capped by a cupola whose conical roof flares to match the larger example below. The building would house two boats on carriages ready to roll out for launching or would be carried over the beach to where they were needed. Large double doors, about 10 feet high and 12 feet wide, swing out toward the ramp (called an incline) leading to the beach.

These three buildings comprised the complex at both locations. The station at Sleeping Bear Point was laid out with the

20. USLSS, "Specifications and Drawings For Life-Saving Stations at Sleeping Bear Point and South Manitou Island, Michigan, 1901," LR 74206, RG 26, NA. The specifications have been reproduced and appear as appendix B.

front of the dwelling facing the lake as, of course, the boathouse did. The outbuilding sat directly behind the dwelling. The fronts of the dwelling and boathouse were on the same line about 80 feet apart (see sketch 2).

Contractor Newcombe's crews began work on the stations in late June, and as indicated by the dates of various changes in the stations, had work well underway by early July. By July 13, Newcombe had suggested some changes concerning the flooring of the dwelling, which were not approved.²¹ Two days later he had suggested a change in the incline from the boathouse to the lake at the point, which was approved.²² By late August two other suggestions, both approved, had been made. One added a well with a pump for both sites; the other added a small door at the rear of the boathouse at both sites.²³

Construction proceeded through August, September, and October 1901. By mid-November the South Manitou project had been completed, and by November 20 it was inspected and found to be "completed in accordance with the contract except as to a few minor details and authorized departures."²⁴ The station at Sleeping Bear Point was not yet done. Newcombe could well have concentrated his efforts at the South Manitou site in order to get the job done before the ice set in, cutting off easy communication

21. Treasury Department to Kimball, July 13, 1901, Letter Sent, LR 74206, RG 26, NA.

22. Treasury Department to Kimball, July 15, 1901, Letter Sent, LR 74206, RG 26, NA.

23. Treasury Department to Kimball, August 19, 1901, Letter Sent, LR 74206, RG 26, NA.

24. USLSS, Superintendent of Construction, to Kimball, December 18, 1901, Letter Sent, LR 74206, RG 26, NA.

with the mainland. By mid-November, the time when the lake could freeze in a cold spell was at hand. This circumstance probably accounts for the completion of the South Manitou Island station before the one at Sleeping Bear Point.

Once the South Manitou site was accepted, Newcombe concentrated his efforts at the Sleeping Bear Point station. By the end of December the station stood ready to receive its final construction inspection, which was done on January 8, 1902. The LSS's superintendent of construction gave the construction inspector an additional duty when he sent him out to examine the contractor's work. Andre Fourchy, an assistant superintendent of construction, was to inspect the station and find a site for a second boathouse about "500 feet west of the [D.H. Day] pier at Sleeping Bear Point." So the man who inspected the original three buildings at the station set the process in motion for the fourth.²⁵ Fourchy's inspection of January 8, 1902, involving the "station house and accessories" found that the complex "had been completed in accordance with the terms of the contract, except as to date of completion and authorized departures."²⁶ The next day William Farrant was hired "as a watchman at the Sleeping Bear Point Life-Saving Station, 12th District, at a compensation of \$15.00 per month, from January 9, 1902, pending the appointment of a keeper."²⁷

25. USLSS, Superintendent of Construction, to Assistant Superintendent of Construction, January 3, 1902, Letters Sent, LR 74206, RG 26, NA. The two letters are filed together.

26. USLSS, Superintendent of Construction, to Kimball, January 8, 1902, Letter Sent, LR 74206, RG 26, NA.

27. USLSS, Kimball, to Superintendent of Construction, January 21, 1902, Letter Sent, LR 74206, RG 26, NA.

Both lifesaving stations were now completed, and all they needed were men and equipment. In mid-January the superintendent of the 12th Lifesaving District at Grand Haven received official notification that the station was completed and that he was "to nominate keepers for them."²⁸

C. Establishment of the Second Boathouse and the Early Years, 1902-1906

The complex of buildings, which was cared for by a watchman, stood empty until a keeper was named; this took place on February 12, 1902. William Walker, a surfman at the Grand Haven Lifesaving Station (south of Sleeping Bear Point), received the assignment to put a crew together to get the station operational.²⁹ Walker took his oath on February 19, and being single, probably moved in right away. Initially, Walker remained alone in the station. His crew of six surfmen would not join him until August 20, 1902 (the seventh surfman did not enter on the rolls until May 20, 1904).³⁰ However, much needed to be done in the interim period. The materials that had arrived to outfit the station had to be inventoried, checked, and stored according to service practice and to Walker's method of operation. Furnishings and supplies kept Walker and his superiors busy that spring and summer. Correspondence from the period indicates that inventorying the supplies was handled by the keeper (see appendix A).

Walker must have overseen the construction of the second boathouse from February to August as well. The station already

28. USLSS, Kimball, to Superintendent, 12th District, January 16, 1902, Letter Sent, LR 74206, RG 26, NA.

29. USLSS, "Register of Employees, Lifesaving Service Districts 10-13," vol. V, RG 26, NA.

30. Ibid.

had a double-doored boathouse with a ramp leading to the beach near the dwelling. It housed two boats and associated equipment. Each station would have a Beebe-McLellan lifeboat and a 23-foot Mononomoy surfboat to be sheltered in the boathouse. However, the Great Lakes demanded more than these craft could always match, and by early 1902, many in the LSS felt there was an urgent need for a 34-foot lifeboat at each station. The inspector charged with looking for a good site was directed to look inside the bay. He was to be helped by the same D. H. Day of Glen Haven who had long worked for the construction of a station at Sleeping Bear Point. It was assumed that the general site would be about a mile from the station by "either the hill, [over the Sleeping Bear Dune] or the beach route."³¹ This would put the new boathouse just west of the D. H. Day dock, an extension of today's main street in the town of Glen Haven. By January 14, Inspector Andre Fourchy had recommended a site "575 feet W.N.W. of Mr. Day's pier & right outside of the limit of the village of Glen Haven, Michigan."³²

With the consideration of a new second boathouse also came discussions for a flagstaff and drill pole. The surviving records do not reveal why the two stations did not have flagstaffs, drill poles, or boathouses for the 34-foot lifeboat included in the original stage of construction. The sequence was no accident, however. The flagstaff and drill pole were neatly crossed off the original specifications, and the second boathouse was not mentioned until very late in 1901 when the Sleeping Bear Point station was ready for inspection. So the completion of the station came in

31. USLSS, Inspector and Superintendent of Construction, to Kimball, January 1902, 131 File, Sleeping Bear Point, RG 26, NA.

32. Ibid.

three phases. The year 1901 brought the dwelling, outbuilding, and boathouse, and 1902 brought the flagstaff and drill pole as a separate project from the second boathouse.

By January 3, 1902, the headquarters of the LSS had authorized \$215 for the construction of a flagstaff and a drill pole at each location.³³ The bidding process took place shortly thereafter, and Robert Newcombe, who had carried out the work thus far, got the contract and put the two poles in at each station. By early June he had submitted his bill for \$215 for "1 flag & 1 drill pole complete at South Manitou Island and Sleeping Bear Point."³⁴ Early June 1902 saw both stations sporting new flagstaffs and drill poles.

Ten days after Newcombe's bill for the poles came in, the LSS asked for bids on the boathouses for the 34-foot lifeboats at both South Manitou Island and Sleeping Bear Point.³⁵ In just less than a month, Robert Newcombe had been awarded the contract, winning his third contract for the two stations in a row. Newcombe was to build the boathouses and the associated wharves for \$3,827.25 each.³⁶ Newcombe presumably rounded up a crew and commenced work at South Manitou Island by late July. The work proceeded smoothly enough until the morning of October 21, 1902,

33. USLSS, Kimball, to Superintendent of Construction, January 3, 1902, Letter Sent, LR 74206, RG 26, NA. A drill pole served to imitate a ship's mast, and the crew used it to practice rigging rescue equipment on ships run aground near the shore.

34. Robert Newcombe to Treasury Department, USLSS, June 2, 1902, Bill Sent, LR 74206, RG 26, NA.

35. USLSS, June 12, 1902, Form 10, LR 74206, RG 26, NA.

36. USLSS, Kimball, to Robert Newcombe, July 11, 1902, Letter Sent, LR 74206, RG 26, NA.

when it came to an abrupt halt. The telegram that arrived at the LSS headquarters reported what had happened: "Manitou wharf a total wreck due to Lake bed sliding our letter follows."³⁷ A more detailed report, which followed the same day, explained that "there was nothing to indicate that the bottom was other than sand and gravel." No one could have foreseen the wreck of the structure, the onsite supervisor continued, adding that "there seems to be nothing else to do than what is already being done, secure the material as the season is now to[o] far advanced to do anything more until Spring."³⁸

The boathouses being built for the 34-foot lifeboat needed the wharf. The boats were so heavy that they had to be launched in at least 3 feet of water. An interruption in the construction of the wharf meant an inability to begin the boathouse, which was to be built on it.

Within two weeks, General Superintendent Kimball had decided to follow the advice that had come from the scene and have the contractor abandon the South Manitou site for the rest of the season and initiate work at Sleeping Bear Point. When the boathouse at the point was done, "settlement will be made with the contractor."³⁹ The contractor had apparently operated much the same in 1901-02 building first at South Manitou, in the hope that the work could be accomplished before the bad winter weather set in and isolated the island, then going to the mainland to do the Sleeping Bear Point work.

37. USLSS, Superintendent of Construction, to Kimball, October 21, 1902, Telegram Sent, LR 74206, RG 26, NA.

38. USLSS, Superintendent of Construction, to Kimball, October 21, 1902, Letter Sent, LR 74206, RG 26, NA.

39. USLSS, Kimball, to Superintendent of Construction, October 21, 1902, Letter Sent, LR 74206, RG 26, NA.

Little could be accomplished, however, even at Sleeping Bear. The supervisor reported that "the season is now far advanced and storms and rough weather already upon us." He doubted that the work could be done before spring.⁴⁰

As Newcombe had worked on the second boathouse on South Manitou Island in the late summer of 1902, the LSS had asked for bids to lay cement walks at both sites. In the same month (August) that the crew of six surfmen signed on, D. H. Day won the contract to lay the cement walks. He completed the work shortly and received \$174.06 for the two jobs in October.

Nothing particularly important happened for the remainder of the year. However, 1902 had been a busy year for the station; by its end, both Sleeping Bear Point and South Manitou Island lifesaving stations had flagstaffs and drill poles, cement walks, and partially completed second boathouses. Both had also become operational, or in lifesaving service rhetoric, both were "established." The complex of buildings, ramps, and poles stood almost complete, lacking only the second boathouse and the lookout, both of which would come over the next few years.

By December 1902, the northern Michigan winter had settled in, freezing the South Manitou passage and stopping shipping. The station closed, and the men were laid off until the spring ice-breakup. Only Keeper Walker, employed for the full year, remained onsite. The timing for closing the station depended on the weather every year; however, by mid-December the north end of Lake Michigan was closed to navigation, and both the South Manitou Island and Sleeping Bear Point lifesaving stations were shut

40. USLSS, Superintendent of Construction, to Kimball, October 27, 1902, Letter Sent, LR 74206, RG 26, NA.

down for the winter. The crew moved to their own homes--presumably nearby--and waited unpaid until the reopening in the spring. This was standard procedure on the Great Lakes.

By the early spring of 1903, a new location for the wharf on South Manitou Island had been determined, and the land for it had been made available by its owner, the Garden City Sand and Gravel Company. The site was to be "1300 ft south of the company's dock."⁴¹ Apparently, work commenced not long afterward, for by October both second boathouses and wharves were completed but empty. The construction supervisor reported to his superiors that "at noon the 9th instant, and in obedience to orders received from your assistant Mr. F.J. Camp, delivered the keys of the Sleeping Bear Point and South Manitou Island boathouses to their respective keepers."⁴²

The completion of the second boathouse meant that the station at Sleeping Bear Point now had two components. The main part of the station lay at Sleeping Bear Point and consisted of the dwelling, outbuilding, boathouse and ramp, flagstaff, drill pole, and cement walks. The other part of the station lay almost a mile to the east and consisted of a boathouse and wharf sitting on piles 15 to 20 feet out in the water and to the west of D. H. Day's dock about 575 feet.⁴³

41. USLSS, Assistant Superintendent of Construction, to Superintendent of Construction, October 11, 1903, Letter Sent, LR 47206, RG 26, NA.

42. Ibid.

43. USLSS, Assistant Inspector of Construction, 12th District, to Inspector of Construction, USLSS, December 24, 1903, Letter Sent, 131 File, RG 26, NA.

Within two weeks the Treasury Department issued a warrant to Contractor Newcombe for \$4,602.55 for the work. This marked the last major addition to the station that would be built by a contractor. Other structures would come, and repairs and modifications would be made routinely, but the work would be completed by the crew. Between drills the crew would be kept busy with painting, plastering, cleaning the grounds, and the myriad of housekeeping duties associated with the normal routine of the station.

In fact, in October 1903, the same month that the contractor finished his work on the boathouse, the LSS headquarters authorized 22 storm windows for the station at a cost not to exceed \$25.⁴⁴

The year 1904 witnessed no major structural changes at the station. On March 1, Keeper Walker and his superiors began a campaign to add another surfman to his complement of six. Their efforts succeeded and in May the seventh man arrived. Thus, the additional man who was needed to assist in rescues involving extremes of distance and current that occurred in manning the Beebe-McLellan lifeboat, to help stand watch, to send signals, and to man the telephone was available for the "opening of the active season."⁴⁵

The letters concerning the appointment of a seventh surfman confirmed the existence of a telephone at the site by 1904.

44. USLSS, Kimball, to Superintendent, 12th District, October 27, 1903, Letter Sent, LR 84576, RG 26, NA.

45. USLSS, Assistant Inspector, 12th District, to Kimball, March 25, 1904, Letter Sent, LR 86008, RG 26, NA.

Other statements in the station's logbook note the existence of "patrol posts." At Sleeping Bear Point the patrols did not contact any other patrols from nearby stations because there were no nearby stations. The surfmen of patrol had to prove that they had completed their patrol circuit by carrying instruments similar to present-day watchmen's clocks. These instruments had a paper insert marked by a key attached to a post at the end of the patrol. The posts, sunken in the sand and painted white, were precisely what they were named: patrol posts.⁴⁶

The chances are good that both the telephone and the patrol posts existed since the beginning of the station's operational life in 1902. The provable, evidence-supported dates show that both these items were in use by early 1904, and until more evidence surfaces, that date can stand.

The year 1904 also marks the beginning of changes in the location of the second boathouse. The long process of moving the structure began on December 27 with a discussion of the situation as it existed then. The district headquarters at Grand Haven reported to Washington that

at Sleeping Bear Point the rear of the boathouse, which formerly stood fifteen or twenty feet from the beach, is now within a few feet of it; the land having made out.⁴⁷

46. USLSS, October 14, 1905, Logbook, Sleeping Bear Point Life-Saving Station, RG 26, Washington National Records Center (hereinafter cited as WNRC). The patrol posts are described in a conversation with John Albright, Lee Wyma, and Charles Bennett at Empire, Michigan, June 24, 1977. Notes on file at Sleeping Bear Dunes National Lakeshore and Denver Service Center.

47. USLSS, Assistant Inspector, 12th District, to Inspector of Construction, December 24, 1904, Letter Sent, 131 File, RG 26, NA.

The letter also recommended a new location and an incline that would allow the lifeboat to be launched into water 5 or 6 feet deep. In addition, it made the following suggestion aimed at preventing damage from winter storms:

The best way to build the incline at Sleeping Bear Point would be to drive piling from the edge of the water on each side and have moveable stringers fastened with bolts which could be taken down every fall, so as to protect them from the ice and put them back in the spring.⁴⁸

The discussions continued as did the search for a final site for the second boathouse. By July 26, 1905, a description of the site was included in the files. The site was described as being Lot 2, Township 20 North, Range 14 West, as of August 19, 1905. Further discussion followed, and Lot 3, one lot to the west, became the final site. A logbook entry dated May 4, 1906, reflected the move, which had come at last, noting that the "crew worked on the boat house and moved it 300 ft."⁴⁹ This would put the boathouse closer to the site of the complex today if the 300 feet that the crew moved the boathouse was west, as it most probably was. This, presumably, was the last move of the boathouse until 1931 when the station was moved to its present location.⁵⁰

48. Ibid.

49. USLSS, August 19, 1905, Logbook, 131 File, Sleeping Bear Point, RG 26, WNRC. It is interesting to note that at about the same time that the Sleeping Bear Station was undergoing scrutiny, the one at South Manitou Island was too, with the recommendation that the boathouse go to "the station lot." USLSS, Inspector, to Kimball, December 27, 1904, 131 File, RG 26, WNRC.

50. The site file, officially the 131 File, contains numerous descriptions of lots and sites for the station. The most promising one for the second location of the boathouse, dated April 12, 1905,

While the second boathouse and its move had been an important consideration for the crew in 1905, other events had taken place. The year proved to be a busy season for the lifesavers. Also, the site had been markedly changed by various additional structures.

By early May the materials to be used in constructing a lookout for the station had arrived, setting up a considerable task for the crew.⁵¹ Beginning on May 15 and continuing through the last days of June, the crew built the "lookout tower," as they called it.⁵² (See appendix E, illus. 5, and sketch 3.) The structure was wooden, on wooden posts, topped by a platform on which a small square structure sat. The square, one-room building did not cover the whole platform but left room on all four sides for a walkway, which was bounded on the outer edge by a railing. Access to the platform was by a stairway. As the crew neared completion, they "wheeled gravel and sand" to use for "banking around the lookout tower."⁵³ This routine chore was required because of the lake's normal wave action, which moved sand and gravel from place to place.

reads as follows: "Commencing at the center of the shore end of D.H. Day's dock on Lake Michigan in Lot 2 in Sect. 20 T[ownship] 29 R[ange] 14W. Thence running north 57½ degrees west 200 feet. Thence north 45 degrees east 375 feet more or less to shore on Lake Michigan. Thence southeasterly along shore of Lake Michigan 200 feet. Thence south 45 degrees west 375 feet more or less to place of beginning."

51. USLSS, May 8, 1905, Logbook, Sleeping Bear Point, RG 26, WNRC.

52. USLSS, May 8, to June 30, 1905 (intermittently), Logbook, Sleeping Bear Point, RG 26, WNRC.

53. USLSS, June 16, 1905, Logbook, Sleeping Bear Point, RG 26, WNRC.

Keeping an eye to their equipment as they added to the physical plant, the crew spent a few days in June cleaning the McLellan lifeboat, putting iron on its keel, and painting it. Within a month the Mononomoy surfboat got a new paint job as well.⁵⁴

In late July 1905, Keeper Walker set the crew to "building a fence around the station." Photographs of the site show a wire fence connected to vertical, evenly spaced round wooden poles. By September the posts were in, and the crew strung wire on them to complete the project.

In late September, the last planned improvement to the physical plant went in. The logbook entry for September 29 includes the statement: "Keeper went to town to post up poster for materials for storm shed."⁵⁵

The phrase "storm shed" was particularly apt that year. On Monday, October 16, the crew performed some unplanned maintenance work, removing "16 feet of outer end of Launch Way on

54. USLSS, June 16 and July 28, 1905, Logbook, Sleeping Bear Point, RG 26, WNRC.

55. USLSS, September 29, 1905, Logbook, Sleeping Bear Point, RG 26, WNRC. What the keeper meant by "storm shed" is not completely clear. Presumably, in the fourth year of the station's active life, no unexpected storage problems existed. What could a storm shed be then? Possibly it was the shelter on the platform of the lookout. Winter was coming on by late September, and if the lookout on the new tower had no protection from the elements, then it would be reasonable to assume that the storm shed could be that part of the tower above the platform. A logbook entry on November 4, 1905, notes the arrival of a stove, which could be the stove where stovepipe appears in the photographs of the lookout. However, an examination of photographs of the site reveals a square board-and-batten structure just where the October 3, 1903, map shows a well to be located. It is obviously a well house, and it is possible that this could be the storm shed noted in the log.

account of being undermined by a heavy sea on Sunday the 15th 1905."⁵⁶

The storm threatened the newly completed lookout as well because as soon as the keeper could restore the launchway for use, he set "part of the crew building a breakwater around Lookout," to protect it from the fall and early winter storms. This effort apparently marked the end of a busy summer at the station, where the required daily drill seldom failed to be executed despite the many improvements made to the site. With the movement of the second boathouse early in the spring the next year, the site had reached a level in its development that would remain for the next few years.

By mid-1906 the configuration of the station was as follows: The main portion had a dwelling, an outbuilding, and a boathouse with ramp, along with a flagstaff, a drill pole, and a new lookout tower. A new fence also delineated the site. To the east the second boathouse, the one built for housing the 34-foot lifeboat, had been moved west to a position close to the station's present location.

D. 1906 to the Present

In 1909, Robert Newcombe received his final settlement for the claim he had submitted in 1903 to get relief from his losses that came when the South Manitou Island dock collapsed. The Treasury Department had considered his claim in April 1904, but the official detailed to evaluate it reported that neither Newcombe nor the Treasury Department was to blame for the collapse.⁵⁷

56. USLSS, October 16, 1905, Logbook, Sleeping Bear Point, RG 26, WNRC.

57. U.S. Treasury Department, April 12, 1904, Memorandum, LR 74206, RG 26, WNRC.

Within a month the department disallowed the claim, however, and so notified the builder.⁵⁸ The matter dragged on until the last day of April 1909 when the Treasury Department managed to find \$960.04 for Newcombe, entitling the action "Relief of R.J.B. Newcombe, Private Act No. 207, Approved March 3, 1909." Just what brought about the reversal of attitude in the intervening five years is not clear, but Newcombe got his money.⁵⁹

While much personal history transpired after 1906, little occurred to alter the site until 1931 when the two parts of the station were combined at their present location. Of course the routine of the daily drill, equipment maintenance, and housekeeping duties continued. An occasional rescue enlivened the scene as well, breaking the routine for the duration of the operation before the daily duties descended again on the crew.

The routine of wheeling sand and gravel and leveling the grounds in order to respond to the actions of wind and water continued, as did the nearly constant painting and scraping of the boats and buildings. Undoubtedly, minor repairs and changes came to pass as part of the systematic work of maintenance and repair, and these actions must have subtly altered the buildings. However, they did not merit inclusion in the station records discovered so far.

58. Acting Auditor, U.S. Treasury Department, to Robert J.B. Newcombe, May 13, 1904, Letter Sent, LR 74206, RG 26, NA.

59. Treasury Department to Newcombe, March 3, 1909, Letter Sent, RG 26, NA.

A few items did get mentioned though. An example of this came in November 1914 with a logbook entry reading "received wind vane for steel tower"⁶⁰ A postcard of the station at the original site shows a steel tower like the one currently at the station. The tower served to carry storm signals to be read by passing ships. (The tower at the Frankfort, Michigan, Coast Guard Station is of the same design.) The work had been underway since late August 1914; the work crew called the structure the "flag tower."⁶¹

By 1931 the time had come to move the station to the land set aside for the second boathouse. For a long time sand moving onto the site had required more and more maintenance time to remove. Added to this recurring land problem was the frequent condition of rough water on the point, which made it difficult to launch the power surfboat. So in the late summer or early fall of 1931 the buildings were moved along the beach to their present location.⁶² From its position nearby, the second boathouse was also moved to the site, but its doors faced inland, and the building became a garage.

The dwelling was put onto a cement foundation over a full basement on the site where it remains today. The steel tower was emplaced to fly signals. The main boathouse was placed facing the

60. USLSS, November 20, 1914, Logbook, Sleeping Bear Point, RG 26, WNRC.

61. USLSS, August 31, 1914, Logbook, Sleeping Bear Point, RG 26, WNRC.

62. Mrs. Agnes Kelderhouse, Maple City, Michigan, to John Albright, August 31, 1977, Files of Denver Service Center and Sleeping Bear Dunes National Lakeshore. Louis Warness, Glen Haven, Michigan, and Charles Bennett, Empire, Michigan, interviews held by Lee Wyma and John Albright, June 23 and 24, 1977, Files of Denver Service Center and Sleeping Bear Dunes National Lakeshore.

water. Cement walks were laid for the complex leading to the dwelling, outbuilding, boathouse, and finally to the parking area, which was put in at the rear of the complex.

Because removal of the station from Sleeping Bear Point to a site inside the bay cut off some visibility, a wooden lookout (possibly the same one built in 1905 or one similar) was emplaced on the top of the dune. A 1931 map (see historic map 6) shows a lookout on the top of the dune at Sleeping Bear Point, probably the one recalled by at least two local residents.⁶³

The grounds at the new site received little of the kind of attention that had so marked the original site. Instead of being sandy and requiring a great deal of constant shaping of sand and gravel, the new site could be planted in grass at least to the front line of the buildings. The new site was in a more heavily wooded area as well; to the immediate west stood a forest (see illus. 13), and to the east lay an open field, which blended into the backyards of the village of Glen Haven, the location of Day's dock. So the new setting of the station differed markedly from the old setting, but for the first time all the components of the station were together.

The station retained the title of Sleeping Bear Point despite its now closer physical association to Glen Haven. No doubt it began to be called the Glen Haven Coast Guard Station locally and possibly even in some official correspondence. The name Sleeping Bear Point remained in the official reports of the Coast Guard, however, as did the designation of its location. From 1928 to 1936 (the last year that the Register of . . . Ships and Stations of the Coast Guard was available), the station was described as

63. Interviews with Warness and Bennett.

being "on Sleeping Bear Point, near Glen Haven, about seven miles south-southeast of South Manitou Light."⁶⁴ The last entry, December 31, 1941, in the last logbook reads: "Log of the U.S. Coast Guard [hand written] station Sleeping Bear Point . . . at Glen Haven, Michigan."⁶⁵

The station continued to operate in its new location during the 1930s and into the 1940s. It is generally believed that the station continued to operate into 1942. This belief is buttressed by a 1942 chart of Lake Michigan that shows "G.G.S. Lookout" at the site of the station.⁶⁶

Sometime during World War II the station closed, probably early in the war when the Coast Guard took on the extra demands of wartime duty. Documents on file at the Coast Guard headquarters tend to support a World War II era closing, noting that the station was in an "inactive status" prior to 1947. A January 7, 1947, letter indicated that the station was to be "stricken from the Shore Operating Plan" as of that date. By February 8, 1956, the land (with buildings attached) had been returned to public domain, and

64. U.S. Coast Guard, Register of Commanding Officers and Warrant Officers and Cadets, Ships and Stations of the Coast Guard, (Washington, D.C.: Government Printing Office, 1928), p. 95, and succeeding annual issues.

65. U.S. Coast Guard, December 31, 1941, Logbook, Sleeping Bear Point Coast Guard Station, RG 26, WNRC.

66. U.S. Coast Guard, 1942, Lake Survey, Chart 705, Lake Michigan, RG 77, NA. This chart appears to reflect mean water levels including 1941. This indicates that the other data, including the Coast Guard Station, is probably accurate to late 1941, for which period there is documentary evidence of the station's existence.

responsibility for it had been accepted by the Bureau of Land Management. The station's active life had come to an end in World War II, and this subsequent action definitely closed its career of service. From 1956 until 1970 when Sleeping Bear Dunes National Lakeshore was formed and the station became a part of the national lakeshore, it remain empty and unused.

E. Miscellaneous Topics

Various aspects of the history of the Sleeping Bear Point Lifesaving Station merit attention, but they fail to fall into neat niches in the sequential historical chapters of a study such as this one. This section contains such topics.

1. Operations

The mission of the lifesaving station was exactly what its original name implied--the saving of lives. This required the same kind of readiness and team expertise that fire, police, and emergency rescue crews live with today.⁶⁷ Daily drill, therefore, was a necessity. This daily drill blended with daily maintenance, resulting in an orderly station, neat grounds, and a well-trained and dedicated crew.

The station usually closed for the winter between December 1 and 10 and opened around April 1. Then the routine

67. While the "lifesavers" of the past are memorialized today only at a few surviving stations and in a life ring shaped candy, there is a significant body of literature concerning them. Among the works that might be of value to the park staff and to future researchers charged with finding data to aid in interpretation at the station are both archival and published materials (see Bibliography). The station logbooks are by far the most valuable single source for park interpreters and researchers. Every day from February 12, 1902, until December 31, 1944, is covered in the logs. It might be beneficial to microfilm them for use at the park; otherwise, those using the logbooks would have to travel to Washington.

of a drill followed by maintenance than began again for another season. A review of the logbooks shows how steady the routine remained over the years. Four periods of about one week each exemplify this.

April 1905

- April 5: Drill with International code and wigwag signals
- April 6: Drill with Beach Apparatus
- April 7: Drill, restoring the Apparently Drowned
- April 8: Crew cleaned house
- April 9: Drill and keeper visits west patrol post

October 1930

- October 1: International Code and Coast Guard Regulation drills; crew worked on telephone line to Glen Haven
- October 2: Resuscitation and frostbite drill; crew cleaned windows in west boathouse
- October 3: Beach apparatus and surfboat drill; crew worked on road to Glen Haven
- October 4: Crew cleaned station
- October 5: Sunday
- October 6: Motorboat drill; Pilot Rules wigwag drill; repaired boats
- October 7: Oscillating light and Surfboat drill
- October 8: International Code and Coast Guard regulation drill; crew painted station skiff

October 1935

- October 1: Drills: power surfboat, light; crew worked on road to rifle range
- October 2: Code Drill: Crew reframed targets
- October 3: Surfboat Drill: Crew built targets
- October 4: Resuscitation Drill, Fire Drill: Crew worked on rifle range
- October 5: Crew cleaned station
- October 6: Sunday
- October 7-8: All drills cancelled for day, rifle range

October 1940

- October 1: Exercised crew in Pilot Rules, light signal drill and Manual of Arms; crew burned paint off outside of dwelling house
- October 2: Exercised crew in International Code, Visual Coast Guard Signals and wigwag; crew burned paint

October 3: Training: burned paint
October 4: Exercised crew in resuscitation of the
Apparently Drowned and frostbit; burned
paint
October 5: Crew cleaned station
October 6: Sunday
October 7: Training: burned paint⁶⁸
October 8: Training: burned paint

However, occasional rescues and other emergencies did arise from time to time, and even the straightforward and unemotional tone of the reporting of the incidents in the station log do not fail to mask the drama of some of the vents. Even in the first month of the station's operational life, the crew managed a rescue. August 31, 1902, saw the schooner Rob Roy in difficulty, as she was "dragging anchor in Sleeping Bear Bay 4 miles NE from Station, during a strong SW wind. Life-Savers boarded in surfboat and found her leaking, as well as in danger of shipwreck on beach, but a tug arrived opportunely and towed her to a safe anchorage, the surfmen assisting to heave up anchors and pump water out of holds."⁶⁹

Other "services of the crew" came from time to time. A few examples follow:

June 27, 1903: The schooner "Alice M. Beers" assisted
"at request of her master."

68. U.S. Coast Guard, Dates Indicated, Logbook, Sleeping Bear Point, RG 26, WNRC.

69. USLSS, Dates Indicated, Logbook, Sleeping Bear Point, RG 26, WNRC.

June 27, 1903: The schooner L.B. Coates . . . "becalmed and dangerously near shore at 7:40 a.m., and station crew manned surfboat and towed her to a safe offing."

August 13, 1905: At one thirty Pm this afternoon received notice by telephone from Empire, Mich. of the drowning of two men in Empire Bay, seven miles south west of this station and out of sight of the Lookout. Launched the Surfboat at once and reached the scene about an hour later. The only information obtainable was from one of two men who reached the shore. And as he was still intoxicated could not tell us anything definite. The party of four men were out in a sail boat which capsized. . . . We dragged for two hours with a grappline . . . [but did not recover the bodies and returned to the station].

October 3, 1905: "At 3:45 a.m. the station watch saw a steamer heading for the Beach near the lookout. He immediately burned a coston signal and there upon the steamer changed her course and stood out into the lake."

October 14, 1905: At 11:15 Pm the Station watch sighted a steamer heading on to the beach in front of the Station; he at once burn a coston signal, but she did not take any notice of the signal, and, burn two more before they took any notice of them and then sheared off and run in the Bay for shelter.

October 19, 1905: Patrick McCauley, No 4. made a long Patrol to the west to look for mail Boat, from South Manitou Island Mich. which was supposed to have been on her way from Empire Mich to the South Manitou Island, Mich, but nothing could be found left Station 7:30 Pm returned at 11 Pm.

April 28, 1906: At 10:28 Pm the Station watch sighted a steamer heading on shore, he immediately burn a coston signal, she at once change her course and stood seaward.

May 1, 1906: At 3:10 am the Lookout at this Station discovered a schooner on the beach about 2000 ft West of Sleeping Bear Point Station 12th Dist. The Surfboat was immediately launch, and reached the schooner about 10 minutes later, run anchor and unloaded 4 or 5 cords of edgings wood and backed foursail, and she swung out into deep water and went on her way. No damage done.

May 7, 1906: At 12:50 Pm the Lookout reported the gasoline launch Reliance of South Manitou Island Mich. broken down, about 4 miles North of this Station. The Surfboat was immediately launched and about 85 minutes later pulled along side of her, took four Passengers, and the Engineer, to the South Manitou Island and got another Gasoline Boat and returned to the Disabled Launch with the South Manitou Life Saving Crew. After returning to the Disabled Launch, turned her over to Keeper Van Weelden, and return to the station arrived 5 Pm.

May 8, 1906: At 12:30 p.m. received notice by telephone from Glen Haven, Mich that a Sloop No Name with one man and woman and three children aboard, was in danger of pounding to pieces again the pier. Took lines and tackels and went over land arrived 20 minutes later, droped[?] the Sloop through the Surf and heaved her upon the beach and at 1:30 Pm had her up in a safe place. Return to station at 2:30 Pm. Wind NE. Brisk High Surf. Cloudy. Crew worked on boathouse.⁷⁰

70. Ibid.

2. Furnishings

This report is not a historic furnishing study, nor is the information that follows an attempt to provide a de facto furnishing study for the station. However, while it would be foolish to try to "slip in" a furnishing study within the pages of this report, it would be irresponsible to suppress any furnishings data that surfaced during the research and which could be included in the report without incurring additional heavy costs. This section is an attempt to hit the midpoint by explaining the furnishings data that did appear and by providing suggestions to ease the way for future researchers and planners who must deal with this data.

Obviously, the "Original List of articles of outfit for the Sleeping Bear Point Life-saving Station, Twelfth District, June 24, 1901" (see appendix A), must be considered the primary furnishings data collection for the station. The station's original furnishings were undoubtedly the items on this list. But of course, expendables were routinely replaced, and as they wore out, so did more durable goods. Many of these items probably did not merit too much official notice, but some did. These appeared in the lists of goods received in the logbook. A representative sampling only appears with the logbook pages in appendix F. The June 24, 1901, list and the logbooks will provide much of the information needed, but there will be other sources as well. Correspondence files in the National Archives will have to be carefully examined in order to see the changes that came in the years following the initial list (changes normal to any activity such as this one).

One element of the furnishings is particularly important to the Sleeping Bear Point Lifesaving Station--the boats. They deserve some special attention because they were the primary item of use at the station.

The two boats that formed the backbone of the station's little fleet were the Beebe-McLellan lifeboat and the Mononomoy surfboat. One of each was shipped from New York to the station on June 8, 1902, via the Baltimore and Ohio Railroad. The shipping bill is included in appendix A. Both boats fit in the main boathouse and on the surfboat wagons as well. Illustration 2 shows them ready for launching, with all gear stowed properly.

The 34-foot lifeboat, a larger craft, required deeper water when it was launched and a bigger boathouse as well. So it could not be sent to the station until the second boathouse was completed. The boats were held by the district headquarters until the boathouses were completed. In late May 1904, they were apparently delivered to the Sleeping Bear Point and the South Manitou Island stations (see appendix A).

These three boats formed the total complement at least for a few years. Not all the components arrived at the same time, however, as a 1902 letter shows. It ordered "one McLellan boat-wagon, with runners, to the Sleeping Bear Point and the South Manitou Island Life-Saving Stations, each, as soon as wagons are available from the lot now being manufactured by Studebaker Bros."⁷¹

Routine replacements for boats and wagons took place during the first ten years of the station's life. In mid-1906, the station received "one Launching Carriage, Woods Pattern from Frankfort LS Station in good condition."⁷² Later that year came a

71. USLSS, Kimball, to Superintendent of Construction, August 13, 1902, Letter Sent, LR 77665, RG 26, NA.

72. USLSS, July 5, 1906, Logbook, Sleeping Bear Point, RG 26, WNRC.

"Beebe-McLellan Selfbailing Selfrighting Lifeboat, with center board and outfit."⁷³ They were replacements in kind and hardly spectacular events, but the item that arrived in 1912 was a major change. The logbook for May 24, 1912, notes: "Took crew to Glen Haven to get power surfboat and fittings." Then on May 31 the entry noted that the crew "transported gasoline to Station in power surfboat." On July 1, "a repairman of Motor Boats LSS in NY inspected Power Surfboat and found everything in good running condition."⁷⁴ Presumably, the oar-powered surfboat was turned in or disposed of as surplus shortly thereafter.

A cryptic note that the crew "used Life car" in 1914 suggests that a life car (an enclosed small fireboat) was at the station then. There is no clear statement as to whether or not the boat was a permanent or transitory part of the station's stores and equipment.⁷⁵

Earlier mentions of a life car in 1905 and 1906 tend to confirm that the boat was a permanent part of the equipment at Sleeping Bear Point. Yet no photographs of the boats or other corroborating documents have yet appeared.⁷⁶ Until then it can be safely assumed, but not finally proven, that the boat complement stood at four--one life car, one Mononomoy surfboat, one Beebe-McLellan lifeboat, and one 34-foot lifeboat.

73. USLSS, November 5, 1906, Sleeping Bear Point, RG 26, WNRC.

74. USLSS, May 24 and 31, 1912, and July 1, 1912, RG 26, WNRC.

75. USLSS, August 29, 1914, Logbook, Sleeping Bear Point, RG 26, WNRC.

76. USLSS, June 21, 1905, and May 24, 1906, Logbook, Sleeping Bear Point, RG 26, WNRC.

3. Landscaping, Repairs, and Construction

With a crew of seven men to keep busy between infrequent emergencies, it is not surprising that a significant amount of light construction took place at the site. Unfortunately, much of this kind of activity can only be documented in the station logbook in cryptic notes. The Sleeping Bear Point Lifesaving Station had its share of this kind of work, which is laconically noted in the logbook. Typical examples include the following:

April 16, 1912: Two men went to Glen Haven to get shade trees.

July 19, 1912: Received 450 feet of rails for boat dock [probably 34' boathouse dock].

July 25, 1912: Crew painting inside of oil house [possibly the out building].

August 16, 1914: The "station wood shed" is mentioned.

September 25, 1914: Received iron and maple to build "skids for launching surfboat" [from the main boathouse].

June 29, 1915: The crew erected a new drill pole.⁷⁷

The routine of repair, maintenance, landscaping, and painting filled the many slack hours of the crew. It is doubtful that a coat of paint on any surface remained untouched for too long or that the yard trees or bushes remained unclipped, unpruned, or

77. USLSS, Dates Indicated, Logbook, Sleeping Bear Point, RG 26, WNRC.

uncut for very long. Subtle changes, therefore, would be constant at the site, but the buildings and boats would generally remain the same.

4. Unresolved Questions

Any research project could go on forever, and this one is no exception. However, time and funds always seem to have a way of running out. Nevertheless, when projects cease, some questions remain unanswered and some information undiscovered. Fortunately, none of the unresolved issues or unanswered questions in this report are crucial to the development planned at Glen Haven. They deserve some consideration, however, and by listing them here, they can be more readily addressed by the park staff and by future researchers.

What are the dates of construction of the well house and the keeper's closet which appear in illus. 2? What was the purpose of the keeper's closet?

Why was the second boathouse turned to face inland in the 1931 consolidation, and when and why did its function as a boathouse cease?

Was there a lookout on the top of the dune from the early days of the station or only after the 1931 move?

When exactly did active operations cease at the site?

What was the exact design of the ramp from boathouse #1?

Where were the patrol posts located?

III. ARCHEOLOGICAL INFORMATION

The publication, An Archeological Inventory and Evaluation of the Sleeping Bear Dunes National Lakeshore, Leelanau and Benzie Counties, Michigan, by William A. Lovis, Robert Mainfort, and Vergil E. Noble, does not mention any site on the land now occupied by the old Coast Guard Station that would affect the development of the complex.

Archeological survey work for prehistoric sites in Sleeping Bear Dunes has been undertaken by Michigan State University under the supervision of Archeologist Adrienne Anderson. It is possible that buried prehistoric archeological remains, as well as historic artifacts associated with the use of the Coast Guard Station, may be encountered where ground disturbance is necessitated in the restorative work. It has been recommended that type 43 funds in the amount of \$2,000 be programmed for both the evaluation of any remains that might be encountered and any necessary overwatching of construction by archeologists.

Historian John Albright found a metal track in the trench dug around boathouse #2 for maintenance work during a field trip in June 1977. This track may have originally been part of the ramp leading from one of the boathouses.

IV. ARCHITECTURAL DATA

A. Lifesaving Station at Sleeping Bear Point, 1901-1930

The lifesaving station at Sleeping Bear Point was constructed on a barren, sandy site facing north toward Lake Michigan (see illus. 1). The complex consisted of a 1½-story dwelling, a boathouse, and four outbuildings, including one constructed to the south of the dwelling that served as coal and wood storage, an oil and paint closet, and a privy. The three remaining outbuildings, for which little documentary evidence exists, include a small well house with a pitched roof, which was located in the southwestern corner of the site; a 1½-story building of unknown function in the southeastern corner; and the keeper's closet, which was also located in the southeastern corner of the site (see historic plan 3). A wooden flagstaff, drill pole (see historic plan 5), and lookout tower (see sketch 3) were located between the dwelling and the boathouse on the beach. All of the buildings were frame, covered with wood siding or board and batten with wood shingle roofs, and originally rested on wood pilings. The buildings were painted a light color, probably light green with a dark green trim that accented the cornerboards, water tables, doors, window frames, and gable ends. The site was originally cleared of all planting while the surrounding area was covered by low, native shrubs. Several 1½-story residences with high, pitched roofs were located near the complex and were probably the homes of the crew members.

Copies of the original specifications and drawings for the lifesaving station at Sleeping Bear Point are included in appendix B and historic plan 3. Four buildings appeared in the early photographs of the complex that are not documented in the known drawings or specifications. A list of the lumber purchased for the lookout tower appears in appendix E. This tower, which was constructed by the crew, appears to have been a portable structure

(see illustrations 2 and 5), but it was not moved to the Glen Haven site. The well house, keeper's closet, and an as-yet unidentified outbuilding also seem to have not been moved.

The year following the completion of the lifesaving station at Sleeping Bear Point another boathouse was planned in conjunction with the complex. It was constructed according to plans and specifications prepared by the LSS off the shoreline to the west of Day's dock at Glen Haven where the more protected beach made it easier for boat launching. The structure was a long one-story building covered with wood shingles on both the walls and roof and was designed to house a self-bailing, self-righting, 34-foot standard lifeboat. Copies of the original specifications and drawings for this boathouse are included in appendix D and historic plan 4.

B. Glen Haven Coast Guard Station, 1931

The LSS station, which by this time had been incorporated into the United States Coast Guard, was relocated to the east side of Sleeping Bear Point near Glen Haven. The complex was located approximately 300 feet from the waterline and was approached from the southwest on a road that came from Glen Haven. Small residences, again probably the homes of crew members, appeared near the station.

The three major buildings were moved from the original site and placed on poured concrete foundations. The 1903 boathouse that was built to the west of Day's dock was also brought to the site to serve as a garage and storage building. Concrete sidewalks were laid, and unlike the original complex, the site was sodded and landscaped. A metal signal tower was constructed to replace the wooden flagstaff. The move caused a change in the orientation of several buildings, and changes were also made in their relationship to each other. Colors of paint in the black-and-

white photographs available from the 1930s seem to conform to Coast Guard standards, with white the predominant color, accented with a dark color on the window frames and moldings, the doors, and the water table. The roof shingles removed from these buildings in 1977 seem to date from at least this period and were stained red on both sides, although the stain had worn off the exposure many years ago. The ramp from boathouse #1 did not extend all the way to the waterline as seen in illustration 11.

C. Coast Guard Station at Glen Haven, 1977

The Coast Guard abandoned the station at Glen Haven in 1942, and it remained unoccupied until it was added to the National Park System on October 21, 1970.

The buildings at this time were unpainted, some of the roofs were leaking, and paintings were overgrown. The National Park Service began work on the complex in 1973. The exteriors of all the buildings except boathouse #2 were repainted, electric service was reworked, and a new circuit panel was installed in the dwelling. The septic system was also reworked, and a septic field was built to the southwest of the dwelling. The plaster was removed from the crew's mess and the keeper's quarters in 1973-74. The walls in the crew's mess and keeper's quarters were then covered with a wood veneer paneling, and the ceilings and uncovered plaster walls in the hall were patched and painted white. Three buildings at the complex have been reroofed by the Park Service--the dwelling in 1974, the outbuilding in 1977, and boathouse #1 in 1977-78. No other work except for necessary maintenance and the reshingling of the walls of boathouse #2 has been scheduled until the acceptance of this report.

All of the buildings moved to the site in the 1930s remain intact. Boathouses #1 and #2 and the outbuilding (now called fire

cache) are used for storage, but the dwelling is unoccupied. The buildings for the most part retain their original interior finishes, although plaster repair and repainting is necessary, especially in the dwelling.

1. Dwelling

The main building at the site is a 1½-story structure with a full basement that served as a residence for the station keeper and his family and as a dormitory for the crew. The dwelling, which is 50 feet 10 inches by 30 feet 4 inches, is framed in Norway pine; the sills are made of white pine. The studs are 3 by 4 inches and set 16 inches on center. The door and window studs and the sill and cap girtings are 4 by 4 inches. The corner posts are 4 by 6 inches, with 2- by 4-inch boards spiked on their interior faces to receive the interior finish.

The outer walls are covered with 1-inch tongued and grooved seconds pine flooring, nailed diagonally to each stud, sill, plate, girt, and brace. The sheathing is covered with tarred roofing paper, and the exterior is shiplap. A wooden water table circumscribes the building at the first floor level while the corners are accented by 6-inch-wide vertical corner boards.

The supporting frame of the roof is made of 4- by 4-inch stuff and the rafters are 2 by 8 inches. Collar beams and rafters have been placed 16 inches on center. Diagonal braces have been set into the studding at all corners, angles, doors, and windows. The roof frame has been covered with 1-inch-thick tongued and grooved seconds white-pine flooring laid in horizontal courses.

The house that originally rested on wooden piles was placed over a poured concrete full basement at the time of the

move. The wooden piles had been replaced with a concrete foundation even at the original site, although it was not as high as the one currently supporting the house (see illus. 6). Two steel columns were placed on either side of the interior basement staircase to support the building over this space. The foundations for the chimneys were extended down to the ground.

The building appears to be in good structural condition in spite of time and the move in 1931. Plaster damage seems to be more the result of neglect than structural strain. Neither insect damage nor dry rot was evident, although further examination of the roof frame is warranted because of leaks caused by lack of maintenance.

The main entrance is oriented north toward Lake Michigan, much the same as it was on the original site. The main feature of this facade is a one-story porch. The porch was completely removed and rebuilt when the dwelling was moved to Glen Haven. The present porch is 23 feet across and has been placed slightly off center on the facade. Its shingled hip roof is supported by four square wooden pillars, and the crawl space beneath the porch is screened by a wood lattice.

The fenestration pattern on the north facade is asymmetrical and reflects the interior plan. The windows used on the first floor are a stock double-hung sash with four-over-four lights topped by a transom with three lights set in a simple wood frame with lugsills and flat lintels. All but one of the transoms are now boarded up, although the original windows are stored inside the house. All of the windows were originally equipped with cloth shades, but none of these remain.

The front porch is emphasized by a centrally placed dormer window that breaks through the roofline to admit light into

the central hallway on the second floor. The small paired, double-hung windows take up much of the face of the dormer, while the remainder of the surface is covered with decorative shingles.

Two brick chimneys break the roofline of the north facade. The flared caps that originally crowned the chimney were removed about the time of the move, and the clay flues are now slightly visible.

The south facade of the dwelling has always been oriented toward the approach road. The central element of this facade is an enclosed porch with a wood-shingled shed roof. The simple wooden staircase that leads up to this porch faces east. One double-hung sash window without a transom has been centered on the south wall of this porch. Larger paired, double-hung sash windows with transoms have been placed on either side of the porch. Three dormers, similar to the one on the north facade, have been evenly spaced across the roof. The central dormer dates from the original construction, and while the flanking dormers copy it precisely, photographic records show that they were added later while the station was still located at Sleeping Bear Point. An exterior entrance to the basement, which was added at the time of the move, is located to the west of the enclosed porch.

The east and west facades were very similar to each other at the time of construction. There are two evenly spaced, double-hung sash windows with transoms on the first floor level. A double window without transoms has been centered in the gable end, and the gable has been covered with decorative shingles. Small brackets mark where the bargeboard (removed at the time of the move to Glen Haven) had been located. An undecorated board that was placed above this point at the time of the move braces the plain boxed cornice near the roof ridge. One double-hung sash

window without a transom was placed between the two original windows on the west facade sometime after construction.

An accurate chronology of the exterior paint is impossible because of the Lifesaving Service's and later the Coast Guard's painting regulations. These regulations call for routine exterior paint removal and repainting. The captain's logbooks cited in the "Historical Data" section verify that these regulations were enforced by both agencies during their occupancy of the station.

Many of the original finishes correspond to the section drawn up for the plans. All interior walls and ceilings on the first and second stories of the dwelling have been finished with plaster. The stairs, hall, kitchen, and mess room have been finished with wainscoting. The wainscoting, which was placed over the plastered wall, is 3 feet 6 inches high from the floor, with 4-inch tongued, grooved, and beaded clear white-pine boards, 7/8-inch thick, with a cap molding and base. The original plaster was applied in two coats while the lath was made of thoroughly seasoned pine with break joints every 18 inches. The first coat of plaster was mixed with animal hair in the proportion of half a bushel to each barrel of lime used. The second coat was made with white sand.

Much of the original plaster and most all of the woodwork remains in the building. Damage to these wall surfaces has been caused mainly by neglect, and the repair of each wall must be individually considered during the preparation of working drawings.

Analysis of the interior paint shows that a similar two-toned color scheme was used throughout the life of the station. The ceilings and woodwork, with the exception of the stained wood

newel post and banisters on the main staircase, have been painted white, and the plaster wall surfaces have been painted coral (the word used in the Coast Guard's regulations). Microscopic investigation shows that the plaster wall surfaces were primed with white paint before receiving the coral color. This white paint corresponds to the munsell color, 5GY 8/1; the coral color is 5 YR 6/6.

In many rooms the ceilings were originally painted coral such as in the crew's quarters, kitchen, pantry, and closets on the first floor and the crew's quarters and southwest room on the second floor. A band of picture molding was later placed 13 inches below the ceiling, and both the ceiling and molding were painted white (munsell N9.01). In the crew's quarters on both the first and second floors, a 3½-inch band of molding was placed 5 feet 7 inches above the floor. The molding and ceilings in these rooms were also painted white. The wall was removed between the two closets on the first floor, probably at the time the building was moved from Sleeping Bear Point, and the room was remodeled into a bathroom. Both the ceilings and walls in these closets were originally painted coral, but the room was repainted white at the time of the remodeling.

Microscopic investigation shows only two of three layers of similarly colored paint below the outer surface, giving rather conclusive evidence that the station has retained much of its original appearance.

The wood floors of the main hall, crew's quarters, and the crew's mess on the first floor and the spare room on the second floor have been covered with brown linoleum at some time during the historic period (probably in the 1930s). This linoleum still remains, although it is curling at the seams and is damaged

both through use and neglect. The wood floor of the second floor hall was covered with green and white "checkerboard" patterned linoleum. There are only small scraps of this covering left under some of the thresholds in the hallway.

The plan of the house is arranged around a central hall on both the first and second stories. The staircase to the second floor fills most of the hallway. The arrangement of the stairway makes an interesting statement about the functionalism built into this house as it faces south, or the back porch, which has always been closer to the approach road and consequently used more frequently than the "front" door. This central hall also separates the keeper's private rooms and kitchen from the more public spaces used by the crew.

The central hall on the second floor again seems to serve as a buffer between the activities of the crew and more private spaces, although the precise functions of the rooms to the west of the hall are not given on the original plans. The north and south walls of the crew's quarters on the second floor are lined with seven small closets, which reflect the number of surfmen employed at the station. The spare room to the south of the staircase on the second floor was at sometime turned into a shower room.

It seems unlikely that the dwelling contained running water in 1901. Though indoor bathrooms were not uncommon at this time, the original plans show a privy located in the outbuilding. In 1905, a small structure was constructed between the dwelling and the first boathouse to protect the pump, which probably provided water for the whole station. The original specifications call for a galvanized iron sink with a waste pipe. There are currently two built-in sinks that fit this description, and the piping indicates that

running water was available at sometime during the historic period. Two bathrooms were installed inside the dwelling in the 1930s. A wall was removed between the two closets on the first floor, and a toilet, sink, and bathtub were placed in this space. A shower stall, toilet, and sink were installed in the spare room on the second floor.

The heating system in the dwelling of the 1901 lifesaving station, according to the "Original List of articles of outfit for the Sleeping Bear Point Life-saving Station, Twelfth District" consisted of two 1894 "Oak Jewel" hard-coal burning stoves. A wood-burning Baron No. 21 stove is currently located in the keeper's quarters. The other stove may have been located in the crew's quarters on the first floor because there is a covered hole for a stovepipe on the north wall. Heat was also generated by the cooking stove in the kitchen, which was a "Prize Jewel" wood-burning range with a single cover reservoir and a T-shelf.

The original list of articles of outfit also seems to indicate that the 1901 lifesaving station did not have an electrical system. All lighting devices ordered at this time are as follows:

- 2 burners, lamp, kerosene, No. 1, "Queen Anne"
- 2 burners, lamp, kerosene, No. 2, "Queen Anne"
- 2 lamps, hanging, brown or brass finish, length 29 inches, with metal rings, 1 quart metal font, central draft, with chimney, burner, smoke bell, tin shade, and screw hook, iron, wire bossed, brown or brass finish, 3 inches from boss to point of screw, complete
- 2 lamps, table, metal, kerosene, central draft, No. 2 burner, with 10-inch tin reflector shade, complete, with chimney
- 1 lantern beach, japanned, with wings and staves and 12 extra lights of glass

6 lanterns, tubular, "Dietz," No. 0, lift-wire, with guards
2 lanterns, patrol, tubular, "Dietz," No. 0, reflector, with
hoods

One 60-gallon oil tank and two 1-day windup clocks
were also ordered for the original station.

The existing electrical fixtures seem to have been
haphazardly installed between the time of the move in 1931 and 1942
when the station was abandoned by the Coast Guard. Most rooms
in the dwelling have at least one electric light in the ceiling.

Minimal electric lighting has been installed in the two
boathouses. There are two exposed electric light bulbs in a
porcelain casing hanging from the ceiling rafters in boathouse #1,
but only one similar fixture exists in boathouse #2.

Access to the basement is down a set of stairs
beneath the main stairway through an area that was originally a
closet. It is a full basement with poured concrete walls and floor.
The mechanical systems, which seem to have been added at the time
of the move, are located in the basement.

Some of the original hardware remains throughout
the dwelling; replacement seems to have been haphazard and was
probably based on necessity. The original specifications called for
4-inch back-japanned butt-hinges on the doors, and onsite
inspection revealed that many of these still exist. The
specifications also call for black porcelain knobs with brass roses
and escutcheons and two tumbler locks on the doors. The only
doorknobs remaining are those on the outside doors. The keyplates
for the most part have been left on the doors. Most windows and
their hardware have been replaced over time. At least one original

window seems to remain on the south wall of the first floor crew's quarters. Shadows on the closet doors of the crew's quarters on the second floor show the outline of numbers 1 through 7, which appeared on these doors.

2. Boathouse #1

Boathouse #1 is a one-story board and batten structure with a wood frame and a shingled bellcast hip roof crowned with a cupola. There are louvers for ventilation in the octagonal base of the cupola, which has a flaring spire to match the curve of the main roof. This building was constructed according to the 1890 original plans and specifications, with small variations most likely caused by the local availability of materials. These original plans call for a building to be located on a dock with a ramp into the water, but photographic evidence and slash marks on the drawings seem to indicate that this building has always been located on land. The boathouse now rests on a low concrete foundation, although originally it probably rested on wooden piles. It has always been oriented with the large double doors facing north; however, at Sleeping Bear Point it was facing the west of the dwelling.

The boathouse is also built of Norway pine framing. Mortising, notching, bracing, and spiking were used throughout the building to strengthen the frame. The studs have been set 16 inches on center and are braced and bridged with two rows of 3-by 4-inch girts. Girders 4 by 8 inches have been placed over the two double doors. The studs have been covered with diagonal sheathing and board and batten on the exterior. The floor joists are 16 inches on center and have been notched 2 inches into the sills. They have been braced with two rows of cross-bridging and solid blocked between the ends of the joists and under the door sills.

The roof rafters of the boathouse are set 16 inches on center and have been notched on the plate and spiked. The hip rafters are 3 by 10 inches, and the 2-inch-thick jack rafters have been planed. Double collar beams have been placed between every alternate pair of rafters.

The north facade is dominated by two large tongued and grooved, hinged doors that open outwards. A boat ramp extended from this building to the waterline at Sleeping Bear Point. The same ramp may have been used at Glen Haven, and an early aerial photograph taken of the site shows a ramp that only extends past the grounds to the beach. The ramp fell into disrepair after the abandonment of the complex by the Coast Guard, and no physical indications of it remain today. The modern shingle roof hides any marks that may have been left by a sign over the doors reading "US Life Saving Service," that shows up in early photographs of Sleeping Bear Point (see illus. 2). This sign would have been removed by the time the LSS became part of the U.S. Coast Guard.

There are two doors on the south facade. One is a hinged double door similar to but slightly smaller than those on the north facade. These doors have large wrought-iron hook hinges. The double doors have been secured with top and bottom flush side-bolts, patent mortise lever locks with brass faces, and a striking plate. A short wooden ramp leads up to the door. A standard-sized, tongue and groove built-up door is located to the west of the boat doors. This door is a change order and does not appear in the original plans (see appendix I). Two poured concrete steps lead up to this opening.

The east and west facades of the boathouse have similar configurations with two high, evenly spaced, paired double-hung sash windows.

The wood bracing and rafters have been left exposed on the interior and appear to be structurally sound. One especially interesting detail is the cupboard built into the southwest corner.

The boathouse is heated by a Baron No. 21 cast-iron stove similar to the one in the dwelling. The heater is vented through a pipe that extends out of the southernmost window on the east facade.

3. Fire Cache

The fire cache is a small wood building that corresponds closely to the original plans and specifications in which it was called an outbuilding. These plans show that the building was intended for coal, wood, oil, and paint storage and as a privy. The building probably did serve these functions, although the seat in the privy has been removed.

The building was constructed with a wood frame covered with diagonal sheathing and shiplap. The framing details are similar to the dwelling, but 4- by 6-inch Norway pine sills were used. The framing is exposed on the interior, as it was historically, and shows no sign of failure. The entrance now faces west, although at Sleeping Bear Point it was oriented toward the north. Since its relocation at Glen Haven, the fire cache has rested on a low concrete foundation. A small, high window with three-over-three lights has been placed on each facade. These windows are now boarded up.

The roof, which was painted red during the Coast Guard era, has recently been reshingled. The ventilation stack that appears in the original plans seems to have never been constructed.

4. Boathouse #2

Boathouse #2 was built according to the plans and specifications prepared in 1902, 12 years after the plans for the other buildings in the complex. The building, originally 575 feet to the west of Day's dock, was moved one lot farther west of the dock in 1905 before being moved to the Glen Haven complex. The boathouse was designed and built in the water with the double-hinged door that is now oriented to the south facing north. This double door also has wrought-iron hook hinges similar to that on boathouse #1 except they are shorter and wider. The door was reconstructed by the park in 1973, but the original hinges were reused.

The building has functioned as a garage and storage space since its move to the Coast Guard complex in 1931; its original location was virtually forgotten by the local inhabitants. The building measures 41 feet 9 inches by 21 feet. The frame was constructed with 4- by 6-inch corner posts, truss posts, and door posts. The girder over the double door now on the south facade is 4 by 8 inches. All studding is 16 inches on center and is sized 3 by 4 inches.

The principals of the roof truss measure 6 by 8 inches, the ties are 6 by 10 inches, and the braces are 6 by 6 inches and 6 by 4 inches. The longitudinal hanger beam measures 6 by 10 inches.

Part of two boat slings remain in place in boathouse #2. They are made of 1½-inch round iron in an elliptical shape with eyes forged on either end. Each is attached to a 3/8- by 4-inch center clip that wraps over the top of the longitudinal hanger beam. The yokes and boat cradles appear to be missing.

The frame of the building is covered with diagonal sheathing. The cedar shingles have been removed from the walls at the time of this report, leaving the diagonal sheathing exposed. Shingles found near the building have been stained red on both sides, although the color has worn off the exposure. Plans were being made at the time of this report to replace the shingles (see appendix J). The roof is also covered with wood shingles.

The frame, which is exposed on the interior, appears to be structurally sound. The floor joists, which are slightly below grade, show indications of dry rot as does the flooring.

D. General Building and Site Conditions

1. Paint and Plaster

The overall concern during the formulation of the proposed alternatives was the retention or accurate re-creation of the historic scene of the Coast Guard Station. The preferred alternative basically retains the site as is, with much of the proposed work only cosmetically changing the appearance of the buildings back to their condition in the 1930s.

The largest scope of work proposed is removing the latex paint on the exterior of the complex, repainting all the buildings, and staining the roof shingles. The latex paint applied by the park several years ago is already blistering and peeling, causing a generally unkempt appearance for the whole station. The buildings were originally painted with an oil-base suspension (see appendix B). This kind of paint continued to be applied throughout the Coast Guard's ownership of the complex. Because of different coefficients of expansion under varying environmental conditions, problems are often encountered when latex paint is applied over oil-base paint. This contact can in some cases (this

one in particular) lead to radical peeling and failure of one or more layers of paint even if the surface is properly prepared. The failure is due to the greater cohesive strength of latex paint, which tends to isolate paint layers, and the greater adhesive strength of oil-base paint, which tends to bind together successive paint layers. Therefore, using latex paints where oil-base paints have traditionally been used can add to maintenance costs and will eventually result in the loss of architectural detail because frequent painting will be necessary.

The preferred method of removing the latex paint would be hand-scraping, which will be facilitated by the present condition of the surface. Chemical paint removers could be considered as a second alternative. Either of these methods, if properly executed, would cause a minimum of damage to the historic fabric.

Another major task recommended by this report is the repair and replacement of plaster inside the dwelling. Certain procedures should be followed during the repair of this plaster. The temperature of the building must be maintained above 55 degrees Fahrenheit for an adequate period of time prior to the application of plaster, during the repair, and after the plaster is dry. The heat should be equally distributed in all areas. The existing wood lath should be reused where it is sound. If existing plaster is to be removed because it is loose, deteriorated, powdery, damaged, or nonhistoric, it should be cut and pulled off without damaging the undersurface. Damaged lath should then be removed and replaced. The plaster used for patching should match the type and texture of the existing adjacent plaster. Where the patch is larger than 1 foot square, self-furring metal lath may be used. The plaster should be applied in as many coats as necessary to bring all portions of the wall to the same plane.

New lath should be spaced with 3/8-inch clearance between lath, and the end of every fourth lath should be staggered. A 3-penny fine blue nail should be used to fasten each lath to the studs. The lath should then be dampened and allowed to dry for 48 hours before it is nailed securely into each support.

The plaster has been totally removed from the walls of the keeper's room and above the wainscoting in the mess room. This plaster should be replaced so that it resembles its original appearance. These walls are currently surfaced with wood veneer paneling over the original wood lath.

2. Mechanical and Electrical Systems

The extent and condition of the mechanical and electrical systems were verified by Michael Woods, mechanical engineer, and Roy Kohën, electrical engineer, during a field trip to the Glen Haven Coast Guard Station in June 1977. Their findings and recommendations are included in this section.

a. Heating

(1) Existing Conditions

The heating system for the building while at its present location was a coal (wood) fired steam boiler with steam radiators throughout. The boiler and distribution piping in the basement are rusted out, and the radiators and piping on the first and second floors have been removed.

The existing boiler was manufactured by U.S. Radiator Corp., Model 28-5, with a capacity of 850 square feet of steam or 204,000 Btu of heat per hour. Its coal capacity was 479 pounds per hour.

There are two chimneys in the house. The west flue has one 6-inch by 10-inch stack; the east flue has two, one of which was used for the boiler. There are covered flue openings in each room adjacent to the chimneys for stovepipe connection when the rooms had freestanding stoves. The east flues were plugged with soot.

(2) Recommendations

The heating system can be replaced with a similarly sized coal or oil boiler in the same room. The distribution system can be radiators, baseboard, or fan-coil units depending on the degree of restoration of the building. For ease of operation, an oil-fired hot water boiler with baseboard radiation divided into four heating zones is recommended. The new heating system should be able to operate using 2,000 to 3,000 gallons of fuel oil per year and about 6,000 gallons in its existing condition, assuming full-time operation.

b. Insulation

(1) Existing Conditions

The dwelling was constructed using typical early 20th century building techniques, and historically it was not insulated. The outer wall is covered with wood shiplap over seconds pine flooring diagonal sheathing. The inner wall has one-half to five-eighths inch of plaster over wood lath. This type of frame wall is a much better insulator than many other materials and parts of a building including glass, concrete, and the ordinary roof.

The plaster has been removed from the walls of the crew's mess and the keeper's quarters on the first floor and replaced with wood veneer paneling over the existing wood lath. There are small holes in the plaster on many of the

walls throughout the house. These seem to be mainly the result of neglect and vandalism. The lath visible through these holes is generally in excellent condition, and the plaster still appears to be keyed to it. Even though the walls will require much patchwork and surface finishing, their general condition seems to warrant the retention of the plaster.

Because this report recommends retaining the existing interior walls, the choices for insulation are limited to cellulose, urea formaldehyde, urethane, perlite, and vermiculite. Each of these insulations can be installed through a hole in an existing wall. However, each has its own inherent disadvantages, and none permits the placement of a vapor barrier in an existing wall.

Several measures (recommended below) can be taken to minimize heat loss without destroying the historic fabric.

(2) Recommendations

Proper care of the heating plant can reduce heating losses, generally at a smaller cost than additional insulation. (Because the heating plant is located in the basement, insulating between the joists supporting the first floor may actually prevent heat created by this plant from rising up to the first floor.)

The controlled addition of humidity to treated air permits the air to be kept at lower temperatures while maintaining the same comfort. The amount of humidification is limited by the surface temperatures of walls and glass because excessive condensation on walls and windows can lead to deterioration of finishes.

Heat can escape up chimneys, although this is minimized because there are no open fireplaces. The existing flues should be checked, however, to ensure that they are blocked to prevent the escape of heat or infiltration of moisture into the structure.

Double-hung windows (used throughout the dwelling) are a major point of air infiltration and heat loss. This can be reduced by caulking around the exterior frame and the glass panes.

The roof is another major source of heat loss. This loss can be minimized by insulating between the ceiling joists in the attic with rock wool or fiberglass bats with a vapor barrier.

The cornice (facia board) can develop cracks through which cold air from the outside can seep in between joists and under the attic floor. This should be checked and any cracks caulked.

The interior doors along the first and second floor halls should be shut when the dwelling is closed for the winter. This will help minimize drafts from the outside doors.

c. Plumbing

(1) Existing Conditions

There is an existing well and "Well-X-Trol" water pressurization system with a submersible pump. The quality of water is unknown, although it appears to be used. The plumbing fixtures in the house have been removed except for a water closet in the first floor restroom, which is manually filled with a garden hose.

(2) Recommendations

A new public restroom will be needed either in the dwelling or in one of the adjacent buildings. The water system appears to be in good operating condition, and if the water quality is acceptable, there should be no problems in serving the facility.

d. Electrical

(1) Existing Conditions

The main distribution panel is a Square D QOC 30M622S panel with 2P150A main circuit breaker (CB), 1-2P40A, 1-2P30A, 1-2P20A, and 11-1P20A CBs, and 13 single pole (1P) spaces. The 1P circuit breakers feed lighting and receptacle circuits wired with metal clad cable (MC), nonmetallic sheathed cable (NM), and rigid steel conduit (basement receptacles, surface mounted).

The boathouse is fed underground from the 2P30A CB with 8/3 NM cable, in conduit where exposed, but it is not known if the cable is in conduit underground.

The well is fed from the 2P20A CB with 12/2 underground feeder cable. The electric range is fed from the 2P40A CB with 6/3 NM cable.

The old MC cable appears to have been spliced and reused. It is fed into the panel board via conduits stubbed into the wall.

The boathouse has its own panel consisting of one 2P20A main CB and three 1P20A CBs. Lighting is on one CB, and two receptacles are on each of the others.

The remains of the original service, consisting of an old fusible knob and tube panel, are in the basement. The existing service is underground with the meter on the outside of the building. There is no existing fire or intrusion system.

(2) Recommendations

Proposed wiring will depend on final decisions on building use and interpretation requirements. Walls that will be refinished will be rewired with electrical metallic tubing to switches and outlets. Outlets can be concealed in historically restored areas. If wall switches are objectionable, the lights can be remotely or time clock controlled. The range circuit will be removed. Four circuits rated 120 volts 20 amps will be available for the display area (Harpers Ferry) to their requirements. Lighting will be per the park's requirements.

Flush-mounted smoke detectors will be provided in finished ceilings. Combination temperature detectors will be provided in the basement. Surface-mounted smoke detectors will be installed in the boathouse. A zoned fire panel will be provided.

Intrusion detection, if desired by the park, will be provided upon their request.

Fire or intrusion can be locally "alarmed" and, in addition, a dialer or radio can be used to send alarms to remote telephones or to radio receivers.

The underground service should remain. If desired for interpretive purposes, a "dummy" overhead service can be provided.

Underground telephone service will be provided per the park's needs.

3. Access for the Handicapped

Access for the handicapped is available throughout most of the Coast Guard Station complex. The buildings and beach are connected by a system of straight, level sidewalks. Access to the fire cache, if it is developed into a public facility, could be by a temporary ramp, which could be stored inside the structure. A permanent ramp to boathouse #1, which may be developed into exhibit space, already exists. Access to the dwelling would probably be impossible for most handicapped persons because the height of the foundation would make the use of a temporary ramp very difficult, if not impossible, and a permanent ramp would be unsightly.

V. ALTERNATIVES FOR RESTORATION

The Coast Guard Station complex at Glen Haven presents itself to three alternatives for restoration as follows:

Alternative 1 - Restoration of the complex to its condition immediately postdating the move of the buildings from Sleeping Bear Point to Glen Haven, 1930-31

Alternative 2 - Restoration of the individual buildings existing on the site to their original condition, 1901-10

Alternative 3 - Restoration of all buildings at the site to their original condition and reconstruction of all buildings and structures that were part of the Sleeping Bear Point Lifesaving Station but were not moved to Glen Haven, 1901-10

The scope of work involved in each alternative builds on the preceding one.

The buildings that make up the Coast Guard Station lend themselves to the same use proposal under the three proposed alternatives:

Dwelling: Adaptive use as exhibit space and visitor service

Boathouse #1: Adaptive use as exhibit space

Fire Cache: Remain as is, or with further development of the park and this complex, the interior of this building could be converted to a small comfort station without altering the exterior.

Boathouse #2: Remain as is (storage)

A. Alternative 1

This alternative outlines the work needed at the Coast Guard Station to stabilize the buildings within a consistent interpretive date so that they may function as exhibit space and as a visitor center.

Dwelling - Exterior

Remove latex paint

Repaint with oil-base paint

Stain roof shingles

Repoint brick on chimneys

Reinstall boarded-up transoms with windows stored
inside house

Reinstall boarded-up windows in concrete foundation

Remove and replace exterior lighting fixtures

Replace lattice work under wood steps leading up to
south porch

Dwelling - Interior

Repair and replace plaster

Clean or replace wood flooring

Remove linoleum flooring on first floor as indicated in
plans

Repair/refinish floors

Repaint or stain interior finishes

Install modern toilet facilities on first floor

Rework radiators

Reequip windows with shades

Remove and replace interior lighting fixtures

Install fire detection system

Install lighting fixtures in basement

Reconstruct first-floor fireplace according to original plans

Remove modern sink in southeast corner of first floor

Rebuild china cabinet, cupboard, closet, and historic sinks

Boathouse #1

Remove latex paint

Repaint with oil-base paint

Stain roof shingles

Reconstruct boat ramp (120 feet long)

Install fire detection system

Install lighting

Reinstall windows as needed

Repair cast-iron stove

Fire Cache

Remove latex paint

Repaint with oil-base paint

Stain roof shingles

Repaint interior

Install lighting fixture to replace bare bulb

Fire Cache - Alternative

Refurbish interior to accommodate comfort station

Site

Remove trees and undergrowth to north of dwelling

Remove bushes around boathouse #1 and fire cache

Prune existing trees and bushes as necessary
Replace bench to south of dwelling

Boathouse #2

Replace wood shingles on roof in kind and stain
Reinstall windows where boarded up
Install lighting in interior

NOTE: While this report was in preparation, the park approached the Denver Service Center for recommendations on extensive maintenance that needed to be performed on this structure before the end of fiscal year 1977. The recommendations sent to the park with regards to this building are included in appendix J.

Signal Tower

Replace missing mast

Drill Pole

This structure is not evident in any of the historic photographs, but it would be highly unlikely if one did not exist on this site. The drill pole could be accurately reconstructed from the original specifications.

Lookout Tower and Outbuildings

These structures do not appear to have been moved to the site near Glen Haven; consequently, reconstruction would not be recommended under this alternative.

B. Alternative 2

This alternative proposes that the individual buildings be restored to their original appearance. The orientation of several buildings and their placement in relationship to one another changed at the time of the move in the 1930s. Alternative 2 does not suggest moving the buildings back to their original configuration. In addition to the necessary maintenance listed under alternative 1, implementation of this proposal would include the following:

Dwelling

Remove present north porch and reconstruct according to original drawings and specifications

Patch wood siding as needed after removal of present porch

Mask part of concrete foundations with wood siding as seen in illus. 6, which was taken on original site

Restore bargeboards under east and west gables according to original drawings

Rebuild chimney caps according to original drawings

Replace front door with double wood panel and screen doors as seen in early photographs

Replace glass panel in present front door with wood; rehing front door and return to original place on south porch

Remove dormers to either side of the central dormer on the south facade

Remove nonoriginal window on west facade; repair wood siding

Remove radiators; install new heating system

C. Alternative 3

This alternative proposes restoring the buildings to their original appearance (ca. 1901-10) and reconstructing the structures

not moved to the present site. Alternative 3 includes all work already outlined in alternatives 1 and 2 plus the following:

Lookout Tower

Reconstruct according to plans, which could be interpolated from the list of lumber purchased (see appendix E) and from illus. 5 and place on either side of dwelling on the beach. (This building changed locations at least twice on the original site; see illustrations 2 and 5.)

Outbuildings

Reconstruct from visual information available in illustrations 1, 2, and 3.

Flagstaff and Drill Pole

Reconstruct according to original plans and specifications. Remove metal signal tower constructed in the 1930s as it would detract from the reconstructed flagstaff and would be inconsistent with interpretation during 1901-10.

Boathouse #1

Reconstruct sign above doors on north facade (see illus. 3).

D. Cost Estimates

Cost estimates for alternatives 1, 2, and 3 are given on the accompanying Forms 802, "Package Estimating Detail."

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

PACKAGE ESTIMATING DETAIL

REGION Midwest	PARK Sleeping Bear Dunes National Lakeshore
PACKAGE NUMBER 124	PACKAGE TITLE Historic Structure Report

(If more space is needed, use plain paper and attach)

ITEM	QUANTITY	COST
<u>ALTERNATIVE 1</u>		
Dwelling - Exterior		\$ 35,000
Dwelling - Interior		101,000
Boathouse #1		56,000
Fire Cache		14,000
Fire Cache - Alternative Site		40,000
Boathouse #2		42,700
Signal Tower		17,000
Drill Pole		1,000
		1,500
		<u>\$308,200</u>

SUMMARY OF CONSTRUCTION ESTIMATES		CLASS OF ESTIMATE		
		A	B	C
		<input type="checkbox"/> Working Drawings	<input checked="" type="checkbox"/> Preliminary Plans	<input type="checkbox"/> Similar Facilities
Proj. Type		Totals from Above		
		B & U	R & T	
52	Museum Exhibits			XXXXX
55	Wayside Exhibits			XXXXX
62	Audio-Visual			XXXXX
89	Ruins Stabilization			XXXXX
91	Construction			
92	Utility Contracts			XXXXX
ESTIMATES APPROVED (Signature)		(title)	(date)	
		71		

POST PROFESSIONAL SERVICES ESTIMATES AND SCHEDULING ON BACK OF FORM

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

PACKAGE ESTIMATING DETAIL

REGION Midwest	PARK Sleeping Bear Dunes National Lakeshore
PACKAGE NUMBER 124	PACKAGE TITLE Historic Structure Report

(If more space is needed, use plain paper and attach)

ITEM	QUANTITY	COST
<u>ALTERNATIVE 2</u>		
Dwelling - Exterior		\$ 66,000
Dwelling - Interior		101,000
Boathouse #1		56,000
Fire Cache		14,000
Fire Cache - Alternative Site		40,000
Boathouse #2		42,700
Signal Tower		17,000
Drill Pole		1,000
		1,500
		<u>\$339,200</u>

SUMMARY OF CONSTRUCTION ESTIMATES		CLASS OF ESTIMATE		
		<input type="checkbox"/> Working Drawings	<input checked="" type="checkbox"/> Preliminary Plans	<input type="checkbox"/> Similar Facilities
Proj. Type		Totals from Above		
		B & U		R & T
52	Museum Exhibits			XXXXX
55	Wayside Exhibits			XXXXX
62	Audio-Visual			XXXXX
89	Ruins Stabilization			XXXXX
91	Construction			
92	Utility Contracts			XXXXX
ESTIMATES APPROVED (Signature)		(title)	(date)	
		72		

POST PROFESSIONAL SERVICES ESTIMATES AND SCHEDULING ON BACK OF FORM

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

PACKAGE ESTIMATING DETAIL

REGION Midwest	PARK Sleeping Bear Dunes National Lakeshore
PACKAGE NUMBER 124	PACKAGE TITLE Historic Structure Report

(If more space is needed, use plain paper and attach)

ITEM	QUANTITY	COST
<u>ALTERNATIVE 3</u>		
Dwelling - Exterior		\$ 66,000
Dwelling - Interior		101,000
Boathouse #1		56,000
Boathouse #1 - Sign		1,500
Fire Cache		14,000
Fire Cache - Alternative Site		40,000
Boathouse #2		42,700
Signal Tower		17,000
Drill Pole		1,000
Lookout Tower		1,500
Outbuildings		10,000
Flagstaff		22,000
		5,200
		<u>\$377,900</u>

SUMMARY OF CONSTRUCTION ESTIMATES		CLASS OF ESTIMATE		
		A	B	C
		<input type="checkbox"/> Working Drawings	<input checked="" type="checkbox"/> Preliminary Plans	<input type="checkbox"/> Similar Facilities
Proj. Type		Totals from Above		
		B & U	R & T	
52	Museum Exhibits			XXXXX
55	Wayside Exhibits			XXXXX
62	Audio-Visual			XXXXX
89	Ruins Stabilization			XXXXX
91	Construction			
92	Utility Contracts			XXXXX
ESTIMATES APPROVED (Signature)		(title)	(date)	
		73		

POST PROFESSIONAL SERVICES ESTIMATES AND SCHEDULING ON BACK OF FORM

E. Conclusions

The initiating development/study package proposal prepared by the Programs Office of the Midwest Regional Office suggested restoration of the old Coast Guard Station to circa 1901-10. This interpretive date poses certain dilemmas so that the date 1931--the time period immediately following the move to Glen Haven--is the preferred alternative for various reasons.

The site and buildings retain much of the original configuration dating from the move. Additional data are available to document the site--both through photographs and oral accounts of long-time residents. This date also removes the interpretive dilemma for boathouse #2 (garage). The use of electricity and the heating system (radiators) is not only compatible with this date, but because the utilities are installed, the environmental impact is minimized. This date also appears to be the least expensive scheme open to consistent development. The present configuration reflects the history of the site to date; more importantly, the retention of historic structures in the condition in which they were received by the National Park Service is the preferred alternative under current management policy.

It is important that a consistent interpretation of this complex be adhered to. The reconstruction of structures that existed at some point in time in conjunction with the complex outside of the chosen interpretive framework would be historically distracting. If a strictly historical, accurate setting for the park's collection of artifacts dating from the period of the Lifesaving Service is desired, further study on utilizing the park-owned lifesaving station on South Manitou Island is recommended. The Coast Guard Station at the Glen Haven site has a greater potential for visitation because of its proximity to such popular areas in the park as the Sleeping Bear Dune and the D. H. Day Campground.

However, its most sensitive interpretation would reflect the evolving history of the Lifesaving Service as it merged with the U.S. Coast Guard to more efficiently serve the increasing traffic on the Great Lakes.

VI. ENVIRONMENTAL IMPACTS

The old lifesaving station was moved to Glen Haven by the Coast Guard in 1931. The site was landscaped with nonnative shrubs and trees; sidewalks and driveways were laid out; power was introduced to the building; and a septic tank and well were dug. The site was located on the edge of a small town that served as a lumber-shipping head. A narrow gauge railroad ran to Day's dock where fairly large steamers waited to pick up cargo.

Photographs taken of Glen Haven in the 1930s show a lightly developed residential area (almost comparable to today) along the beachfront. The layout of the Coast Guard Station at Glen Haven remains virtually unaltered from its original siting in the 1930s. The trees have grown to maturity, and the buildings have aged gracefully in their present environment.

One intrusion to the site is the modern house constructed to the west of the dwelling. The contemporary design and proximity of this house would conflict with any of the proposed interpretive dates. The structure is owned by the National Park Service, and the concurrence of the park personnel while this report was in preparation was that it be removed. The removal of this modern building would, of course, have an environmental impact, but it would be offset by the re-creation of a more original setting for the station. The trees to the north of the dwelling also present an intrusion upon the complex's interpretation as a Coast Guard Station because they block the view of the lake from many parts of the site. It seems (through photographic evidence) that most of these trees were permitted to mature after the abandonment of the station. Further investigation of the possibility of an adverse effect caused by removal of this undergrowth should be undertaken.

Undergrounding existing power and telephone lines would not be necessary if the recommended alternative to return the site to its appearance immediately postdating the move is followed because the aboveground lines are historically accurate (see illus. 13). If further study indicates that the sewer and septic system require rebuilding or replacement, excavation will cause a temporary disturbance to the soil, topography, and nonnative vegetation. This would cause a minor inconvenience to visitors but would be mitigated by improved facilities in the long range.

The parking lot should not be enlarged as this would destroy its historic configuration. The construction of trails would be unnecessary not only because of the small scale of the site but also because much of the property is sand. The removal of undergrowth to the north of the dwelling would bring the beach back to its original relationship with the house and permit access to the lake from the historic sidewalks.

The recommended alternative (alt. 1) presents no long-range environmental effects not already encountered at the site. Construction activity would, of course, cause temporary inconvenience to visitors, but this can be minimized by closing the area for the duration.

The adaptation of the Coast Guard Station to an exhibit space and visitor service center would facilitate the preservation and continued use of the complex. If this facility continues to be used for storage, it would continue to decay until the resource is lost.

The development and reuse of the complex would cause a minimal impact upon the already disturbed natural environment. The critical resource, the structures themselves, would be stabilized and reused in the alternatives proposed in this report, furthering the legislatively directed missions and mandates of the National Park Service.

VII. RECOMMENDATIONS FOR FURTHER STUDY

The most pressing need in the area of history studies is that of a historic resource study (type 32) for the park. In the normal sequence of historical reports, the historic resource study comes first and is the report on which the others build. In theory, the general history of any park is known and its cultural resources identified before any development studies are prepared, such as this historic structure report. Therefore, there is a need to fill this gap and to prepare a historic resource study for purposes of resource management (for what is not identified and evaluated cannot be managed), planning, and development. This routine and normal need is important enough by itself, but the special needs for such a study at Sleeping Bear Dunes National Lakeshore are even greater. At the time of this writing (October 1977), a general management plan and two comprehensive designs are being prepared. The requirements of National Park Service policy and legislation will require cultural resource input as soon as possible. With a completed historic resource study, it would already be done, and no time would be lost awaiting its completion.

Because the proper sequence is already broken, it might be wise to wait a few months longer until the basic ideas of the general management plan are known, and the historian preparing this vitally needed report can address them.

The historical and architectural survey underway at this time, while an excellent tool, is not a substitute for a historic resource study.

A study should be made that compares the Coast Guard complex at Sleeping Bear Dunes with its twin at South Manitou Island, which was built at the same time by the same contractor using the same plans and specifications.

The measured drawings prepared for this report should be adapted into the Historic American Buildings Survey format.

The water system needs to be checked more thoroughly for potability, and the routing and type of sewer system needs to be verified.

A P P E N D I X E S

A P P E N D I X A

Original List of Articles of Outfit for the Sleeping Bear Point Lifesaving Station, Twelfth District, June 24, 1901

This list is a duplicate of the one prepared for South Manitou Island and shows all of the initial furnishings for the Sleeping Bear Point Lifesaving Station. From time to time additional items were added to the station's furnishings; some were noted in the station logbook, and some were not. Those noted in the early years of the station's history are included at the end of the June 24, 1901, list.

L.R. 79665 50/208

Original.

List of articles of outfit for the
Sleeping Bear Point
Life-saving Station,
Twelfth District.

June 24, 1901.

4. 4. catalogue, \$46.92, 75751.

Post office address:

KEEPER Sleeping Bear Point
LIFE-SAVING STATION

Green Haven,

Michigan

Shipping direction:

KEEPER Sleeping Bear Point
LIFE-SAVING STATION

Green Haven,

Mich.

via Chicago thence by

Northern Michigan

Transportation Co.

Mem. Prepay to Chicago, Ill. Ill.

" G.H." Meaning Grand Haven storehouse.

" N.Y." " New York.

" O.M." " open market purchase.

" C.O.N.Y." " contractor or contractors.

" B.S.H." " boat storage house New Jersey.

THE UNITED STATES.

List of articles of outfit for the
Sleeping Bear Point station, 12th Dist. DR.

6/24/11 Date of purchase, _____; authorized by letter dated _____

THE UNITED STATES,

List of articles of outfit for the
 Sleeping Bear Point station, 12th Dist.
 DR.

1/24/11 Date of purchase, ; authorized by letter dated.

ITEM No.	QUANTITY	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
BEDS AND BEDDING.						
GH.	10	Beds, iron, single, with best quality woven wire mattresses combined, per sample each.	STOREHOUSE GRAND HAVEN,			
GH	24	Blankets, 8 pounds per pair, gray, per sample, per pair	STOREHOUSE GRAND HAVEN,			
	3	Blankets, all wool, gray, 8 pounds per pair, 4 points, U. S. L. S. S. woven in fabric, "Oregon City Woolen Mills," per sample per pair				
	4	Blankets, all pure new wool stock, gray, 8 pounds per pair, U. S. L. S. S. woven in fabric, Bandon Woolen Mills Co.'s, per sample per pair.				
	10	Mattresses, stuffed with fine fiber rattan, heavy cotton tops, square edges, bound, weight 27 pounds, 6 feet 2 inches by 2 feet 6 inches, A. C. A. ticking each.	STOREHOUSE GRAND HAVEN,			
	10	Mattress covers, Park check, No. 90, to fit mattresses, item No. 5 each.	STOREHOUSE GRAND HAVEN,			
	10	Pillows, feather, first quality, new, live geese, 20 x 30 inches, weight 3 pounds, A. C. A. ticking each.	STOREHOUSE GRAND HAVEN,			
	20	Pillowcases, 23 x 35 inches, 1-inch hem, "Utica Mills" each.	STOREHOUSE GRAND HAVEN,			
	20	Pillow covers, Park check, No. 90, to fit pillows, item No. 7 each.	STOREHOUSE GRAND HAVEN,			
	40	Sheets, brown, two yards to weigh 1 pound, 75 wool, 72 warp, 7-4, 24 yards long, hemmed and made each.	STOREHOUSE GRAND HAVEN,			
		Amount carried forward.....				

QUANTITY.

ARTICLES.

(Do not alter Descriptions.)

PRICES.

AMOUNT.

DOLLARS.

CENTS.

DOLLARS.

CENTS.

Amount brought forward.....

BLOCKS AND SHEAVES.

11	2	Blocks, breeches buoy, English pattern, per sample, each
12	2	Blocks, double, 8-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks..... each
13	1	Blocks, double, 10-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks..... each
14	2	Blocks, double, 8-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks and beckets..... each
15	1	Blocks, double, 10-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks and beckets..... each
16	2	Blocks, galvanized iron, combination snatch, per sample..... each
17	1	Blocks, single, 8-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks..... each
18	1	Blocks, single, 10-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks..... each
19	1	Blocks, single, 8-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks and beckets..... each
20	1	Blocks, single, 10-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks and beckets..... each
21	3	Blocks, single, 6-inch, inside galvanized iron strapped, open galvanized iron sheaves, swivel eye with thimble, ash shell, 18-foot tail of 2 1/2 inch manila, per sample..... each
		Blocks, triple, 12-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks..... each
23		Blocks, triple, 12-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks and beckets..... each
24		Blocks, triple, 10-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks..... each

STOREHOUSE GRAND HAVEN,

25	Blocks, triple, 8-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks..... each
26	Blocks, triple, 10-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks and buckets..... each
27	Blocks, triple, 8-inch, inside galvanized iron strapped, galvanized iron sheaves, with best composition roller bushings and loose hooks and buckets..... each
28	Sheaves, open, galvanized iron, bushed, 3½ x 1½ inch (for tail blocks)..... each
29	Sheaves, galvanized iron, best composition roller bushings, 8½ x 1½ inch..... each
30	Sheaves, galvanized iron, best composition roller bushings, 5 x 1½ inch..... each
31	Sheaves, galvanized iron, best composition roller bushings, 6½ x 1½ inch..... each
32	Sheaves, galvanized iron, best composition roller bushings, 8 x 1½ inch..... each

CORDAGE.

(Circumference in inches.)

Hawses LAWSERS, 3-INCH.

33	1 Bolt rope, best manila, right-hand laid, one red yarn throughout the entire length of one strand (150 fathoms each)..... per pound.
34	1 Bolt rope, best manila, right-hand laid, one red yarn throughout the entire length of one strand (235 fathoms each)..... per pound.

WHIP LINES, 1½-INCH.

35	Bolt rope, best manila, right-hand laid, one red yarn throughout the entire length of one strand (300 fathoms each)..... per pound.
36	Bolt rope, best manila, right-hand laid, one red yarn throughout the entire length of one strand (150 fathoms each)..... per pound.
37	1 <i>Whiplines</i> Bolt rope, best manila, left-hand laid, one red yarn throughout the entire length of one strand (300 fathoms each)..... per pound.
38	2 <i>Whiplines</i> Bolt rope, best manila, left-hand laid, one red yarn throughout the entire length of one strand (150 fathoms each)..... per pound.

MISCELLANEOUS SIZES.

(Circumference in inches unless otherwise noted.)

39	70 lb Bolt rope, best manila, 2½ inch..... per pound.
40	30 lb Best manila, long fiber, smooth laid, 6-thread..... per pound.

Amount carried forward.....

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

G.H.
G.H.
G.H.
G.H.
G.H.

ITEM NO.	QUANTITY.	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
41		Best manila, long fiber, smooth laid, 9 thread, per pound.				
42	25 lbs	Best manila, long fiber, smooth laid, 12 thread, per pound.			STOREHOUSE GRAND HAVEN,	
43	75 lbs	Best manila, long fiber, smooth laid, 14 inch, per pound.			STOREHOUSE GRAND HAVEN,	
44	50 lbs	Best manila, long fiber, smooth laid, 11 inch, per pound.			STOREHOUSE GRAND HAVEN,	
45		Best manila, long fiber, smooth laid, 17 inch, per pound.				
46		Best manila, long fiber, smooth laid, 2 inch, per pound.				
47		Best manila, long fiber, smooth laid, 2 1/2 inch, per pound.				
48	50 lbs	Best manila, long fiber, smooth laid, 2 1/2 inch, per pound.			STOREHOUSE GRAND HAVEN,	
49	75 lbs	Best manila, long fiber, smooth laid, 3 inch, per pound.				
50		Best manila, long fiber, smooth laid, 4 inch, per pound.				
51		Best manila, long fiber, smooth laid, 4 1/2 inch, per pound.				
52	10 lbs	Best Russia hemp, 12 thread per pound.			STOREHOUSE GRAND HAVEN,	
53	10 lbs	Best Russia hemp, 15 thread per pound.			STOREHOUSE GRAND HAVEN,	
54	5 lbs	Halvards, signal, No. 7, braided, Italian hemp, in coils per pound.				
55	10 lbs	Marline hemp (5 and 10 pound coils) per pound.				
56	10 lbs	Spun yarn, hemp, 2-yarn (5 and 10 pound coils) per pound.				
CROCKERY.						
57	2	Bowls, mixing, yellow, 6-quart. each.			STOREHOUSE GRAND HAVEN,	
58	2	Bowls, sugar, without handles, with covers, best ironstone china each.			STOREHOUSE GRAND HAVEN,	
59	2 sets	Cups, coffee, without handles, with saucers, best ironstone china (set to consist of 6 cups and 6 saucers) per set.				

G. H.

NY
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G. H.

60		Cups, coffee, without handles, best ironstone china, each.
61	2	Dishes, baking, yellow, 10-inch each
62	2	Dishes, butter, with covers and drainers, best ironstone china, 5-inch each
63	4	Dishes, vegetable, 10-inch, with covers, best ironstone china each
64	1	Jugs, stone, 1-gallon each
65	1	Jugs, stone, 2-gallon each
66	1	Jugs, stone, 3-gallon each
67	2	Pitchers, milk, 1-quart, best ironstone china each
68	2	Pitchers, molasses, 1-pint, heavy glass, white metal covers each
69	2	Pitchers, water, best ironstone china, 6's each
70	1/2 doz	Plates, dinner, 10-inch, best ironstone china, per dozen
71	1 doz	Plates, soup, 10-inch, best ironstone china, per dozen
72	2	Platters, meat, oval, 14 inch, best ironstone china, each
73	2	Salicollars, pressed glass, plain, heavy, largest size each
74	1 doz	Tumblers, table, pressed glass, plain, extra heavy, largest size per dozen
FURNITURE.		
75	12	Chairs, office, hard wood, back of bent wood in one piece, with five upright rungs, one 1/2-inch iron rod with head and nut, on each side through seat and side rungs, per sample each
76	1	Tables, extension, 3 1/2 x 10 feet, solid oak, round, drop leaves, iron brackets, iron hinges, five legs fastened to frame with bolts, nuts, and washers, and iron clasps on underside of tops to fasten tables when closed, brass casters, set up single, tops burlaped each
77	2	Tablecloths, Turkey, "Toilette," with variegated stripes, 67 inches x 3 yards, ends hemmed, per sample each
78	2	Table covers, oilcloth, white marble pattern, 11 x 4 yards, each rolled on 1 1/2 inch roller 46 inches long each
Amount carried forward		

STOREHOUSE GRAND HAVEN,

FORM No.	QUANTITY.	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
3 H.	12 yds	79 Toweling, linen, crash, light, 18-inch, best quality, per yard.	STOREHOUSE GRAND HAVEN,			
	12 yds	80 Toweling, linen, crash, heavy, 18-inch, best quality, per yard.	STOREHOUSE GRAND HAVEN,			
		HARDWARE.				
4 H.	2	81 Brackets, brass, cast, 5 1/4 x 7 inches, with brass screws	STOREHOUSE GRAND HAVEN,			
	2	82 Brackets, iron, cast, japanned, plain, 12 x 14 inches, with screws	STOREHOUSE GRAND HAVEN,			
		83 Burrs, copper, No. 15 (for 1-inch nails) .. per pound.				
		84 Burrs, copper, No. 14 (for 1 1/4-inch nails) .. per pound.				
		85 Burrs, copper, No. 12 (for 3-inch nails) .. per pound.				
H.	2	86 Coal hods, 18-inch, No. 20 galvanized iron, Iron Glad Co.'s or equal	STOREHOUSE GRAND HAVEN,			
		87 Coffee mills, box, per sample				
H.	1	88 Coffee mills, side, Parker's No. 460	STOREHOUSE GRAND HAVEN,			
		89 Couplings, brass, for 1 1/4-inch discharge hose .. per set.				
		90 Couplings, brass, for 2-inch discharge hose .. per set.				
		91 Couplings, brass, for 2 1/4-inch discharge hose .. per set.				
	6 sheets	92 Emery cloth, No. 00, Baeder, Adamson & Co.'s, per sheet.	STOREHOUSE GRAND HAVEN,			
	6 sheets	93 Emery cloth, No. 14, Baeder, Adamson & Co.'s, per sheet	STOREHOUSE GRAND HAVEN,			
	6 sheets	94 Emery cloth, No. 3, Baeder, Adamson & Co.'s, per sheet.	STOREHOUSE GRAND HAVEN,			
H.	1	95 Flour sieves, seamless, tin rim, 12 1/2 inches diameter, No. 18 mesh				
	1	96 Forks, carving, rubber handles, with bolsters, Russell's or Northampton Cutlery Co.'s				
	1	97 Forks, flesh, 18-inch, 3 prongs, malleable iron, retinned	STOREHOUSE GRAND HAVEN,			
	1	98 Funnels, corrugated, 1-quart, 4X tin				
	1	99 Funnels, corrugated, 1-quart, 4X tin, with brass wire-cloth strainers				

100		Hasps, wrought iron, galvanized, 7 inch, with staples, Stanley's or Brewer's.....	each
101		Hinges, strap, heavy, 6-inch, wrought iron, galvanized, brass pins, with screws, Stanley's.....	per pair
102		Hinges, strap, heavy, 8 inch, wrought iron, galvanized, brass pins, with screws, Stanley's.....	per pair
103		Hooks, clothes, medium size, japanned, with screws.....	per dozen
104		Hooks, harness, galvanized, 8-inch, with screws.....	per dozen
105		Hooks, hat and coat, No. 14, japanned, with screws.....	per dozen
106		Hooks, wrought-iron, galvanized, 6-inch, with staples.....	each
107		Hose, carbon, 3/4-inch delivery, in 50-foot lengths, coupled with brass shank couplings and "Sherman's" brass hose bands, with iron bolt and nut.....	per foot
108		Hose, cotton, 1 1/4-inch delivery, in 50-foot lengths, coupled with brass shank couplings and "Sherman's" brass hose bands, with iron bolt and nut, "Warwick," mildew and rot proof, "Safety" brand, or equally good.....	per foot
109	<i>GH.</i>	<i>150 feet</i> Hose, cotton, 2 inch delivery, in 50 foot lengths, coupled with brass shank couplings and "Sherman's" brass hose bands, with iron bolt and nut, "Warwick," mildew and rot proof, "Safety" brand, or equally good.....	per foot
110		Hose, cotton, 2 1/4 inch delivery, in 50-foot lengths, coupled with brass shank couplings and "Sherman's" brass hose bands, with iron bolt and nut, "Warwick," mildew and rot proof, "Safety" brand, or equally good.....	per foot
111		Hose, rubber, hard, standard quality, 4-ply, 1 1/4-inch delivery, for suction.....	per foot
112	<i>GH.</i>	<i>20 feet</i> Hose, rubber, hard, standard quality, 4-ply, 2-inch delivery, for suction.....	per foot
113		Hose, rubber, hard, standard quality, 4-ply, 2 1/4-inch delivery, for suction.....	per foot
114		<i>2 sets</i> Knives and forks, dinner, best shear steel, rubber handles, with metal bolsters, Russell's, Northampton Cutlery Co.'s, or L. & G. (set to consist of 6 knives and 6 forks).....	per set
115	<i>GH.</i>	<i>21</i> Knives, butcher, best shear steel, 7 inch blade, cocoa or beech handles, with metal bolsters, Russell's, Northampton Cutlery Co.'s, or L. & G.....	each
116		<i>1</i> Knives, carving, best shear steel, 12 inch blade, rubber handles, with metal bolsters, Russell's, Northampton Cutlery Co.'s, or L. & G.....	each

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

Amount carried forward.....

ITEM No.	QUANTITY	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
117	1	Knives, mincing, best cast steel, single blade, polished, No. 1, plain handle each			STOREHOUSE GRAND HAVEN,	
118	1	Knives, putty, 6-inch, square, elastic, riveted handles each			STOREHOUSE GRAND HAVEN,	
119	2	Match safes, iron, japanned, large, self closing, each			STOREHOUSE GRAND HAVEN,	
120	1	Measures, lipped, 4X tin, gallon each			STOREHOUSE GRAND HAVEN,	
121	1	Measures, lipped, 4X tin, quart, graduated measure each			STOREHOUSE GRAND HAVEN,	
122	2 lb	Nails, boat, copper, 1 inch per pound			STOREHOUSE GRAND HAVEN,	
123	2 lb	Nails, boat, copper, 1 1/2 inch per pound			STOREHOUSE GRAND HAVEN,	
124		Nails, boat, copper, 3 inch per pound				
125	5 lb	Nails, boat, galvanized, Swedish iron, 1-inch, per pound			STOREHOUSE GRAND HAVEN,	
126	5 lb	Nails, boat, galvanized, Swedish iron, 1 1/2 inch, per pound			STOREHOUSE GRAND HAVEN,	
127	5 lb	Nails, boat, galvanized, Swedish iron, 3-inch, per pound			STOREHOUSE GRAND HAVEN,	
128	5 lb	Nails, cut, 6d per pound			STOREHOUSE GRAND HAVEN,	
129		Nails, cut, 8d per pound				
130		Nails, cut, 10d per pound				
131	5 lb	Nails, cut, 20d per pound			STOREHOUSE NEW YORK CITY,	
132	5 lb	Nails, cut, galvanized, 6d per pound			STOREHOUSE GRAND HAVEN,	
133	5 lb	Nails, cut, galvanized, 8d per pound			STOREHOUSE GRAND HAVEN,	
134		Nails, cut, galvanized, 10d per pound				
135		Nails, cut, galvanized, 20d per pound				
136		Nails, wire, common, 3d per pound				
137		Nails, wire, common, 4d per pound				
138		Nails, wire, common, 6d per pound				
139	25 lb	Nails, wire, common, 8d per pound			STOREHOUSE GRAND HAVEN,	
140	25 lb	Nails, wire, common, 10d per pound				
141		Nails, wire, common, 16d per pound				

ITEM No.	QUANTITY	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
168		Screws, brass, flat heads, gimlet points, 1 1/2 inch, No. 14 per gross				
169		Screws, brass, flat heads, gimlet points, 1 1/4 inch, No. 15 per gross				
170		Screws, brass, flat heads, gimlet points, 2 inch, No. 16 per gross				
171		Screws, iron, flat heads, gimlet points, 1/2 inch, No. 5, per gross.				
172		Screws, iron, flat heads, gimlet points, 3/4 inch, No. 6, per gross.				
173		Screws, iron, flat heads, gimlet points, 7/8 inch, No. 7, per gross.				
174	1/2 gross	Screws, iron, flat heads, gimlet points, 1 inch, No. 9, per gross.			STOREHOUSE GRAND HAVEN,	
175		Screws, iron, flat heads, gimlet points, 1 1/4 inch, No. 12 per gross				
176	1/2 gross	Screws, iron, flat heads, gimlet points, 1 1/2 inch, No. 13 per gross			STOREHOUSE GRAND HAVEN,	
177		Screws, iron, flat heads, gimlet points, 1 3/4 inch, No. 14 per gross				
178	1/2 gross	Screws, iron, flat heads, gimlet points, 2 inch, No. 15 per gross			STOREHOUSE GRAND HAVEN,	
179	3	Soap dishes, hanging, galvanized, Central Stamping Co.'s, No. 100, 4 1/2 inches each			STOREHOUSE GRAND HAVEN,	
180	1 lb	Solder, best half-and-half per pound			STOREHOUSE GRAND HAVEN,	
181		Spanners, brass, for 1 1/4 inch hose each				
182	2	Spanners, brass, for 2 inch hose each			STOREHOUSE NEW YORK CITY,	
183		Spanners, brass, for 2 1/2 inch hose each				
184	1	Spring balances, improved, 24 pounds by 1/4 pound, with rings and hooks attached each				
185		Spikes, cut, black iron, 6 inch per pound				
186		Spikes, cut, black iron, 6 1/2 inch per pound				
187		Spikes, cut, galvanized, 6 inch per pound				
188		Spikes, cut, galvanized, 6 1/2 inch per pound				
189		Spittoons, indurated fiber, No. 2 each				

G. H.	190	4	Spilloons, iron, porcelain lined, loaded, 8 1/2 x 6 inches	each	STOREHOUSE GRAND HAVEN,
G. H.	191	2	Spoons, bread, forged iron, tinned, 18-inch	each	STOREHOUSE GRAND HAVEN,
	192	1 doz	Spoons, table, pure white German silver, not less than 18 per cent nickel, perfectly plain in style, highly polished and finished, and shall measure 8 1/2 inches, and weigh 20 ounces avoirdupois to the dozen	per dozen	STOREHOUSE GRAND HAVEN,
G. H.	193	1 doz	Spoons, tea, pure white German silver, not less than 18 per cent nickel, perfectly plain in style, highly polished and finished, and shall measure 5 1/2 inches, and weigh 9 1/2 ounces avoirdupois to the dozen	per dozen	STOREHOUSE GRAND HAVEN,
G. H.	194	1/2 lb	Tacks, copper, in papers, size 1-inch, full weight,	per pound	
G. H.	195	1/2 lb	Tacks, copper, in papers, size 2-inch, full weight,	per pound	
	196		Tacks, copper, in papers, size 3-inch, full weight,	per pound	
	197		Tacks, galvanized iron, in papers, size 4 ounce, full weight	per pound	
	198		Tacks, galvanized iron, in papers, size 6-ounce, full weight	per pound	
	199		Tacks, galvanized iron, in papers, size 8-ounce, full weight	per pound	
	200		Tacks, galvanized iron, in papers, size 10-ounce, full weight	per pound	
	201		Tacks, galvanized iron, in papers, size 12-ounce, full weight	per pound	
G. H.	202	1/2 lb	Tacks, black iron, in papers, size 8-ounce, full weight	per pound	STOREHOUSE GRAND HAVEN,
	203		Wire gauze, copper, No. 16 mesh, No. 28 wire, for door and window screens.	per square foot	
G. H.	204	4	Washbowls, IXXX, deep, tinned, flat bottom, retinned, with rings, 13 inches diameter	each	STOREHOUSE GRAND HAVEN,
	205		Yellow sheet metal, 18-ounce	per pound	
LAMPS, LANTERNS, ETC.					
G. H.	206	2	Burners, lamp, kerosene, No. 1, "Queen Anne,"	each	STOREHOUSE GRAND HAVEN,
	207	2	Burners, lamp, kerosene, No. 2, "Queen Anne,"	each	STOREHOUSE GRAND HAVEN,
Amount carried forward					

(11)

Item No.	QUANTITY.	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
208		Burners, lamp, kerosene, No. 0, central draft, per sample..... each				
209		Burners, lamp, kerosene, No. 2, central draft, per sample..... each				
210		Burners, lantern, kerosene, No. 1, styles as required, each.				
211		Burners, lantern, kerosene, No. 2, styles as required, each.				
G H. 212	<i>1/2 doz</i>	Burners, lantern, No. 2, tubular (for No. 0 tubular lift wire lantern)..... per dozen.			STOREHOUSE GRAND HAVEN,	
NY 213	<i>1/4 doz</i>	Burners, lantern, No. 4, tubular (long cone and long shaft for No. 0 reflector lantern)..... per dozen			STOREHOUSE NEW YORK CITY,	
214		Chimneys, No. 0, for B. & H. lamp, per sample, per dozen				
215	<i>2 doz</i>	Chimneys, No. 2, for B. & H. lamp..... per dozen			STOREHOUSE GRAND HAVEN,	
216		Chimneys, No. 0, "Pearl Top" or "Pearl Glass," per sample..... per dozen				
217		Chimneys, No. 1, "Pearl Top" or "Pearl Glass," per sample..... per dozen				
218		Chimneys, No. 2, "Pearl Top" or "Pearl Glass," per sample..... per dozen				
219	<i>1/4 doz</i>	Globes, green, for "Dietz" No. 0, lift-wire, tubular lanterns, with guards..... per dozen			STOREHOUSE GRAND HAVEN,	
220	<i>1/4 doz</i>	Globes, ruby, for "Dietz" No. 0, lift-wire, tubular lanterns, with guards..... per dozen			STOREHOUSE GRAND HAVEN,	
221	<i>1 doz</i>	Globes, white, for "Dietz" No. 0, lift-wire, tubular lanterns, with guards..... per dozen				
222		Lamps, hand, metal, kerosene, central draft, No. 0 burner, complete, with chimney..... each				
223	<i>2</i>	Lamps, hanging, brown or brass finish, length 29 inches, with metal rings, 1 quart metal font, central draft, with chimney, burner, smoke bell, tin shade, and screw hook, iron, wire bossed, brown or brass finish, 3 inches from boss to point of screw, complete..... each			STOREHOUSE GRAND HAVEN,	
224	<i>2</i>	Lamps, table, metal, kerosene, central draft, No. 2 burner, with 10 inch tin reflector shade, complete, with chimney..... each				
225	<i>1</i>	Lamp fillers, quart, best heavy block tin, to close air tight..... each				

G H.	226	1	Lamp trimmers, "Challenge, No. 40, polished blades	each
	227	2 doz	Lampwick, flat, woven, No. 1 (¾ inch) ..	per dozen
	228	2 doz	Lampwick, flat, woven, No. 2 (1 inch) ..	per dozen
	229		Lampwick, flat, woven, No. 3 (1½ inch) ..	per dozen
G H.	230	1 doz	Lampwick, woven, No. 2, for B. and H. lamps.	per dozen
	231		Lampwick, yarn	per pound
G H.	232	1	Lanterns, beach, japanned, with wings and staves and 12 extra lights of glass, per sample ..	each
	233	6	Lanterns, tubular, "Dietz," No. 0, lift-wire, with guards, per sample ..	each
	234	2	Lanterns, patrol, tubular, "Dietz," No. 0, reflector, with hoods, per sample ..	each
G M.	235	1	Oil tanks, 60 gallon capacity, No. 26 galvanized iron, with pump, front of hood to slide around, lettered U. S. L. S. S. and having a 4 piece mitered joint, round, wood bottom, let in flush with rim ..	each
			<p><i>Delivered at 104 B. ...</i></p> <p>LUMBER.</p>	
	236		Lumber, white pine, clear, dressed, board measure ..	per M
	237		Lumber, white pine, clear, undressed, board measure ..	per M
	238		Lumber, yellow pine, seconds, dressed, board measure ..	per M
	239		Lumber, yellow pine, seconds, undressed, board measure ..	per M
	240		Lumber, hemlock, dressed, board measure ..	per M
	241		Lumber, hemlock, undressed, board measure ..	per M
	242		Lumber, spruce, dressed, board measure ..	per M
	243		Lumber, spruce, undressed, board measure ..	per M
	244		Laths	per M
	245		Shingles, cypress, No. 1, rived ..	per M
	246		Shingles, cedar, No. 1, rived ..	per M
	247		Shingles, white pine, No. 1, rived ..	per M
			Amount carried forward	

STOREHOUSE GRAND HAVEN,
 STOREHOUSE GRAND HAVEN,

*7 25 Supt. Constr. purcl
 M. 15, 1902 authority to make purchase
 by letter to Supt. Constr. ...*

QUANTITY	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
		DOLLARS.	CENTS.	DOLLARS.	CENTS.
	Amount brought forward				
	MEDICINES, ETC.				
248	Lint, surgeon's, in 1 pound packages. . . per pound.				
249	1 Medicine chests, with medicines, per sample each <i>Delivered at 1048 B...</i>			30 00	✓ Supts. Constr. pure
250	Plasters, adhesive, "S. & J.," in tin boxes, in yard rolls				
G H. 251	1 box Plasters, mustard, "Rigolotti" or "S. & J.," in tin boxes, 10 in box				STOREHOUSE GRAND HAVEN,
252	Water bottles, rubber, 2-quart, with covers each.				
G H. 253	1 qt Whisky, pure rye (for medicinal purposes), in quart bottles, packed singly in wooden boxes, per quart.				STOREHOUSE GRAND HAVEN
	PAINTS, OILS, ETC.				
	(No extra charge will be allowed for cans.)				
254	2 Brushes, dust, best quality, all bristles, black, 9½-inch solid hard-wood blocks, per sample each.				STOREHOUSE GRAND HAVEN,
255	2 Brushes, paint, flat, leather bound, all white Russia bristles, for ordinary painting, size 3¼-inch each.				STOREHOUSE GRAND HAVEN,
256	1 Brushes, paint, flat, leather bound, all white Russia bristles, for ordinary painting, size 4½-inch each.				STOREHOUSE GRAND HAVEN,
257	Brushes, paint, round, No. 3 0, all white bristles, Clinton's extra, or Whiting's extra Russia, each.				
258	1 Brushes, paint, round, No. 4 0, all white bristles, Clinton's extra, or Whiting's extra Russia, each.				STOREHOUSE GRAND HAVEN,
259	1 Brushes, paint, round, No. 5 0, all white bristles, Clinton's extra, or Whiting's extra Russia, each.				STOREHOUSE GRAND HAVEN,
260	1 Brushes, painter's dusters, No. 5 0, all bristles, black outside				
261	2 Brushes, sash tool, No. 2, "Atlantic," wire bound, extra French bristles				
262	2 Brushes, sash tool, No. 3, "Atlantic," wire bound, extra French bristles				
263	1 Brushes, varnish, 1-inch, flat, tin bound, French bristles, "Atlantic," double thick				STOREHOUSE GRAND HAVEN,
264	1 Brushes, varnish, 2-inch, flat, tin bound, French bristles, "Atlantic," double thick				STOREHOUSE GRAND HAVEN,

5 H.

265	Brushes, whitewash (heads), brass bound, all white Russia bristles, Clinton's extra, width 8 inches, each
266	Drier, patent, Acme White Lead and Color Works, in 1-pound cans..... per pound
267	Drier, patent, Masury's, in 1-pound cans. per pound
268	Drier, patent, Tieman's, in 1-pound cans. per pound
269	Drier, patent, Harrison Bros. & Co.'s, in 1-pound cans..... per pound
270	Drier, patent, F. W. Devoe & Co.'s, in 1-pound cans..... per pound
271	Drier, patent, John Lucas & Co.'s, in 1-pound cans, per pound
272	Drier, patent, "Peninsular," in 1-pound cans, per pound
273	Drier, patent, Toch Bros., in 1-pound cans, per pound
274	Drier, patent, F. O. Pierce Co.'s, in 1-pound cans..... per pound
275	Drier, patent, C. A. Woolsey Paint and Color Co.'s, in 1-pound cans..... per pound
276	Drier, patent, The Sherwin-Williams Co.'s, in 1-pound cans..... per pound
277	Glass cutters, steel wheel..... each
278	Lead, red, dry, best American..... per pound
279	Lead, white, in oil, strictly pure American White Lead and Color Works'..... per pound
280	Lead, white, in oil, strictly pure, Lewis'..... per pound
281	Lead, white, in oil, strictly pure; "Atlantic,"..... per pound
282	Lead, white, in oil, strictly pure, Richardson's,..... per pound
283	Lead, white, in oil, strictly pure, Jewett's,..... per pound
284	Lead, white, in oil, strictly pure, Cornell's,..... per pound
285	Lead, white, in oil, strictly pure, Detroit White Lead Co.'s..... per pound
286	Lead, white, in oil, strictly pure, Acme White Lead and Color Works'..... per pound

Amount carried forward.....

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

Supts. Constr. purchase contractor,

Cont.

ITEM No.	QUANTITY	ARTICLES (Do not alter Descriptions.)	PRICES		AMOUNT	
			DOLLARS	CENTS	DOLLARS	CENTS
		Amount brought forward				
287		Lead, white, in oil, strictly pure, Harrison Bros. & Co.'s.....				
288		Lead, white, in oil, strictly pure, Wetherill & Bros.'.....				
289		Lead, white, in oil, strictly pure, "Capitol,".....				
290		Lead, white, in oil, strictly pure, "Pioneer,".....				
291		Lead, white, in oil, strictly pure, Toch Bros.'.....				
292		Lead, white, in oil, strictly pure, F. O. Pierce Co.'s,.....				
293		Ocher, yellow, dry.....				
294		Oil, boiled linseed, strictly pure, in 1-gallon cans,.....				
295		Oil, boiled linseed, strictly pure, in 2-gallon cans,.....				
296		Oil, boiled linseed, strictly pure, in 3-gallon cans,.....				
297	5 gall	Oil, boiled linseed, strictly pure, in 5-gallon cans,.....				
298		Oil, raw linseed, strictly pure, in 1-gallon cans,.....				
299		Oil, raw linseed, strictly pure, in 2-gallon cans,.....				
300	3 gall	Oil, raw linseed, strictly pure, in 3-gallon cans,.....				
301		Oil, hard finish, dark, Acme White Lead and Color Works', in 1-gallon cans.....				
302		Oil, hard finish, dark, Berry Bros.', in 1-gallon cans,.....				
303		Oil, hard finish, dark, "Excelsior," in 1-gallon cans.....				
304		Oil, hard finish, dark, Harrison Bros. & Co.'s, in 1-gallon cans.....				
305		Oil, hard finish, dark, John Lucas & Co.'s, in 1-gallon cans.....				

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306	Oil, hard finish, dark, Pratt & Lambert's, in 1-gallon cans.....	per gallon
307	Oil, hard finish, dark, Toch Bros., in 1-gallon cans,	per gallon.
308	Oil, hard finish, dark, American White Lead and Color Works', in 1-gallon cans.....	per gallon.
309	Oil, hard finish, dark, Masury's, in 1-gallon cans,	per gallon.
310	Oil, hard finish, dark, F. O. Pierce Co.'s, in 1-gallon cans.....	per gallon.
311	Oil, hard finish, dark, C. A. Woolsey Paint and Color Co.'s, in 1-gallon cans.....	per gallon.
312	Oil, hard finish, dark, The Sherwin-Williams Co.'s, in 1-gallon cans.....	per gallon.
313	Oil, hard finish, white, Acme White Lead and Color Works', in 1-gallon cans.....	per gallon.
314	Oil, hard finish, white, Berry Bros., in 1-gallon cans.....	per gallon.
315	Oil, hard finish, white, "Excelsior," in 1-gallon cans.....	per gallon.
316	Oil, hard finish, white, Harrison Bros. & Co.'s, in 1-gallon cans.....	per gallon.
317	Oil, hard finish, white, John Lucas & Co.'s, in 1-gallon cans.....	per gallon.
318	Oil, hard finish, white, Pratt & Lambert's, in 1-gallon cans.....	per gallon.
319	Oil, hard finish, white, Toch Bros., in 1-gallon cans,	per gallon.
320	Oil, hard finish, white, American White Lead and Color Works', in 1-gallon cans.....	per gallon.
321	Oil, hard finish, white, Masury's, in 1-gallon cans,	per gallon.
322	Oil, hard finish, white, F. O. Pierce Co.'s, in 1-gallon cans.....	per gallon.
323	Oil, hard finish, white, C. A. Woolsey Paint and Color Co.'s, in 1-gallon cans.....	per gallon.
324	Paint, copper, Woolsey's "Yacht," or equally good, in 1 quart cans.....	per quart.
325	Paint, mixed, best, colors as required, Acme White Lead and Color Works'.....	per gallon.
326	Paint, mixed, best, colors as required, Lucas's,	per gallon.
327	Paint, mixed, best, colors as required, Mound City Paint and Color Co.'s.....	per gallon.
328	Paint, mixed, best, colors as required, Averill's,	per gallon.

Amount carried forward.....

ITEM No.	QUANTITY.	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
329		Paint, mixed, best, colors as required, "Atlas," per gallon				
330		Paint, mixed, best, colors as required, C. A. Wool- sey Paint and Color Co.'s per gallon				
331		Paint, mixed, best, colors as required, Cleveland Oil and Paint Mfg. Co.'s per gallon				
332		Paint, mixed, best, colors as required, F. O. Pierce Co.'s per gallon				
333		Paint, mixed, best, colors as required, Harrison Bros. & Co.'s per gallon				
334		Paint, mixed, best, colors as required, Masury's, per gallon				
335		Paint, mixed, best, colors as required, Charles M. Childs & Co.'s per gallon				
336		Paint, mixed, best, colors as required, Chilton's, per gallon				
337		Paint, mixed, best, colors as required, Toch Bros., per gallon				
338		Paint, mixed, best, colors as required, American White Lead and Color Works' per gallon				
339		Paint, mixed, pure prepared, colors as required, Whittier, Fuller & Co.'s per gallon				
340		Paint, mixed, "City and Village," strictly pure, colors as required, Yates & Co.'s per gallon				
341		Paints, mixed, best, colors as required, "Penin- sular" per gallon				
342		Paint, mixed, best, colors as required, The Sherwin Williams Co.'s per gallon				
343		Paint, asbestos, fire and water proof, mixed, best, colors as required per gallon				
344		Paint, asbestos, fire and water proof, mixed, best, colors as required, H. W. Johns Mfg. Co.'s per gallon				
345		Paint, mineral asphalt, mixed, best, colors as re- quired, The Standard Paint Co.'s per gallon				
346		Paint, pure rubber, mixed, colors as required, per gallon				
347		Paint, drop black, best, in 1-pound cans, Masury's, per pound				
348		Paint, drop black, best, in 1-pound cans, Acme White Lead and Color Works' per pound				
349		Paint, drop black, C. P., in 1 pound cans, John Lucas & Co.'s per pound				

350	Paint, drop black, best, in 1-pound cans, Harrison Bros. & Co.'s	per pound
351	Paint, drop black, best, in 1-pound cans, "Peninsular"	per pound
352	Paint, drop black, best, in 1-pound cans, Toeh Bros.	per pound
353	Paint, drop black, best, in 1-pound cans, American White Lead and Color Works'	per pound
354	Paint, drop black, best, in 1-pound cans, F. O. Pierce Co.'s	per pound
355	Paint, drop black, best, in 1-pound cans, C. A. Woolsey Paint and Color Co.'s	per pound
356	Paint, drop black, best, in 1-pound cans, The Sherwin-Williams Co.'s	per pound
357	Prussian blue, best, strictly pure, ground in oil, Tieman's, in 1-pound cans	per pound
358	Prussian blue, best, strictly pure, ground in oil, Acme White Lead and Color Works', in 1-pound cans	per pound
359	Prussian blue, best, strictly pure, ground in oil, Masury's, in 1-pound cans	per pound
360	Prussian blue, best, strictly pure, ground in oil, Harrison Bros. & Co.'s, in 1-pound cans	per pound
361	Prussian blue, best, strictly pure, ground in oil, Whittier, Fuller & Co.'s, in 1-pound cans,	per pound
362	Prussian blue, best, strictly pure, ground in oil, Yates & Co.'s, in 1-pound cans	per pound
363	Prussian blue, best, C. P., ground in oil, John Lucas & Co.'s, in 1-pound cans	per pound
364	Prussian blue, best, strictly pure, ground in oil, "Peninsular," in 1-pound cans	per pound
365	Prussian blue, best, strictly pure, ground in oil, American White Lead and Color Works', in 1-pound cans	per pound
366	Prussian blue, best, strictly pure, ground in oil, Toeh Bros., in 1-pound cans	per pound
367	Prussian blue, best, strictly pure, ground in oil, F. O. Pierce Co.'s, in 1-pound cans	per pound
368	Prussian blue, best, strictly pure, ground in oil, C. A. Woolsey Paint and Color Co.'s, in 1-pound cans	per pound
369	Prussian blue, best, strictly pure, ground in oil, The Sherwin Williams Co.'s, in 1-pound cans,	per pound
370	Patty, in 5 pound tins	per pound
371	Pumice stone, lamped	per pound

Amount carried forward

Supts. Constr. purchase contractor.

15

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ITEM No.	QUANTITY	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
372		Turpentine, best, in 1/2-gallon cans per gallon.				
373	gall	Turpentine, best, in 1-gallon cans per gallon.				
374	2	Turpentine, best, in 2 gallon cans per gallon				
375		Varnish, grain alcohol, shellac, best, in 1/2 gallon cans per gallon				
376		Varnish, grain alcohol, shellac, best, in 1-gallon cans per gallon.				
377		Varnish, grain alcohol, shellac, best, in 2 gallon cans per gallon				
378		Vermilion, in oil, best English, in 1 pound cans, per pound				
379		Vermilion, in oil, best, "Peninsular," in 1-pound cans per pound				
380		Vermilion, in oil, unfading, Harrison Bros. & Co.'s, in 1 pound cans per pound				
SHIP CHANDLERY.						
381		Anchors, boat, galvanized iron, weight 16 pounds, per pound.				
382		Anchors, boat, galvanized iron, weight 26 pounds, per pound.				
383	/	Anchors, boat, galvanized iron, weight 35 pounds, per pound				
384		Anchors, boat, galvanized iron, weight 50 pounds, per pound.				
385	/	Anchors, boat, galvanized iron, long shank, weight 100 pounds per pound.				
386		Anchors, boat, iron, weight 35 pounds. per pound				
387		Anchors, boat, iron, weight 50 pounds. per pound.				
388		Anchors, boat, Dirigo patent folding, galvanized iron, weight 26 pounds per pound				
389		Anchors, boat, Dirigo patent folding, galvanized iron, weight 32 pounds per pound				
390		Anchors, boat, Dirigo patent folding, galvanized iron, weight 44 pounds per pound				
391		Anchors, boat, Dirigo patent folding, galvanized iron, weight 55 pounds per pound				

Supts. Constr. purchase contractor, 62 / 24

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

H.	392	1	Anchors, boat, Dirigo patent folding, galvanized iron, weight 78 pounds..... per pound
	393		Anchors, boat, Dirigo patent folding, galvanized iron, weight 106 pounds..... per pound
H.	394	1 box	Axle grease, 2-pound boxes, "Frazer's," "Manhattan," or "The Four Brothers"..... per box
	395		Bags, gunny (for coal)..... each
H.	396	6	Bath bricks..... each
	397	1/2 lb	Beeswax, pure yellow..... per pound
	398	2	Boat grapnels, galvanized iron, four prongs, with rings at bottoms, 10 pounds..... each
	399		Boat grapnels, galvanized iron, four prongs, with rings at bottoms, 30 pounds..... each
H.	400	4	Boat hooks, navy, double hooks, ball points, No. 14, Newhall's, with 9-foot staves..... each
	401	2	Boat hooks, heavy, pointed, galvanized wrought iron, 9-foot staves..... each
	402	1/2 doz	Brooms, corn, best railroad XXX, without seed, not less than 28 pounds to the dozen..... per dozen
	403		Brushes, horse, 5 x 8 1/2 inches, all white bristles, exposed length of bristles not less than 14 inches, russet leather backs, with strap handles..... each
H.	404	6	Brushes, scrubbing, white tampico center, gray wings, 11-inch block, per sample..... each
	405	2	Brushes, stove, all black bristles, very full, dauber extension, with handles, per sample..... each
	406	2	Buckets, rubber, black, No. 2, 3-gallons, metal parts of galvanized iron..... each
	407		Bunting, American, standard, colors as required, 18-inch..... per yard
	408		Canvas, cotton, No. 8, 22-inch..... per yard
	409		Canvas, cotton, No. 10, 22-inch..... per yard
H.	410	2	Chains, sling, close-linked, 3 feet long, 4-inch iron, with large link in each end..... each
	411		Combs, curry, open back, 8 bars, tinned iron..... each
C.S.	412	2 lb	Cotton, calking, for seams..... per pound
	413		Duck, linen, No. 6, 24 inches wide..... per yard
H.	414	2	Glue, broken, Peter Cooper's, No. 14, or "Buffalo" No. 1..... per pound

STOREHOUSE GRAND HAVEN,

Amount carried forward

ITEM NO.	QUANTITIES	ARTICLES. (Do not alter Descriptions.)	PIECES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward.....				
H. {	1	415 Hand grapnels, galvanized, 2½ pounds..... each.			STOREHOUSE GRAND HAVEN,	
	1	416 Hand grapnels, galvanized, 4 pounds..... each.			STOREHOUSE GRAND HAVEN,	
		417 Lacing eyes, No. 2, ¾-inch eye, galvanized, per dozen.				
		418 Lacing eyes, No. 2, ¾-inch eye, brass..... per dozen.				
H.	12 lbs	419 Leather, rigging..... per pound.			STOREHOUSE GRAND HAVEN,	
		420 Line, fresh burnt..... per barrel.				
	1	421 Marline spikes, 12-inch..... each.			STOREHOUSE GRAND HAVEN,	
	4	422 Mops, cotton, 1-pound..... each.			STOREHOUSE GRAND HAVEN,	
	2	423 Mopsticks, Taylor's patent..... each.				
	1/200 ft	424 Needles, sail, Smith's, No. 11..... per hundred.				
	1/200 ft	425 Needles, sail, Smith's, No. 14..... per hundred.			STOREHOUSE GRAND HAVEN,	
	1/200 ft	426 Needles, sail, Smith's, No. 16..... per hundred.			STOREHOUSE GRAND HAVEN,	
		427 Oars, best ash, ends of blades strapped with 12-ounce copper, 6-foot..... per foot.				
		428 Oars, best ash, ends of blades strapped with 12-ounce copper, 7-foot..... per foot.				
		429 Oars, best ash, ends of blades strapped with 12-ounce copper, 8-foot..... per foot.				
		430 Oars, best ash, ends of blades strapped with 12-ounce copper, 9-foot..... per foot.				
		431 Oars, best ash, ends of blades strapped with 14-ounce copper, 10-foot..... per foot.				
		432 Oars, best ash, ends of blades strapped with 14-ounce copper, 11-foot..... per foot.				
H.	144 ft	433 Oars, best ash, ends of blades strapped with 14-ounce copper, 12-foot..... per foot.			STOREHOUSE GRAND HAVEN,	
	156 ft	434 Oars, best ash, ends of blades strapped with 14-ounce copper, 13-foot..... per foot.			STOREHOUSE GRAND HAVEN,	
		435 Oars, best ash, ends of blades strapped with 14-ounce copper, 14-foot..... per foot.				
		436 Oars, best ash, ends of blades strapped with 11-ounce copper, 15-foot..... per foot.				
		437 Oars, best ash, ends of blades strapped with 11-ounce copper, 16-foot..... per foot.				
		438 Oars, sweeps, best ash, ends of blades strapped with 14 ounce yellow metal, 18 foot..... per foot.				

I.	439	40 lb	Oars, sweeps, best ash, ends of blades strapped with 14-ounce yellow metal, 20-foot	per foot	STOREHOUSE GRAND HAVEN,
	440	44 lb	Oars, sweeps, best ash, ends of blades strapped with 14-ounce yellow metal, 22-foot	per foot	STOREHOUSE GRAND HAVEN,
	441		Oil polish, Bertram's, in 1-quart cans	per quart	
	442		Pails, "Star," indurated fiber, about 12 quarts	each	
H.	443	6	Pails, water, No. 22 galvanized iron, 14-quart	each	STOREHOUSE GRAND HAVEN,
NY.	444	6	Pails, fire, No. 22, galvanized iron, cone bottom, 14 quart	each	STOREHOUSE NEW YORK CITY,
H.	445	2	Palms, sewing, full hide, mounted, No. 2	each	STOREHOUSE GRAND HAVEN,
	446		Paste, metal polish, Hoffmann's, 1-pound boxes	per pound	
	447	2 lb	Paste, polishing, Universal, in 1-pound cans	per pound	STOREHOUSE GRAND HAVEN,
	448	2 lb	Rotten stone, lumped	per pound	STOREHOUSE GRAND HAVEN,
H.	449	10 lb	Salt soda	per pound	STOREHOUSE GRAND HAVEN,
	450	10 cakes	Sapolio (3 1/2 x 2 1/2 x 1 1/2 inches)	per cake	STOREHOUSE GRAND HAVEN,
	451	1	Slates, double, 9 x 13 inches, brass hinges, without panel backs, per sample	each	STOREHOUSE GRAND HAVEN,
	452	1 doz	Slate pencils, soapstone	per dozen	
	453	80 lb	Soap, fresh-water, good quality, not less than 2 months old, in 40 and 80 pound boxes	per pound	
	454		Soap, salt-water, good quality	per pound	
	455		Soap, Bell's Star Cleaner, 10-ounce cakes	per cake	
H.	456	2 lb	Sponges, large, coarse, for boat use, per sample	per pound	STOREHOUSE GRAND HAVEN,
	457		Tarpaulins, 8 x 8 feet, No. 6 cotton canvas, tabled, unpainted, brass eyelets 12 inches apart all around	each	
G N	458	1	Tarpaulins, 10 x 10 feet, No. 6 cotton canvas, tabled, unpainted, brass eyelets 12 inches apart all around	each	STOREHOUSE GRAND HAVEN,
NY.	459	1	Tarpaulins, 12 x 12 feet, No. 6 cotton canvas, tabled, unpainted, brass eyelets 12 inches apart all around	each	STOREHOUSE NEW YORK CITY,
	460		Thole pins, locust, 7-inch, 9 inches long	per dozen	
	461	2 doz	Thole pins, locust, 1-inch, 10 inches long	per dozen	STOREHOUSE GRAND HAVEN,
S H.	462	1	Trays, chopping, oval, No. 4	each	STOREHOUSE GRAND HAVEN,
	463	2 lb	Twine, best Andover flax, 3 ply	per pound	

Amount carried forward.

QUANTITIES	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
		DOLLARS.	CENTS.	DOLLARS.	CENTS.
	Amount brought forward.....				
64	<i>Ells</i> Twine, cotton, sewing, 1-pound balls...per pound			STOREHOUSE GRAND HAVEN,	
65	<i>W.B.</i> Waste, cotton, machinery, white, picked, No. 1. per pound			STOREHOUSE GRAND HAVEN,	
66	Webbing, linen, 1 1/2-inch (in 12-yard pieces), ties for life-belts.....per yard				
67	<i>2</i> Wheelbarrows, canal or railroad, bolted, per sam- ple.....each			STOREHOUSE GRAND HAVEN,	
STOVES, ETC.					
68	Ash pans for "Beaver" range No. 8-21.....each				
69	Ash pans for Buck's "Regal" range No. 83 B. each				
70	Ash pans for "Crawford" range No. 8.....each				
71	Ash pans for "Model Grand" range No. 8 20. each				
72	Ash pans for "Hub Heater" No. 30.....each				
73	Ash pans for "Irving" No. 4.....each				
	Ash pans for "Oak Jewel" No. 618.....each				
75	Ash pans for "Princess Beaver" No. 12.....each				
76	Ash pans for "Princess Beaver" No. 13.....each				
77	Ash sieves, 14 x 16 inches, galvanized iron, No. 2 mesh, hard-wood frames.....each				
78	Ash sifters, "Rival," wood, galvanized wire, for barrels.....each			STOREHOUSE GRAND HAVEN,	
79	Boilers, 8 quart, cast iron, round, tinned inside, with covers.....each			STOREHOUSE GRAND HAVEN,	
80	Boilers, 12-quart, cast iron, round, tinned inside, with covers.....each				
81	Boilers, wash, with covers, 4X tin, drop iron han- dles, flat copper bottoms, 19 inches long, 12 inches wide, 13 inches high.....each				
82	Boilers, wash, with covers, 4X tin, oval, range, drop iron handles, flat copper bottoms, 21 inches long, 15 inches wide, and at least 13 inches high.....each			STOREHOUSE GRAND HAVEN,	
83	Boilers, wire, retinned, reversible, 13 wires, riveted, 10 x 9 inches.....each			STOREHOUSE GRAND HAVEN,	
84	Cake turners, stamped, threaded handles, retinned, 4 1/2 x 3 1/4 inches.....each			STOREHOUSE GRAND HAVEN,	

485	Castings for "Atlantic" caboose No. 3... per pound.
486	Castings for "Atlantic" range No. 7... per pound.
487	Castings for "Atlantic" range No. 8... per pound.
488	Castings for "Beaver" range No. 8-21... per pound.
489	Castings for "Buck" No. 7... per pound.
490	Castings for "Buck" No. 9... per pound.
491	Castings for Buck's "Royal" No. 15... per pound.
492	Castings for Buck's "Gem" No. 25... per pound.
493	Castings for Buck's "Regal" range No. 83 B, per pound.
494	Castings for "Bright Diamond" No. 150 per pound.
495	Castings for "Brilliant Diamond" No. 250, per pound.
496	Castings for Clad's steel plate portable French range No. 8 x 20... per pound.
497	Castings for 1885 "Crawford" range No. 8, per pound.
498	Castings for "Crown Jewel" No. 9... per pound.
499	Castings for "DeKalb" No. 14... per pound.
500	Castings for "DeKalb" No. 16... per pound.
501	Castings for "Diamond" No. 20... per pound.
502	Castings for "Diamond Oak" No. 17... per pound.
503	Castings for "F. & W. Oak" No. 190... per pound.
504	Castings for "Elon" 21-inch... per pound.
505	Castings for "Prize Jewel" range... per pound. (style B, No. 87-18.)
506	Castings for "Favorite Argand" No. 9-22, per pound.
507	Castings for "Garland" No. 9... per pound.
508	Castings for "Hallett" caboose No. 3... per pound.
509	Castings for "Hub Heater" No. 30... per pound.
510	Castings for "Irving" No. 4... per pound.
511	Castings for "Jewett" range No. 33... per pound.

Amount carried forward.....

ITEM No.	QUANTITY.	ARTICLES, (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
519		Castings for "New Elmwood" plain range No. 3, per pound				
513		Castings for "New Medallion" plain range No. 8, per pound				
511		Castings for "New Splendid" stove No. 80 per pound				
515		Castings for "Regal Hub" stove No. 8-20, per pound.				
516		Castings for "Princess Beaver" No. 12, indirect draft. per pound				
517		Castings for "Princess Beaver" No. 13, full reverti- ble per pound.				
518		Castings for "Matchless Diamond" No. 140, per pound				
519		Castings for S. S. Jewett & Co.'s range No. 90, per pound.				
520		Castings for 1894 "Oak Jewel" No. 618. per pound.				
521		Castings for "Splendid" No. 2. per pound.				
522		Castings for "Trojan" No. 25. per pound.				
523		Castings for "Stewart Oak" No. 195. per pound.				
524		Castings for "Stewart Oak" No. 4. per pound.				
525		Castings for "Granite Peninsular" range No. 8-21, per pound.				
526		Castings for "Model Grand" range No. 8-20, per pound.				
527		Castings for "Peerless Universal" range No. 8-20, per pound				
528		Castings for "Universal Radiator" No. 3, per pound				
529		Castings for "World's Leader" No. 111. per pound				
530		Castings for "Arcadian" range No. 80. per pound				
531		Castings for "Somersworth Ideal" range No. 8-20, per pound				
532		Castings for "New Sterling" range No. 81, per pound				
533	/	Colanders, family, retimed, feet fast, 12 x 5 1/2 inches, each				

STOREHOUSE GRAND HAVEN,

534		Collars, tin, for 5-inch stovepipe..... each
535	3	Collars, tin, for 6-inch stovepipe..... each
536	12	Cups, best heavy tin, stamped, retinned, flaring pattern, pint, 4 1/4 x 2 1/4 inches..... each
537		Cups, best heavy tin, stamped, retinned, quart, 5 1/2 x 2 1/2 inches..... each
538		Dampers, cast-iron, for 5-inch stovepipe..... each
539	3	Dampers, cast-iron, for 6-inch stovepipe..... each
540	2	Dippers, cup, stamped, retinned, 5 x 2 1/2 inches, flaring, flat handles..... each
541		Dippers, tin, stamped, retinned, hollow tin handles, with rings, quart..... each
542		Elbows, stovepipe, No. 18 galvanized iron, 90°, 5-inch, 4 pieces (about 4 pounds each)..... per pound
543		Elbows, stovepipe, No. 18 galvanized iron, 90°, 6 inch, 4 pieces (about 4 1/2 pounds each)..... per pound
544		Elbows, stovepipe, No. 11 Russia iron, 90°, 5-inch, 4 pieces (about 1 pound each)..... per pound
545	8 1/2	Elbows, stovepipe, No. 11 Russia iron, 90°, 6 inch, 4 pieces (about 1 pound each)..... per pound
546		Fire bricks for "Atlantic" caboose No. 3..... per set
547		Fire bricks for "Atlantic" range No. 7..... per set
548		Fire bricks for "Atlantic" range No. 8..... per set
549		Fire bricks for "Beaver" range No. 8-21..... per set
550		Fire bricks for "Buck" No. 7..... per set
551		Fire bricks for "Buck" No. 9..... per set
552		Fire bricks for Clad's steel plate portable French range No. 8 x 20..... per set
553		Fire bricks for 1885 "Crawford" range No. 8..... per set
554		Fire bricks for "Prize Jewel" range..... per set. (Style B, No. 87-18.)
555		Fire bricks for "Garland" No. 9..... per set
556		Fire bricks for "F. & W. Oak" No. 190..... per set
557		Fire bricks for "Hallett" caboose No. 3..... per set
558		Fire bricks for "Hub Heater" No. 30..... per set
559		Fire bricks for "Irving" No. 4..... per set
560		Fire bricks for "Jewett" range No. 93..... per set
		Amount carried forward.....

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

STOREHOUSE NEW YORK CITY,

STOREHOUSE GRAND HAVEN,

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190

ITEM No.	QUANTITY	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
561		Fire bricks for S. S. Jewett & Co.'s range No. 90. per set				
562		Fire bricks for "Granite Peninsular" range No. 8 21 per set				
563		Fire bricks for "Model Grand" range No. 8 20. per set.				
564		Fire bricks for "Peerless Universal" range No. 8-20 per set.				
565		Fire bricks for "New Sterling" range No. 81, per set.				
566		Grates for Glad's steel plate portable French range No. 8 x 20.....each				
567	1	Griddles, oblong or round, balled or handled, 16-incheach				STOREHOUSE GRAND HAVEN,
568		Heads, Liverpool, No. 18 galvanized iron, sizes as required, with saddle for roof, and 30 feet No. 16 galvanized-iron wireper pound				
569		Heads, Liverpool, No. 18 galvanized iron, sizes as required, without saddle for roof, with 30 feet No. 16 galvanized-iron wireper pound.				
570		Kettles, tea, iron, galvanized, 7-inch, pit bottom, each.				
571	1	Kettles, tea, iron, galvanized, 8-inch, pit bottom, each.				STOREHOUSE GRAND HAVEN,
572		Kettles, tea, iron, galvanized, 9 inch, pit bottom, each.				
573	1	Ladles, deep, solid, tinned iron, retinned, 3½-inch, 14-inch flat handles with hookseach.				STOREHOUSE GRAND HAVEN,
574		Mica, for stoves, clear, sizes as required, per ounce.				
575	2	Pans, bake, round, wrought iron, polished, 2 quarts, 8½ x 2½ incheseach.				STOREHOUSE GRAND HAVEN,
576	1	Pans, bake, round, wrought iron, polished, 4 quarts, 10½ x 2½ incheseach.				STOREHOUSE GRAND HAVEN,
577		Pans, bake, round, wrought iron, polished, 6 quarts, 11½ x 2½ incheseach				
578	1	Pans, bake, oblong, for bread, flaring pattern, pieced, best heavy tin, 9½ x 5½ x 3 inches.....each				STOREHOUSE NEW YORK CITY,
579		Pans, bake, oblong, for bread, flaring pattern, pieced, best heavy tin, 11½ x 6½ x 3½ inches.....each.				
580	1	Pans, bread raisers, stamped, retinned, with ven- tilated covers, 17-quart, 18½ x 6½ inches.....each.				STOREHOUSE GRAND HAVEN,

581	/	Pans, cake, round, stamped, retinned, shallow, tubed, 8½ inches diameter, 2½ inches deep	each	STOREHOUSE GRAND HAVEN,
582	/	Pans, cake, round, stamped, retinned, deep, tubed, 11½ inches diameter, 3½ inches deep	each	STOREHOUSE GRAND HAVEN,
583		Pans, dish, round, best heavy tin, stamped, retinned, with handles, 10 quarts, 14½ x 5½ inches	each	
584	2	Pans, dish, round, best heavy tin, stamped, retinned, with handles, 17 quarts, 18 x 6 inches	each	STOREHOUSE GRAND HAVEN,
585	7	Pans, dripping, smooth iron, best charcoal, 10 x 15 inches, weight per dozen 19 pounds	each	STOREHOUSE GRAND HAVEN,
586	/	Pans, dripping, smooth iron, best charcoal, 12 x 20 inches, weight per dozen 26 pounds	each	STOREHOUSE GRAND HAVEN,
587	/	Pans, fry, wrought iron, polished, lipped, 10 x 2 inches	each	STOREHOUSE GRAND HAVEN,
588	/	Pans, fry, wrought iron, polished, lipped, 14½ x 2½ inches	each	STOREHOUSE GRAND HAVEN,
589		Pans, fry, wrought iron, "Central," polished, hollow handles, improved lips, 9-inch	each	
590		Pans, fry, wrought iron, "Central," polished, hollow handles, improved lips, 11 inch	each	
591	/	Pans, mixing, stamped, retinned, round bottom, 10 quart, 15½ x 5½ inches	each	STOREHOUSE GRAND HAVEN,
592	/	Pans, pudding, tin, stamped, retinned, beaded edge, extra deep, 6-quart	each	STOREHOUSE NEW YORK CITY,
593	/	Pans, pudding, tin, stamped, retinned, beaded edge, extra deep, 10-quart	each	STOREHOUSE GRAND HAVEN,
594	/	Pans, roast, iron, seamless, 11 x 16 inches, handled	each	STOREHOUSE GRAND HAVEN,
595		Pans, roast, iron, seamless, 17 x 17 inches, handled	each	
596	/	Pans, sauce, cast iron, inside enameled, with covers, 6-quart	each	STOREHOUSE GRAND HAVEN,
597	/	Pans, stew, tin, stamped, retinned, shallow, plain, 6 quart, 11½ x 2½ inches	each	STOREHOUSE GRAND HAVEN,
598	/	Pans, stew, tin, stamped, retinned, deep, 6 quart, 11½ x 3½ inches	each	STOREHOUSE GRAND HAVEN,
599		Pipe, stove, No. 18 galvanized iron, 5-inch, in 2-foot lengths	per pound	
600		Pipe, stove, No. 18 galvanized iron, 6 inch, in 2-foot lengths	per pound	
601		Pipe, stove, No. 18 galvanized iron, 6-inch, in 2-foot lengths, collar joint, sizes as required	per pound	

Amount carried forward

ITEM No.	QUANTITY	ARTICLES. (Do not alter Descriptions.)	PRICES		AMOUNT	
			DOLLARS	CENTS	DOLLARS	CENTS
		Amount brought forward.....				
602	60 lbs	Pipe, stove, No. 11 Russia iron, 5-inch, in 2 foot lengths..... per pound <i>(about 20 joints)</i>			STOREHOUSE GRAND HAVEN,	
603		Pipe, stove, No. 11 Russia iron, 6-inch, in 2 foot lengths..... per pound				
604		Pipe, stove, No. 11 Russia iron, 6 inch, in 2 foot lengths, collar joint, sizes as required. per pound				
605	1 doz	Plates, pie, tin, 10-inch, stamped, 1 1/2 inches deep. per dozen			STOREHOUSE GRAND HAVEN,	
606	3	Pokers, stove, 26 inch, 4-inch iron, with rings and hooks..... each			STOREHOUSE GRAND HAVEN,	
607	1	Pots, coffee, 3 gallon, 4X tin, flat copper bottoms, handled, bail handles..... each				
608	1	Pots, coffee, 1-gallon, 4X tin, flat copper bottoms, handled, bail handles..... each			STOREHOUSE GRAND HAVEN,	
609	1	Pots, tea, 2-gallon, 4X tin, flat copper bottoms, handled, bail handles..... each			STOREHOUSE GRAND HAVEN,	
610	1	Pots, tea, 1-gallon, 4X tin, flat copper bottoms, handled, bail handles..... each			STOREHOUSE GRAND HAVEN,	
611		Saddles, No. 18 galvanized iron, for roof, to fit Liverpool heads..... per pound				
612	3	Shovels, stove, wrought iron, japanned, "U. S." No. 65, 5 x 8 1/2 x 23 inches..... each			STOREHOUSE GRAND HAVEN,	
613	1	Steamers, 1XXX tin, raised cover in one piece, new style, 6-inch..... each			STOREHOUSE GRAND HAVEN,	
614	1	Steamers, 1XXX tin, raised cover in one piece, new style, 9 inch..... each			STOREHOUSE GRAND HAVEN,	
615	1 doz	Stove polish, Dixon's, "Rising Sun," or "Phoenix," per dozen papers.			STOREHOUSE GRAND HAVEN,	
616		Stove cover lifters, cast iron, japanned, 10 inch. each			STOREHOUSE GRAND HAVEN,	
617		Stoves, cooking, "Beaver" range No. 8 21, for coal or wood as required, single oven, reservoir, with furniture complete, including 1 wash boiler, 1 iron pot and cover, 1 iron kettle, 1 iron teakettle, 1 dipper, 1 square tin pan for bread, 1 drip pan, 1 spider, 1 shovel, 1 poker, 1 griddle, 1 round tin pan for pudding, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized iron stovepipe..... each				
618		Stoves, cooking, "Beaver" range No. 8 21, for coal or wood as required, single oven, reservoir, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized iron stovepipe, without furniture..... each				

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- 619 Stoves, cooking, Buck's "Regal" range No. 83 B, for coal or wood as required, single oven, heavy inside white enameled reservoir attached, with furniture complete, including 1 iron pot, ground; 1 iron kettle, ground; 1 iron teakettle, ground; 1 iron spider, ground; 1 iron cake griddle, ground; 2 tin pot covers; 1 granite dipper; 1 granite bread pan, 10 x 16 inches; 1 drip pan, 12 x 17 inches; 1 iron shovel; 1 iron poker; 1 granite pudding pan, round, 8 quart; 1 copper-bottom wash boiler; 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe, each.
- 620 Stoves, cooking, Buck's "Regal" range No. 83-B, for coal or wood as required, single oven, heavy inside white enameled reservoir attached, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe, without furniture..... each.
- 621 Stoves, cooking, 1885 "Crawford" range No. 8, with lining for coal or wood, as required, single oven, reservoir, with furniture complete, including 1 wash boiler, 1 iron pot and cover, 1 iron kettle and cover, 1 teakettle, 2 bake pans, 1 wire broiler, 1 tin dipper, 1 iron spider, 1 griddle, 1 poker, 1 shovel, 2 bread pans, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe..... each.
- 622 Stoves, cooking, 1885 "Crawford" range No. 8, with lining for coal or wood, as required, single oven, reservoir, 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized iron stovepipe, without furniture..... each.
- 623 Stoves, cooking, "Granite Peninsular" range No. 8 21, for coal or wood as required, single oven, reservoir, with furniture complete, including 1 wash boiler, 1 iron pot and cover, 1 iron kettle, 1 iron teakettle, 1 dipper, 1 square tin pan for bread, 1 drip pan, 1 spider, 1 shovel, 1 poker, 1 griddle, 1 round tin pan for pudding, 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe..... each.
- 624 Stoves, cooking, "Granite Peninsular" range No. 8 21, for coal or wood as required, single oven, reservoir, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe, without furniture..... each.
- 625 Stoves, cooking, "Model Grand" range No. 8-20, for coal or wood as required, with reservoir, tea shelf, single oven, with furniture complete, including 1 wash boiler, 1 iron teakettle, 1 iron pot and cover, 1 iron kettle and cover, 1 iron spider, 1 broiler, 1 griddle, 2 bread pans, 1 poker, 1 shovel, 1 drip pan 14 x 17 inches, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized-iron stovepipe..... each.
- 626 Stoves, cooking, "Model Grand" range No. 8-20, for coal or wood as required, with reservoir, tea shelf, single oven, 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe, without furniture..... each.

Amount carried forward.....

ITEM No.	QUANTITY	ARTICLES (Do not alter Descriptions.)	PRICES		AMOUNT	
			DOLLARS	CENTS	DOLLARS	CENTS
		Amount brought forward				
627		Stoves, cooking, "Peerless Universal" range No. 8 20, for coal or wood as required, with reservoir and T shelf, single oven, with furniture complete, including 1 No. 8 wash boiler, 1 C. tin, copper bottom, 1 No. 8 iron teakettle, 1 No. 8 iron pot, and cover, 1 No. 8 iron kettle and cover, 1 No. 8 iron spider, 1 wire broiler, 1 No. 8 iron griddle, 2 9x14 inch tin bread pans, 1 poker, 1 No. 80 shovel, 1 14x17 inch iron drip pan, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe.....each.				
628		Stoves, cooking, "Peerless Universal" range No. 8 20, for coal or wood as required, with reservoir and T-shelf, single oven, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe, without furniture.....each.				
629		Stoves, cooking, "Prize Jewel" range, Style B, No. 87 18, hard coal soft coal, or wood, as required, single oven, reservoir, T-shelf, with furniture complete, including 1 wash boiler, 1 iron pot and cover, 1 iron kettle and cover, 1 teakettle, 2 bake pans, 1 wire broiler, 1 tin dipper, 1 iron spider, 1 griddle, 1 poker, 1 shovel, 2 bread pans, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized iron stovepipe.....each.				
630		Stoves, cooking, "Prize Jewel" range, Style B, No. 87 18, hard coal, soft coal, or wood, as required, single oven, reservoir, T-shelf, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe, without furniture.....each.				
631		Stoves, cooking, "New Elmwood" plain range No. 8, single oven 20 x 20 inches, for coal or wood, as required, with furniture complete, including 1 wash boiler, 1 coffee pot, 1 steamer, 2 round tin pans, 1 shaker, 2 pot covers, 1 square drip pan, 1 flat-iron heater, 1 iron kettle, 1 cake griddle, 1 shovel, 1 lifter, 1 ladle, 1 cook's fork, 1 cake turner, 1 teakettle, 1 dipper, 2 square tin pans, 4 pie plates, 1 scraper, 1 oblong drip pan, 1 iron pot, 1 cast broiler, 1 spider, 1 poker, 1 skimmer, 1 cook's spoon, 1 tea strainer, 2 joints stovepipe each.				
632		Stoves, cooking, "New Elmwood" plain range No. 8, single oven 20 x 20 inches, for coal or wood, as required, 2 joints stovepipe, without furniture, each.				
633		Stoves, cooking, "New Medallion" plain range No. 8, single oven 20 x 20 inches, for coal or wood, as required, with furniture complete, including 1 wash boiler, 1 coffee pot, 1 steamer, 2 round tin pans, 1 shaker, 2 pot covers, 1 square drip pan, 1 flat-iron heater, 1 iron kettle, 1 cake griddle, 1 shovel, 1 lifter, 1 ladle, 1 cook's fork, 1 cake turner, 1 teakettle, 1 dipper, 2 square tin pans, 4 pie plates, 1 scraper, 1 oblong drip pan, 1 iron pot, 1 cast broiler, 1 spider, 1 poker, 1 skimmer, 1 cook's spoon, 1 tea strainer, 2 joints stovepipe each.				

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634	Stoves, cooking, "New Medallion" plain range No. 8, single oven 20 x 20 inches, for coal or wood, as required, 2 joints stovepipe, without furniture, each
635	Stoves, cooking, "New Splendid" No. 80-20, for coal or wood as required, with reservoir and No. 2 tea shelf, with furniture complete, including 1 wash boiler, 1 iron pot and cover, 1 iron kettle, 1 iron teakettle, 1 dipper, 1 square tin pan for bread, 1 drip pan, 1 spider, 1 shovel, 1 poker, 1 griddle, 1 round tin pan for pudding, 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe..... each
636	Stoves, cooking, "New Splendid" No. 80-20, for coal or wood as required, with reservoir and No. 2 tea shelf, 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe, without furniture each
637	Stoves, cooking, "Regal Hub" No. 8-20, for coal or wood as required, with reservoir, tea shelf, single oven, with furniture complete, including 1 wash boiler, 1 iron teakettle, 1 iron pot and cover, 1 iron kettle and cover, 1 iron spider, 1 broiler, 1 griddle, 2 bread pans, 1 poker, 1 shovel, 1 drip pan 14 x 17 inches, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe each
638	Stoves, cooking, "Regal Hub" No. 8-20, for coal or wood as required, with reservoir, tea shelf, single oven, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized iron stovepipe, without furniture each
639	Stoves, cooking, "Arcadian" range No. 80, for coal or wood as required, with furniture complete, including 1 wash boiler, 1 iron pot and cover, 1 iron kettle and cover, 1 teakettle, 2 bake pans, 1 wire broiler, 1 tin dipper, 1 iron spider, 1 griddle, 1 poker, 1 shovel, 2 bread pans, 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe. each
640	Stoves, cooking, "Arcadian" range No. 80, for coal or wood as required, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized-iron stovepipe, without furniture, each.
641	Stoves, cooking, "Somersworth Ideal" range No. 8-20, for coal or wood as required, with low hot closet and reservoir with copper lining, with furniture complete, including 1 wash boiler, 1 iron pot and cover, 1 iron kettle, 1 iron teakettle, 1 dipper, 1 square tin pan for bread, 1 drip pan, 1 spider, 1 shovel, 1 poker, 1 griddle, 1 round tin pan for pudding, 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe..... each
642	Stoves, cooking, "Somersworth Ideal" range No. 8-20, for coal or wood, as required, with low hot closet and reservoir with copper lining, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe, without furniture each

Amount carried forward

70

ITEM NO.	QUANTITY	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward.....				
643		Stoves, cooking, "New Sterling" range No. 81, with lining for coal or wood as required, single oven 18 x 18 x 12 inches, reservoir, 2 nickel tea shelves, shaker, lifter, flue cleaner, towel rod, and furniture complete, including 1 wash boiler, 1 iron pot and cover, 1 iron kettle and cover, 1 teakettle, 2 bake pans, 1 wire broiler, 1 tin dipper, 1 iron spider, 1 griddle, 1 poker, 1 shovel, 2 bread pans, 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe.....each				
644		Stoves, cooking, "New Sterling" range No. 81, with lining for coal or wood as required, single oven, 18 x 18 x 12 inches, reservoir, 2 nickel tea shelves, shaker, lifter, flue cleaner, towel rod, 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized iron stovepipe, without furniture.....each				
645		Stoves, heating, Buck's "Royal" No. 15 (hard or soft coal), with 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe.....each				
646		Stoves, heating, Buck's "Gem" No. 25, fixed top (wood), with 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6 inch galvanized-iron stovepipe.....each				
647		Stoves, heating, "Elon," 21 inch (wood), with 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe, each				
648		Stoves, heating, "Hub Heater" No. 30, with 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6 inch galvanized-iron stovepipe, each				
649		Stoves, heating, "Irving" No. 4 (hard coal), with 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized-iron stovepipe, each				
650		Stoves, heating, "Matchless Diamond" No. 140, hard coal (no brick required), with 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized-iron stovepipe.....each				
651	2	Stoves, heating, 1891, "Oak Jewel" No. 618 (hard coal), with 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized iron stovepipe.....each				
652		Stoves, heating, "Stewart Oak" No. 4, wood and coal (no brick required), with 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized iron stovepipe.....each				
653		Stoves, heating, "Trojan" No. 25 (wood), with 1 collar joint, 6 inch, No. 18 galvanized iron, to connect with 6 inch galvanized-iron stovepipe, each				

Supls. Constr. purchase contractor. 3300

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	651		Stoves, heating, "Universal Radiator" No. 3 (hard or soft coal), with 1 collar joint, 6-inch, No. 18 galvanized iron, to connect with 6-inch galvanized-iron stovepipe..... each.			
	655		Stoves, heating, "World's Leader" No. 114 (hard coal), with 1 collar joint, 6 inch, No. 18, galvanized iron, to connect with 6-inch galvanized-iron stovepipe..... each.			
H.	656	28 lbs	Zinc, sheet, 9 gauge..... per pound. (Size 36 x 42 inches, average weight about 7 lbs. Size 36 x 84 inches, average weight about 14 lbs.)	STOREHOUSE GRAND HAVEN,		
H.	657	2	Zinc boards, No. 9 zinc, square, 36 x 36 inches (for heating stoves)..... each	STOREHOUSE GRAND HAVEN,		
	658	1	Zinc boards, No. 9 zinc, oblong, 32 x 42 inches (for cooking stoves)..... each	STOREHOUSE GRAND HAVEN,		
TOOLS.						
H.	659	1	Augers, carpenter, best steel, 1-inch, handled, with nut, Russell Jennings's or Pugh's..... each	STOREHOUSE GRAND HAVEN,		
	660	1	Augers, carpenter, best steel, 1 inch, handled, with nut, Russell Jennings's or Pugh's..... each	STOREHOUSE GRAND HAVEN,		
	661	1	Augers, carpenter, best steel, 1 1/2-inch, handled, with nut, Russell Jennings's or Pugh's..... each	STOREHOUSE GRAND HAVEN,		
	662	1	Augers, carpenter, best steel, 2-inch, handled, with nut, Russell Jennings's or Pugh's..... each	STOREHOUSE GRAND HAVEN,		
	663	1/2 doz	Axles, broad, best steel, shouldered, 1/2-inch, without handles..... per dozen	STOREHOUSE GRAND HAVEN,		
	664	1	Axes, broad, Collins & Co.'s or Beatty's, best steel faced, 8 1/2 to 9 1/2 inch cut, handled..... each	STOREHOUSE GRAND HAVEN,		
	665	4	Axes, felling, 5-pound, handled, Ogden's "Yankee"..... each			
	666		Ax handles (broadax), extra hickory, all white, polished..... each			
	Y.	667	4	Ax handles (felling ax), extra hickory, all white, polished, 32-inch..... each	STOREHOUSE NEW YORK CITY,	
	H.	668	2	Ax handles (felling ax), extra hickory, all white, polished, 34-inch..... each	STOREHOUSE GRAND HAVEN,	
Y.	669	1	Ax handles (felling ax), extra hickory, all white, polished, 36-inch..... each	STOREHOUSE NEW YORK CITY,		
H.	670	1	Bevels, sliding T, No. 4, 10 inch, Disston's..... each	STOREHOUSE GRAND HAVEN,		
	671	1	Bits, gimlet, for braces, best solid cast steel, 1/2-inch, Russell Jennings's or Pugh's..... each	STOREHOUSE GRAND HAVEN,		
	672	1	Bits, auger, for braces, best solid cast steel, 1/2-inch, Russell Jennings's or Pugh's..... each	STOREHOUSE GRAND HAVEN,		
	673	1	Bits, auger, for braces, best solid cast steel, 1/2-inch, Russell Jennings's or Pugh's..... each	STOREHOUSE GRAND HAVEN,		

Amount carried forward.....

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ITEM No.	QUANTITY.	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward				
674	/	Bits, auger, for braces, best solid cast steel, 1/2-inch, Russell Jennings's or Pugh's				
675	/	Bits, auger, for braces, best solid cast steel, 1-inch, Russell Jennings's or Pugh's				
676	/	Bits, plain, screw-driver, 1/2-inch, solid cast steel, standard quality, Russell Jennings's or Pugh's,				
677	/	Bits, snail, countersinks, for wood, cast steel, standard quality, Russell Jennings's or Pugh's				
678	/	Bits, rose, countersinks, cast steel, round shanks, for brass, standard quality, Russell Jennings's or Pugh's				
679	/	Bits, flat, countersinks, cast steel, for iron, standard quality, Russell Jennings's or Pugh's				
680	/	Braces, Barber's improved, ratchet, No. 32, 10-inch sweep, maple, cherry, or walnut heads and handles				
681	/	Brands, metal, U. S. L. S. S., in 1-inch letters, 18 inch iron handles				
682	/	Chisels, socket firmer, solid cast steel, 1/2-inch, with handles leather tipped, 6 to 6 1/4 inch blade, Buck Bros.				
683	/	Chisels, socket firmer, solid cast steel, 1/2-inch, with handles leather tipped, 6 to 6 1/4 inch blade, Buck Bros.				
684	/	Chisels, socket firmer, solid cast steel, 1-inch, with handles leather tipped, 6 to 6 1/4 inch blade, Buck Bros.				
685	/	Chisels, socket firmer, solid cast steel, 1 1/4-inch, with handles leather tipped, 6 to 6 1/4 inch blade, Buck Bros.				
686	/	Chisels, socket firmer, solid cast steel, 2-inch, with handles leather tipped, 6 to 6 1/4 inch blade, Buck Bros.				
687	/	Chisels, cold, solid cast steel, octagon, 1-inch, regular length, Peck, Stow & Wilcox Co.'s				
688	/	Compasses, carpenter's, best steel, 6 inch				
689	1/2 doz	Files, saw, slim, tapered, double cut, 5-inch, handled, Kearney & Foot's or Disston's				
690	1/2 doz	Files, saw, tapered, 7-inch, handled, Kearney & Foot's or Disston's				
691	1/4 doz	Files, flat, smooth, 8-inch, Kearney & Foot's or Disston's				
692		Files, flat, second cut, 10-inch, Kearney & Foot's or Disston's				

STOREHOUSE GRAND HAVEN,

- 693 *1/2 doz* Files, flat, bastard, 12-inch, Kearney & Foot's or
Disston's per dozen
- 694 *1* Gauges, marking, Russell & Erwin Mfg. Co.'s
No. 61 each
- 695 *1/6 doz* Gimlets, nail, steel, double cut, wood handles,
Shepardson's or C. E. Jennings & Co.'s, No. 1,
..... per dozen
- 696 *1/6 doz* Gimlets, nail, steel, double cut, wood handles,
Shepardson's or C. E. Jennings & Co.'s, No. 2,
..... per dozen
- 697 *1/6 doz* Gimlets, nail, steel, double cut, wood handles,
Shepardson's or C. E. Jennings & Co.'s, No. 3,
..... per dozen
- 698 *1* Gouges, socket firmer, solid cast steel, 1-inch, with
handles leather tipped, 6-inch blade, Buck Bros.,
..... each
- 699 *1* Gouges, socket firmer, solid cast steel, 1-inch, with
handles leather tipped, 6 inch blade, Buck Bros.,
..... each
- 700 *1* Gouges, socket firmer, solid cast steel, 1 1/4-inch, with
handles leather tipped, 6-inch blade, Buck Bros.,
..... each
- 701 *1* Grindstones, No. 2 "Ohio," 20 inches diameter, 2 1/2
inches thick, mounted, complete, with crank
and treadle each
- 702 *2* Hammers, claw, adz eye, solid cast steel, weight 1
pound, handled, Peck, Stow & Wilcox Co.'s,
Plumb's, Clark's, or C. E. Jennings & Co.'s,
..... each
- 703 *1/4 doz* Handles, beech, for 1/4-inch shouldered brad awls,
..... per dozen
- 704 *1* Handles, for claw hammers, extra hickory, all
white, polished each
- 705 *1* Handles, for hatchets (ax pattern), extra hickory,
all white, polished each
- 706 *1* Handles, for boat hatchets, extra hickory, all white,
polished each
- 707 *1* Handles, for pickaxes, extra hickory, all white,
polished each
- 708 *1* Handles, for 8 pound blacksmith's sledges, extra
hickory, all white, polished each
- 709 *2* Hatchets, ax pattern (boat), 3 1/2-inch cut, handled,
Collins & Co.'s, No. 2 each
- 710 *2* Hatchets, broad (boat), 4 1/2 inch cut, handled,
Beatty's, No. 2 each
- 711 *1* Hatchets, claw (boat), 4-inch cut, handled, Beatty's,
No. 3 each

Amount carried forward.....

STOREHOUSE GRAND HAVEN,

STREET GRAND HAVEN, CITY,

STOREHOUSE GRAND HAVEN,

1159
No. QUANTITY.

ARTICLES.
(Do not alter Descriptions.)

PRICES.
DOLLARS. CENTS. DOLLARS. CENTS.

Amount brought forward

712 / Hatchets, claw (boat), 4 1/2-inch cut, handled, Collins & Co.'s, No. 3 each

713 / Knives, drawing, extra quality, cast steel, 8-inch cut, handles ferruled and capped, Douglass Manufacturing Co.'s each

714 Mallets, round, lignum vitae, 4 inches diameter, mortised handles each

715 / Mallets, square, maple, 3 x 4 inches, mortised handles each

716 / Nail sets, cast steel, No. 1 each

717 / Nippers, end cutting, 7-inch, good American, warranted each

718 / Oilers, zinc, "Paragon," No. 3, brass bottoms, double walled caps each

719 2 Pickaxes, railroad pattern, adz eye, steel points, 6 pound, handled, average length 24 1/2 inches, "Trenton" each

720 / Pincers, steel, 7-inch, good American, warranted, each

721 / Planes, jack, best beech, "Sandusky," 16 inches long, Butcher's double iron, 2 1/2 inch each

722 / Planes, jointer, best beech, "Sandusky," 28 inches long, Butcher's double iron, 2 1/2 inch each

723 / Planes, smoothing, best beech, "Sandusky," 8 inches long, Butcher's double iron, 2 1/2 inch each

724 / Pliers, steel, flat nosed, 8-inch, good American, warranted each

725 / Rasps, wood, 12 inch, half-round, handled, Kearney & Foot's or Disston's each

726 / Rules, carpenter's, boxwood, brass bound, 2-foot, 3 joints, 1 1/2 inches wide, 8ths and 16ths each

727 / Saw sets, Morrill's, No. 1 each

728 / Saws, butcher, 20 inch, extra spring steel blades, beech handles, polished edges, three brass screws, flat buels each

729 2 Saws, crosscut, lumber, 6-foot, set and sharpened, plain handled, Disston's each

731 Saws, crosscut, lumber, 8 foot, set and sharpened, plain handled, Disston's each

STOREHOUSE GRAND HAVEN,

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H.

- 733 / Saws, hand, crosscut, 26-inch, four screws, grained blades, Disston's each
- 733 / Saws, hand, rip, 28-inch, four improved screws, grained blades, Disston's each
- 734 Saws, panel, 18-inch, Disston's each
- 735 Saws, whip, 6-foot, with handles, Disston's each
- 736 / Saws, wood, with frames, No. 6, Disston's each
- 737 / Screw drivers, steel, 8 inch, handled, brass ferrules, Stanley's or C. E. Jennings & Co.'s each
- 738 3 Shovels, best steel, No. 3, handled, Ames's each
- 739 2 Shovels, round point, best steel, long handled, Ames's each
- 740 / Shovels, scoop, Ames's, No. 2 each
- 741 / Sledges, blacksmith's, 8 pound, steel face andpeen polished, handled, Atha Tool Co.'s, No. 29, or "Trenton" each
- 743 / Soldering tools, 1-pound, handled each
- 743 / Spades, best steel, handled, Ames's, No. 2 each
- 744 / Spokeshaves, best steel, 3-inch blade, plated, beechwood, with thumbscrews, Bagshaw & Field's or Booth & Mills's each
- 745 / Stones, oil, mounted, 8 x 2 x 1 1/4 inches, Washita, each
- 746 / Squares, carpenter's, steel, "Eagle," 24 inches long, with 14-inch arm each
- 747 / Squares, try, Disston's, No. 1, 8-inch each
- 748 / Wrenches, monkey, 12-inch, knife handles, Coe's, each
- 749 / Wrenches, combination pipe, bolt, and nut, 12-inch, Donahue's patent, No. 100 each
- 750 / Vises, carpenter's, parallel, 4-inch jaw, Parker's 22X or "Trenton" No. 4 each

MISCELLANEOUS.

- 751 Barometers, life buoy, aneroid, first quality, in bronzed cases, per sample each
- 752 Barometers, life buoy, aneroid, porcelain dials, square oak frames, per sample each
- 753 Boat drags, canvas, per sample each

Amount carried forward

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

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STOREHOUSE NEW YORK CITY,

ITEM No.	QUANTITY	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward.....				
754	2	Breeches buoys, with slings, complete, per sample, each.				
755	1/10 M	Cartridge bags, red, per sample..... per M.				
756	1/10 M	Cartridge bags, white, per sample..... per M.				
757		Cases, leather, for marine glasses, with straps complete, per sample..... each.				
758		Cases, leather, for time detectors, with straps complete, per sample..... each.				
759	2	Clocks, banner lever, nickel plated, one-day, 8-inch dial, time, U. S. L. S. S., in black letters, 2-inch, on dial, each.	3	23		
		<i>Delivered at 107 Broadway, N.Y.</i>				
760		Compasses, liquid, boat, with binnacles, complete, Ritchie's, per sample..... each.				
761		Compasses, liquid, boat, with binnacles, complete, John Bliss & Co.'s, per sample..... each.				
762	1	Compasses, liquid, boat, with lacquered copper improved binnacles, complete, 5 1/2 x 5 1/2 x 9 1/2 inches, per sample..... each.				
763	2	Crotches, per sample..... each.				
764		Dials, card, for Inhauser's time detectors, 370 dials to box..... per box.				
765	52 ft	Fenders, cork, for boats 5 inches diameter at center, tapered to 2 1/2 inches at end, covered with No. 4 cotton canvas, with fixtures complete, viz. 18 fathoms 6 thread steam-tarred manila, and 4 dozen composition lacing eyes, 3-inch eye-lengths as required..... per foot.				
		<i>Delivered at 107 Broadway, N.Y.</i>				
766	2 yds	Flannel, red, all wool, 27 inches wide..... per yard.				
767	1	Flasks, powder, heavy copper, 16-ounce capacity, screw tops, outside springs, per sample..... each.				
768		Glasses, binocular marine, Bardon & Son's, No. 2711, 26", with extra heavy leather cases, including straps, complete, per sample..... each.				
769	1	Glasses, binocular, 26" field glass, short body, oxidized slides, movable shades, heavy soft leather cases, with strap for hanging; "U. S. L. S. S." to be engraved upon slides and stamped or gilded upon the inner side of case covers, per sample..... each.				
770	1	Handcarts, beach apparatus, per sample..... each.				
771	3	Heaving sticks, per sample..... each.				

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STOREHOUSE NEW YORK CITY,

Supts. Constr. purcha.
6 46

May 15, 1912. Delivered at 107 Broadway, N.Y.
Supts. Constr. purcha.
22
11 70

NY.	772	2	Key safes, iron, "Abbey" pattern, with two keys, per sample.....	each.
	773		Keys, for "Abbey" pattern key safes, per sample, each.	
	774		Keys, for Imhauser's time detectors, per sample, each.	
	775		Launching carriages, iron, Wood's improved, for lifeboats.....	each.
	776		Launching carriages, iron, Wood's improved, for surfboats.....	each.
	777	15	Life belts, cork, "Abbey" pattern, size 38 inches, per sample.....	each.
	778	20	Life belts, cork, "Abbey" pattern, size 40 inches, per sample.....	each.
	779	10	Life belts, cork, "Abbey" pattern, size 44 inches, per sample.....	each.
	780		Life belts, cork, "Ward" pattern, sizes as required, per sample.....	each.
NY.	781	1	Life caps.....	each.
NY.	782	100	Powder, Hazard's (L. S. S. Standard), 10 pound packages.....	per pound.
NY.	783	1	Pumps, Rumsey's, No. 1, horizontal, double-acting, 5-inch cylinder, with fore and aft brakes, complete (2-inch suction and 2-inch discharge).....	each.
	784		Pumps, Rumsey's, No. 2, horizontal, double-acting, 6-inch cylinder, with fore and aft brakes, complete (2 1/2-inch suction and 2 1/2-inch discharge).....	each.
	785	1	Pumps, Gould's, "Challenge," No. 12, horizontal, double-acting, 5-inch cylinder, with fore and aft brakes, complete (2-inch suction and 2-inch discharge).....	each.
	786		Pumps, Gould's, "Challenge," No. 16, horizontal, double-acting, 6-inch cylinder, with fore and aft brakes, complete (2 1/2-inch suction and 2 1/2-inch discharge).....	each.
	787	1	Reels, double, for hand carts, per sample.....	each.
	788	2	Sand anchors, per sample.....	each.
	789	2	Sand anchor pendants, per sample.....	each.
	790	1	Signals, "Coston," patrol.....	per dozen.
	791	60	Signal holders, "Coston," improved.....	each.
	792	1	Speaking trumpets, brass, 14-inch, marked "U. S. L. S. S.".....	each.
			Amount carried forward.....	

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

Supts. Constr. purchase contractor, for Grand Haven

See item 785.

Supts. Constr. purchase contractor, for Grand Haven

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

STOREHOUSE GRAND HAVEN,

ITEM No.	QUANTITY.	ARTICLES. (Do not alter Descriptions.)	PRICES.		AMOUNT.	
			DOLLARS.	CENTS.	DOLLARS.	CENTS.
		Amount brought forward.....				
Y. { 793	3	Tally boards, No. 1, per sample..... each.			STOREHOUSE NEW YORK CITY,	
794	3	Tally boards, No. 2, per sample..... each.			STOREHOUSE NEW YORK CITY,	
795		Telescopes, Bardon & Son's, day and night adjustment, No. 362, 22", per sample..... each.				
NY. 796	1	Telescopes, brass, calf-covered body, diameter of object lens, 2 1/4-inch, "U. S. L. S. S." engraved upon slides, per sample..... each.			STOREHOUSE NEW YORK CITY,	
3 H. 797	2	Thermometers, copper case, per sample..... each.			STOREHOUSE GRAND HAVEN,	
NY. 798	2	Time detectors, Imhanser's watchman's latest improved, with safety lock attachment, leather cases, 8 keys, 1 box dials (370 to box), complete, per sample..... each.			STOREHOUSE NEW YORK CITY,	
799		Tripods, "McLellan," per sample..... each.				

A P P E N D I X B

Specifications for Lifesaving Stations at Sleeping Bear Point and South Manitou Island, Michigan, 1901

The drawings, which accompany the specifications, are included in the Historic Maps and Plans.

SPECIFICATIONS AND DRAWINGS

FOR

LIFE-SAVING STATIONS

AT

Sleeping Bear Point & South Manitowish

~~MARQUETTE, MICHIGAN.~~

~~1890.~~

1901

SPECIFICATIONS.

GENERAL REMARKS.

The structures to be erected, and which together constitute ^{one} the life-saving station, are as follows:

Dwelling.

Out-building.

~~Flag-staff.~~

~~Isolator.~~

Boat-house *and Incline.*

The contractor is to provide, at his own expense, all the plant, materials, and labor necessary for the complete and substantial execution of everything described, shown, or reasonably implied in the drawings and specifications, including all transportation. He must give his personal superintendence to the work during its progress, and see that everything is constructed in the most careful manner, and according to the true intent and meaning of the drawings and specifications attached to the contract, and forming a part thereof. All materials and fixtures throughout are to be the best of their respective kinds, and all workmanship to be of the best quality.

The drawings and specifications are intended to correspond and be illustrative of each other; any work appearing in one and not in the other is to be done the same as though included in both.

No advantage will be taken by the contractor of any omission in the specifications and drawings, as full explanations ~~and details~~ ^{and details} will be given for any part of the work not sufficiently shown or understood.

Where figures are given on the drawings they will be the guide; otherwise scale dimensions will be accurately followed.

Any permanent matter of construction essential to make the structures substantial and suitable, but which may have been omitted from the specifications and drawings, shall be supplied and put up or fitted by the contractor at his own expense.

The buildings will be erected under the supervision and to the entire satisfaction of such person or persons as may be designated by the Government. These authorized agents are to have access to the work and materials at all times.

(5)

INFORMATION FOR BIDDERS.

All proposals should be made on blank forms, which will be furnished with the specifications and drawings.

The individual names of a firm must be signed in full to the proposal.

Bidders will be required to state the time in which they will agree to have the buildings completed and ready for occupancy.

Each bid must be accompanied by a certified check in the sum of one hundred dollars, drawn to the order of the Secretary of the Treasury, as security that the bidder will enter into contract without delay and give such bonds as security for the faithful performance thereof as may be required if his bid be accepted.

Certified checks will be returned within two weeks to the unsuccessful bidders, and the check of the successful bidder will be returned after his contract, together with bond for the faithful performance of the terms thereof, shall be approved by the Secretary of the Treasury.

In case the successful bidder fails to enter into contract his check will be forfeited, in the discretion of the Secretary of the Treasury.

Proposals must be inclosed in sealed envelopes and indorsed "Proposals for the construction of Life-Saving Stations at Marquette, Michigan" *Sleeping Bear Point, Mich. & South Hamitou, Mich.*

The right to reject any or all bids or to waive defects, if it be deemed for the interest of the Government, is reserved.

Lumber and timber.—Except where otherwise specified, the lumber and timber used will be well seasoned and of the best kind and quality used for similar purposes at or near the locality where the station is to be built, subject to the approval of the superintending officer.

Lime, cement, and sand.—All the lime to be used in the work to be extra No. 1 Rockland, or of like quality fresh burned, and all cement to be best fresh ^{Atlas Portland} ~~Hydrant~~, or of like quality, except when otherwise expressly specified. All sand to be clean and sharp, and used in proper proportions.

The contractor will substitute, at his own cost and without delay, satisfactory work and materials for such as may be rejected, and make good other work that may be disturbed thereby.

Any damage to the buildings during their construction, by fire, water, or otherwise, must be made good by the contractor, who will also be responsible for any injury to person or property caused by his act or default.

The contractor will protect the work and materials from damage during the progress of operations, and will clear away from time to time, as may be necessary, all dirt and rubbish resulting from the work; on completion he will thoroughly clean all floors and windows, remove all *débris*, and leave the premises in good order, ready for occupancy, and satisfactory in every respect to the superintending officer, to whom he will then deliver the keys.

The contractor is to guarantee all roofs, flashings, casings, and the cistern tight for six months after completion and acceptance; also the plastering free from cracks and blisters for the same period. The sum of two hundred dollars (\$200) is to be withheld by the Government from the contract price, to be forfeited on failure of the contractor to fully comply with this guarantee.

to be jointed with clear cement, and to be provided with connections to waste-pipe and down-spouts, all as directed by the superintending Government officer.

FOUNDATION.

The foundation of the dwelling and porch to be of red cedar posts, not less than 6 feet long, and not less than 10 inches in diameter, and set in

the ground not more than 5 feet apart. Foundation posts to be placed under all outer walls, under hall-partitions, porch, and under the main partition, which runs lengthwise through the building. Post holes to be well tamped before setting posts, and packed solid thereafter. All corner posts and those at intersections of girders and sills to be braced in two and three directions respectively with 6 by 6-inch ^{cedar} ~~stuff~~, well notched in and spiked.

FRAMING.

The entire frame-work to be well braced and securely tied and spiked together, making every thing as strong and firm as possible. All framing-timbers to be of the best quality thoroughly seasoned Norway pine, except where otherwise specified.

Sills.—All main-sills and girders to be 6 by 8 inches, sills of porches to be 4 by 6 inches, all to be of white pine in full lengths, halved, lapped, and pinned at corners and intersections.

Plates.—Plates to be 4 by 4 inches, in full lengths.

Floor-joists of first floor to be shouldered on to sills and well spiked. Attic-floor joists to be supported by 1 by 6-inch interties let into the studding, and by partition-walls; they will be well spiked to the studding and their supports. All joists to be 16 inches on centers and double cross-bridged with 1½ by 2-inch stuff. The attic-floor joists over hall will be laid parallel to the front of the dwelling, and will rest upon the two hall-partitions; between the joists on the partitions there will be solid bridging. The joists of the front and rear porches to be 2 by 8 inches. Double joists to be under all partitions.

Scantling.—All studs to be 3 by 4 inches, 16 inches from centers; door and window studding, sill and cap girtings, 4 by 4 inches; corner-posts to be 4 by 6 inches, with 2 by 4-inch pieces spiked on their interior faces to receive the interior finish; roof supporting frames, seven in number, to be of 4 by 4-inch stuff; collar-beams and rafters to be 16 inches from centers; diagonal braces to be set into studding at all corners, angles, doors, and windows. Every third stud and corner-post to be fastened both to sills, plates, and rafters by ½ by 1½-inch strap-irons, 12 inches long, and spiked on in the most thorough manner. Headers and trimmers to have 1 inch extra thickness.

OUTSIDE COVERING.

Walls.—The outer walls of dwelling and out-building will be covered with 1-inch tongued and grooved seconds pine flooring, nailed diagonally with two ten-penny nails to each stud, sill, plate, girt, and brace, then covered with best tarred roofing-paper, over which the face-

covering will be laid. This will consist of milled rustic-rebated white-pine boarding, 1 by 6 inches, laid 5 inches to the weather. The corner-boards, door and window-casings, frieze, water-table, and cornice to be 1½ by 6 inches, with moldings and washes as per drawings, and all to be of well seasoned, clear white pine, flashed where necessary to make it water-tight. The face covering of all gables will be of best white-pine shingles, 5 inches wide, the butts cut octagonal, laid 5 inches to the weather, all as shown on drawings.

Roof.—The roof to be covered with 1-inch tongued and grooved seconds white-pine flooring, the planed side down, laid in horizontal courses. Over this the best quality of roofing-felt will be tacked. The roof then will be shingled with best white-pine shingles, laid 4½ inches to the weather, and nailed with galvanized-iron nails. Projecting ends of rafters and gable rafters will be planed. Ridge-boards and roll to be of white pine. Valleys of roof, and angles around chimneys and dormer windows, to be well flashed with ^{as lead} flashings bent diagonally, shingled in, one under each course of shingles, shingles to be woven in closely.

Front porch to be built with turned posts of 6 by 6-inch white-pine with square base, balustrade, and newels; treads of steps to be of hard pine.

Priming.—All outside finish to be primed before putting up or immediately afterwards, and nail holes to be puttied.

INTERIOR FINISH.

Flooring.—The under floors of first story to be of 1-inch good Norway pine 4 inches wide, laid diagonally, tongued and grooved, and planed on top to an even thickness; the upper floor to be of 1-inch first-quality rift hard pine of 3 inches uniform width, dressed, tongued and grooved, and blind-nailed. ~~Floor of attic to be of 1-inch matched Norway pine flooring, blind-nailed.~~ The under floors of first story and the attic flooring to be laid close out to sheathing between studs. Floor of front porch to be of 1½-inch narrow hard-pine boards of uniform width, well jointed and planed, and laid at right angles to front of house on a pitch of 1½ inches.

Plastering.—All walls and ceilings not specified to be sheathed will be lathed and plastered two coats. The lathing will be done with thoroughly-seasoned pine laths, free from sap and knots, put on to break joints every 18 inches. The first coat of plastering will have mixed with it fresh cattle or goat hair in the proportion of half a bushel to each barrel of lime used. The second coat will be made with selected white sand, and be well floated.

When finished, the work must be free from cracks, blisters, or other defects, with plain surfaces and sharp corners, the walls to be plastered to the floors in all cases, even behind the wainscoting and base-boards, for which purpose grounds must be set.

Sheathing.—The wall side of stairs, hall, kitchen, and mess-room will be sheathed 3 feet 6 inches high from the floor, with 4-inch tongued, grooved, and beaded clear white-pine boards, ½-inch thick, with a suitable cornice molding and base.

The ceiling of the open porch, the walls and ceiling of the storm porch, ~~the walls and ceiling of the two rooms in attic~~ to be sheathed with good 1-inch flooring, matched and planed; ~~the remainder of attic to be left unfinished, showing the framing timber.~~ Where chimney passes through ceiling and roof, a strong pine collar to be secured to the ceiling and roof respectively, and to be well joined into the trim work and cemented.

DOORS.

All door-frames to be of clear white pine, ½ inches thick, molded on the outside edge; the doors to be 1½ inches thick, in four panels each, made in the best manner, and to be hung with 4-inch black-japanned butt-hinges; the outside doors to be provided with weather-strips, and to have brass-faced 5-inch three-tumbler mortise locks; all other doors with two-tumbler locks.

All doors to have a hard-wood threshold and black porcelain knobs with brass ^{knobs} spinacles and escutcheons. Vestibule door to have the two upper panels glazed with extra thick ground-surface glass. Stationary transom sashes to be placed over double front door and rear door of hall with lights ~~as shown in detail drawings~~ to match transoms of windows.

WINDOWS.

The windows will have box-frames, with 1½-inch pulley stiles, 2-inch sills, 1½-inch sashes, double hung with best hemp cord over brass axle pulleys, the sashes to have brass sash locks and lifters; the upper or transom sashes to be stationary and to have a number of small lights in opaque glass. All windows to be provided with panelled outside shutters, hung on hinges of approved pattern automatically securing the shutters in position, and furnished with suitable catches.

STAIRS.

The stairs are to have open-string molded nosings, returned at the ends, 4-inch risers, 1½-inch treads, housed into sheathing or wainscot in

the wall side, the treads ploughed into the risers and risers ploughed into underside of treads; posts 4 by 4 inches, balusters 1 1/2 inch square, two to a tread, rail 2 1/2 by 4 inches; balusters and rail carried around well, all as shown on plans. Treads, posts, balusters, and rail to be of hard pine. Stairs to be supported by three 2 by 12-inch strings; all to be thoroughly wedged, blocked, and glued in the best manner.

Casings.—There will be 1/2 by 4-inch beaded white-pine casings to all windows and doors.

Base, etc.—The base-board throughout first story will be 8 inches high, with a plain beveled edge; 6-inch beaded chair-boards will be put on all plastered walls. The kitchen, crew's quarters, and storm-porch will be provided with 4-inch strips each, with beaded edges, 6 feet from the floor, into which a sufficient number of japanned-iron hooks will be screwed.

Shelves, etc.—The closets, pantry, and locker-room to have white-pine shelving, and hook-strips, with ~~each number~~ ^{10 Nos.} of japanned hooks of suitable size ~~as the superintending officer may direct~~. Keeper's room, crew's quarters, and mess-room to have plain mantel-pieces, of white-pine 2 inches thick, resting on two brackets, each neatly sawed out of 2-inch plank.

Furniture.—A neat galvanized-iron sink, with waste-pipe, etc., will be provided in the kitchen. The keeper's room will be furnished with a suitable shelf on japanned-iron brackets for the medicine-chest. The pantry to be furnished with a china closet with folding panelled doors below, a counter-shelf, and glazed doors above, ~~as shown in detail drawings~~. The kitchen to be furnished with a simple cupboard with panelled doors. Front porch to be provided with two strong benches of neat design.

Lockers.—The attic will contain a locker-room with eight numbered lockers, each to consist of two drawers below with a thin floor between them, and a wardrobe above with folding-doors. They will be provided with locks with non-interchangeable duplicate keys, knobs, bolts, and clothes-hooks.

CHIMNEY.

The foundation of the chimney to be of concrete, made of good ~~Best~~ ^{Best} cement, ~~or like quality~~, clean sand and broken hard stone, in the proportion of 1 cement to 2 of sand to 5 of broken hard stone. The block of concrete to project 1 foot on all sides of the chimney. Between the concrete foundation and ground line there will be two footing courses of 15 inches in height each, as shown. The brick used in chimneys to be the best common hard brick, carefully selected for the

facings of chimney above roof, and laid in cement mortar. The chimney to be topped out above roof as shown, and finished with a cut cap 4 inches thick of best local building stone; suitable earthen thimbles, 6 inches in diameter, with strong tin covers, to be set into chimneys 7 feet above first floor where indicated on drawings.

The bricks to be laid wet, except in freezing weather, with joints thoroughly flushed up with mortar, and all well bonded. All brick-work to be afterwards plastered is to have rough joints, other work to have the joints neatly struck, and all work visible outside the house to be washed down after completion with muriatic acid, ~~and pointed~~ ^{and pointed} ~~with~~. The brick work to be kept in all cases at least 1 inch clear of any wood-work.

Wide counter-flashings of 4-pound lead will be worked into joints of chimneys. Wide ~~wide~~ ^{4 lb lead} flashings will be shingled in and turned up against the brick-work as high as the counter-flashings will allow. The counter-flashing will then be turned down, closely dressed, and ~~cemented~~ ^{soldered} perfectly tight against the brick-work.

GUTTERS AND DOWN-SPOUTS.

Six-inch gutters to be put up under the eaves of the building, connected to 4-inch down-spouts. All to be of No. 26 galvanized iron, well secured with hooks and straps.

Suitable provision will be made for the disposition of rain-water by paved gutters.

OUT-BUILDING.

The out-building will contain wood and coal bins, an oil-room and a privy. The ground surrounding the out-building to be properly graded.

Foundation to be of 8-inch red-cedar posts, 4 feet in the ground, 5 feet on centers.

Sills to be 4 by 6-inch Norway pine. All framing to be as shown and specified for dwelling.

A heavy plank division will separate the bins, which will be provided with removable sections along passage. Floors and sides of bins to the height of 6 feet will be covered with 2 by 6-inch plank. Floors of oil-room and privy to be of matched and planed Norway pine. Openings on rear wall of coal and wood bins will have no sash, but will be closed by a strongly-battened shutter, made of narrow matched and beaded white pine, opening outward, hung on hinges at top and secured by hooks. The oil-room will be provided with two rows of shelving 10 inches wide; oil-room and privy to be ceiled throughout

with narrow matched and dressed material. The privy-seat and riser to be of 1 1/2-inch clear white pine.

A strong box of planed boards, to slide under seat, to be easily removable, will be provided. It will be concealed on the outside by a hinged shutter.

The ventilator will be made of planed boards.

A substantial plank-walk, 3 feet wide, will be laid from steps at kitchen entrance to door of out-building.

~~THE FLAG-STAFF~~

The flag-staff will be in two parts—lower mast with cross-trees, and top-mast. The lower mast to be of white pine, 46 feet long, 12 inches diameter at heel and 7 inches at head; top-mast of spruce, to be 25 feet long, 6 inches diameter at heel and 3 1/2 inches at head. A 6-inch lignum-vitæ truck, two sheaves and halyards, wooden cleats on lower mast for climbing to mast-head, and iron cleats for belaying halyards, will be furnished. The lower mast to bury 6 feet, stepped and mortised into 4 by 12-inch ground-sills, 12 feet long, crossing each other at right angles. The braces and butt of staff to receive a thorough coating of hot coal-tar. From the ends of ground-sills 4 by 6-inch braces will be framed into the lower mast above the surface of the ground, properly secured. The flag-staff to be erected and fitted up ready for use.

~~LOOK-OUT~~

A look-out will be built on top of the small hill adjacent to the dwelling, as shown on plans. Foundation posts to be of red cedar, and framing of Norway pine; other finish to be the same as specified for corresponding parts of dwelling.

GLAZING.

All sash to be glazed with best quality of double-thick glass, properly bedded, sprigged, and puttied.

PAINTING.

Porch-floors and steps will receive two coats of oil. Soffits of porch-roof and of projecting eaves will be stained with one coat light oil of creosote. All vertical shingles before putting on will be immersed in Cabot's creosote shingle-stain No. 332, or a Dexter stain of same color. A coat of the same stain will be applied when the shingles are in place. The roofs throughout will be left without paint or stain. The outer walls will be painted three coats of light greenish grey. The belts,

trimmings, casings, outside of doors, outside of sash, blinds, and other exterior wood-work to be painted three coats of dark olive-green.

All wood-work will be prepared for painting and oiling by rubbing down, puttying up, etc. First-story floors and the stairs to be oiled two coats.

All interior wood-work will be finished with three coats of hard oil, thoroughly rubbed down with oil and pumice-stone.

All tin used in buildings will receive two coats of metallic paint, and all gutters and down-spouts will receive two coats in lead and oil in dark olive-green.

Outside of out-building and lookout to be painted as specified for dwelling; inside sheathing to be shellacked and oiled two coats; flag-staff to be painted three coats of best white-lead.

BOAT-HOUSE.

The site of the boat-house is on the eastern half of the dock of the Marquette City Water Works. The entire plank floor and all floor joists, girders, and piles in this half of the dock which are in any way unsound or broken must be renewed.

FOUNDATION.

The ~~new portion of~~ foundation of boat-house ~~incline, and floor of dock~~ will be of white-oak ~~or rock~~ piling, sound and straight, not less than 12 inches in diameter at small end, and ~~20 feet long~~ ^{10 feet in the ground}. The piles to be sharpened to a short blunt point, and after driven in place to be sawed off square and level at the required height. They will be capped with Norway pine timbers. Cap-timbers under boat-house to be in full lengths, halved, lapped, and pinned at corners, and secured to piles by 1/2-inch drift-bolts, 20 inches long; main stringers of incline to be shouldered into piling and secured thereto by 1/2-inch screw-bolts of suitable lengths.

A cluster of three piles not less than 12 inches in diameter at small end, and 25 feet long, will be driven at the southern extremity of the dock as shown on plan, well tied together, with not less than 6 turns of 1/2-inch chain secured thereto by a number of 6-inch wrought spikes. The piles to be cut off at a height of 9 feet above the level of the lake. A strap-iron 3 inches wide and 1/2-inch thick to be laid around the cluster of piles at the level of dock floor and securely spiked to both piles and dock.

FRAMING.

Studs.—Studs to be 16 inches from centers, well braced and bridged with two rows of 3 by 4-inch girts. Heads to be framed into all

window and door-openings, of the same size as studs. All studs to be mortised into cap-timbers, and well spiked thereto and to plates. The corner-posts and every third stud to be fastened to cap-timber and plate by 1 by 11-inch iron straps 12 inches long. A 4 by 8-inch girder will be placed over door-openings and properly trussed.

Joists.—Floor-joists of house to be 16 inches from centers, notched 2 inches into sills, braced with two rows of cross-bridging, and solid blocked between the ends of joists and under door-sills. Floor-joists of front incline to be 2 feet from centers, with two rows of cross-bridging. Every alternate floor-joist above, and all floor-joists below, water level to be fastened to the stringers by twisted galvanized wrought-iron straps well nailed on. Joists of rear platform to be 3 by 10 inches, shouldered into the dock-girders.

Rafters.—Rafters to be 16 inches from centers, notched on the plate and spiked; hip-rafters to be 3 by 10 inches; double collar-beams to be placed between every alternate pair of rafters; jack-rafters of main roof to be 2 inches thick and planed. Every third rafter to be fastened to the plate by an iron strap, in the manner described for studs. The king-posts to be secured to rafters by a T-shaped band-iron 1 inch thick, and to the double collar-beams by a hard-wood pin. Horizontal 3 by 8-inch braces to be framed diagonally across the four corners of the house, well nailed to collar-beams and rafters.

Ventilator.—The bottom of studs on the roof-boarding to be braced with 2 by 6-inch interties. Plates to be cut rounding, out of a 3 by 8-inch plank. Jack-rafters to be of 11-inch stuff.

The entire frame-work to be properly constructed by mortising, notching, bracing, and spiking all the parts together, making the building as firm and strong as possible. The material for framing to be sound and well-seasoned Norway pine.

OUTSIDE COVERING.

Rough-boarding.—Cover the whole of the outside of studs with 1 by 6-inch dressed Norway pine boards, laid diagonally, with close joints. The roof to be covered with the same material, laid close at right angles with the rafters, and well nailed.

Face-covering.—The rough-boarding of the boat-house to be covered with heavy tarred roofing-paper, over which the face-covering will be nailed. This to consist of first quality white-pine boards, 1/2 inch thick, laid vertical, and well jointed, with 1/2 by 2-inch chamfered battens nailed over joints.

Roof.—Roof and ventilator to be covered with best ^{cedar} white-pine shingles, laid 11 inches to the weather, and nailed with galvanized

137

nails: ~~Snow-heads, 6 inches high, to be secured over the covers with galvanized iron straps nailed to the rough boarding.~~

Casings.—All door and window casings and cornice to be of 11-inch well-seasoned white pine, the former to have the top edge finished with a wash. The vertical boarding to be joined close over the wash and well flashed with a tin apron.

FLOORING.

Boat-room.—The boat-room floor to be of 2-inch white-pine planks, 4 inches wide, matched, planed, and blind-nailed.

Front incline.—The floor of the front incline to be of 3-inch white pine, 4 inches wide, spiked with galvanized-iron wrought spikes, 6 inches long. ~~The first 15 feet from boat-room doors to be laid with close joints, from there to enter and of incline to be laid with 1 inch space between planks. Joists, stringers, etc. as noted on drawing.~~

Rear platform and dock.—The floor of rear platform and dock to be of 3-inch pine laid close. ^{on 3 1/2" joists 2 ft. oc. on 8" S. hardwood or cedar str.} ~~The dock construction to be completed to the shore with which it will be properly connected.~~ _{on six 8" cedar jo. 30" in the ground}

LAUNCHING-WAYS.

The launching-ways will consist of a double railway with cradles and a hand-winch, all of which will be furnished to the contractor free of cost at the station. The contractor to secure the rails to the floor-planks of front incline and boat-room, as well as to bolt the winch to the floor in the rear of boat-room as directed.

INTERIOR FINISH.

All interior wood finish to be hand smoothed and sand-papered, and all quirks thoroughly cleaned out before the finish is put up.

by 6-inch dressed clear pine, covered with sheathing of 1-inch white pine 2 1/2 inches wide, tongued and grooved and beaded on both sides. The sheathing to be put on with ^{screws} ~~blind-stud-nails~~ and well blind-nailed to frame: the outer edges to be rounded off. ~~The 2 by 1-inch~~

~~galvanized iron top and floor bolts to each~~ ^{leaf} ~~leaf will be furnished by the Government and placed by the contractor.~~

pine sashes, with molded sash-bars and counter-checked meeting-rails, double hung with best brass-faced pulleys and best shoe-thread sash-line and iron weights well balanced; and sash-bars 1/2-inch thick.

A wrought-iron grating to be made and secured on outside of all windows with countersunk 2-inch screws.

The ventilator to be provided with 1-inch white-pine slats let 1/2 inch into frame-stiles.

Sheathing.—The sides along the inclined portion of the floor to be sheathed with narrow dressed and matched white-pine flooring, blind-nailed.

Casings.—Inside casings to doors and windows to be of 1/2-inch white pine of plain design.

Shelving.—Provide and fix 100 superficial feet of 1 1/2-inch clear white-pine shelving on proper bearers, where directed by the superintending Government officer.

Closet.—The closet to have a locker with double-paneled doors, ^{1/2 doz. sup.} hooks, and shelves, as directed, and a counter-shelf 3 feet from the floor with three drawers below it. All to be done in white pine and provided with the proper hardware in brass.

Ladder.—A substantial ladder, 16 feet long, neatly finished and painted, to be furnished.

HARDWARE.

138 The doors to be hung with extra-heavy wrought-iron hook-hinges, made in accordance with ~~detail~~ drawing, three to each leaf of front and two to each leaf of rear doors.

Wrought-iron sockets to be bolted to the meeting-stiles of door to receive the cross-bars. Each leaf of front door to be furnished with a wrought-iron handle, put on with carriage bolts. All doors to have top and bottom flush slide-bolts, patent mortise lever-locks with brass face, and striking-plate. Suitable posts, hooks, and screw-eyes to be provided to hold the doors in place when open.

Two bronze hook-lifts and one bronze sash-lock will be placed on each window.

Two dozen large black japanned harness-hooks will be put up where directed.

All hardware will be of galvanized iron where exposed, if not specified otherwise.

WEATHER-VANE AND FLASHING.

A 16-ounce cold-rolled copper weather-vane will be put upon the roof of ventilator. A cone-shaped cup 8 inches deep to be secured on the apex of the ventilator roof and soldered on to the staff of the weather-vane. The staff to be of 1/2-inch galvanized iron, with molded lead but-
tens soldered on. The ridge and hips will have an extra course of

shingles flashed in the most thorough manner with lead flashings 8 inches wide. Intersection of ventilator with main roof will be properly flashed.

PAINTING AND GLAZING.

The outside of boat-house to be painted after priming in two coats of light greenish grey.

Outsides of doors, outer ends of jack-rafters, soffits of eaves, outer-casings, outside of sashes and ventilator slats to be painted two coats of olive-green, mixed with sufficient lamp-black to make it dark.

The inside of house; viz, sheathing, casings, doors, shelves, closets, etc., to receive three coats of pure linseed-oil, well rubbed down and smoothed. The floor to receive two coats of oil.

All iron-work not otherwise specified to receive two coats of black paint.

All sash to be glazed with the best double-thick glass; well bedded, sprigged, and puttied.

A P P E N D I X C

Specifications for Boathouse #2, 1902

National Archives, Record Group 26, Sleeping Bear Point Lifesaving Station, LR #74206

of the LABOR and MATERIAL required in the Construction of a WHARF and BOATHOUSE, at each of the Life-Saving Stations, SLEEPING BEAR POINT, and SOUTH MANITOU ISLAND, Mich., 12th District.

INFORMATION FOR BIDDERS.

All proposals should be made on blank forms, which will be furnished with the specifications and drawings.

The individual names of a firm must be signed in full to the proposal.

Bidders will be required to state the time in which they will agree to have each wharf and building completed and ready for occupancy.

Each bid must be accompanied by a certified check in the sum of one hundred (\$100.00) dollars, drawn to the order of the Secretary of the Treasury, as security that the bidder will enter into contract without delay, and give bond as security for the faithful performance thereof, in a sum equal to the amount of his bid.

Certified checks will be returned within two weeks to the unsuccessful bidders, and the check of the successful bidder will be returned after his contract, together with bond for the faithful performance thereof, shall be approved by the Secretary of the Treasury.

In case the successful bidder fails to enter into contract, his check will be forfeited in the discretion of the Secretary of the Treasury.

Proposals must be enclosed in sealed envelopes, and endorsed, "Proposals for the Construction of Wharves and Boathouses at the Sleeping Bear Point and South Manitou Life-Saving Stations, Michigan, 12th District."

The right to reject any or all bids or to waive defects if it be deemed for the interest of the Government, is reserved.

All plans and specifications must be returned, whether a proposal is sent or not.

General Remarks, etc.

The structures to be erected, and which together constitute the boathouse, are as follows, viz:

Foundation. (Wharf.)

Superstructure. (Boathouse.)

The contractor is to provide, at his own expense, all the plant, materials and labor necessary for the complete and substantial execution of everything described, shown, or reasonably implied in the drawings and specifications, including all transportation. He must give his personal superintendence to the work, keeping thereon a competent foreman during its progress, and see that everything is constructed in the most careful manner, and according to the true intent and meaning of the drawings and specifications attached to the contract, and forming a part thereof. All materials and fixtures throughout are to be the best of their respective kinds, and all workmanship to be first class.

The drawings are intended to correspond with the specifications, each illustrative of the other; any work appearing in one and not in the other, is to be done the same as though included in both.

No advantage will be taken by the contractor of any omission in the specifications and drawings, as full explanations will be given for any part of the work not sufficiently shown or understood.

Where figures are given on the drawings they will be the guide, otherwise scale dimensions will be accurately followed.

The work will be done under the supervision and to the entire satisfaction of such person or persons as may be designated by the Government. These authorized agents are to have access to the work and materials at all times.

The contractor will substitute at his own cost and at no delay, satisfactory work and materials for such as may be rejected, and make good other work that may be disturbed thereby.

Any damage to the buildings during their construction, by fire, water, or otherwise, must be made good by the contractor, who will also be responsible for any injury to person or property, caused by his, or his agents' act or default, to the amount of his contract.

The contractor will, on completion of the work, thoroughly clean all floors and windows, and leave the premises in good order, ready for occupancy, and satisfactory in every respect to the superintending officer, to whom he will then deliver the keys.

The contractor is to guarantee the roofs, flashings, casings, etc., watertight for six months after completion and acceptance; and the sum of Fifty (\$50.00) dollars is to be held by the Government from the contract price, to be forfeited on failure of the contractor to fully comply with this guarantee.

LOCATION. The location of each of these wharves and boathouses is to be in the water of the Lake, at a point where the depth of the water is about three (3) feet, and in such a position as may be directed by the superintending officer.

PILES. These will be of Norway pine or rock elm, 12-inch solid wood diameter at the center, and not less than 18 feet long, finished, driven to a depth of ten (10) feet in the bottom, at such spacing as noted on the plans; and the tops are to be five (5) feet above mean low water, shouldered 3-inches for the reception of cap pieces, and gained out 2-inches for the lower wales and braces.

DOLPHINS. There will be three of these, each composed of three piles, 18-inches diameter at the butt, 20-ft long, driven 12-ft into the bottom, and with four turns of 5/8-inch chain binding the tops together, and secured in the best manner for the purpose. The dolphins to be set about fifteen (15) feet from the wharf, as directed by the superintending officer.

TIMBER. The wales, cap-pieces, braces, and timber generally, of the wharves, to be of rock elm, of the sizes shown, and to be sound, square edged, and free from any defects impairing strength and durability. The long timbers will be of the greatest length the market affords, and spliced, when necessary as shown on plans. The cap pieces will be halved at corners and intersections, and bolted together with 1-1/4-inch machine bolts, 2 washers to each. Two beams under the sill of the house at closed end, to be mortised, tenoned and oak-pinned, as shown. All the other beams, 6 x 10 and 4 x 10-inch, to be mortised 2-inches into caps, and secured thereto by iron

1-inch machine bolts, 2 washers each. Diagonal braces at end of well, mortised and tenoned and oak pinned. The lower wale to be bolted to piles with 1-inch machine bolts, 2 washers to each, and the braces bolted to piles, wales and caps with 1-inch machine bolts, 2 washers to each. The iron straps on the corners of caps to be secured to same by 1/2-inch bolts, except one in each, which will be the 1-inch bolt securing cap to pile head. Care to be taken to stagger all bolts coming close together, and crossing each other. Between the doubled 4 x 10-inch beams, under the house sill, place a block of 8 x 11-inch, spiked, and bolted two 3/4-inch machine bolts each.

PLANKING. This will be between lower wale and cap piece on inner row of piles of outer half of wharf, and of the closed end, as shown, of 2 x 8-inch elm, gained 1-inch on piles, and strongly spiked thereto with 5 wire nails, heavy, 5-inches long, each bearing.

There will be eight (8) elm braces, 4 x 6-inch, running longitudinally, from top of piles to wale, and where there is no wale, to the third pile, and bolted to piles and wales with 1-inch machine bolts, 2 washers to each, under the ends of the four longitudinal cap pieces.

DECK PLANK will be 2 x 8-inch pine or spruce, laid 1-1/2 inch open jointed, with a joint at the side lines of the building, laid fore and aft, in lengths covering at least 3 bearings, butts well squared, each bearing to have three, and butts four heavy wire 5-inch nails. Deck plank flush with sides of cap piece.

CRADLE TRACK made of clear grain white oak, out of 2 x 6 inch stuff, dressed top and two edges, in as long lengths as can be procured, any splices carefully and smoothly made, and secured by heavy wire 5-inch nails; butts and splices 3 nails each.

LADDERS. There will be two, one inside and one outside the house, as shown, made with dressed 1-3/4 x 3-3/4-inch pine or spruce strings, and 7/8 x 1-7/8-inch dressed oak treads or rungs, let into the strings and screwed fast. Strings lag-screwed to cap piece, and to a bearer between piles at the lower end, one string to extend to a height of three feet above floor, all satisfactory to the superintendent.

SUPERSTRUCTURE consists of a boathouse, built on the decking of the wharf, in the following manner, viz:

Sills of 2 x 4-inch, with pieces of 2 x 6-inch, 13-ft long under the truss-posts, extending over three bearings. All to be spiked to deck plank and bearings below same with 5-inch heavy wire spikes. Corner posts, truss posts and large floor posts to be 4 x 6-inch; girder over large door to be 4 x 8-inch, gained into door posts; all studding 3 x 4-inch, on 16-inch centers; plates doubled 2 x 4-inch; rafters 2 x 8 inch on 20-inch centers; ridge 2 x 10-inch; angle beams 3 x 4-inch solid, and other braces 3 x 4-inch, cut in. All the above timber to be white pine or spruce, of a good quality, sound, seasoned, square edged and free from defects impairing strength and durability. Truss timber of the same kind of wood, except the truss-tie, which will be oak or Georgia pine. Principals, 6 x 8-inch; tie, 6 x 10-inch; braces 6 x 6 and 6 x 4-inch; longitudinal bearer or hanger beam, 6 x 10-inch. All to be framed, bolted, lag-screwed and put together in the manner shown, and satisfactory to the superintendent. Bolts to be 3/4-inch machine bolts, nuts and washers; truss rod 1-1/4-inch, with two washers, 1/4 x 4 x 4-inch. Braces lag-screwed with 3/4 x 10-inch; ends of truss-tie spiked and lag-screwed to plate and post. Block up under ends of 6 x 10-inch hanger beam, and brace from ridge to beam with 1-1/2 x 6-inch, as shown, well spiked.

~~SPACE NUMBER DOORS~~
rap, hangers of wrought iron, 3/8 x 4-inch, with eye forged
end, 1-1/4-inch diameter, secured in place by four heavy
spikes.

SHEATHING. Cover studding, and rafters with a good quality white pine, matched, 7/8 x 6-inch sheathing, laid diagonally on walls and level on the roof, with 2 wire 8 d nails to each bearing and three at butts. Wall butts made diagonally. Dressed side of sheathing to be on inside.

WINDOW and DOOR FRAMES to be made in the usual manner, out of a good quality of seasoned white pine, free from large or rotten knots, sap or shake; outside casings 1-1/8 x 4-1/2 inch, inside casings, 7/8 x 5-inches, except where shown to be wider to catch nailing on studding, etc. Door jambs 1-1/8-inch thick, rebated. Window jambs 7/8-inch thick, made for a plain rail sash, no box, and of Norway pine. All window sills out of 2-1/2-inch stock, made with 1" in 4" pitch; stool, 1-1/8-inch, and apron, 7/8 x 4-inch. Door sill of 2" oak or elm with pitch as above, and set on top of rough 2 x 4-inch sill. All heads to have a good wash or drip piece of heavy tin, painted both sides, flashed up 9-inches, and over edge of drip and well tacked with 1-inch wire roofing nails.

Large sliding door frame to have a well constructed pocket on each jamb for cast iron weight to counterbalance the door. Pulleys to be 3-inch, steel axle, heavy iron face plate, and weights to be hung with bronze or copper chain, of ample strength. Proper stops to be put in, regulating the length of the sliding motion, so that by no error can the door be forced to go too far in either direction.

SHINGLES. All walls and roof will be shingled as follows: The shingles to be the best quality of cedar the market affords, 16-inches long, and random widths; any over 8-inches wide to be split with a saw, so that all widths will come between 2-1/2 and 8-inches. Shingles to have two wire nails each, not so long as to come through and show on the inside of the sheathing. The corners to be woven together alternately, and to be carefully nailed. The lower two courses to be furred out on a slight curve. The roof shingles to be 4-inches weather, and on the walls to be 5-inches. Care to be taken to fill closely the space furred off under frieze and roof ridge boards.

FINISHING LUMBER in the ridge boards, cornices and the frieze to be of a good clear white pine, of the thicknesses and widths shown, and the cornice profile of the eaves and gables is alike. All to be cut in a workmanlike manner, and put in place neatly with 8 d finishing wire nails, heads set.

SASH are to be of clear white pine, 1-3/8-inch thick, 8 lights, plain rail, about 1-ft, 11-inches wide by 3-ft, 5-1/2-inches long, each furnished with a pair of spring bolt sash fasts, japanned. Glass of a good quality, X American, well put-tied and sprigged.

DOORS to be of the sizes shown, all constructed of a good quality of white pine, free from large or rotten knots, sap or shake. Frame of small door 1-1/8-inch thick, and of large door, 1-3/8-inch. Outside covering of both to be 7/8 x 2-1/2-inch double dressed and beaded, matched, clear white pine, secured to frames by clinch nails, heads set in. All lengths to be in one piece. Small door hung to swing inside, on one pair of heavy 12-inch T hinges, corrugated make, (Stanley?), and trimmed with a heavy rim lock and latch combined, jet knobs, japanned roses and escutcheons, and 2 flat steel keys.

PAINTING. Paint one coat priming, and two coats pure
ad and oil paint, (4)

doors, both sides of each, casings, door jambs, sills and ridge boards, and oil with two coats raw oil the window jambs.

All the labor and materials to be subject to the approval of the Government Superintendent.

DUPLEX BLOCKS. Furnish and put in place in the strap hangers provided for them, two in each house, Yale Duplex blocks, screw-gearred, each three and one half tons' capacity, all complete.

BOAT SLINGS, two in number for each house, are to be made of 1-1/2-inch round iron, with eyes forged on each end, and the outline to be half an ellipse, with a vertical diameter to under side of yoke of 5-ft, 2-inches, all as per the drawings. Center clips to be made of 3/8 x 4-inch wrought iron, forged to the shape shown, with pin ends 3/4-inch thick. Bolt, 1-1/4-inch, with nut.

Yokes to be of best clear, heart, Georgia pine or white oak, 6 x 8 x 8-ft, 2-inch, corners rounded and tapered to dimensions given, with a groove 4-inches from each end, for eye of sling, smoothly dressed and oiled two coats raw linseed oil.

BOAT CRADLES, two in number for each house, are to be made of the same material as the yokes, worked, dressed and oiled, and provided with lag-screws, washers and links for lanyards at both ends.

A P P E N D I X D

Initial Crew at Sleeping Bear Point Lifesaving Station, 1902

The initial crew consisted of six surfmen and a keeper. A seventh man was added after the station became operational.

TITLE	NAME	SALARY	PREVIOUS OCCUPATION
Keeper	William Walker ^s	75.00 mo.	Surfman, Grand Haven
No. 1 Surfman	William Robinson ^m	65.00 mo.	Surfman, Grand Haven
No. 2 Surfman	John Dwigans ^m	65.00 mo.	Surfman, Grand Haven
No. 3 Surfman	George W. Mastain ^d	65.00 mo.	Surfman, Little Au Sable
No. 4 Surfman	Jesse L. Bell ^s	65.00 mo.	Temporary Surfman, Muskegon
No. 5 Surfman	Robert C. Smith ^s	65.00 mo.	Temporary Surfman, South Haven
No. 6 Surfman	Herman W. Allers ^m	65.00 mo.	Sailor
No. 7 Surfman	James F. Smith [*]	65.00 mo.	Fisherman

m = married

s = single

d = divorced

* All of the crew signed on August 20, 1902, except James Smith who signed on May 10, 1904.

A P P E N D I X E

Materials Used by Crew in Constructing the Lookout Tower at
Sleeping Bear Point Lifesaving Station, 1905

250 ft. Novelty Siding, No. 1
500 ft. 1x6x14
224 ft. 2x4x14
150 ft. Flooring
225 ft. Matched Sheeting
86 ft. 8x8x16
256 ft 8x8x12
180 ft. 2x4x12
56 ft. 1x8x14
42 ft. 1x4x14
216 ft. 2x12x12
128 ft. 4x4x12
1 Roll of Building Paper
3 Windows, 18x40 in.
1 Door, 2-6"x6-6"
1 Door Frame (complete)
1 Pair Butt hinges, 4x4
1 Lock Mortice
3 Pair Stub Hinges
2 M[ooo] Cedar Shingles, No. 1
75 lbs. Wire Nails, 8d
10 lbs. Nails, 8d
50 ft. Round Iron, 3/4 in.

A P P E N D I X F

Sample Logbook Pages, Sleeping Bear Point Lifesaving Station

A rough calculation of the days of operation of the Sleeping Bear Point Lifesaving (later Coast Guard) Station comes to 10,500. The pages reproduced here are but a small sample of the whole. They show the three forms used over the operational life of the station and provide a glimpse of the daily routine, which could not be matched even by a lengthy narrative.

Saturday, *October 14*, 190*7*

CONDITION OF THE SURF.			
Midnight.	Sunrise.	Noon.	Sunset.
Smooth	Smooth	Smooth	Smooth
Light	Light	Light	Light
Moderate	Moderate	Moderate	Moderate
Strong	Strong	Strong	Strong
Rough	Rough	Rough	Rough
High	High	High	High
Very high	Very high	Very high	Very high

The keeper will make a cross immediately after the word indicating the condition of the surf at midnight, sunrise, noon, and sunset.

Direction and force of wind, and state of weather at midnight.
S.E. Light B. Cloudy.

Direction and force of wind, and state of weather at sunrise.
S.E. Light B. Cloudy.

Direction and force of wind, and state of weather at noon.
S.E.W. Fresh B. Cloudy.

Direction and force of wind, and state of weather at sunset.
S.E. Fresh B. Cloudy.

ENTER THE READING OF BAROMETRE AND THERMOMETER AT MIDNIGHT, SUNRISE, NOON, AND SUNSET.

Barometer—Midnight, *27.35* ; Sunrise, *29.40* ; Noon, *29.42* ; Sunset, *29.35*
 Thermometer—Midnight, *45* ; Sunrise, *30* ; Noon, *72* ; Sunset, *62*

(Fill in, in the blank spaces below, the names of the patrolmen or watch, the names of the patrolmen met, and the name of the station the latter were from.)

Station watch.

Herman W. Allers.
Patrick M. Bauley.
James F. Smith.
Frank B. Bennett.
James D. Keltie.
Charles Robinson.
George W. Mastain.
Patrick M. Bauley.

PATROL.

12 Pm. to 2 am, met *George W. Mastain.* from Station.
2 am. to 4 a. m., met *Patrick M. Bauley.*
4 a. m. to 6 am, met *James F. Smith.*
6 am. to 8 a. m., met *Frank B. Bennett.*
8 am. to 10 am, met *James D. Keltie.*
10 am. to 12 pm, met *Patrick M. Bauley.*
12 pm. to 2 am, met *Herman W. Allers.*
2 pm. to 4 am, met *James D. Keltie.*
4 am. to 6 am, met *Frank B. Bennett.*

Is the house thoroughly clean? *yes.*
 Is the house in good repair? *yes.*
 Is the apparatus in good condition? *yes.*
 Was any member of the crew (including keeper) absent on liberty, if so, who, and from what hour to what hour? *Herman W. Allers. No 3. from 8 am to 6 pm*
 Was anyone absent on twenty-four hours' leave, if so, who? *No*
 Was anyone absent for other cause, if so, who, and why? *No*
 Name of substitute: *James D. Keltie.* in place of *Peter Olson.*, surfman.
 Name of substitute: _____ in place of _____, surfman.

(Fill in the number of vessels of each class that have passed the station this day.)

Ships, _____ barks, _____ brigs, _____ schooners, *22* steamers, *32* sloops, *3*

GENERAL REMARKS.

(Under this head are to be stated all transactions relating to house or service.)

Drill fire drill. time 35 seconds.
new cleaned house.

Received a list of names. to select one from to fill vacancy. made by the resigning of Surfman Peter Olson.

visited East patrol post and found it in good condition.

At 11:15 Pm. the Station watch sighted a steamer heading on to the beach in front of the station. he at once burn a station signal. but she did take any notice of the signal. and burn two more. before they took any notice of them. and then sheared off and run in the Bay for shelter

William Walker
Keeper

Thursday, October 19, 1905

CONDITION OF THE SURF.			
MIDNIGHT.	SUNRISE.	NOON.	SUNSET.
Smooth	Smooth	Smooth	Smooth
Light	Light	Light	Light
Moderate	Moderate	Moderate	Moderate
Strong	Strong	Strong	Strong
Rough	Rough	Rough	Rough
High	High	High	High
Very high	Very high	Very high	Very high

The keeper will make a cross immediately after the wind indicating the condition of the surf at midnight, sunrise, noon, and sunset.

Direction and force of wind, and state of weather at midnight,

N.W. Fresh & cloudy.

Direction and force of wind, and state of weather at sunrise,

N.W. Fresh & cloudy.

Direction and force of wind, and state of weather at noon,

E.S.E. Fresh & cloudy.

Direction and force of wind, and state of weather at sunset,

N.E. Fresh & cloudy.

ENTER THE READING OF BAROMETER AND THERMOMETER AT MIDNIGHT, SUNRISE, NOON, AND SUNSET.

Barometer—Midnight, 29.10 ; Sunrise, 28.91 ; Noon, 29.14 ; Sunset, 29.31
 Thermometer—Midnight, 52 ; Sunrise, 58 ; Noon, 42 ; Sunset, 44

(Fill in, in the blank spaces below, the names of the patrolmen or watch, the names of the patrolmen met, and the name of the station the latter were from.)

Station watch.

PATROL.

James D. Keltie 12 P.M. to 2 A.M. met Charles Robinson 4 P.M. to 6 P.M. Station.
 Charles Robinson 2 A.M. to 4 A.M. met George W. Mastain 6 P.M. to 8 P.M.
 George W. Mastain 4 A.M. to 6 A.M. met Herman W. Allers 8 P.M. to 11 P.M.
 Herman W. Allers 6 A.M. to 8 A.M. met Patrick M. Bailey 11 P.M. to 12 P.M.
 Patrick M. Bailey 8 A.M. to 10 A.M. met
 James P. Smith 10 A.M. to 12 P.M. met Charles Robinson 12 P.M. to 2 A.M. West
 Frank E. Bennett 12 P.M. to 2 P.M. met James D. Keltie 2 A.M. to 4 A.M. East
 James D. Keltie 2 P.M. to 4 P.M. met Patrick M. Bailey 7.30 P.M. to 11 P.M. West
 Herman W. Allers 11 P.M. to 12 P.M. East.

Is the house thoroughly clean? yes.
 Is the house in good repair? yes.
 Is the apparatus in good condition? yes.

Was any member of the crew (including keeper) absent on liberty, if so, who, and from what hour to what hour? William Walker, Keeper from 1 P.M. to 4 P.M.

Was anyone absent on twenty-four hours' leave, if so, who? No

Was anyone absent for other cause, if so, who, and why? No

Name of substitute: James D. Keltie in place of Peter O'Brien, surfman.
 Name of substitute: in place of , surfman.

(Fill in the number of vessels of each class that have passed the station this day.)

Ships, barks, brigs, schooners, 2 steamers, 20 sloops, 1

GENERAL REMARKS.

(Under this head are to be stated all transactions relating to house or service.)

Drill with Beach Apparatus. Time 705 Elevation of gun 17 degrees. Distance of shot from pole 80 yards.

crew worked in and about the Station and grounds.

Patrick M. Bailey No. 4. made long patrol to the west. to look for mail boat from South Manitou Island Mich. which was supposed to have been on her way from Empire Mich. to the South Manitou Island. Mich. but nothing could be found left station 7.30 P.M. returned at 11 P.M.

William Walker
Keeper

Monday, April 20, 1906

CONDITION OF THE SURF.			
MIDNIGHT.	SUNRISE.	NOON.	SUNSET.
None	None	None	None
Light <i>X</i>	Light	Light	Light <i>X</i>
Moderate	Moderate <i>X</i>	Moderate <i>X</i>	Moderate
High	High	High	High
Very high	Very high	Very high	Very high

The keeper will make a cross immediately after the word indicating the condition of the surf at midnight, sunrise, noon, and sunset.

WEATHER CONDITIONS AT—	WIND.		STATE OF WEATHER.	BAROMETER.	THERMOMETER.
	Direction.	Force.			
Midnight	W.	Light	Cloudy	29.99	40
Sunrise	W.W.	Fresh	Clear	29.45	35
Noon	W.W.	Light	Clear	29.49	49
Sunset	W.W.	Light	Cloudy	29.59	46

PATROLS AND WATCHES.

In the blank spaces below enter the names and numbers of men on patrol and watch duty; the time of each, and direction patrolled. The patrols from all stations in a district (except as otherwise specifically authorized) shall be made in the same direction at the same time.

PATROL.			TIME.	STATION AND DAY WATCHES.	
No.	NAME.	DIRECTION.		No.	NAME.
3	Herman W. Allers	West	Midnight to 2 a. m.	2	George W. Mastain
2	George W. Mastain	East	2 a. m. to 4 a. m.	3	Herman W. Allers
			4 a. m. to sunrise. 6	4	Patrick J. M ^c . Bauley
			6 Sunrise to 8 a. m.	5	James F. Smith
			8 a. m. to noon.	6	Frank B. Bennett
			Noon to 4 p. m.	7	Peter Cardinal
			4 p. m. to sunset. 6	1	Charles Robinson
			Sunset to 6 p. m.		
			6 p. m. to 8 p. m.	2	George W. Mastain
5	James F. Smith	West	8 p. m. to 10 p. m.	4	Patrick J. M ^c . Bauley
4	Patrick J. M ^c . Bauley	East	10 p. m. to midnight.	5	James F. Smith

Are all the buildings thoroughly clean? *yes.*

Are the station premises in tidy condition? *yes.*

Is the apparatus in good condition? *yes.*

Was any member of the crew (including keeper) absent on liberty; if so, who, and from what hour to what hour? *Herman W. Allers. No. 3. at Liberty from 8 am on the 20th to 9 am on the May 1st*

Was anyone absent for other cause; if so, who, and why? *Peter Cardinal. sent for mail.*

Name of substitute: *none* in place of _____, surfman.

Name of substitute: *none* in place of _____, surfman.

(Fill in the number of vessels of each class that have passed the station this day.)

Ships, _____ barks, _____ brigs, _____ schooners, 10 steamers, 36 sloops,

GENERAL REMARKS.

(Under this head are to be stated all transactions relating to house or service.)

Received 12 sheets Emery cloth. 12 yds. Trenching. 2 dust pans. 3/2 lin. brass screws. 3/2 2 in. iron screws. 1 lb copper taints. 1 doz. Sand H. Lamp wicks. 1 dust cover. 10 lbs. yellow ochre. 2 Bath Bricks. 6 Brushes scrubbing. 1 brush stone. 20 yds. canvas. 6 map cotton. 10 oz. red soda 10 cakes. Balls. tin canner. 1 collar tin for stove pipe. 6 cakes. Polish stove Dixon. 1 saw set. 2 Boxes. Diaks. 726.
Drill with Beach apparatus. time 4.20 Elevation of gun 18 degrees.
Distances of shot from pole. 102 yds. 2 ounces powder
crew worked on boat house

William Walker.

Tuesday, May 1, 1906

CONDITION OF THE SURF			
MINUTE	SUNRISE	NOON	SUNSET
None	None	None	None
Light <i>X</i>	Light <i>X</i>	Light <i>X</i>	Light <i>X</i>
Moderate	Moderate	Moderate	Moderate
High	High	High	High
Very high	Very high	Very high	Very high

The keeper will make a cross immediately after the word indicating the condition of the surf at midnight, sunrise, noon, and sunset.

WEATHER CONDITIONS AT	WIND		STATE OF WEATHER	BAROMETER	TEMPERATURE
	Direction	Force			
Midnight	N.E.	Light	Clear	29.75	49
Sunrise	S.W.	Light	Clear	29.30	40
Noon	S.E.	Light	Clear	29.47	48
Sunset	S.E.	Light	Clear	29.45	50

PATROLS AND WATCHES.

In the blank spaces below enter the names and numbers of men on patrol and watch duty, the time of each, and direction patrolled. The patrols from all stations in a district (except as otherwise specifically authorized) shall be made in the same direction at the same time.

PATROL			TIME	STATION AND DAY WATCHES	
No.	NAME	DIRECTION		No.	NAME
7	Peter Cardinal	West	Midnight to 2 a. m.	6	Frank B. Bennett
6	Frank B. Bennett	East	2 a. m. to 4 a. m.	7	Peter Cardinal
			4 a. m. to sunrise	6	Peter Cardinal
			6 Sunrise to 8 a. m.	2	George W. Mastain
			8 a. m. to noon	3	Thermon W. Allen
			Noon to 4 p. m.	4	Patrick J. M ^{rs} Bailey
			4 p. m. to sunset	5	James F. Smith
			Sunset to 6 p. m.		
			6 p. m. to 8 p. m.	6	Frank B. Bennett
2	George W. Mastain	West	8 p. m. to 10 p. m.	1	Charles Robinson
1	Charles Robinson	East	10 p. m. to midnight	2	George W. Mastain

Are all the buildings thoroughly clean? *yes.*

Are the station premises in tidy condition? *yes.*

Is the apparatus in good condition? *yes.*

Was any member of the crew (including keeper) absent on liberty; if so, who, and from what hour to what hour? *Peter Cardinal No. 7. at Liberty from 8:30 am on 1st to 7:30 am on the 2nd.*

Was anyone absent for other cause; if so, who, and why? *Patrick J. M^{rs} Bailey sent for mail.*

Name of substitute: *none* in place of _____, surfman.

Name of substitute: *none* in place of _____, surfman.

(Fill in the number of vessels of each class that have passed the station this day.)

Ships, barks, brigs, schooners, 15 steamers, 47 sloops,

GENERAL REMARKS.

(Under this head are to be stated all transactions relating to house or service.)

at 3.10 a.m. the Lookout at this Station discovered a schooner on the beach, about 2,000 ft West of Sleeping Bear Point. Station 12th Dist. the Surfboat was immediately launch and reached the schooner about 10 minutes later. run anchor and unloaded 4 or 5 cords of edging wood and backed fairsail and she swung out into deep water and went on her way. No damage done

Drill with Surfboat

William Walker.
Keeper

Monday, May 7th, 1906

CONDITION OF THE SURF.			
MIDNIGHT.	SUNRISE.	NOON.	SUNSET.
None	None	None	None
Light	Light	Light	Light
Moderate	Moderate	Moderate	Moderate
High	High	High	High
Very high	Very high	Very high	Very high

The keeper will make a cross immediately after the word indicating the condition of the surf at midnight, sunrise, noon, and sunset.

WEATHER CONDITIONS AT—	WIND.		STATE OF WEATHER.	BAROMETER.	THERMOMETER.
	Direction.	Force.			
Midnight	N.	Fresh	cloudy	29.42	97
Sunrise	N.	Light	clear	29.44	96
Noon	W.	Light	cloudy	29.50	96
Sunset	SW	Light	clear	29.53	99

PATROLS AND WATCHES.

In the blank spaces below enter the names and numbers of men on patrol and watch duty, the time of each, and direction patrolled. The patrols from all stations in a district (except as otherwise specifically authorized) shall be made in the same direction at the same time.

PATROL.			TIME.	STATION AND DAY WATCHES.	
No.	NAME.	DIRECTION.		No.	NAME.
3	Herman W. Allers	West	Midnight to 2 a. m.	2	George W. Mastain
2	George W. Mastain	East	2 a. m. to 4 a. m.	3	Herman W. Allers
			4 a. m. to sunrise. 6	4	Patrick J. Mc. Banley
			6 Sunrise to 8 a. m.	5	James F. Smith
			8 a. m. to noon.	6	Frank B. Bennett
			Noon to 4 p. m.	3	Herman W. Allers
			4 p. m. to sunset. 6	1	Charles Robinson
			Sunset to 6 p. m.		
			6 p. m. to 8 p. m.	2	George W. Mastain
5	James F. Smith	West	8 p. m. to 10 p. m.	4	Patrick J. Mc. Banley
4	Patrick J. Mc. Banley	East	10 p. m. to midnight.	5	James F. Smith

Are all the buildings thoroughly clean? *yes.*

Are the station premises in tidy condition? *yes.*

Is the apparatus in good condition? *yes.*

Was any member of the crew (including keeper) absent on liberty; if so, who, and from what hour to what hour? *Herman W. Allers. No. 3. at Liberty from 8 a.m. to 12.30 p.m. and from 5 p.m. on the 7th. to 7.30 a.m. on the 7th*

Was anyone absent for other cause; if so, who, and why? *No*

Name of substitute *None* in place of _____, surfman.

Name of substitute: *None* in place of _____, surfman.

(Fill in the number of _____ class that have passed the station this day.)

Ships, barks, brigs, schooners, 14 steamers, 39 sloops,

GENERAL REMARKS.

(Under this head are to be stated all transactions relating to house or service.)

At 12.50 pm the Lookout reported the S. machine launch. Reliance of South Manitow Island. Mich. broken down, about 4 miles West of this station. The Surfboat was immediately launched and about 45 minutes later, pulled along side of her. Took four Passengers and the Engineer. To the South Manitow Island, and got another S. machine boat and returned to the Disabled Launch, with the South Manitow Island Life Saving crew after returning to the Disabled launch turned her over to Keeper Van Welden. and return to the station arrived 5 pm

Will fire drill. time 34 seconds.

3 men worked on boat house. from 5.30 am to 11.45 am
 repaired Patrol clock No 23.11 to the South 12th Dist. for repairs.

William Walker

Tuesday, 8th 1906

CONDITION OF THE SURF.

Direction	SURF.				WEATHER CONDITIONS AT—	WIND.		STATE OF WEATHER.	BAROMETER.	TEMPERATURE.
	None	Light	Moderate	High		Direction	Force			
None	None	None	None	None						
Light	Light	Light	Light	Light						
Moderate	Moderate	Moderate	Moderate	Moderate						
High	High	High	High	High						
Very high										

Note: The keeper will make a cross immediately after the word indicating the condition of the surf at midnight, sunrise, noon, and sunset.

PATROLS AND WATCHES.

In the blank spaces below enter the names and numbers of men on patrol and watch duty, the time of each, and direction patrolled. The patrols from all stations in a district (except as otherwise specifically authorized) shall be made in the same direction at the same time.

PATROL.				STATION AND DAY WATCHES.	
No.	NAME.	DIRECTION.	TIME.	No.	NAME.
7	Peter Cardinal	West	Midnight to 2 a. m.	6	Frank B. Bennett
6	Frank B. Bennett	East	2 a. m. to 4 a. m.	7	Peter Cardinal
			4 a. m. to sunrise-6	1	Charles Robinson
			6 Sunrise to 8 a. m.	2	George W. Mastain
			8 a. m. to noon.	3	Herman W. Allen
			Noon to 4 p. m.	4	Patrick J. M. Bauley
			4 p. m. to sunset-6	5	James P. Smith
			Sunset to 6 p. m.		
			6 p. m. to 8 p. m.	6	Frank B. Bennett
2	George W. Mastain	West	8 p. m. to 10 p. m.	1	Charles Robinson
1	Charles Robinson	East	10 p. m. to midnight.	2	George W. Mastain

Are all the buildings thoroughly clean? *yes.*
 Are the station premises in tidy condition? *yes.*
 Is the apparatus in good condition? *yes.*
 Was any member of the crew (including keeper) absent on liberty; if so, who, and from what hour to what hour? *Peter Cardinal, No 7, at Liberty from 8 a.m. to 12.30 p.m. and from 3.30 p.m. on the 8th to 7.30 a.m. on the 9th*
 Was anyone absent for other cause; if so, who, and why? *Patrick J. M. Bauley sent for mail.*

Name of substitute: *None* in place of _____, surfman.
 Name of substitute: *None* in place of _____, surfman.

(Fill in the number of vessels of each class that have passed the station this day.)
 Ships, _____ barks, _____ brigs, _____ schooners, 6 steamers, 24 sloops,

GENERAL REMARKS.

(Under this head are to be stated all transactions relating to house or service.)

at 12.30 p.m. received notice by Telephone from Glen Haven Mich. that a Sloop, No Name, with one man and woman and three children aboard, was in danger of pounding to pieces against the pier. Took lines and tackle, and went over land arrived 20 minutes later, dropped the sloop through the surf and heaved her upon the beach and at 1.30 p.m. had her up in a safe place. return to station at 2.30 p.m. Wind N.E. Brisk High Surf Breezy.

crew worked on Boat house.

*William Walker:
Keeper.*

LOG OF THE U. S. COAST GUARD

(Date to which returned) *Al. S. ... Michigan* Date *London* (Day of year) *...* (Month) *...* (Day) *...* Commanding Officer *...* U. S. C. G.

L.	DIST.	R. P. M.	COGNAC (U. S. C.)	BAR.	TEMP.	WIND		WEATHER	CLOUDS		SEA	VIS.	POSITION
						Dir.	Force		Fore	Aft			
													8 A. M. <i>...</i>
													Noon <i>...</i>
													8 P. M. <i>...</i>
													Time under way <i>...</i>
													Miles cruised <i>...</i>
													Recd. <i>...</i>
													Expd. <i>...</i>
													Remg. <i>...</i>
													COMPLEMENT
													MILITARY
													Off. Enl. men Off.
													Authorized <i>...</i>
													Present <i>...</i>
													Al. <i>...</i>
													Awl. <i>...</i>
													Ah. <i>...</i>
													Ahm. <i>...</i>
													Vacancy <i>...</i>
													Extra No. <i>...</i>
													General mess rations issued <i>...</i>
													Commuted rations issued <i>...</i>

Temp: Max. *38°* Min. *23°* Drills held: *...*

RECORD OF THE MISCELLANEOUS EVENTS OF THE DAY

Mid. to Pres. Com.

7:00 A.M. Telephone line to South Manitowish Out. of Order.

7:20 A.M. Crew performed morning routine duties.

7:30 A.M. Mide inspection of station, buildings, grounds and apparatus. Results satisfactory.

8:00 A.M. Morn'g Colored - *Edmer Ludberg, Surf. No. 2*

8:00 A.M. to 4:00 P.M.

11:30 A.M. *Chris J. Anderson (100-183) B.M.I.C., returned from regular liberty.*

2:00 Noon *Joseph P. Bantam (100-153) Surf granted regular liberty.*

Edmer Ludberg, Surf. No. 2

4:00 P.M. to Mid.

Evening colored at sunset.

4:00 P.M. Mide inspection of station, buildings, grounds and apparatus.

6:00 P.M. Mide final night inspection.

Edmer Ludberg Surf. No. 2

Approved for the day:
Chris J. Anderson
Commanding

Examined and found to be complete:
Edmer Ludberg
Surf. No. 2

LOG OF THE U. S. COAST GUARD

Station - District *Commanding Officer* *U. S. C. C.*
 (Unit to which attached) *Commanding Officer*
 At *St. John's, Newfoundland*, Date *21st*, 19*11*
 (Exact location at 0000 hours) (Day of week) (Month) (Day)

LOG	DIR.	R. P. M.	COURSE (P. S. C.)	BAR.	TEMP.	WIND		WEATHER	CLOUDS		SEA	VIS.	POSITION	
						Dir.	Force		Fortis	Ampl.			8 A. M.	12 Noon
1														
2														
3														
4				29.25	28	2	2	2	2	2				
5														
6														
7														
8				29.25	28	2	2	2	2	2				
9														
10														
11				29.25	28	2	2	2	2	2				
12				29.25	28	2	2	2	2	2				

8 A. M. *St. John's, Newfoundland*
 Noon *St. John's, Newfoundland*
 8 P. M. *St. John's, Newfoundland*

Time under way _____ Hr. _____ Min.
 Miles cruised _____

FUEL OIL OR GASOLINE	LUB. OIL	WATER

Head _____
 Expd _____
 Remr _____

COMPLEMENT

	MILITARY		CIVILIAN	
	Off.	Enl. men	Off.	Men
Authorized				
Present				
Al				
Awl				
Ah				
Ahm				
Vacancy				
Extra No. General mess rations issued				
Computed rations issued			3	

Mag. Temp.: Max. 33° Min. 28° Drills held: *Customs & Navigation laws and manual drill*

RECORD OF THE MISCELLANEOUS EVENTS OF THE DAY

Mid. to 5:00 p.m.
5:00 p.m. Telephone line to South Mountain out of order.
7:30 p.m. Crew performed morning routine duties.
7:30 p.m. Made inspection of station buildings, grounds and apparatus. Results satisfactory.
8:30 p.m. Messing colors.
8:10 p.m. Exercised crew in Customs and Navigation laws and manual drill.
9:00 p.m. to 4:00 p.m. Joseph F. Bartunek, Surf Pilot
9:45 p.m. Crew employed shoveling snow off side walks, and various jobs about the station.
4:00 p.m. to mid. Joseph F. Bartunek, Surf Pilot
 Evening colors at sunset.
7:30 p.m. Rec'd message from Pasabuct station originates 9th Naval Dist, Attention 2. All units, No. 919136, Group Count 55.
8:00 p.m. Made inspection of station buildings, grounds and apparatus.
10:00 p.m. Made final night inspection.
 Joseph F. Bartunek, Surf Pilot

Approved for the day:
Joseph F. Bartunek
 Commanding

1-9-0-0
 (OVER)

Examined and found to be complete:
Joseph F. Bartunek
 Surf Pilot Navigator

A P P E N D I X G

Extract From 1899 Lifesaving Service Regulations

The pages that comprise this appendix explain much of the drill and operations procedures used by the lifesavers.

GENERAL SERVICE SIGNAL CODE.

A	22	O	21
B	2112	P	1212
C	121	Q	1211
D	222	R	211
E	12	S	212
F	2221	T	2
G	2211	U	112
H	122	V	1222
I	1	W	1121
J	1122	X	2122
K	2121	Y	111
L	221	Z	2222
M	1221	tion.	1112
N	11		

NUMERALS.

1	1111	6	2211
2	2222	7	1222
3	1112	8	2111
4	2221	9	1221
5	1122	0	2112

ABBREVIATIONS.

a	after	t	the
b	before	u	you
c	can	ur.	your
h	have	w	word
n	not	wi.	with
r	are	y	you

CONVENTIONAL SIGNALS.

End of a word	3	Cease signaling	22 22 22 333
End of a sentence	33	Wait a moment	1111 3
End of a message	333	Repeat after (word) 121 121 3 223 (word)	
xx3..numerals follow (or)numerals end		Repeat last word.	121 121 33
sig 3 signature follows		Repeat last message . . .	121 121 121 333
Error	12 12 3	Move a little to right.	211 211 3
Acknowledgment, or "I understand"	22 22 3	Move a little to left	221 221 3
		Signal faster	2212 3

INSTRUCTIONS FOR USING THE SYSTEM

The whole number opposite each letter or numeral stands for that letter or numeral.

TO SIGNAL WITH FLAG, TORCH, HAND LANTERN, OR BEAM OF
SEARCH LIGHT.

There are but one position and three motions.

The first position is with the flag or other appliance held vertically, the signalman facing squarely toward the station with which it is desired to communicate.

The first motion, or "one" or "1," the signal is waved to the right of the sender, and will embrace an arch of 90°, starting with the vertical and returning to it, and will be made in a plane exactly at right angles to the line connecting the two stations.

The second motion, or "two" or "2," is a similar motion to the left of the sender.

To make the third motion, "front," or "three," or "3," the signal is waved to the ground directly in front of the sender, and instantly returned to the first position.

Numbers which occur in the body of a message must be spelled out in full. Numerals may be used in signaling between stations having naval signal books, using the code calls.

To use the torch or hand lantern, a footlight must be used as a point of reference to the motion. The hand lantern is more conveniently swung out upward by hand from the footlight for "1" and "2" and raised vertically for "3."

TO SEND A MESSAGE.

To call a station, signal its initial or call letter until acknowledged. To acknowledge a call, signal "I understand," followed by the call letter of the acknowledging station.

Make a slight pause after each letter and also after "front." If the sender discovers that he has made an error, he should make the "front" and 12 12 3, after which he proceeds with the message, beginning with the word in which the error occurred.

ADDITIONAL INSTRUCTIONS.

At the end of each word, abbreviation, or conventional signal, the space signal or "front" motion is made.

If the call letter of the station wanted be not known, signal "A" until acknowledged.

To break or stop the signals from the sending station, hold the flag or other signaling appliance in the first position.

To start the sending station after breaking, signal 121 121 3 223, followed by the last word correctly received. The sender will immediately resume his message, beginning with the word indicated by the receiver.

To acknowledge the receipt of a message, signal 22 22 3, followed by the personal signal of the receiver.

Each station should have its characteristic signal or call letter, as Washington, W, and each signalist his personal signal, as Jones, Jo.

The full address of a message shall be considered as one sentence, and will be followed by the signal "33."

BEEBE-McLELLAN SELF-BAILING SURFBOAT DRILL WITH
McLELLAN BOAT WAGON.
(Double Bank.)

By Lieut. C. H. McLellan, R. C. S., Assistant Inspector Life-Saving Station.

PRELIMINARY INSTRUCTIONS.

The surfboat and boat wagon will originally be prepared for service at a station in the following manner:

The boat wagon, with the boat loaded bow forward upon it, will be backed into the boat room.

Fit drag ropes of 2-inch manila rope to the eyes in the rear axle braces, having one loop in each rope large enough to pass easily over a man's shoulder, and the same to the forward cross piece of the hounds, with two loops on each rope. Also fit side lashings in the eyes on the rear axle, of whip-line stuff sufficiently long to make fast around the gunwale of the boat, and a check rope 1 1/2 fathoms of the same material to be spliced around the after axle on the left side with which to take a turn around the bilge keel of the boat to prevent its running down the reach when unloading.

Before unloading the boat from the wagon, the keeper must take particular care to have the valve to the water-ballast tank, the hatch, and the ventilators to the side air cases securely closed.

The boat must never be dragged over the ground with the water-ballast valve open, as the sand will be forced up into the tank.

If sand accumulates in the tank, it can be removed by taking out the valves and using a crooked piece of hoop iron.

In boats numbered 66 and 76, and upward, will be found forward and aft of the valve well removable sections of deck, under which are hand holes in the tank, through which the sand can be pushed to the valves; securely screw in the hand plates before replacing the deck.

The water ballast, if needed, should not be let into the tank until the boat is afloat and under control. When the tank is full, close the valve. The tank can be emptied of water by the pump or by opening the valves after the boat is landed.

Each man will keep the shoulder strings of his life-preserver crossed and knotted at the proper length, and placed on his thwart.

When removing the life preserver from the person the waist strings will be brought to the front and loosely tied with a slip knot to insure their being clear when putting on the preserver.

The life-preservers will be worn whenever the boat is launched, whatever the condition of the surf; but if the men are required to work on board a wreck and the life-preservers should become impediments, they may be removed while on board, but must be put on before entering the boat.

The thwarts will be numbered from aft forward, Nos. 1 and 2 pulling on the after thwart, 3 and 4 on the next thwart forward, etc.; the odd numbers on the starboard and the even numbers on the port side.

The surfboat will never be left alongside of a vessel or wreck without a boat keeper, and in rough weather there will be two.

Unloading the boat from the wagon should be practiced so it can be done quickly and easily, and the crew will be timed in this evolution from the command "Unload" until the oars are crossed and the boat is ready to be taken down to the surf. One-half minute is ample time in which to unload when a crew is properly drilled. The crew will not be drilled in loading the boat upon the wagon quickly.

When it is not suitable for launching, the crew can be exercised in unloading, which exercise, however, must be in addition to the regular boat practice.

The keeper will at every boat practice resign the steering oar to No. 1 or No. 2 (alternately) for a short time, who will exercise the crew under the direction of the keeper, including going off and landing through the surf.

EQUIPMENTS.

One set of oars.

One spare oar.

One boat hook forward, one aft.

One set of oarlocks or thole pins; if the latter, they will be connected by a lanyard, and the third pin strung on its bight.

One boat hatchet forward and one aft, kept in pockets on the inside of the boat. A lanyard 2 feet long will be spliced in a hole in the end of the handle of each, with an eye splice 6 inches long in the other end of the lanyard, which will allow the lanyard to be passed around the inside gunwale, and the hatchet dipped through the eye, thus insuring the safety of the hatchet and its easy removal for use in any part of the boat. The after and bow oarsmen will care for and keep the hatches in order.

Heaving stick and line to be stowed forward.

Boat sponge.

A life-preserver for each member of the crew including the keeper.

Spare life-preservers will be neatly folded and snugly stopped, two under each thwart.

One anchor (26 pounds) unstocked and stopped to the bottom boards.

One anchor line, the length according to the depth of the water in the vicinity of the station, but not less than 15 fathoms.

One hand grapnel and line stowed forward.

Canvas drogue and fittings stowed aft on the rail.

Righting lines of 18-thread manila, 18 feet long in the clear, will be spliced around the inside gunwales, on each side of the boat abreast of each thwart. The ends of these lines will be provided with cedar floats 4 1/2 inches long and 3 inches diameter, tapered and confined at each end by a Mathew Walker knot worked before and after the float is put on. The righting lines will be kept neatly coiled on the thwarts, but not stopped.

Life lines of 15-thread manila, without floats, will be looped from the gunwales at equal distances on both sides, the bights to be sufficiently long in the waist to reach the water line, to be used as stirrups in climbing into the boat.

DRILL.

WORDS OF COMMAND.

Man the surfboat.
Forward.
Halt! Unload.
Take life belts.
Take oars.
Go.
In bow.
Way enough.
Up oars.
Shove off.

Let fall.
Oars.
Hold.
Face about--hold.
Pull port--Back starboard.
Pull starboard--Back port.
Give away together.
In oars.
Way enough.

"MAN THE SURFBOAT."

Nos. 5 and 6 open and secure the boat room doors. If the wagon pole be detached Nos. 1 and 2 adjust it, 1 holding it in position while 2 inserts the bolt:* the men fall into place with the drag ropes over their shoulders, as shown in the following diagram:

[DRAWING]

The wagon is run out of the house and to the most desirable place for launching, as near the water as possible, boat heading toward the surf.

"HALT--UNLOAD."

The drag ropes are dropped. Nos. 3 and 4 cast off the side lashings; 1, 3, and 5 on the starboard side and 2, 4, and 6 on the port side run the boat back over the rear axle as far as the wheels will allow. No. 7 takes a turn with the check rope around the bilge keel or grip streak, and tends it. No. 1 swings out the starboard lifting bar, No. 2 follows with the port lifting bar, which he hooks. Nos. 1, 3, 5, on the starboard side, and 2, 4, 6 on the port side, man the bars. The keeper removes the king-bolt, the reach is lifted, and the keeper removes the forward wheels; the reach is then carefully lowered to the ground.

No. 7 slacks the check rope and the boat is rolled down and off the reach.

Nos. 3 and 4 run the fore wheels and 5, 6, and 7 the rear wheels up the beach out of the reach of the tide.

The men assemble on their respective sides of the boat and abreast of their thwarts.

"TAKE LIFE PRESERVERS."

At the command "Take," each man lays hold of his own life-preserver. At the command "Life preservers," which is given with a very short pause after "Take," the life preservers are taken simultaneously and the men facing the boat proceed to adjust them (Ward pattern) as follows:

Place the cross of the shoulder strings over and back of the head, passing the arms up through and over the low parts on the sides of the preserver, one arm at a time, pass and securely knot the waist strings. The men should be drilled in putting on the life-preservers independent of the boat drill, until they can adjust them quickly and easily and without assistance, care being taken that the strings are securely knotted and that the life-preserver is well up under the arms.

*Nos. 1 and 2 perform similar duties if shafts are used.

"TAKE OARS."

At the command "Take," each man lays hold of his oar. At the word "Oars," which is given after a slight pause (and the men must act promptly to make the pause as brief as possible), the oars are raised simultaneously on end and the men governed by the movements of No. 1, drop them together into the oarlocks on their respective sides, the handles resting against the opposite air case. The oars will be kept on end only long enough to insure uniform action, and will be dropped without orders. The keeper at the same time secures the steering oar in its oarlock, the handle resting under the after thwart.

At this point the time of the evolution "Unload" should be taken.

The boat is taken down and into the water, the keeper at the proper time directing the two bowmen to jump into the boat, which they do, and taking their oars assist to keep the boat head to the sea, No. 7 at the stern assisting the keeper.

"GO."

At this command, which the keeper gives at his own discretion, the men give the boat all the headway possible, then spring on board with the keeper, take their oars, and give way briskly together, No. 7 steadying the boat as long as the depth of the water or surf will permit.

When going alongside of a vessel, the keeper, when at the proper distance to allow of the execution of the maneuver, will give the command,

"IN BOW."

The bowmen at once toss their oars, throw the blades forward, and light them aft next the rail and entirely inboard.

They then make ready for going alongside as instructed by the keeper, either with the boathook, painter, or heaving stick and line, or standing ready to catch a line from the vessel, which is more desirable when practicable.

When satisfied that his boat has sufficient headway, the keeper commands,

"WAY ENOUGH."

When the stroke is finished, the oars are lossed together on end, and without pausing the blades are thrown forward and lowered between the men and the rail, and entirely within the boat. When the oars are boated, the stroke oarsman next the vessel makes ready to assist with his boathook to

to hold the boat alongside. The oarlocks or thole pins on the side next the vessel will be unshipped, the crew remain seated and keep silent.

In actual service the keeper must oftentimes exercise his highest skill and judgment in maneuvering about a wreck or vessel, and no hard and fast rules of action can be prescribed. He will therefore not regard the above instructions as compulsory, but will adopt such as in his judgment is best adopted to each occasion. (See "Rules for management of open rowboats in a surf," caption, "Boarding a wreck or a vessel under sail or at anchor in a heavy sea," p. 151.)

When leaving the side of a vessel, the keeper will command,

"UP OARS."

The oarlocks or thole pins are shipped, the crew excepting the bowmen raise their oars on end, blades feathered to the wind, when the keeper commands,

"SHOVE OFF."

The bowmen next the vessel casts off his line, or hauls in the painter, and with his boathook shoves off the bow assisted by the keeper with his steering oar.

When the boat has dropped away the length of the oars, the keeper commands,

"LET FALL."

The oars are dropped together into the oarlocks, and the necessary commands given to point the boat in the desired direction. The bowmen raise their oars and let fall together without further orders.

Sometimes the conditions may be such that it will be more desirable to drop away from the vessel before ordering "Up oars." In such a case command "Shove off," and when away a proper distance, command "Up oars," and "Let fall," as before directed.

At the command,

"OARS."

The men rest on their oars, the blades feathered and peaked in line with the stroke oar, sufficiently high to clear the seas.

To stop the boat's headway entirely, command,

"HOLD."

The blades are dropped into the water and held there.

If necessary to stop the boat quickly, or to hold the boat when in danger of running a sea, command,

"FACE ABOUT--HOLD."

The men face about, passing around the ends of their oars, and take seats on the next thwart aft, drop the blades of their oars into the water and hold hard.

To turn the boat quickly, command,

"PULL PORT--BACK STARBOARD."

Or,

"PULL STARBOARD--BACK PORT."

The keeper at the same time assisting with the steering oar.

When the boat heads in the desired direction, command,

"GIVE WAY TOGETHER."

When landing in a rough sea, the keeper commands at the proper time,

"IN OARS."

The oars are hauled inboard, their looms resting on the opposite rail, the men jump overboard on their respective sides, and run the boat up on the beach, using the oars as rollers.

The life-preservers are removed, the waist strings being knotted in front with a slip knot before the preservers are taken off.

The oars are laid in, blades forward, and the same order followed in loading the boat on the wagon, as in unloading.

When landing in smooth water, and sufficiently near the beach, command,

"WAY ENOUGH."

The oars are tossed together and boated as before described.

(See also captions, "On running before a broken sea or surf to the shore," page 148, and "Beaching or landing through a surf," page 150.)

UPSETTING AND RIGHTING DRILL.

It is very essential that the surfboat crews be exercised in righting the boat, so that in case of an accidental upset the men will be thoroughly at home and work understandingly.

Keepers will choose suitable times, and purposely upset the boat, previously leaving all the movable outfits on shore.

To right the boat the righting lines are thrown over the bottom, and the men getting on the opposite side, and bracing against the boat, at the same time hauling on the lines, right the boat, climbing in as she rights. With practice the men soon learn to take every advantage, and can right and climb into the boat in a very short time.

No part of the boat practice is more essential than the righting drill.

THE DROGUE.

The canvas drogue will prove of the greatest assistance when landing a boat in a dangerous surf; but to obtain good results, it must be carefully fitted and always kept ready for instant use.

It must be frequently practiced with to accustom the men to working it, and a few trials will convince the most skeptical of its value. It should be fitted as follows:

Those already supplied to the Service with iron hoops in the opening should have the hoops removed and grommets of 1 1/2-inch rope (whip-line stuff) substituted.

Two rope bails crossing each other are spliced around the grommet. The holding rope which is spliced around the cross of the bails, should be of 1 1/2-inch manila (whip-line stuff), and of sufficient length to allow the drogue when full to drop clear of the steering oar, say 20 feet from the stern,

The bare end of the holding rope is spliced around the inside gunwale near the steering yoke, near which end there should be a cleat to which the bight of the holding rope is belayed 6 feet from its end; the holding rope should be marked with a red rag tucked through the lay at the point where it is belayed.

A tripping line of 12-thread manila is spliced into the bottom of the drogue and just long enough to allow the drogue to stand full when towing by the holding rope from the cleat. The end of the tripping line is spliced around the gunwale and a cleat is provided for it the same as for the holding rope. The drogue should be kept on the quarter rail, bottom forward, so secured that it can be quickly loosened and dropped overboard.

The lines can be coiled and hung on the cleats, and are thrown overboard with the drogue. With a little ingenuity on the part of the fitter, the whole outfit can be neatly and conveniently arranged.

METHOD OF USING THE DROGUE.

When necessary to check a boat's headway on a sea, drop the drogue and lines overboard (the bight of the holding line being fast around the cleat); this can be done by No. 1. As soon as it fills, it will hold, and straighten the boat on the sea.

When it is desired to go ahead, throw off the hitch of the holding rope, and the tripping line capsizes and empties the drogue, allowing the boat to gather headway.

Before entering a dangerous surf, the drogue can be dropped and towed bottom forward by the tripping line hauled in a few feet and belayed on its bight, the towing rope also belayed on its bight; then in case its use is necessary, throw off the hitch of the tripping line, and the drogue fills instantly and checks the boat.

A P P E N D I X H

Specifications for Flagstaff and Drill Pole, 1902

National Archives, Record Group 26, Sleeping Bear Point Lifesaving Station, LR #74206

-----: FLAGSTAFF. :-----

To be constructed as per drawing and erected where required.

Lower mast to be of best quality, well-seasoned Georgia pine, or white pine, free from sap, shakes, large or loose knots, etc.

Topmast to be of spruce or Georgia pine, same quality.

Mdsills and braces to be clear, well-seasoned, heart Georgia pine or white oak.

Trestletrees, crosstrees, fid, etc., to be clear, seasoned, heart white oak, neatly dressed and rounded off at edges.

All iron bands, bolts, pole steps, screws, spikes, etc., to be of the best quality, galvanized. All bolts and lag screws to have washers.

Sheave in heel of topmast to be 8 inches, galvanized.

Truck to be 7 inches, of lignum-vitae, with two galvanized sheaves.

Two belaying cleats, galvanized, with 3-inch horns.

Halyards to be No. 7 Italian hemp, two sets.

The whole to be carefully made, neatly fitted, and dressed. Every piece to be painted two good coats of white lead before putting together, except the parts underground, which are to be thickly coated with hot tar to 1 foot above grade (also before putting together). When erected and completed, the whole to receive a third coat of white lead, and to be left ready for use.

-----: DRILL POLE. :-----

To be constructed as per drawing, and erected where required.

Mdsills and braces to be clear, well-seasoned, heart Georgia pine or white oak; all other parts to be of best quality, well-seasoned Georgia pine, or white pine, or white oak.

All bolts, screws, spikes, nails, etc., to be galvanized.

All to be made, fitted, dressed, painted, tarred, put up, and finally painted in same manner as the flagstaff specified above.

A P P E N D I X I

Miscellaneous Construction Documents, 1902

The accompanying documents show the changes added to the Sleeping Bear Point and South Manitou Island stations during their construction.

National Archives, Record Group 26, Sleeping Bear Point Lifesaving Station, LR #74206

L.R.74206⁴⁴

50/41

Office of Supts. of Construction,
Life-Saving Stations,
Atlantic and Lake Coasts,

No. 24 State Street, New York,

January 21, 1902.

C. A. Abhey
John Dennett,
Captains, U.S.R.C.S., Superintend-
ents.

Subject: Transmitting bill and
other papers in connection with
the life-saving stations at Sleep-
ing Bear Point and at South Mani-
tou Island, Michigan, 12th Dis-
trict.

(United States Life-Saving Ser-
vice -- Received Jany. 22,
1902).

(COPY)

LIFE-SAVING SERVICE,
Office of Superintendents of Construction of Stations,
Atlantic and Lake Coasts,
No. 17 State Street, New York, N.Y.

January 21, 1902.

The General Superintendent
of the Life-Saving Service,
Washington, D.C.

Sir:

Herewith is respectfully transmitted a bill in duplicate, in favor of Mr. Robert J.B. Newcombe, 336 River Street, Manistee, Michigan, in the sum of Eleven thousand, four hundred and sixty-seven and 31/100 (\$11,467.31) dollars, for furnishing the labor and material for, and constructing a life-saving station house and accessories at Sleeping Bear Point, and one at South Manitou Island, Michigan, under contract dated May 20, 1901 (L.R.74206/10) and for departures authorized by Department letters of July 13 and 15, 1901, (L.R.74206/22 and 74206/21) and August 19, 1901 (L.R.74206/23 and 74206/25).

By the terms of the contract the houses, etc., were to have been completed on or before November 1, 1901, in default of which a penalty of \$30.00 per day for each day's delay was to be imposed. The buildings were not all completed until January 2, 1902, as per report of our assistant, Mr.D.C.Wickham, herewith, dated January 2, 1902, or, 62 days after the time specified.

South Manitou Island station was completed December 12, 1901, and Sleeping Bear Point station January 2, 1902.

The contractor was called upon to give such explanation

as he had to offer, showing cause why the penalty should not be exacted, and to furnish a statement in writing that his bill covered his entire claim against the Government, and that he had no bill for extras to present, if such were the case.

Mr. Newcombe's letter of January 2, 1902, explaining causes of delay, is inclosed, and in view of his statements, and the fact that the Government has sustained no money loss because of such delay, the remission of the penalty is recommended.

There is also inclosed a certificate, signed by Mr. Newcombe, that his bill, in the sum of \$11,467.31 covers all his claims against the Government, in connection with the stations named, etc., and that he has no other bill to present.

The South Manitou Island station, etc., were inspected by Capt. C.A. Abbey, R.C.S., Sup't of Const'n, L-S.S., November 20, 1901, who found that they were constructed in accordance with the contract, except as to date of completion, authorized departures from the provisions of the contract, and a few minor details. Reference is made to his letter to you dated November 27, 1901, and one from this office of December 18, 1901.

Assistant to Superintendents of Construction D.C. Wickham, under date of December 14, 1901, reported the completion of the station on December 12, 1901, and the following is quoted from his report, herewith: "Since your inspection he has completed all unfinished work noted by you, and the buildings are now ready for occupancy."

The Sleeping Bear Point station was completed January

2, 1902, as per report of our assistant, Mr.D.C.Wickham, herewith, and a final inspection was made by our assistant, Mr. Andre Fourchy, on January 8, 1902, who found that the buildings had been finished in accordance with the contract, except as to the date of completion, and the authorized departures therefrom.

In this connection reference is made to two letters to you from this office, dated January 14, 1902, reporting the completion and inspection of the buildings, and that a watchman had been placed in charge, pending the appointment of a keeper.

The following described papers received with your letter of May 29, 1901 (L.R.74206/10), are herewith returned, viz:

A letter from the Assistant Inspector of the 11th District (old), dated May 21, 1900 (L.R.39214/39), with a pencil sketch, of site of the South Manitou Island station.

The proposal of the contractor for two small doors in the boat houses, received with your letter of August 19, 1901 (L.R.74206/23), has been attached to the original bill as per your instructions.

Respectfully,

(Signed) C. A. ABBEY,

JOHN DENNETT,

Captains, R.C.S.,

Sup'ts of Const'n.,

8 inclosures.

FTC.

L-S.S.

VOUCHER FOR GENERAL EXPENSES.

The United States, To Robert J. B. Newcombe, Dr. #336 River St, Marquette Michigan

Date	Authorized by Letter dated	190	DOLLARS	CTS.	SEC. VOUCHER NO.
1907 Jan 22					
For furnishing the material and labor for, and constructing a life-saving station house and accessories, at Sleeping Bear Point and one at South Mariton Island Michigan, under contract dated May 20, 1901 (G.S.L. May 29, 1901, E.R. #42062)			11.973	25	✓
Amount carried forward.			11.973	25	✓

DUPLICATE.

CERTIFY that the above enumerated have been that they have been duly inspected and were delivered and accepted on the day of 190 ; that they were necessary for, and have been, or will be, applied to the use of the Life-Saving Service; that the prices charged are just and reasonable, and do not exceed current market rates.

APPROPRIATION: Approved: Superintendent. Assistant Secretary.

RECEIVED at this day of 190 of Disbursing the sum of 100 dollars, in full of the above account.

WITNESS: Paid by check on No. dated 190 drawn to the order of

* The price per unit of weight or measure should be stated in all cases. † Insert here "and in all respects according to contract," or "and that the exigency of the service required the immediate [Delivery or performance.]" ‡ To be receipted in black ink in all cases. § This blank to be filled when the bill is in favor of a corporation.

Amount brought forward
For furnishing and
placing deadening felt,
"Eureka", between the rough
and finished floors of
the first stories of each
of the stations above
named, at \$6.⁰⁰, each

11,973 25 ✓

✓ Authorized by letter of July 13, 1901
(L.R. 74205²²).

12 00 ✓

For furnishing and
placing a small door
in the end of the boat
house at each of the
stations above named,
at \$20.⁰⁰, each.

✓ Authorized by letter of August 19, 1901
(L.R. 74206²³).

40 00 ✓

For furnishing the material
and constructing a driven
well, with pumps, com-
plete, at each of the stations
above named, at \$39.⁰⁰, each

✓ Authorized by letter of August 19, 1901.
(L.R. 74206²⁵).

78 00 ✓ 130 00 ✓

Amount carried forward

12,103 25 ✓

Amount brought forward
For furnishing the labor
and material for, and
constructing an incline,
including all material
and labor for launchway,
and white cedar posts
under dwelling and out-
building and for oak
piles under boat house
and incline at each of
the stations above named,
at \$129.38, each

1210325 ✓

25876 ✓

For mudrills, herlock,
furnished and placed,
including iron work,
at each of the above named
stations, at \$116.32, each.

23264 ✓ 49140 ✓

1259465 W

Less cost of two launch-
ways that were not
constructed - inches
substituted - at \$563.67 each

112734 ✓

Authorized by letter of July 15, 1901

(Co. R. 74202)

Amount carried forward

1146731 ✓

44 50 / 41
4206

FORM 1814.

Voucher No. _____

DUPLICATE

VOUCHER

Robert
R. J. B. Newcombe,
Marquette, Mich.

FOR

Life-saving stations, etc.
\$11,267.³¹/₁₀₀

APPROPRIATION:

UNITED STATES LIFE-SAVING SERVICE.



5763
TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,

January 23 1902

Approved for the sum of eleven thousand and two hundred sixty seven dollars and 31/100 and referred to THE AUDITOR FOR THE TREASURY DEPARTMENT, for examination and settlement. Amount found due to be paid from appropriation.

Establishing Life Saving Stations

Draft to be sent to
Robert J. B. Newcombe,
336 River st.,
Marquette, Mich.

In view of the statements and recommendation of the Superintendent of Construction, Life-Saving Stations, contained in their letter dated January 21, 1902, enclosed herewith, the generally named in the contract for failure to complete the work on the date stipulated therein is hereby remitted.

Contract forwarded to the Auditor for the Treasury Department May 29, 1901.

Secretary.

VOUCHER FOR GENERAL EXPENSES.

The United States, To _____, Dr. [Post-office address.]

Date Expense was incurred.	Authorized by Letter dated _____, 190	DOLLARS.	CTS.	SUB-VOUCHER NO.
190	Amount brought forward	11.46	73	✓
	Less amount to be withheld six months after completion of work in accordance with paragraph of the specifications of the contract		200	00
	Total	11.46	73	

DUPLICATE.

WE CERTIFY that the articles & services above enumerated have been received & performed that they have been duly inspected and were delivered and accepted on the 8th day of January 1907, that they were necessary for, and have been, or will be, applied to the use of the Life-Saving Service; that the prices charged are just and reasonable, and do not exceed current market rates and in all respects according to contract except as to date of completion and authorized department therefrom.

1/21/1907. John D. Smith
 Approved: John D. Smith
 Captain, R. E. S., Dept. of the Interior

Assistant Secretary.

RECEIVED at _____, this _____ day of _____, 190 _____ of _____, Disbursing _____, the sum of _____ dollars, in full of the above account.

\$ _____
 WITNESS: _____
 Paid by check on _____, No. _____, dated _____, 190 _____ drawn to the order of _____

* The price per unit of weight or measure should be stated in all cases.
 † Insert here "and in all respects according to contract," or "and that the exigency of the service required the immediate" (Delivery or performance.)
 ‡ To be receipted in black ink in all cases.
 †† This blank to be filled when the bill is in favor of a corporation.



U.S. Coast and Geodetic Survey,
Office of Superintendent of Construction,
Washington, D. C.
June 13, 1902.

The General Superintendent
of the Life-Saving Service,
Washington, D. C.

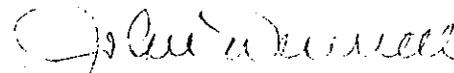
Sir:

Attention is respectfully called to the fact that the sets of miniature tin-signals furnished as part of outfits for Sleeping Bear Point and South Manitou Island Life-Saving Stations, 12th District, (L.R. 77665¹), do not include the new signals representing letters A, E, F, I, L, O, U, X, Y and Z, necessary for use under the ~~the~~ new International Code of Signals.

The Inspector of Life-Saving Stations reports that 29 sets of the new-signals (10 to a set, with box) were furnished to the 12th District, and that there is a stock of them in the New York storehouse (see letter to Inspector April 14, 1901, L.R. 76400⁹⁶, inclosing copy of letter of same date and number to the Superintendent 11th District).

As the 29 sets furnished to the 12th District are sufficient only for supplying the old stations, it is recommended that the Inspector be directed to withdraw from stock two sets (10 flags to a set, with box), one set for Sleeping Bear Point Station and one set for South Manitou Island Station.

Respectfully,


Captain, R.C.S.,

PMBL.

Superintendent of Constr'n.

R 77005¹⁷ 15/12

Twelfth Life-Saving District,
South Manitow Island STATION,

August 6th, 1902.

Urs. Björberg
Keeper.

SUBJECT:
acknowledgement of receipt of
Books, Blanks, Circulars, etc.

No. of Inclosures,

186



Life-Saving Service,

Twelfth District,

South Manitowish Island Station,

August 6th, 1902

Hon. S. J. Kimball

General Superintendent Life-Saving Service

Washington D. C.

Sir,

Herewith respectfully acknowledge the receipt of the following articles, from your office, for use at this station.

- 1 International Code Signal Book, 2 Regulations of Life-Sav. Service 187,
- 2 Official Register of U.S. Life Sav. Service, 26 Circulars,
- 10 Directions to Mariners in case of Shipwreck, 12 Reports on change in crew, Form 1811. 11 articles of engagement of Surjman, Form 1803 A
- 11 applications for Medical Inspection of Keepers, Form 1801.
- 7 Directions for Restoring the Apparently Drowned and
- 2 Amending Regulations of the Life-Saving Service.

Very Respectfully

Luis B. J. Berg

Keeper

L. R. ¹⁸ 77665 ⁵¹ / 291

FORM 1814.

Voucher No. _____

ORIGINAL
Handwritten
VOUCHER

OF

Central R. Co. of N. J.
Newark, N. J.

FOR

Transportation
\$ 249.56 ✓

APPROPRIATION:

~~REVENUE~~

United States Life-Saving Station ✓

UNITED STATES LIFE-SAVING SERVICE.

Imp + 4



VOUCHER FOR GENERAL EXPENSES.

The United States, To CENTRAL RAILROAD COMPANY OF NEW JERSEY, [Post-office address.] Dr.

Central Building, Liberty & West Streets, New York City.

Date Expense was incurred.	Authorized by Letter dated	DOLLARS.	CTS.	SUB-VOUCHER No.
1902	April 29, 1902 (L.R. 77665)	\$243	56	✓
* Transporting two (2) Beebe-McLellan surfboats, with centerboard, etc., two (2) 23-foot Monomoy surfboats, with centerboard, etc., and two (2) light surfboat wagons, from Galilee, New Jersey, to Glen Haven, Michigan, for the Sleeping Bear Point and South Manitou Island Life-Saving Stations, Twelfth District, - - - - -				
[Articles or services.]				
[Received or performed.]				

CERTIFY that the **services** above enumerated have been **performed**; that they have been duly inspected and were delivered and accepted on the **5th** day of **June** 1902; that they were necessary for, and have been, or will be, applied to the use of the Life-Saving Service; that the prices charged are just and reasonable, and do not exceed current market rates; and that the exigency of the service required the immediate performance.

Approved: *[Signature]*
 Captain U.S. R. & S. Tugboat Construction Superintendent

APPROPRIATION: **Life Saving Service, 1902**

Assistant Secretary.

Received at *[Address]*, this *[Day]* day of *[Month]*, 1902, Disbursing *[Name]*, the sum of **two hundred forty three** dollars, in full of the above account.

\$ 243.⁵⁶

WITNESS: _____
 Paid by check on _____, No. _____, dated _____, 1902.
 [drawn to the order of _____]

* The price per unit of weight or measure should be stated in all cases.
 † Insert here "and in all respects according to contract," or "and that the exigency of the service required the immediate" [Delivery or performance.]
 ‡ This blank to be filled when the bill is in favor of a corporation.

ORIGINAL.

R 77665 ²⁰ 7/346

LIFE-SAVING SERVICE,
OFFICE OF SUPERINTENDENTS OF CONSTRUCTION OF STATIONS,
ATLANTIC AND LAKE COASTS,
NO. 17 STATE STREET, NEW YORK, N. Y.

May 23, 1904, 190

JOHN DENNETT,
Captain, U. S. S., Superintendents.

SUBJECT:

4-foot lifeboats authorized
for Sleeping Bear Point and
South Manitou Island stations,
2nd District.

RECEIVED

No. of Inclosures, LIFE SAVING SERVICE
PROPERTY DEPARTMENT

MAY 24 9 25 AM 1904

Approved by the Superintendents of
Construction, Life-Saving Service.



LIFE-SAVING SERVICE,

OFFICE OF

SUPERINTENDENTS OF CONSTRUCTION OF STATIONS

ATLANTIC AND LAKE COASTS,

NO. 17 STATE STREET, NEW YORK, N. Y.

May 23, 1904.

The General Superintendent
of the Life-Saving Service,
Washington, D. C.

Sir:

Answering your letter of the 20th instant (L.R.77665¹), you are respectfully informed that, as directed by your letter of April 29, 1902 (L.R.77665¹), this office, on May 6th, 1902, instructed the Superintendent of the 12th District to hold the 34-foot lifeboats for South Manitou Island and Sleeping Bear Point stations until the completion of accommodations for housing the boats at those stations. It was thought that, under the instructions given him at that time, the Superintendent 12th District would take action in the matter without further instructions, upon being informed that the houses were finished. However, the houses having been completed, and, it being assumed, from your letter of the 20th instant, that the Superintendent 12th District has not forwarded the boats, this office has to-day written him that he will forward the boats at the earliest possible moment, if he has not already done so.

Respectfully,

Captain, P.C.S., Superintendent of

Construction, L-S. Stations.

P.H.M.

A P P E N D I X J

Recommendations for Maintenance Work on Boathouse #2

The shingles were completely removed from the walls of boathouse #2, and a trench was dug around the foundations in the spring of 1977 in the course of what the park believed to be regular maintenance. This was noticed during a field trip to the old Coast Guard Station by a team from the Denver Service Center in late June. The park then agreed to cease work on the building until an architectural and historical study was made. The park realized later in the summer that \$8,000, which had already been earmarked for the maintenance work, needed to be committed by the end of the fiscal year. The accompanying report was prepared in response to this problem. At the time that this report was being finalized, no work had commenced on the building, although plans were being made to prepare the building for winter.

RECOMMENDATIONS FOR BOATHOUSE #2, GLEN HAVEN, MICHIGAN

Joists

The exposed joists show deterioration caused by dry rot (decay). These joists should not be removed with the exception of the joist on the far north end of the building. New joists similar in size to those existing can be bought that are already treated with CCA (Chromated Copper Arsenate), and these should then be placed next to the weakened joists. The decaying wood need not be treated. This solution retains the historic fabric while giving the necessary stability to the building.

Flooring

The deteriorating wood floor inside the boathouse was not a problem the park originally intended to deal with in this scope of work, but while the trench is dug around the foundations, one remedial step can easily be taken. Black plastic should be placed on the soil between supporting joists to stop ground moisture from further damaging the flooring.

Shingles

The shingles used to cover the walls should have either a blue or red tag. Shingles with a black tag should not be used. If shingles with a red tag are used, care should be taken to sort out those with knots and blemishes. The original specifications read:

All walls and roof will be shingled as follows: The shingles to be the best quality of cedar the market

affords, 16-inches long, and random widths; any over 8-inches wide to be split with a saw, so that all widths will come between 2 1/2 and 8-inches. Shingles to have two wire nails each, not so long as to come through and show on the inside of the sheathing. The corners to be woven together alternately, and to be carefully nailed. The lower two courses to be furred out on a slight curve. The roof shingles to be 4-inches weather, and on the walls to be five inches. Care to be taken to fill closely the space furred off under frieze and roof ridge boards.

Shingles removed from the garage are 16 inches long and have approximately a 4 3/4-inch exposure. In slight exception to the original specs, shingle width should range only between 5 1/2 to 7 inches. They should be attached to the sheathing with only two nails; one an inch and a half from each edge. Any appropriate nail may be used, but care should be taken that they do not show through the inside of the sheathing. The diagonal wood sheathing need not be treated before applying the shingles.

Shingles removed from this building in the course of maintenance have been stained with a reddish-brown color on both sides. This color conforms to standards outlined in Instructions for United States Coast Guard Stations published in 1917 by the Government Printing Office and still considered standard in current regulations. There are several commercial stains that matched the shingles we brought back to Denver from this building, but Mr. Djovik from the Forest Product Service has said that the most effective and probably least expensive treatment for these shingles would be a mix of pentachlorophenol and iron oxide tint, which could be done at a local paint store to match the original color. He warned that only stain and not paint should be used in this mix. Mr. Djovik

went on to say that this treatment of the shingles would be chemically compatible with the CCA treatment to be used on the joists under the building and that it could be used on the roofs of all buildings on the site if they are ever returned to their original color. He did not feel that the treatment with cuprinol, which Mr. Schlange inquired about, would be as effective as the one he suggested.

It was discovered after the submission of this above report that pentachlorophenol is banned in Michigan. It is still possible to buy this fungicide in neighboring states and bring it into Michigan, though given the political atmosphere and the local controversy surrounding the park, care should be exercised. Despite the fact that the proposed treatment is safe if correctly applied, circumstances seem to dictate another solution.

At least two other alternatives for staining the shingles can be considered. If a fungicide is desired (the shingles removed from the boathouse in June 1977 are covered with fungus growths), the shingles could be treated with CCA and then stained red. The CCA will give the shingles a greenish tinge, but this can be masked by the stain. Tests will have to be run to achieve the appropriate color.

If the shingles are simply stained without being treated with a fungicide, park management should be aware that the building will have to be watched carefully for the formation of fungus and will perhaps need to be handscrubbed with a wire brush every few years.

B I B L I O G R A P H Y

PRIMARY SOURCE MATERIAL

Washington, D.C. National Archives and Records Service. Record Group 26, "Records of the United States Coast Guard."

The materials in this group pertaining to the Sleeping Bear Point Lifesaving Station are scattered throughout the Record Group. Items are retrieved by use of a letter Register Index, which provides a "Letter Register" number, cited as "LR." The LR numbers of more than routine value to the station are 74206 (almost 200 items) 82543, 84219, and 77665 (almost 200 items). Other important items include the "Site File" (also called the 131 File) by station name. The station logbooks (48 in number) are part of the collections at the National Archives in Washington but are located at the Washington National Records Center in Suitland, Maryland. Volume V of the "Register of Employees, Lifesaving Service, Districts 10-13" is also within Record Group 26. Only lighthouses have Clipping Files such as the one used in this study for the South Manitou Island Light Headquarters, U.S. Coast Guard, Washington, D.C.

Washington, D.C. U.S. Coast Guard. Real Property Branch. "Property Books Extracts."

This material was culled from the records by Chief Dennis Noble for use in this project.

U.S. GOVERNMENT PUBLICATIONS

U.S. Department of the Interior, National Park Service. America's Lighthouses: Their Illustrated History Since 1716, by Francis R. Holland, Jr. Brattleboro, VT: The Stephen Crane Press, 1972.

Holland's otherwise excellent survey fails to note the South Manitou Light, but its general history of the Lighthouse Service is of real value.

U.S. Lifesaving Service. Annual Report of the Operations of the United States Life-Saving Service. Washington, D.C.: Government Printing Office. Yearly, 1876-1915.

The phrase "Operations of" was dropped beginning with the year 1899. The Annual Reports are valuable in showing which rescues were considered meritorious enough to merit mention. The district organization of the LSS as well as the openings and closings of stations are also noted. Like most government documents of the same type, they deserve careful examination by any researcher.

Regulations For the Government of the Life-Saving Service of the United States. Washington: Government Printing Office, 1899.

This is the manual that should be consulted for information on organization, equipment, and drill for the first ten years of the station's existence. Thus, it should be consulted should any "living history" demonstrations be conducted.

Instructions, United States Coast Guard. Washington: Government Printing Office. Copies of 1916 and 1934 editions of Instructions on file at the park.

The annotation for the Life-Saving Service Regulations applies to these Instructions as well.

OTHER MATERIALS

Barnett, J.P. The Lifesaving Guns of David Lyle. South Bend, Indiana: South Bend Replicas, 1974.

This excellent general history bears the imprimatur of the Company of Military Historians and Collectors.

Bennett, Robert F. Surfboats, Rockers, and Carronades. Washington: Government Printing Office, 1976.

This general history of American lifesaving is complemented by an excellent bibliography.

Dalton, J. W. The Life Savers of Cape Cod. Reprint of 1902 edition. Old Greenwich, Connecticut: The Chatham Press, n.d.

This delightful paperback reprint explains much of the drama as well the daily operations of the Lifesaving Service, much of which is applicable to the Sleeping Bear Point Lifesaving Station. Every park with any lifesaving sites should have it in the park library.

Dickinson, Julia Terry. The Story of Leelanau. Omena, Michigan: Sallie's Bookshop, 1951.

This concerns the local history of the area surrounding the site at Glen Haven.

Hatcher, Harlan. The Great Lakes. New York: Oxford University Press, 1944.

This general history of the Great Lakes carries a grand view of the history of the lakes and their adjoining lands but provides little on Sleeping Bear Dunes.

Noble, Dennis L. United States Life-Saving Service Annotated Bibliography. Washington: United States Coast Guard, Public Affairs Division, 1975.

This is a fine source to use in starting any research on any project involving the Lifesaving Service.

O'Brien, T. Michael. Guardians of the Eighth Sea: A History of the U.S. Coast Guard on the Great Lakes. Washington: Government Printing Office, 1976.

This survey contains a great deal of information on the customs and drill of the LSS on the Great Lakes and can provide a good foundation for lifesaving research. It has a good bibliography and numerous illustrations.

Proceedings of the United States Naval Institute, Special Coast Guard Issue, March 1976.

This issue is devoted to the Coast Guard and its predecessors.

Quaife, Milo M. Lake Michigan. The American Lakes Series. New York: Bobbs-Merrill Company, 1944.

Quaife's study of Lake Michigan, like his other fine works, is detailed, clearly written, comprehensive, and a reference work of real value. It provides a fine general survey of the history of navigation on the lakes and commerce and culture associated with the lakes.

The Traverse Region Historical and Descriptive, With Illustrations Of Scenery and Portraits and Biographical Studies of Some of Its Prominent Men and Pioneers. Chicago: H.R. Page and Company, 1884.

The title provides any necessary annotation.

INTERVIEWS AND LETTERS

Bennett, Charles. Empire, Michigan. Interview with John Albright and Lee Wyma, June 24, 1977.

Kelderhouse, Agnes. Maple City, Michigan. Letter to John Albright, August 31, 1977.

Warness, Louis. Glen Haven, Michigan. Interview with John Albright and Lee Wyma, June 23, 1977.

ILLUSTRATIONS

I L L U S T R A T I O N S

HISTORIC

1. Lifesaving Station, ca. 1903-05
2. Lifesaving Station, ca. 1905-15
3. Lifesaving Station, ca. 1905-14
4. Dwelling, ca. 1910-12
5. Dwelling, Lookout Tower, and Fence, ca. 1910-12
6. Original Front Porch of Dwelling, ca. 1917
7. Crew Drill, ca. 1910
8. Lifesaving Station at Sleeping Bear Point, n.d.
9. Boathouse and Crew at Marquette, ca. 1900
10. Boathouse at Coast Guard Station, 1977
11. Glen Haven Coast Guard Station, ca. 1934
12. Glen Haven Coast Guard Station, ca. 1940
13. Glen Haven Coast Guard Station, ca. 1932
14. Glen Haven Coast Guard Station, 1977

EXISTING CONDITIONS

15. Dwelling and Signal Tower from Northeast
16. Dwelling from Southeast
17. Boathouse #1 from Southwest
18. Fire Cache from West
19. Boathouse #2 from Southwest

1. Lifesaving Station at Sleeping Bear Point, ca. 1903-05

The station shortly after construction, probably between October 1903 and mid-1905. The flagstaff is built, but the lookout tower does not appear. There is only one dormer at this time on the south facade of the dwelling.

Courtesy, Mrs. Helen I. Oliver, granddaughter of Patrick McCauley, surfman at the station; on file at Sleeping Bear Dunes National Lakeshore

2. Lifesaving Station at Sleeping Bear Point, ca. 1905-15

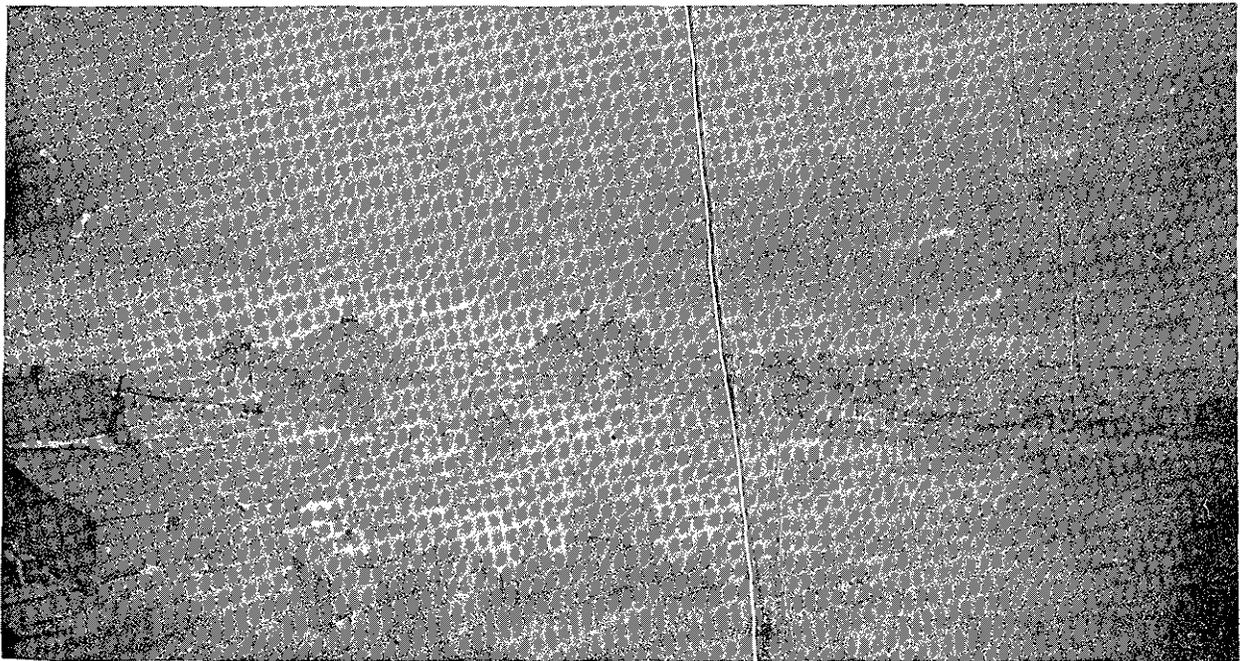
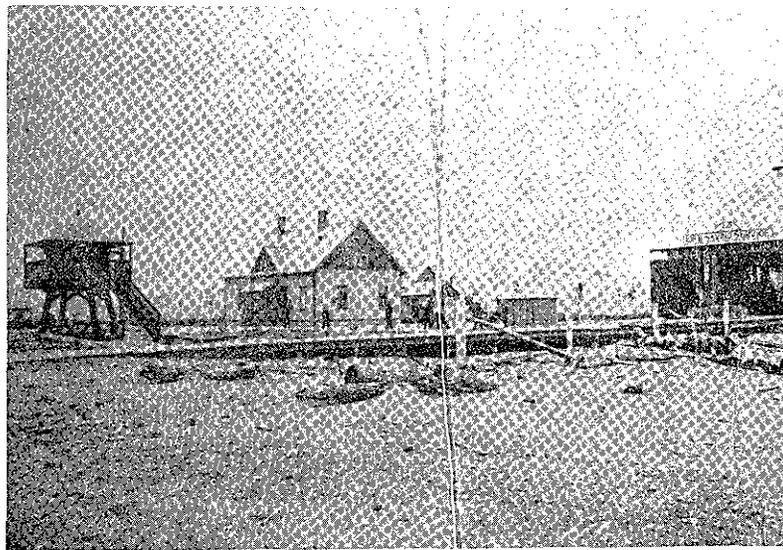
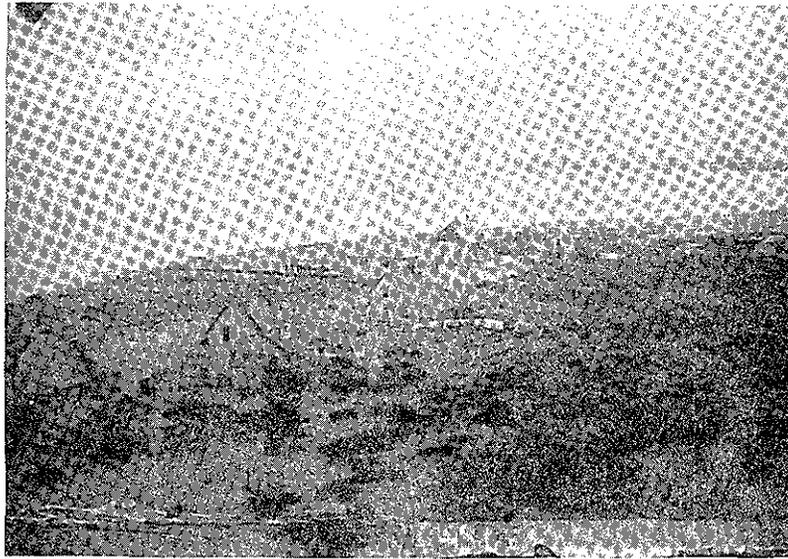
This scene of the station at the original site is post-1905 and pre-1915. It appears that the Beebe-McLellan lifeboat is in the right side of boathouse #1 and that the Monomoy surfboat occupies the left.

Courtesy, Mrs. Helen Oliver; photo on file at national lakeshore

3. Lifesaving Station at Sleeping Bear Point, ca. 1905-14

This photo shows a winter scene at the original site between 1905 when the fence (which is seen) was built, and 1914 when the steel tower (which is not seen) was constructed. Two additional dormers have been built on the south facade of the dwelling.

Courtesy, Mrs. Helen Oliver; photo on file at national lakeshore



4. Dwelling at Sleeping Bear Point From Northwest, ca. 1910-12

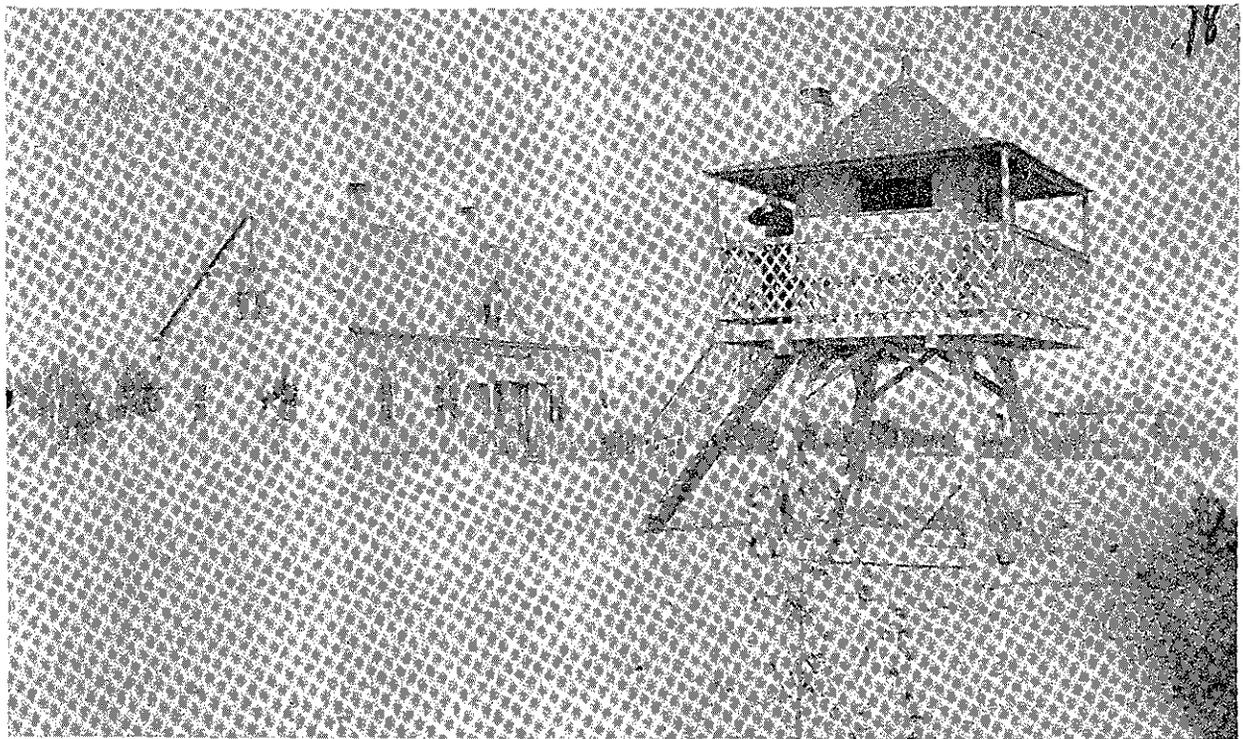
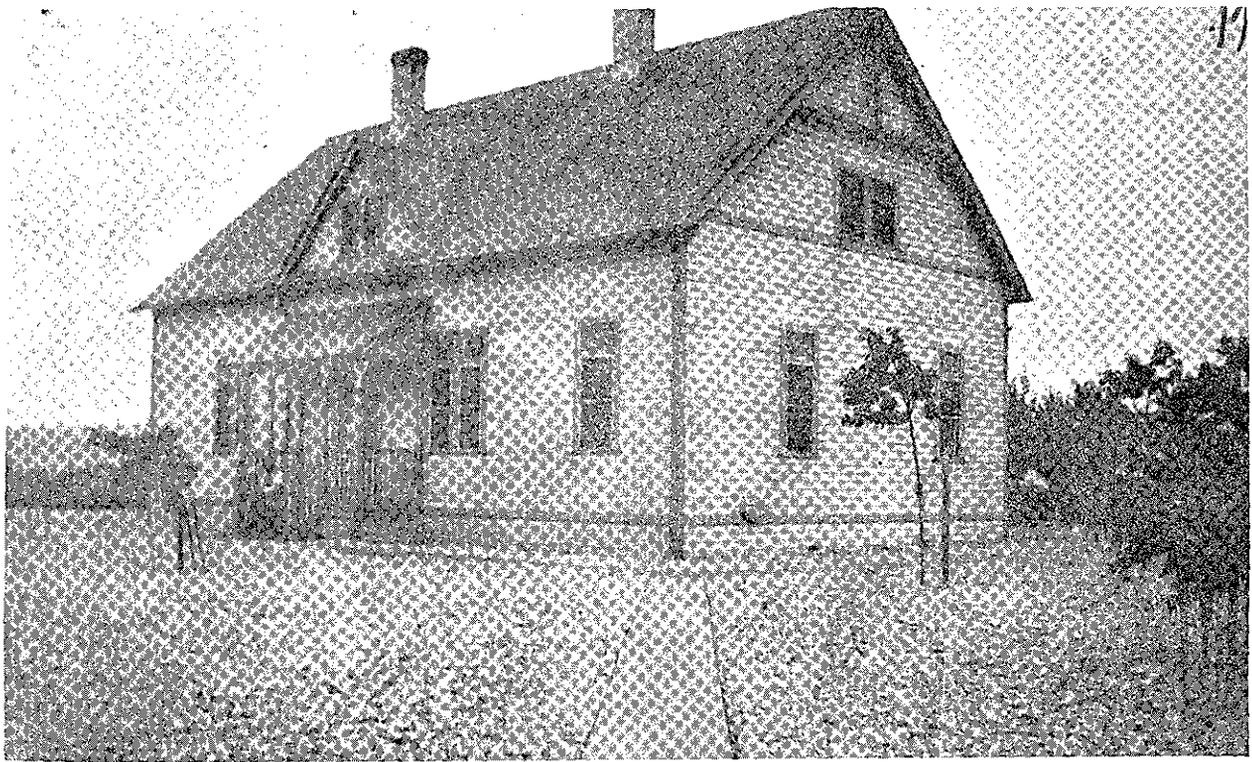
This photo was probably taken between 1910 and 1912 because the trees appear newly planted, and a 1910 entry in the logbook mentions trees. The cement walks definitely date the photograph as post-1902. The neatly smoothed grounds reflect one of the periodic entries in the logbook that the crew "wheeled sand and gravel." The color scheme of the house differs from earlier photographs--note especially the light color on the gable and dormer faces. This photo clearly shows original features such as the north porch, bargeboard, and capped chimneys that were altered at the time of the move in 1931.

Courtesy, Mrs. Helen Oliver; photo on file at national lakeshore

5. Dwelling, Lookout Tower, and Fence at Sleeping Bear Point from Northeast, ca. 1910-12

Photo was probably taken around 1910. A change in the color scheme dates it after illustrations 1 and 2. Please note that the lookout tower has shifted from the left to the right of the dwelling. The vertical pole to the right of the lookout tower is probably the drill pole.

Courtesy, Mrs. Helen Oliver; photo on file at national lakeshore



6. Original Front Porch of Dwelling at Sleeping Bear Point, ca. 1917

The dwelling has been removed from its original foundation of wood piles and set on a poured concrete foundation. The wood stairs on the north porch have been replaced with concrete steps, and the balustrade on the north side of the porch has been removed.

Courtesy, Mrs. Oliver, whose caption reads, "Leaning on Post Alvin Westcott, Charley McCauley, Harry Muchens, Solomon Coppens"; photo on file at national lakeshore.

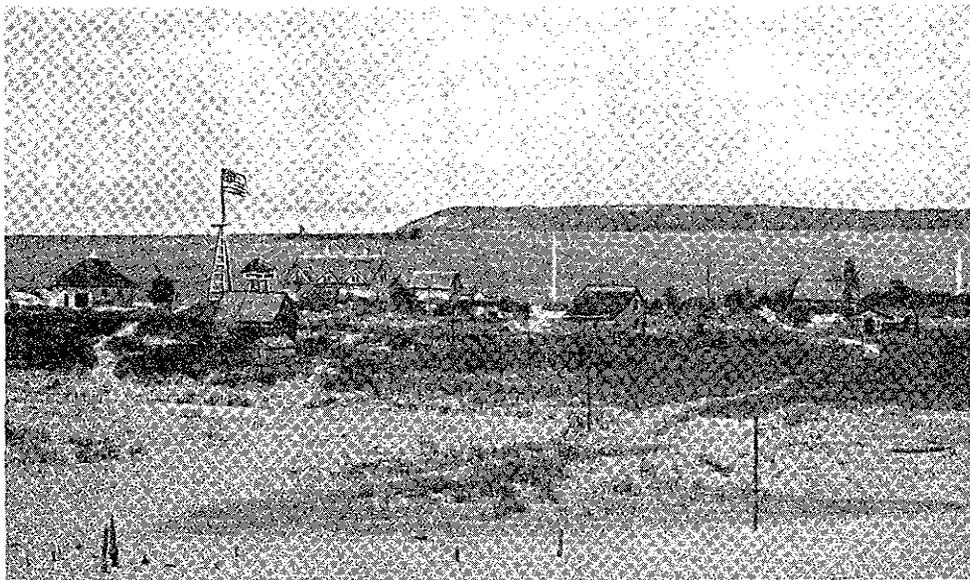
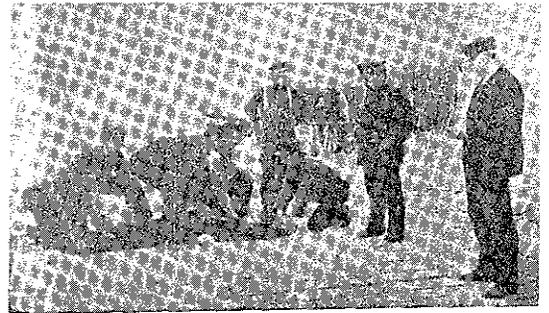
7. "Restoring the Apparently Drowned" Crew Drill at Sleeping Bear Point, ca. 1910

Courtesy, Charles Bennett, Empire, Michigan

8. Lifesaving Station at Sleeping Bear Point

This undated photo postcard of the original site shows all of the station's structures except boathouse #2. The signal tower appears to have been artificially amplified.

Courtesy, Michigan Department of State, State Archives



9. Boathouse and Crew at Lifesaving Station, Marquette, Michigan, ca. 1900

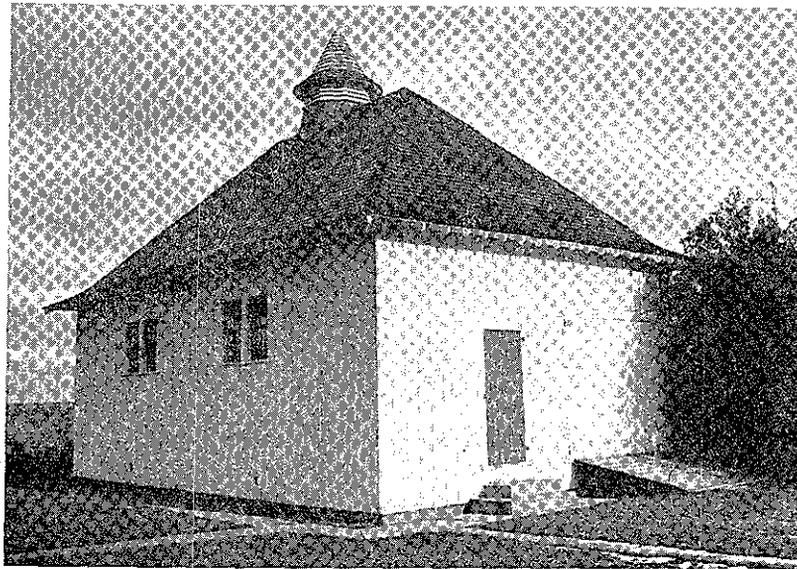
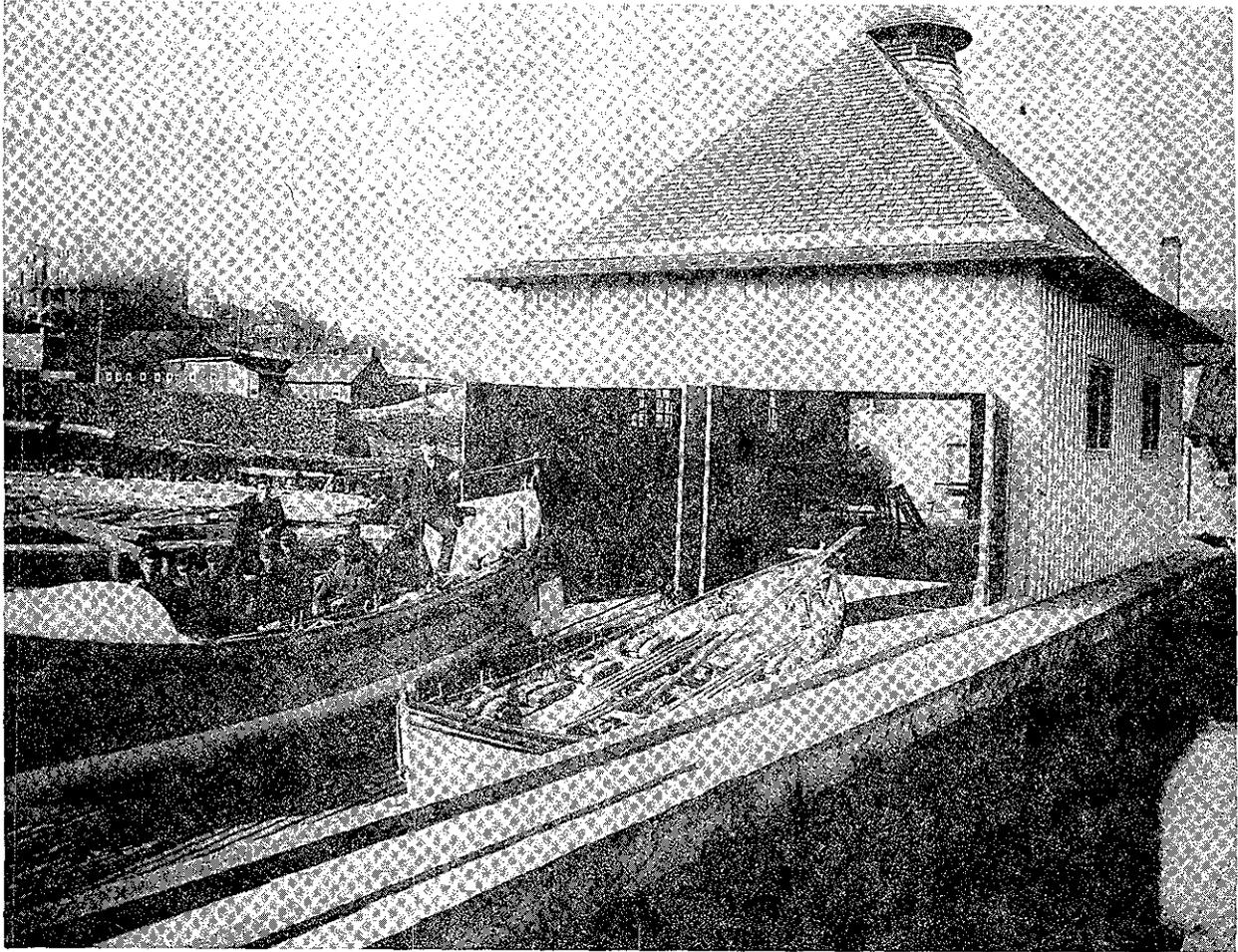
This photo closely resembles boathouse #1 constructed in 1901 at the Sleeping Bear Point Lifesaving Station. The boat on the left is the Beebe-McLellan lifeboat, while the one to the right is a Mononomoy surfboat. Both of these boats were used at the Sleeping Bear Point Lifesaving Station. This boathouse, unlike the one at Sleeping Bear Point, was built on a dock in the water, and the wooden planks on the ramp run lengthwise.

Courtesy, Michigan Department of State, State Archives

10. Boathouse at Coast Guard Station, Glen Haven, Michigan, 1977

This photo illustrates the actual similarity between the boathouse at Glen Haven, originally constructed at Sleeping Bear Point, and its predecessor at Marquette, Michigan.

Photo by John Albright, National Park Service, 1977



11. Glen Haven Coast Guard Station, ca. 1934

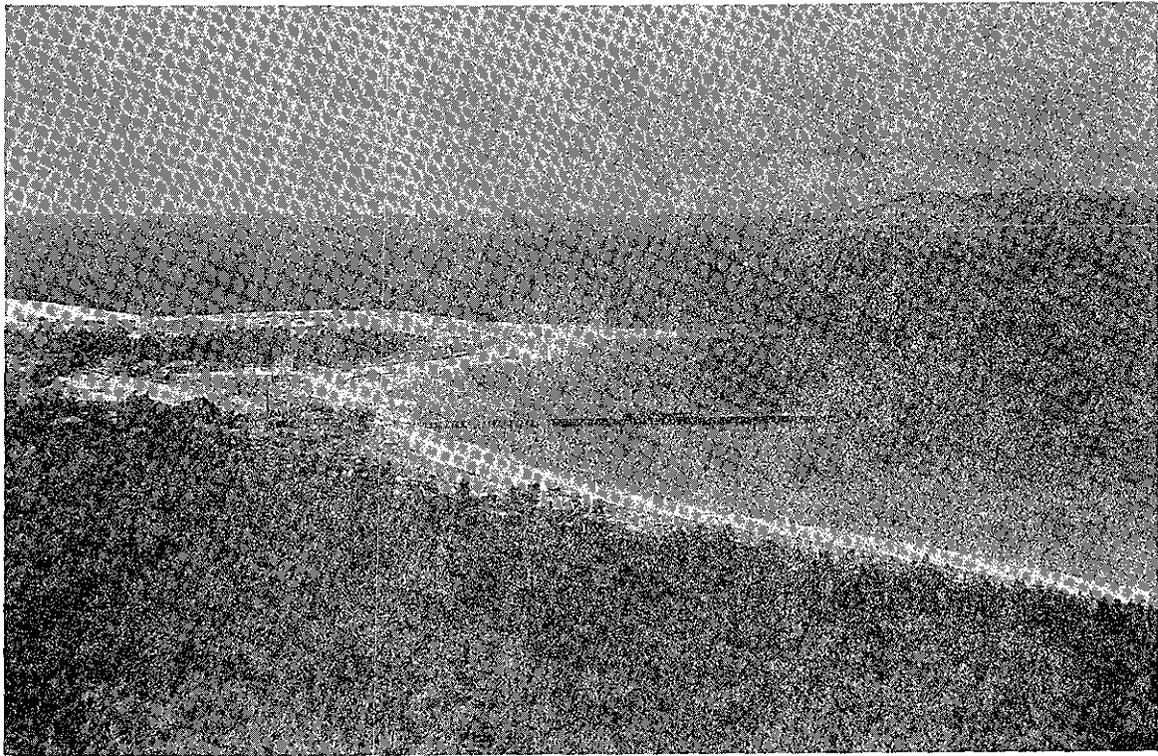
This photo is an aerial view of the Coast Guard Station at its present location after the 1931 move.

Courtesy, Michigan Department of State, State Archives

12. Glen Haven Coast Guard Station, ca. 1940

This photo is also an aerial view of the Coast Guard Station. Note the encroachment of the forest on the site and the ruins of Day's dock.

Courtesy, Michigan Department of State, State Archives



13. Glen Haven Coast Guard Station From South, ca. 1932

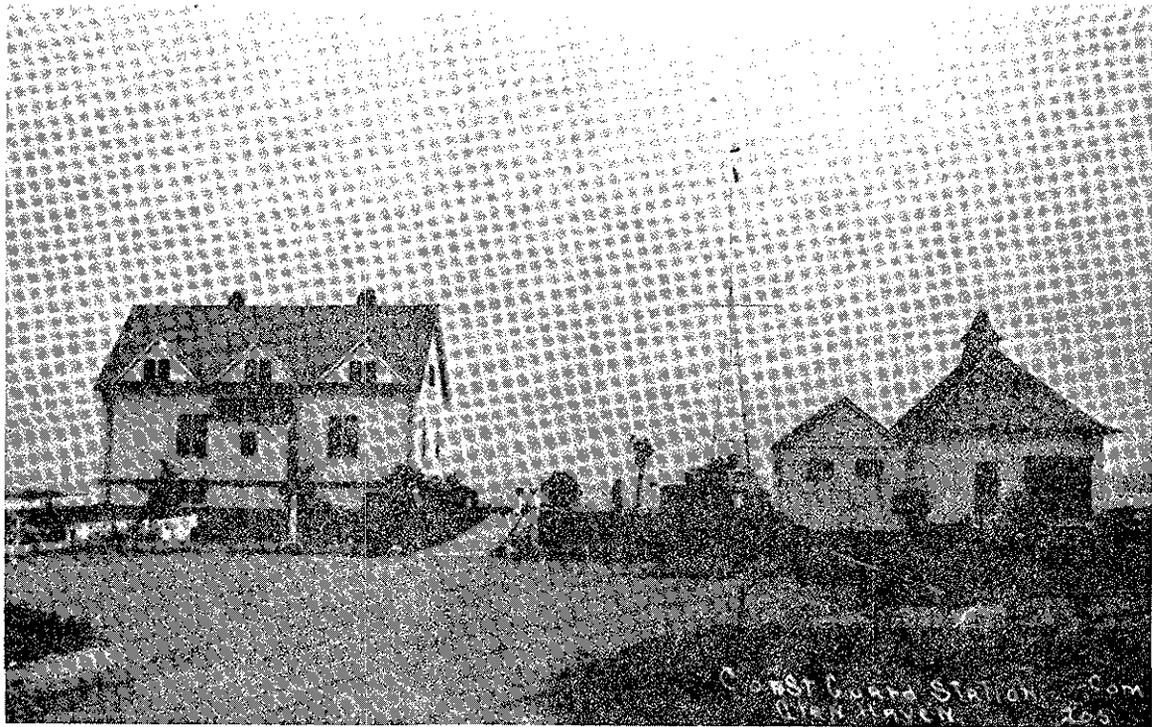
This photo shows the station after the 1931 move, although the date is not exactly known. The absence of boathouse #2 suggests that it either has not been moved to the site or had been purposely been left out of the photograph. The configuration of the site has remained the same to the present day, but the small trees in this photo have grown to maturity, blocking much of the view of the lake from the southern end of the property.

Photo on file at Sleeping Bear Dunes National Lakeshore

14. Glen Haven Coast Guard Station From South, 1977

This more recent photo was taken from approximately the same spot as illustration 13.

Photo by John Albright, NPS, 1977

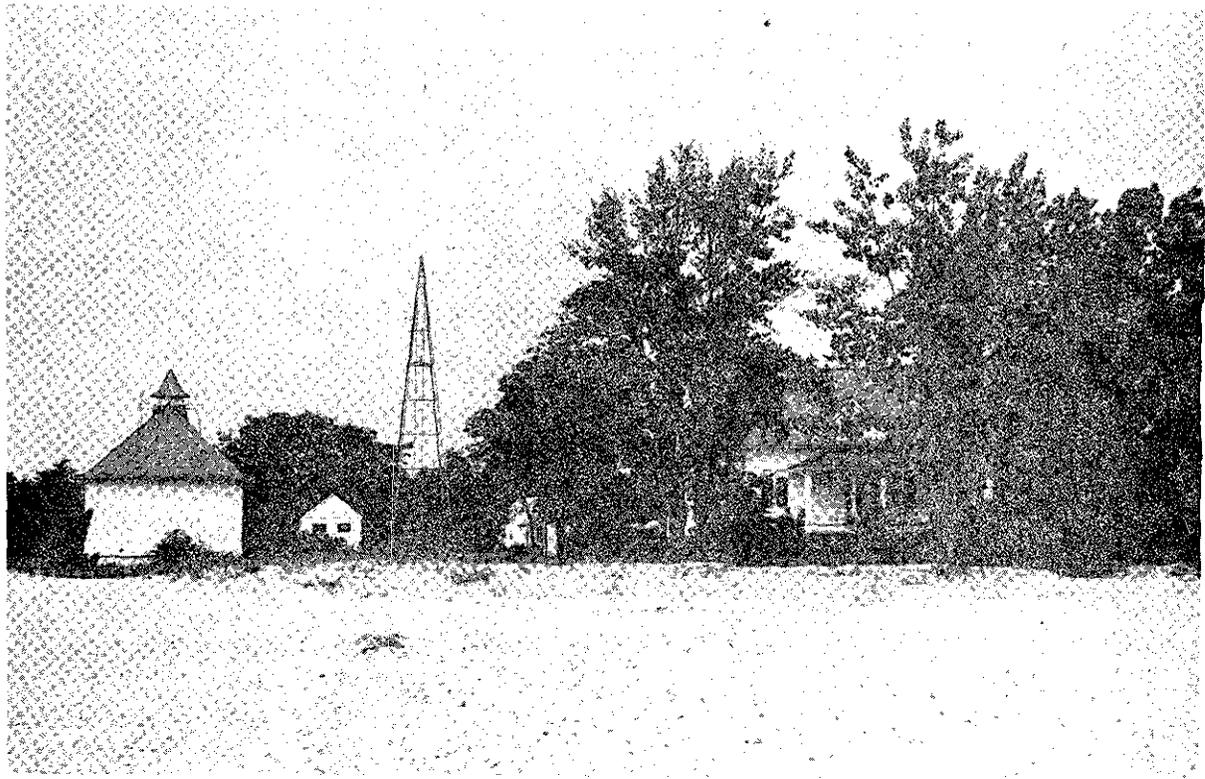


15. Dwelling and Signal Tower from Northeast

Photo on file at the Denver Service Center

16. Dwelling from Southeast

Photo on file at the Denver Service Center



17. Boathouse #1 from Southwest

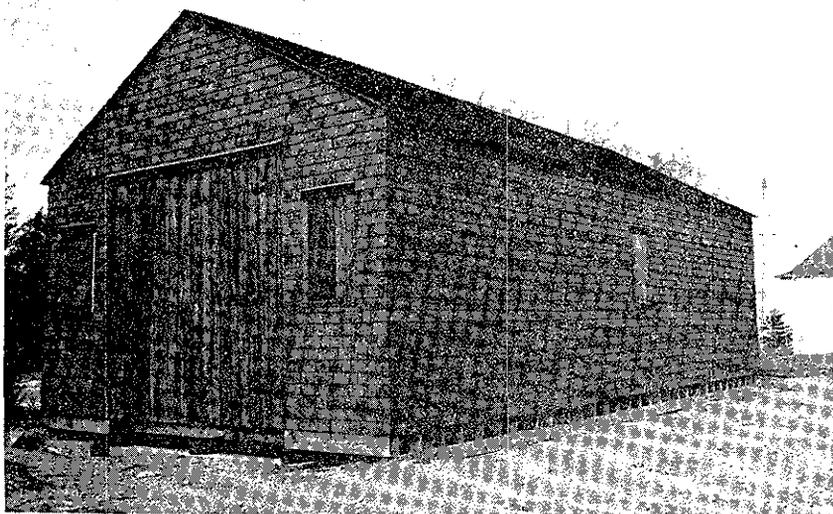
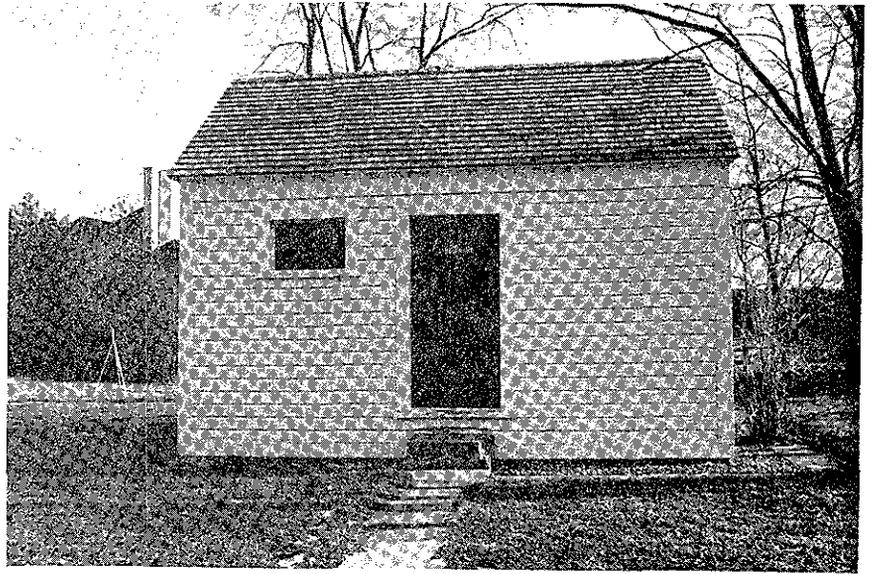
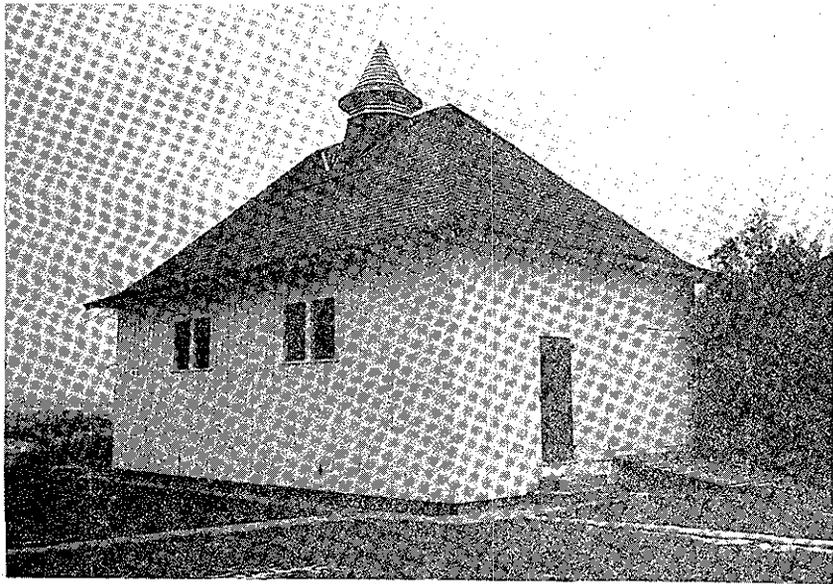
Photo on file at the Denver Service Center

18. Fire Cache from West

Photo on file at the Denver Service Center

19. Boathouse #2 from Southwest

Photo on file at the Denver Service Center

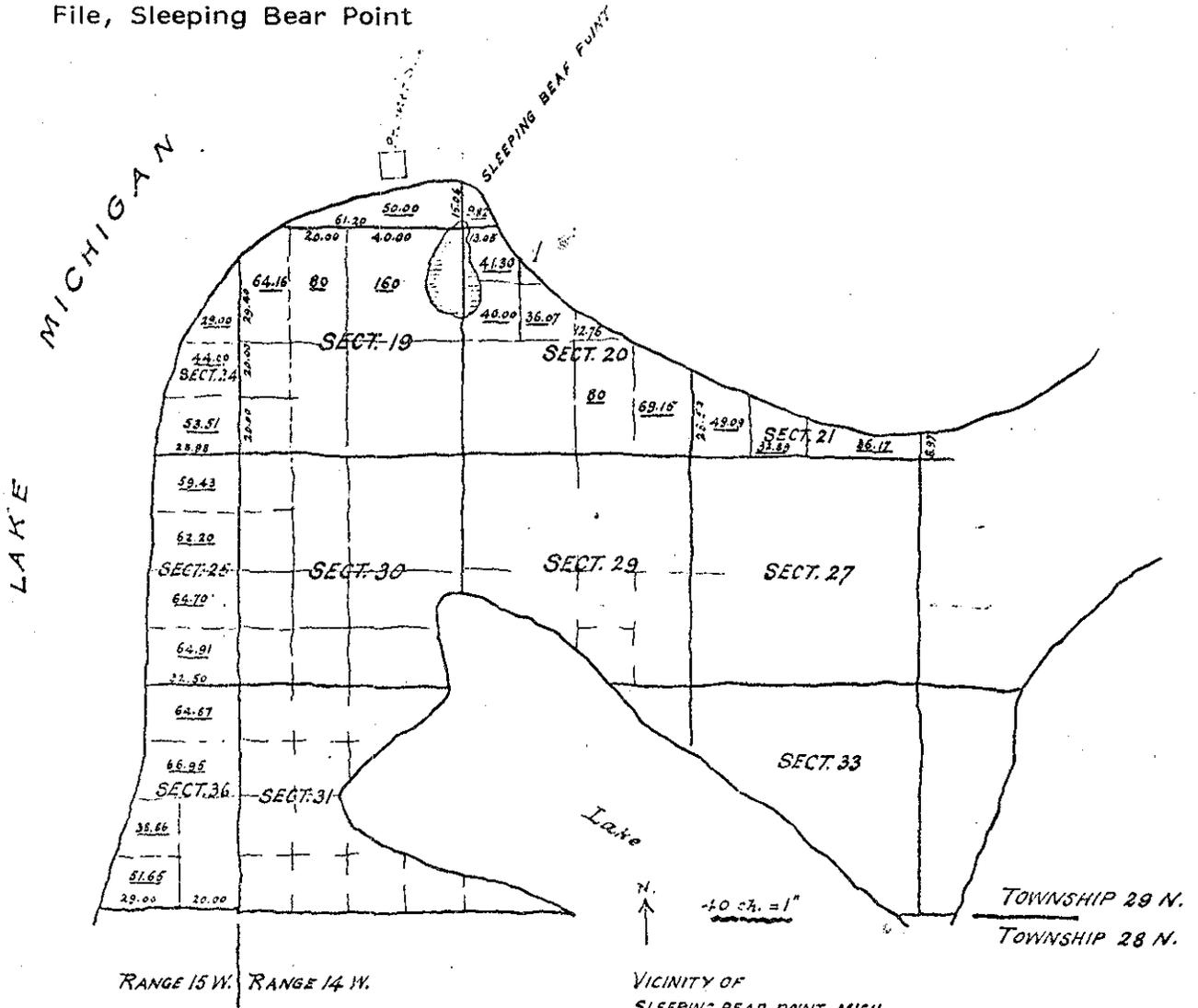


HISTORIC MAPS AND PLANS

1. 1894 Plat of Original Site for Lifesaving Station at Sleeping Bear Point

This is the plat that accompanied the letter of July 19, 1894, setting aside a site for a lifesaving station at Sleeping Bear Point. Notice how the shoreline had changed between 1840 and 1894, when the lighter line representing the shoreline then existing was drawn. The proposed site of 1894 was on sand laid down since 1840.

National Archives, Record Group 26, U.S. Lifesaving Service, Site File, Sleeping Bear Point



2. 1908 Map Showing Original Location of the Lifesaving Station at Sleeping Bear Point

The structure, which shows in the water just west of Day's dock, is at the location specified by documents describing the boathouse for the 34-foot lifeboat. The phrase "Sto. Sig. Sta." probably refers to a storm signal station. The dock belonged to the same D. H. Day who actively fought for the establishment of a station at Sleeping Bear Point.

The map is entitled "Survey of the Northern and Northwestern Lakes. Field Sheet No 1, Manitou Passage, Lake Michigan. Made under the direction of Major Charles Keller, Corps of Engineers, USA, and Francis Shenehon, Principal Assistant Engineer, by Andrew J. Swift, Junior Engineer, 1908. Scale 1:200,000."

National Archives, Record Group 26, U.S. Lifesaving Service, Site File, Sleeping Bear Point; copy on file at Sleeping Bear Dunes National Lakeshore

3. Original Plans for the Dwelling, Boathouse #1, and Outbuildings

Plans for the dwelling, boathouse, and outbuildings, marked "Marquette, Mich. L.S.S. ^{tn} 10th District" were used for the lifesaving stations at Sleeping Bear Point and South Manitou Island. The specifications accompanying the drawings are reproduced in appendix B.

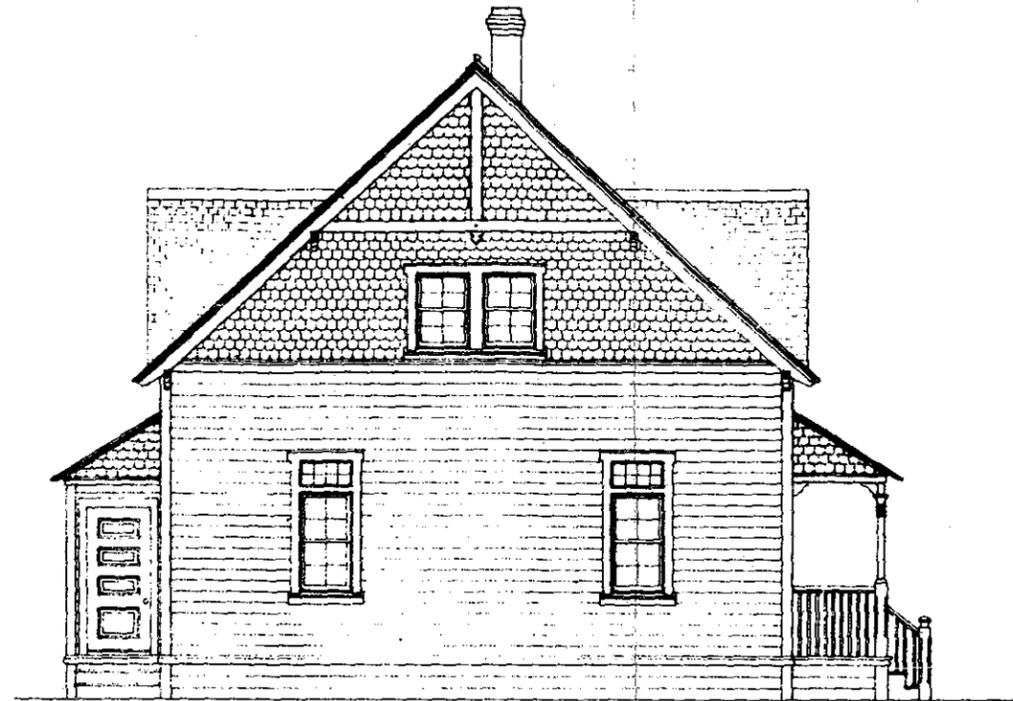
National Archives, Record Group 26, U.S. Lifesaving Service, LR #74206, Sleeping Bear Point

DWELLING FOR MARQUETTE MICH. L. S. ST^N 10TH District.

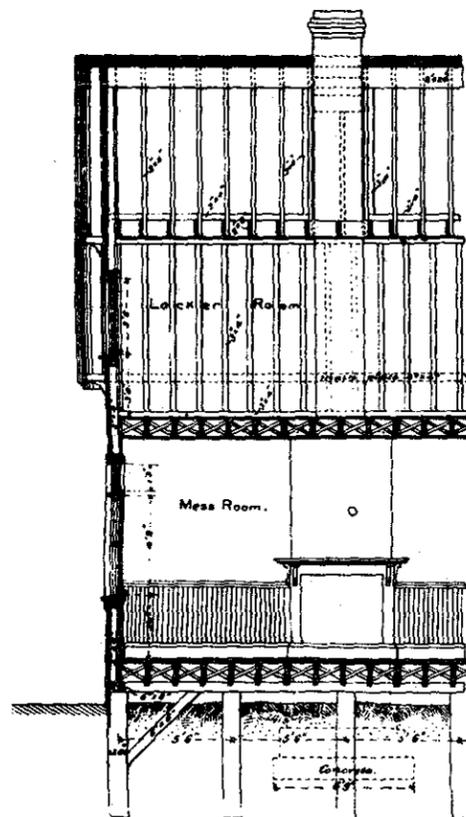
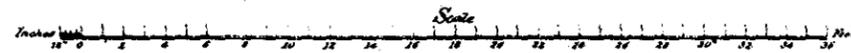
No. 2.



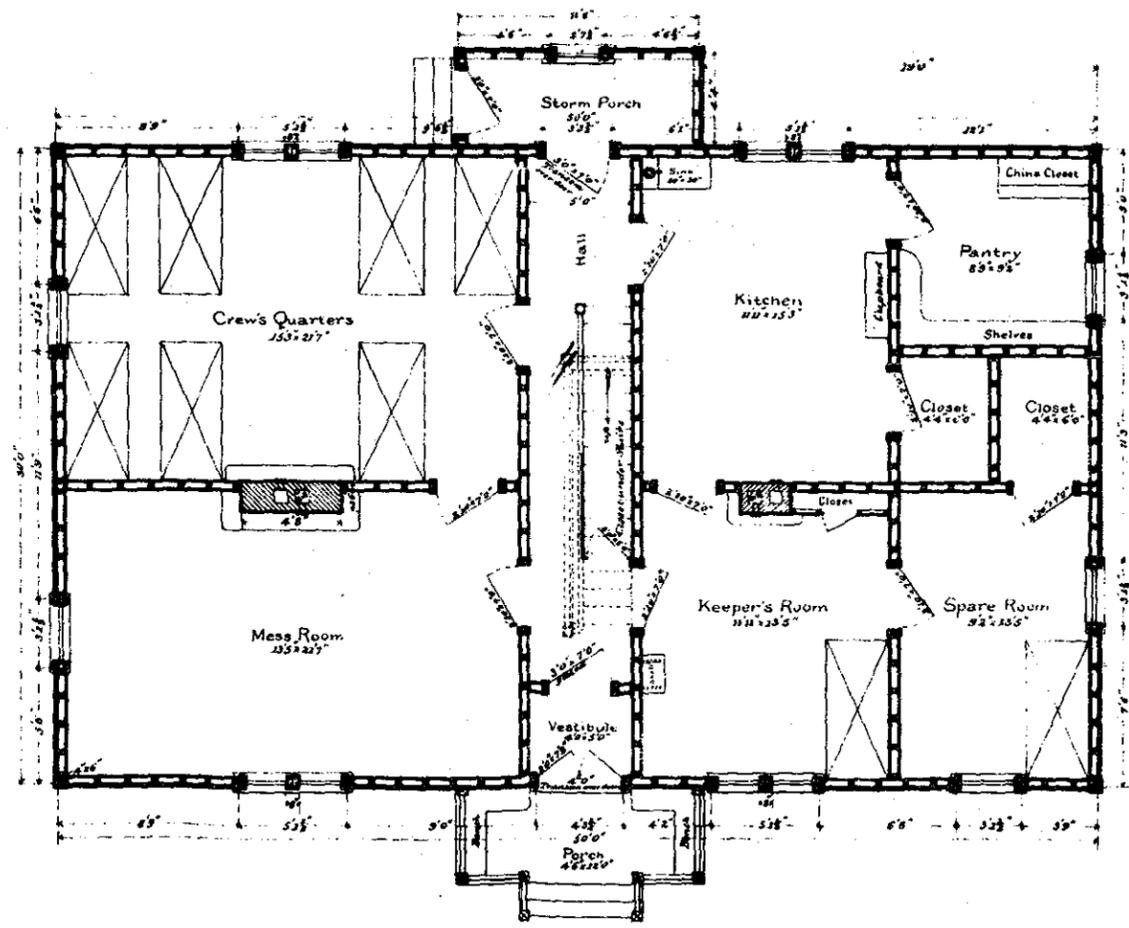
FRONT ELEVATION.



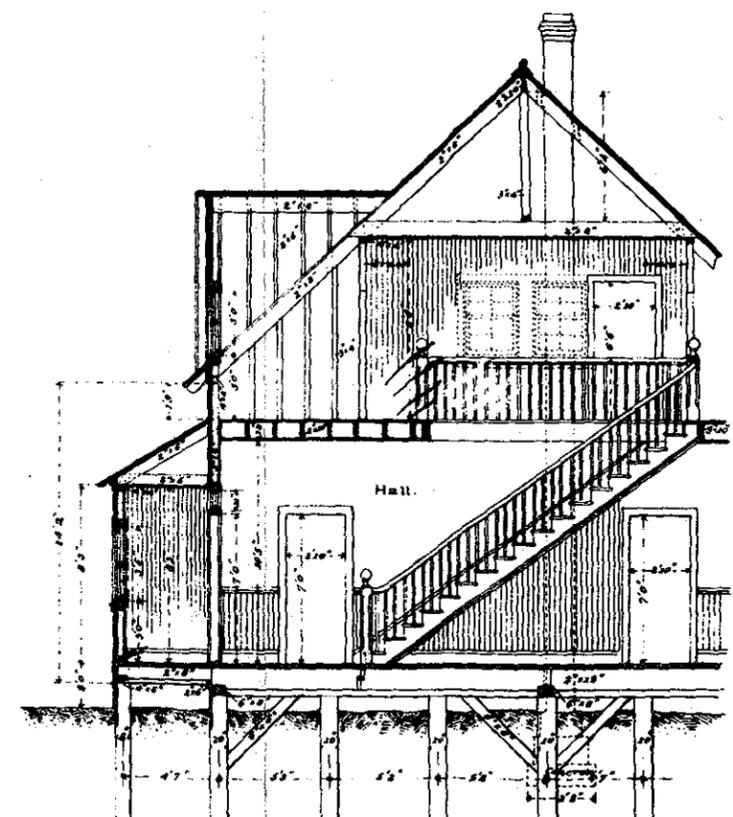
SIDE ELEVATION.



LONGITUDINAL SECTION.



GROUND PLAN.

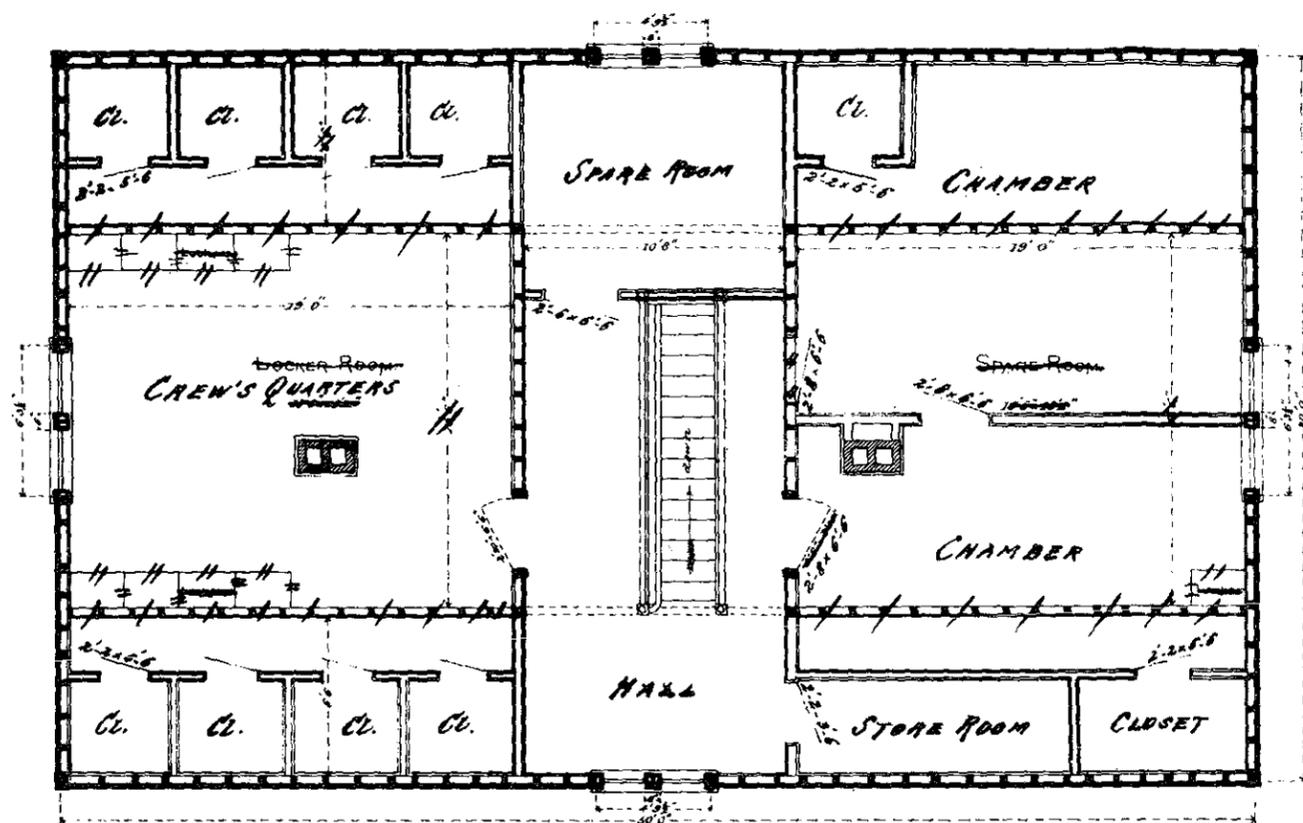


TRANSVERSE SECTION.

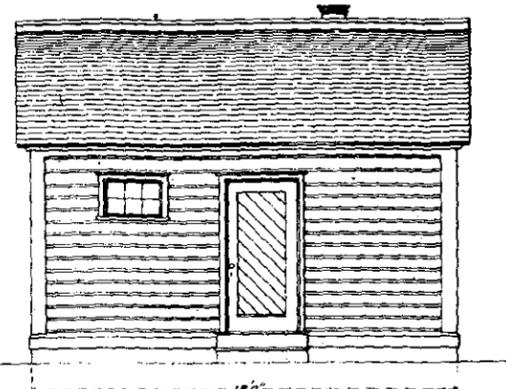
Drawn by Charles Schlar

MARQUETTE MICH. L.S. Sth 10th District.

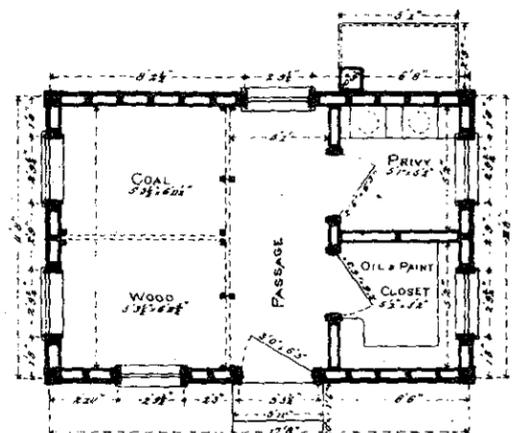
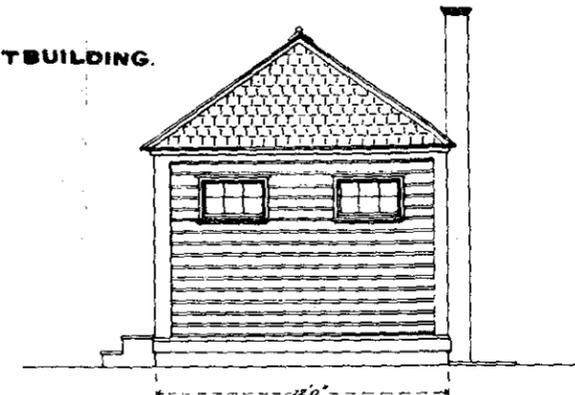
GROUND PLAN OF ATTIC.



FRONT ELEVATION.

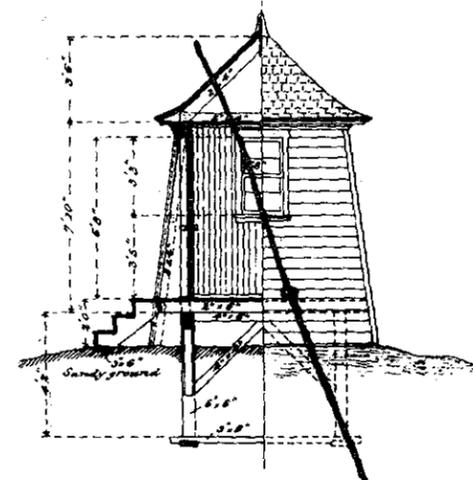


SIDE ELEVATION.



GROUND PLAN OF OUT-BUILDING.

LOOKOUT. Sectional Elevation.

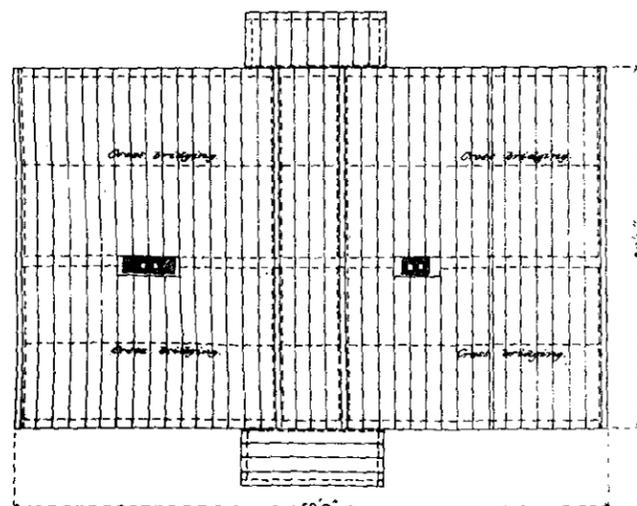


Scale for Ground Plan of Attic, Outbuilding & Lookout.

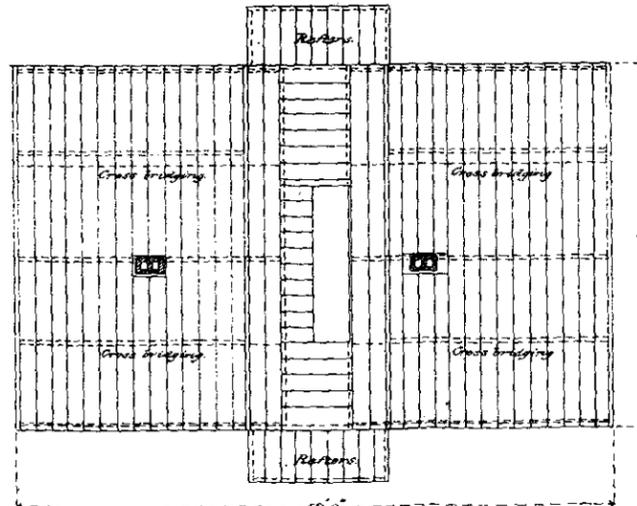
Feet

FRAMING PLANS.

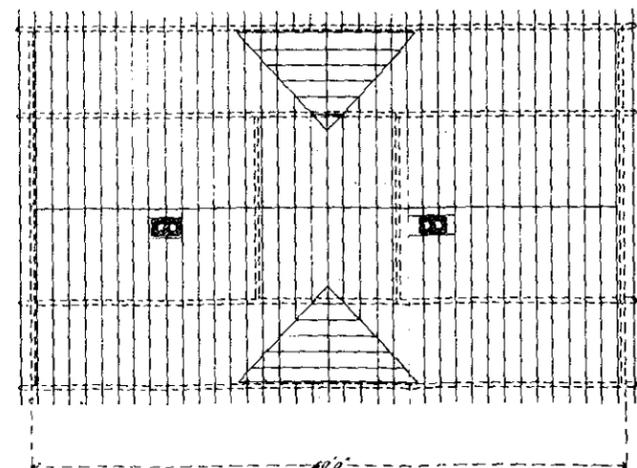
DWELLING.



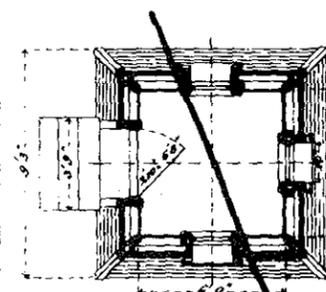
1st FLOOR JOISTS.



ATTIC FLOOR JOISTS.



RAFTERS.



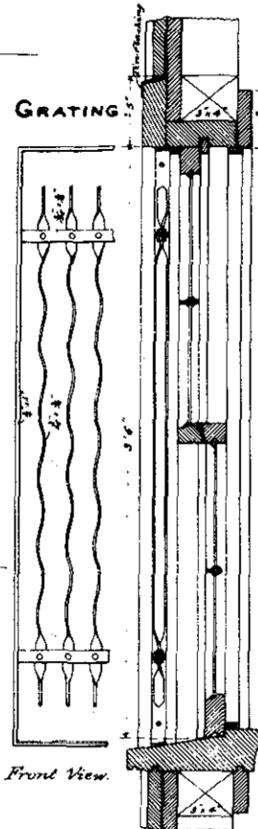
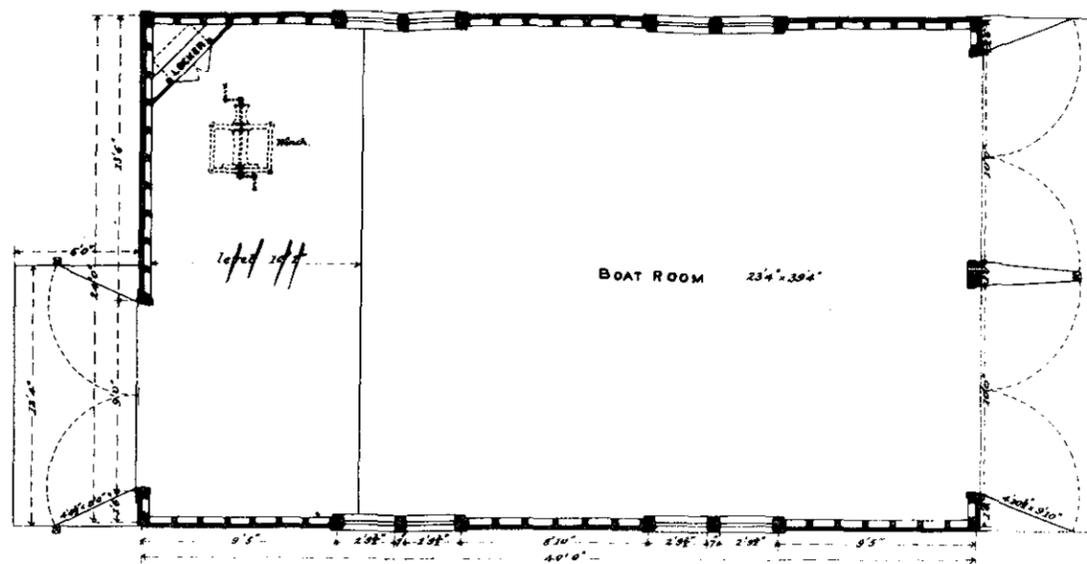
GROUND PLAN.

Scale for Framing Plans.

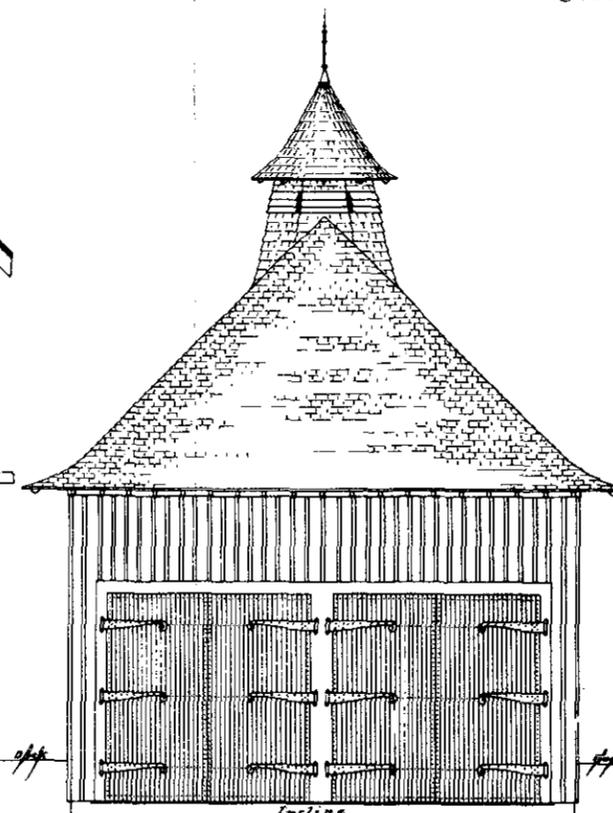
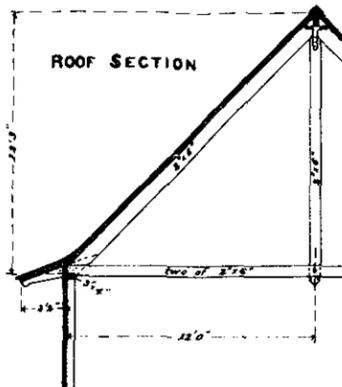
Feet

BOAT HOUSE FOR MARQUETTE MICH. L. S. S.TM 10th District.

GROUND PLAN.

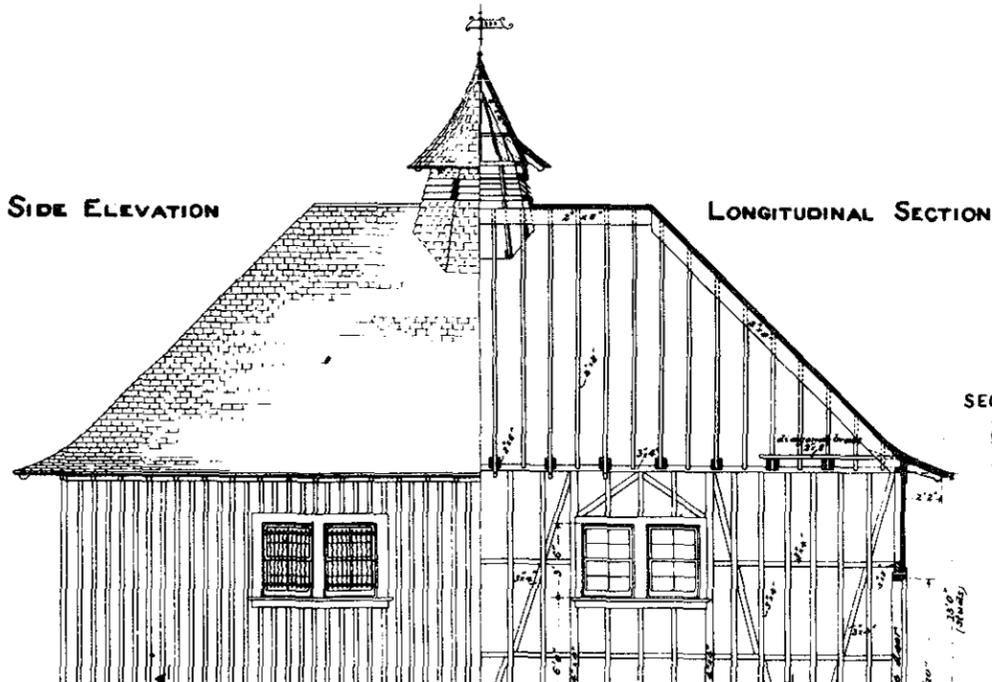


ROOF SECTION



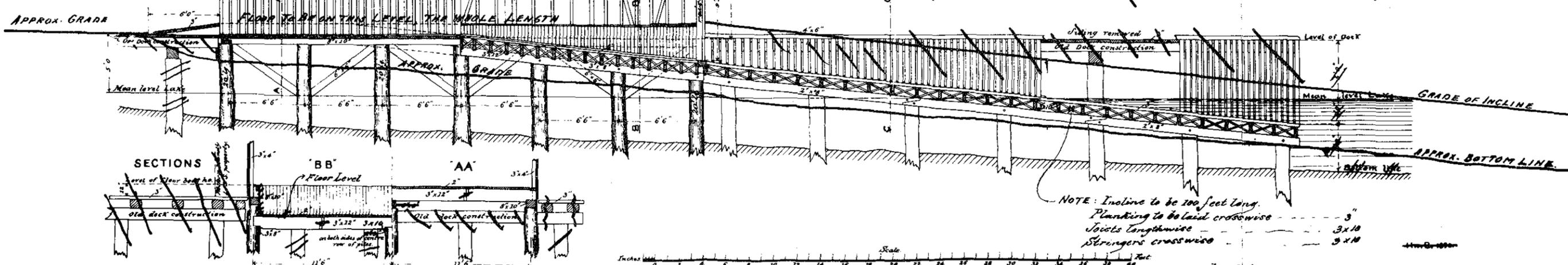
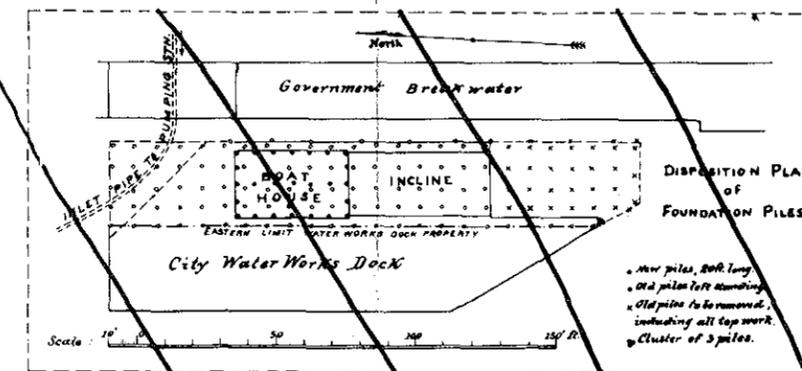
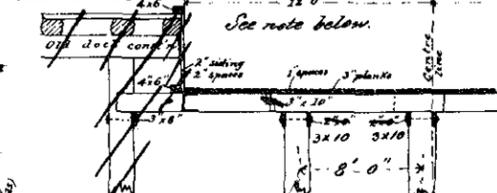
FRONT ELEVATION.

SIDE ELEVATION

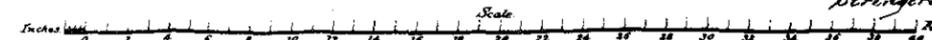
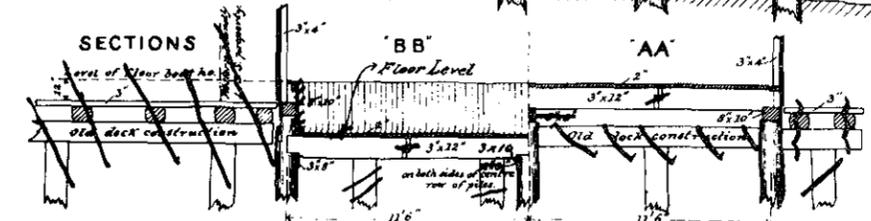


LONGITUDINAL SECTION.

SECTION 'CC'



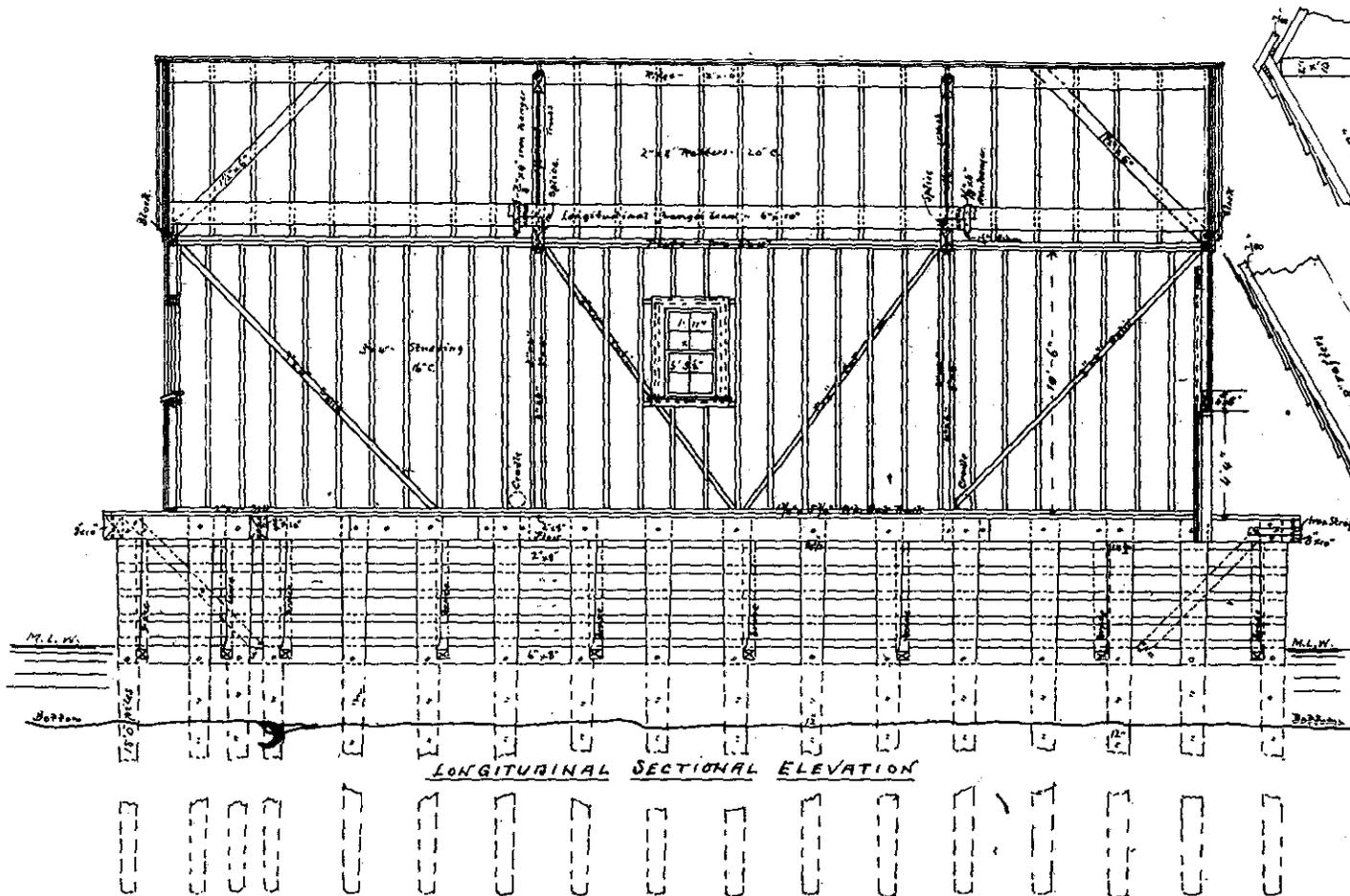
SECTIONS



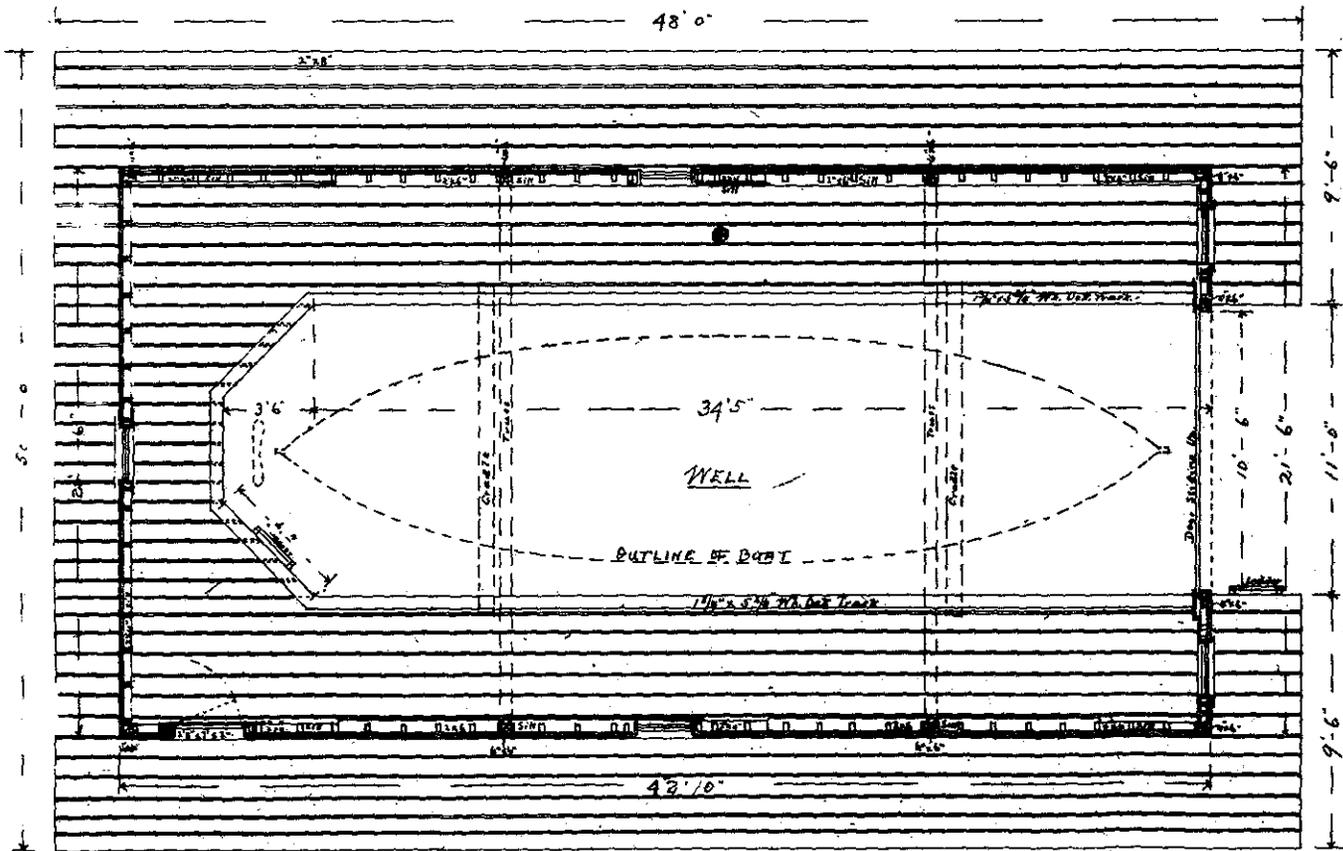
4. Original Plans for Boathouse #2

The plans for the boathouse for the 34-foot lifeboat were prepared in 1902 for both Sleeping Bear Point and South Manitou Island. The specifications that accompanied them are included in appendix C.

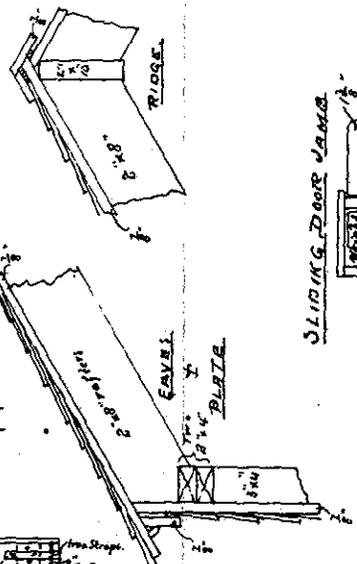
National Archives, Record Group 26, U.S. Lifesaving Service, LR #74206, Sleeping Bear Point



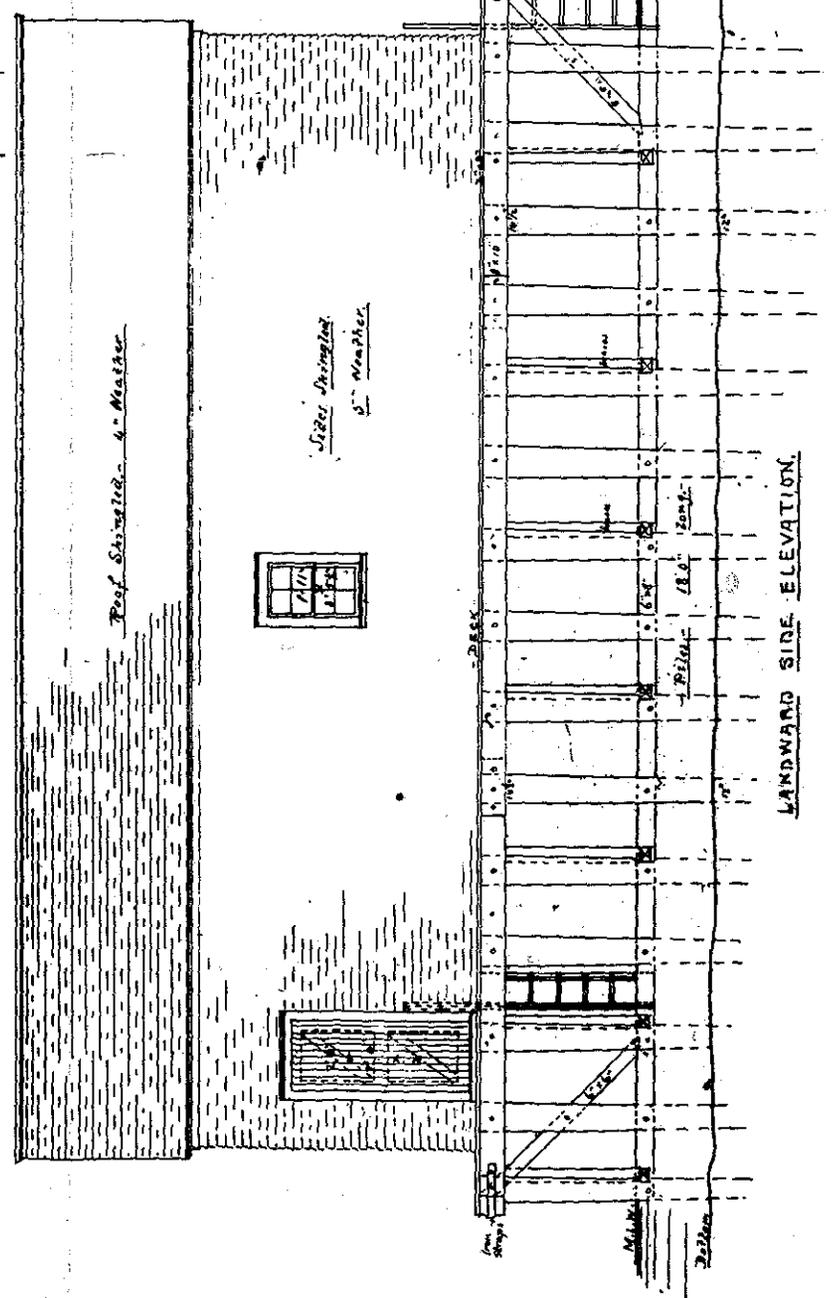
LONGITUDINAL SECTIONAL ELEVATION



PLAN OF BOATHOUSE

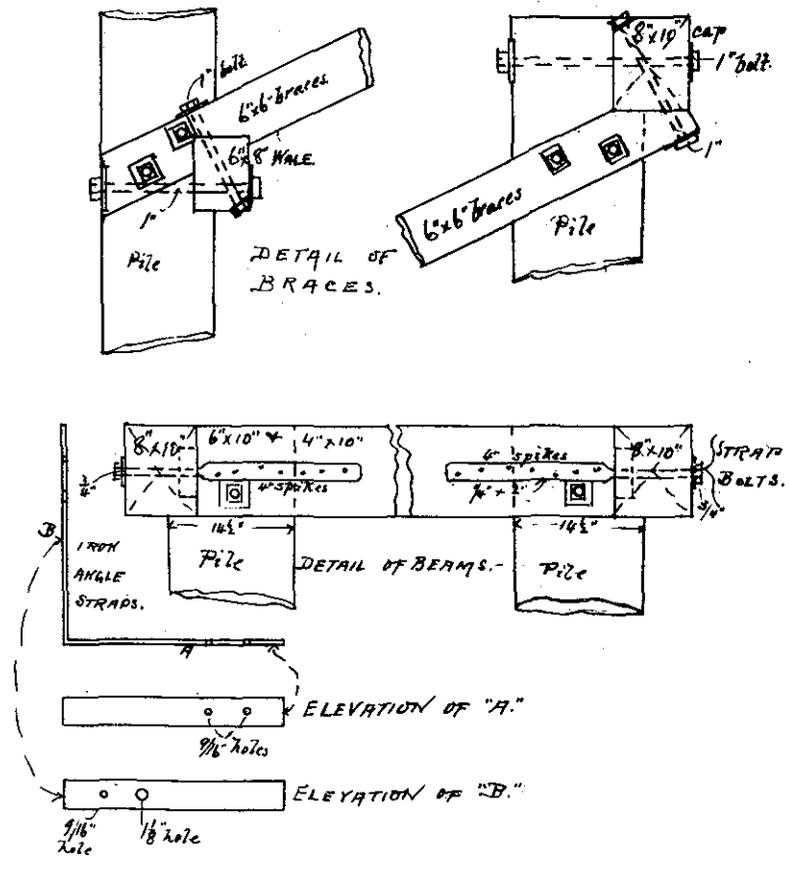
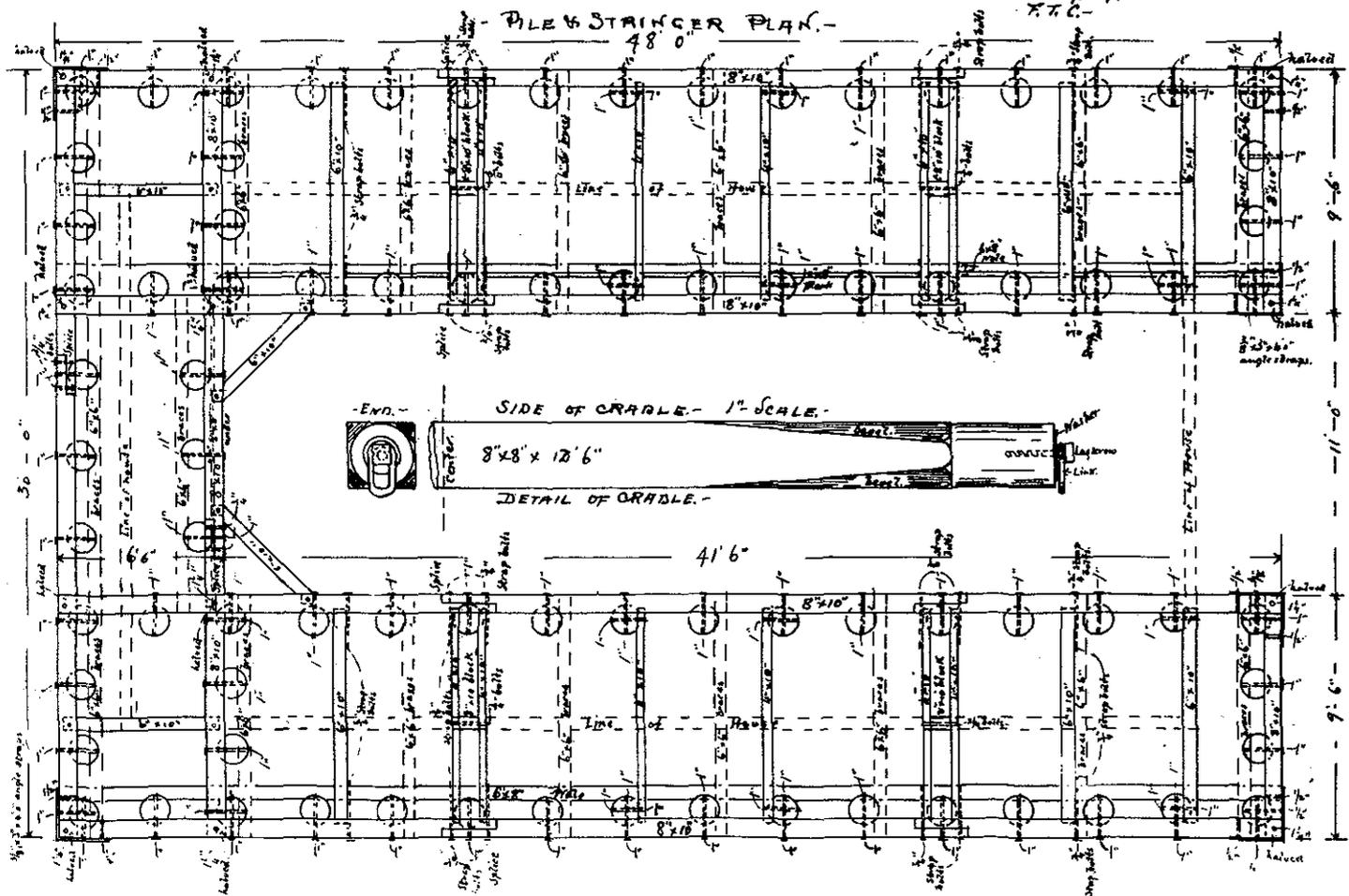
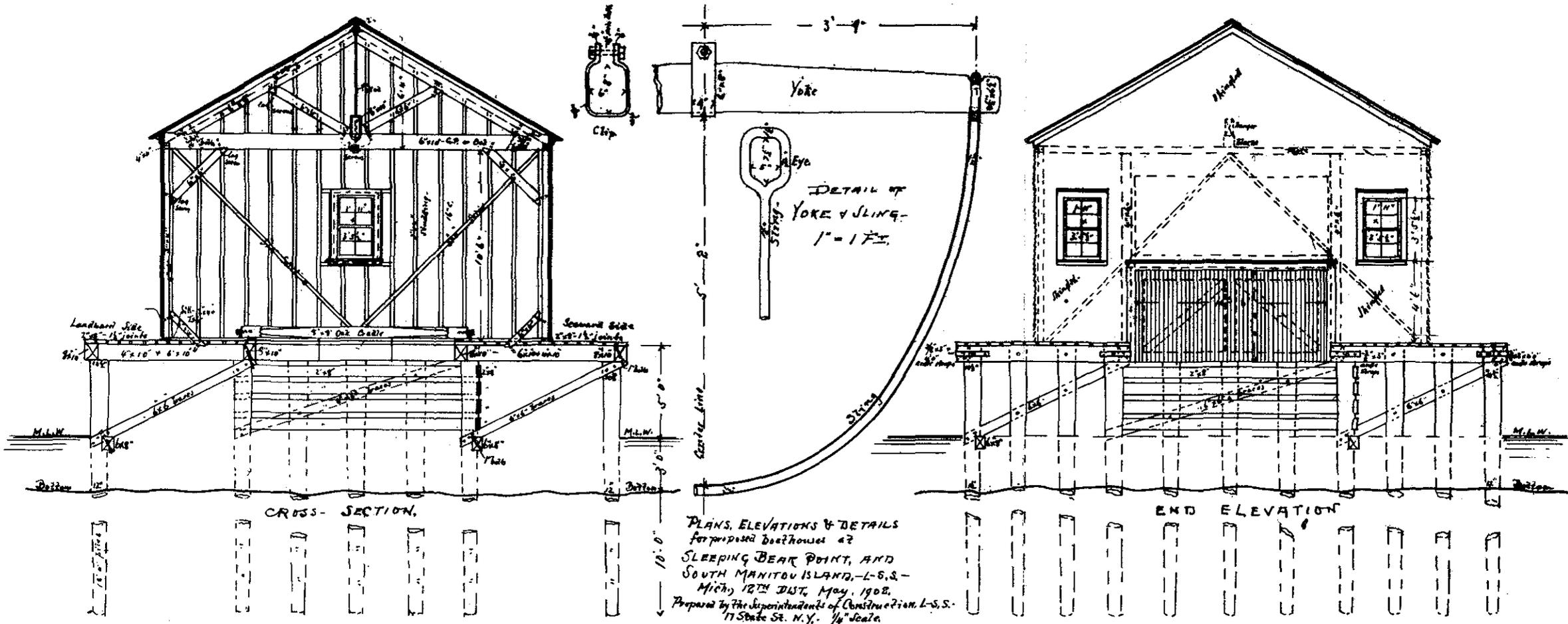


SLIDING DOOR JAMB
DETAILS - 1" = 1 FOOT



LANDWARD SIDE ELEVATION

PLAN, SECTION & ELEVATION
for proposed boathouses at
SLEEPING BEAR POINT, and
SOUTH MANITOBY ISLAND, L-322 -
MICH. 18TH DISTRICT
Prepared by the
Superintendent of Construction, U.S.S.
17 State St. New York - May 14, 1908.
R.T.C.



5. Plans and Specifications for Flagstaff and Drill Pole

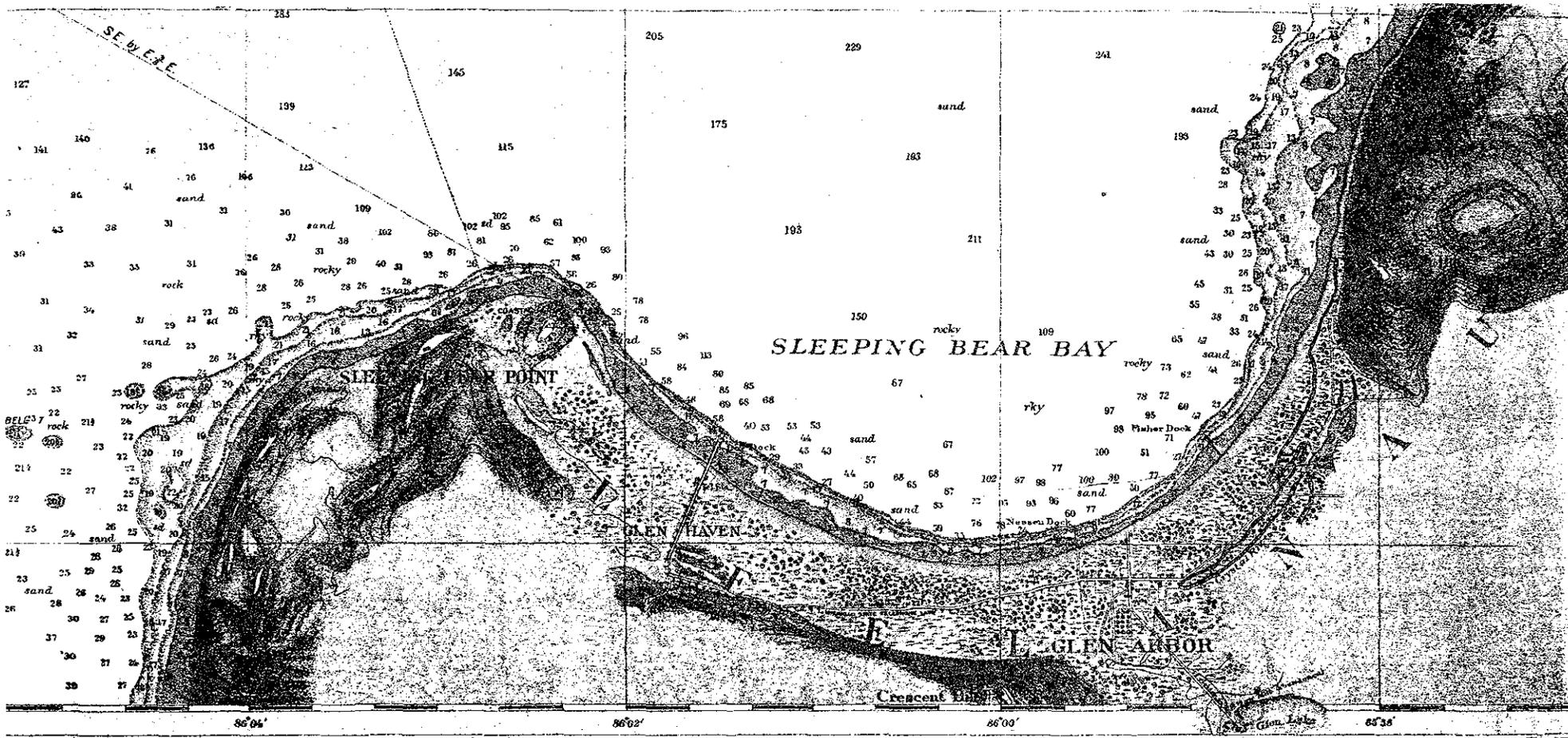
The plans and specifications for the flagstaff and drill pole at both Sleeping Bear Point and South Manitou Island lifesaving stations were dated August 19, 1900, and prepared for the Quonochontaug pattern of station. The Quonochontaug pattern of station was considered for Sleeping Bear Point and South Manitou Island but rejected except for these two poles, which were erected in 1902.

National Archives, Record Group 26, U.S. Lifesaving Service, LR #74206, Sleeping Bear Point

6. Map of Original Location of Boathouse #2

This map shows the station in its original location and boathouse #2 still "down in the bay," as of June 19, 1931, indicating that the move came after that date.

Courtesy, Michigan Department of State, State Archives



358
D10
P4

State Archives
of Michigan

Mansou Passage, Lake Michigan

On sale at U. S. LAKE SURVEY OFFICE, Detroit, Mich.
 " " U. S. ENGINEER OFFICE, Buffalo, N. Y.
 " " U. S. ENGINEER OFFICE, Sault Ste. Marie, Mich.
 " " U. S. ENGINEER OFFICE, 1st. District, New York, N. Y.
 " " U. S. ENGINEER OFFICE, Albany, N. Y.

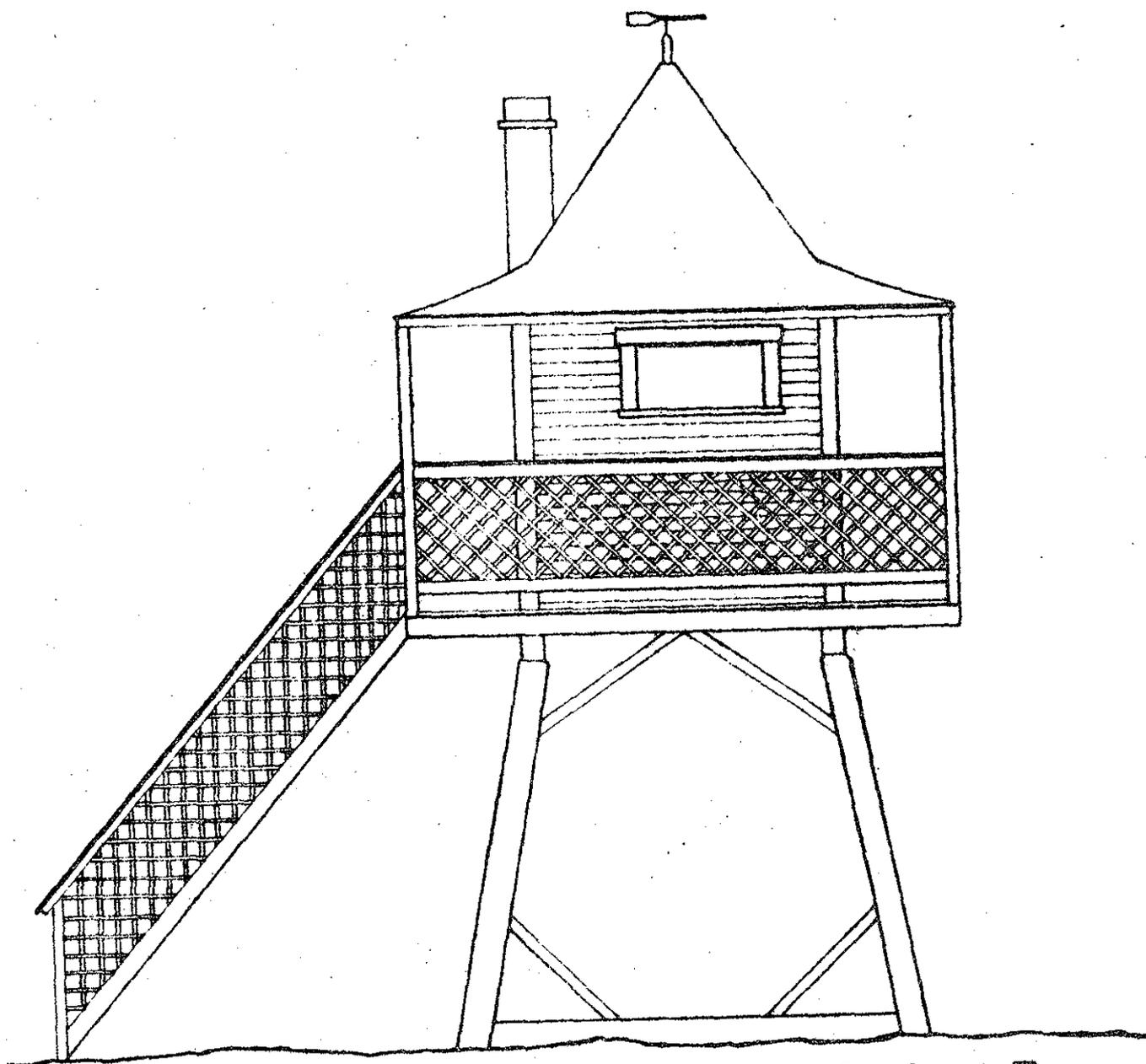
PUBLIC PROPERTY
 Issued for official use under the provisions of Section 2224
 act of Congress approved January 12, 1895 (Public No. 13)

AIDS TO NAVIGATION CORRECTED FROM INFORMATION RECEIVED TO JUNE 19, 1931

SKETCHES

3. Lookout Tower at Sleeping Bear Point, ca. 1905

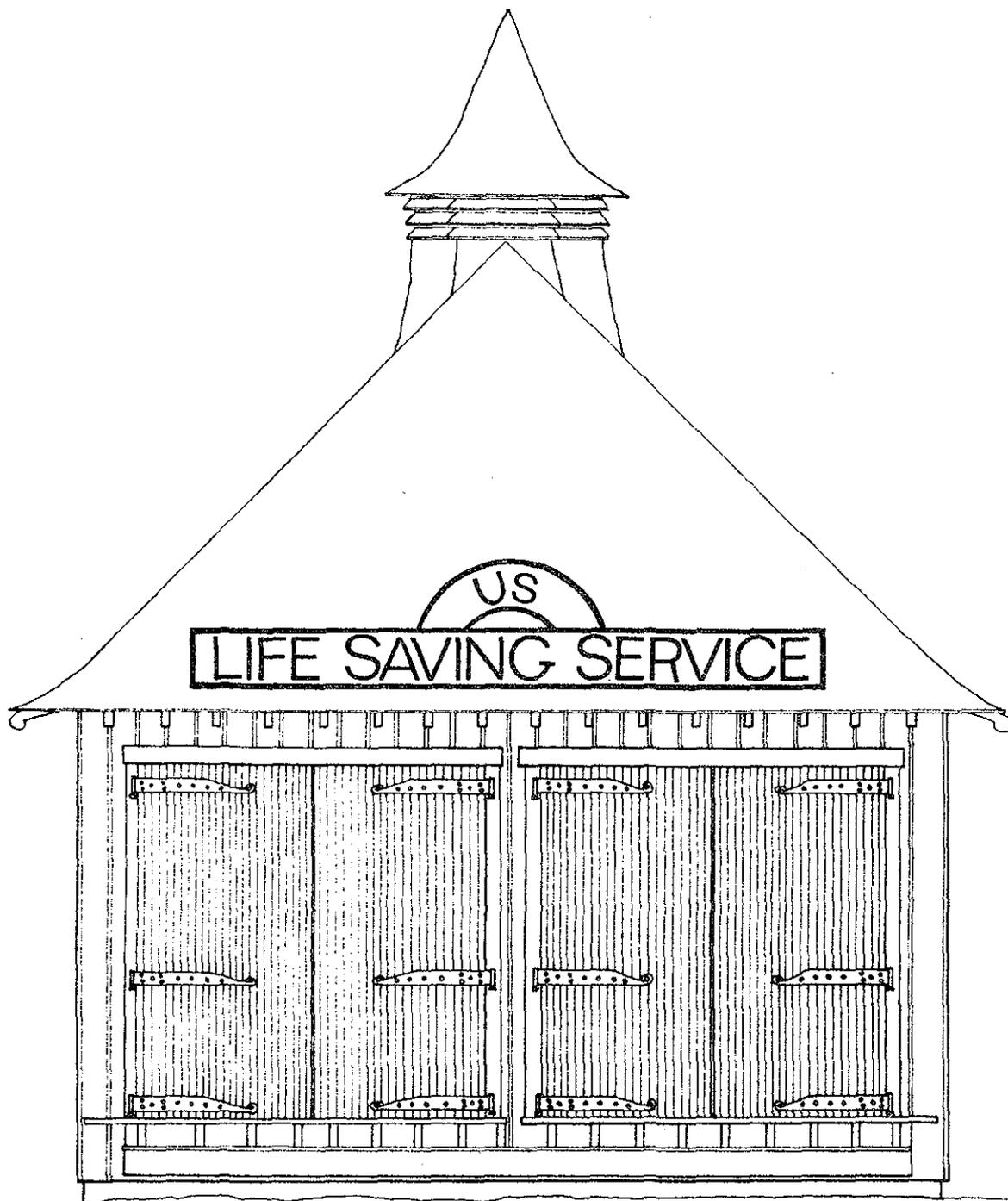
National Archives, Record Group, U.S. Lifesaving Service, LR
#82543



**Conjectural Drawing of Lookout Tower
from Historic Photograph c. 1905**

4. Boathouse #1 at Sleeping Bear Point, ca. 1905

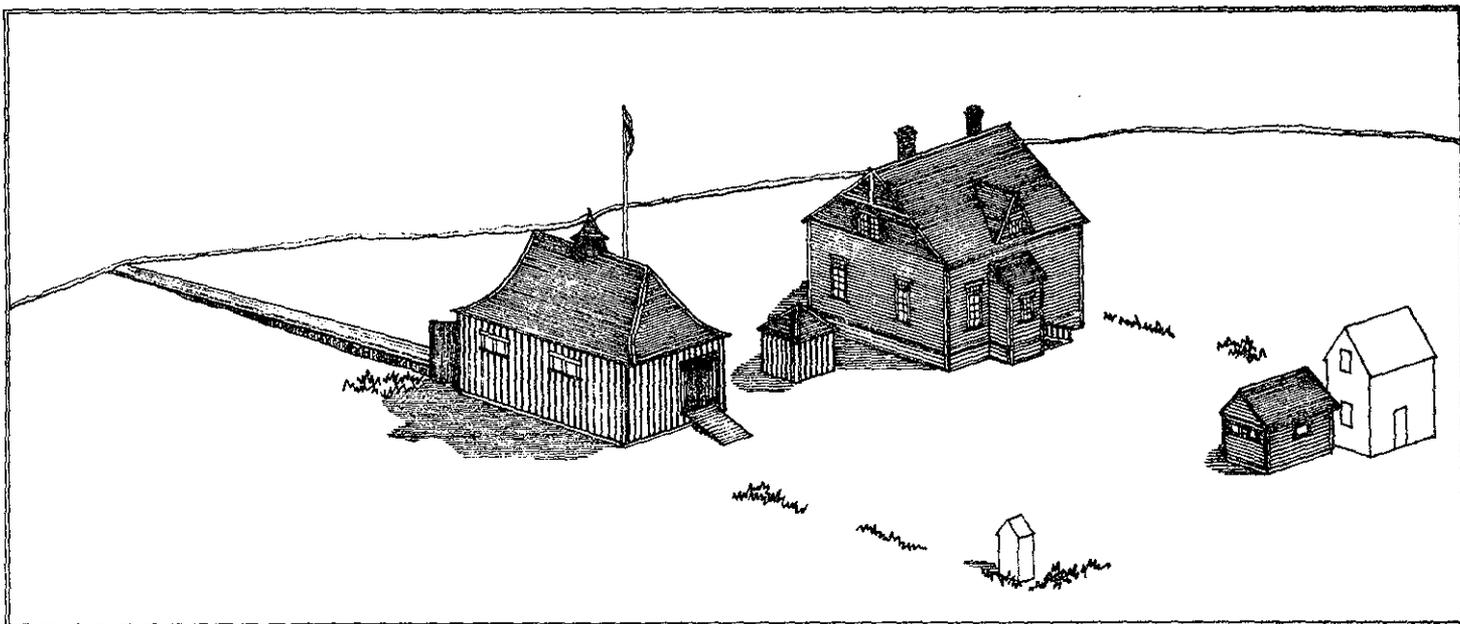
National Archives, Record Group 26, U.S. Lifesaving Service, LR #82543



**Boat House #1 at
Sleeping Bear Point c. 1905**

1. Aerial View of Lifesaving Station at Sleeping Bear Point, ca.
1904-05

National Archives, Record Group 26, U.S. Lifesaving Service, LR
#82543

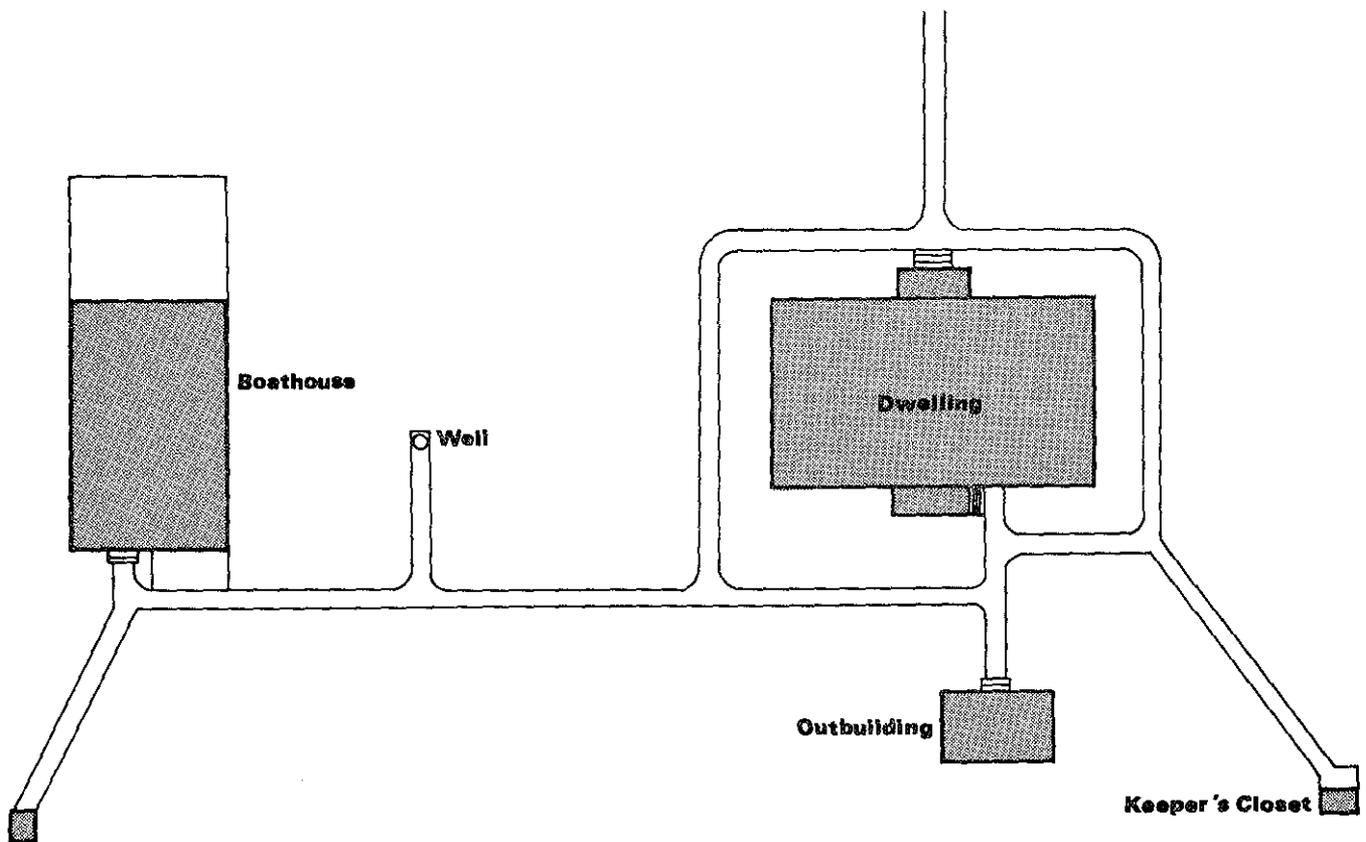


Life-Saving Station at Sleeping Bear Point c. 1904-05

2. Lifesaving Station at Sleeping Bear Point, 1903

This sketch was drawn to show the proposed layout of sidewalks and is dated October 2, 1903. The relationships of buildings to one another are most probably accurate although the map is not drawn to scale.

National Archives, Record Group 26, U.S. Lifesaving Service, LR #82543



SITE PLAN: Life-Saving Station at Sleeping Bear Point
dated October 2, 1903



MEASURED DRAWINGS

EXISTING CONDITIONS

1. Cover Sheet
2. Site Plan
3. Dwelling Elevations - North and East
4. Dwelling Elevations - South and West
5. Dwelling Plans - First and Second Floors
6. Boathouse #1 Plan and Elevations
7. Fire Cache Plan and Elevations
8. Boathouse #2 Plan and Elevations.

DEVELOPMENT PROPOSAL

9. Site Plan
10. Dwelling Elevations - North and East
11. Dwelling Elevations - South and West
12. Dwelling Plans - First and Second Floors
13. Boathouse #1 Plan and Elevations
14. Fire Cache Plan and Elevations
15. Boathouse #2 Plan and Elevations

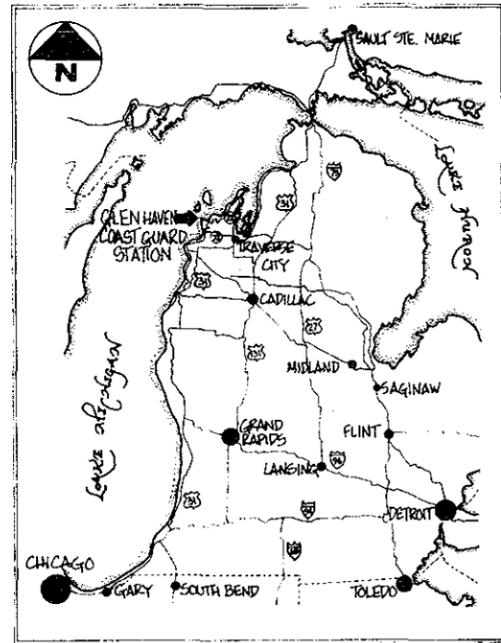
HISTORIC STRUCTURES REPORT

Index to Measured Drawings

1. Cover Sheet
2. Site Plan
3. North and East Elevations, Dwelling
4. South and West Elevations, Dwelling
5. First and Second Floor Plans, Dwelling
6. Plan and Elevations, Boat House #1
7. Plan and Elevations, Fire Cache
8. Plan and Elevations, Boat House #2

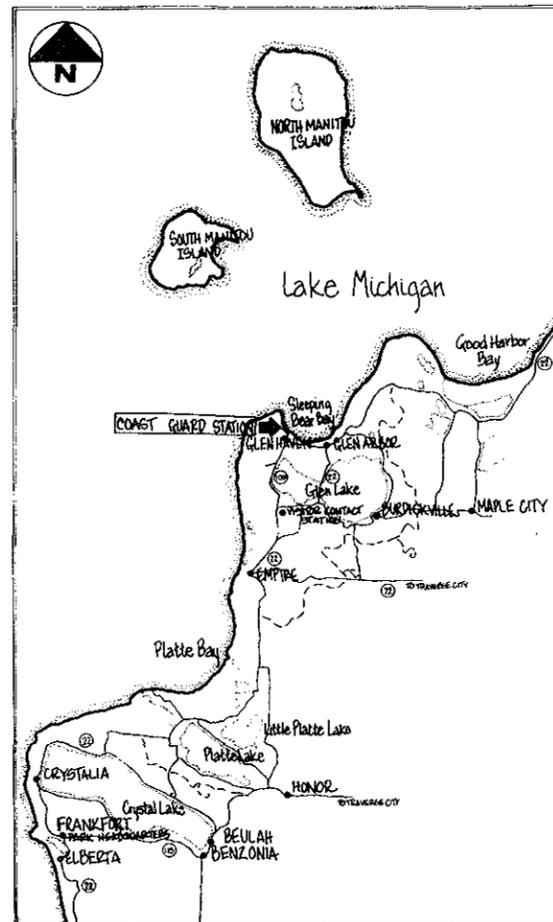
DEVELOPMENT PROPOSAL

9. Site Plan
10. North and East Elevations, Dwelling
11. South and West Elevations, Dwelling
12. First and Second Floor Plans, Dwelling
13. Plan and Elevations, Boat House #1
14. Plan and Elevations, Fire Cache
15. Plan and Elevations, Boat House #2



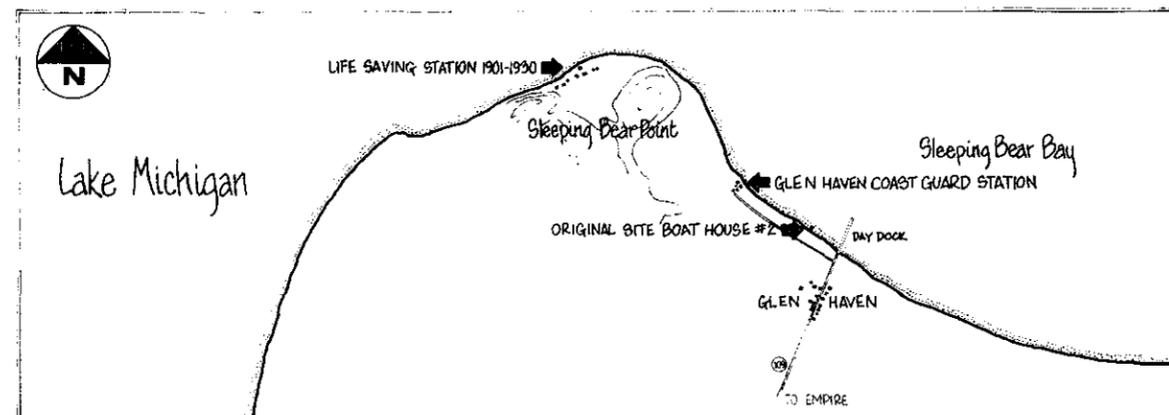
LOCATION MAP: Sleeping Bear Dunes National Lakeshore

SCALE IN MILES (Drawn at 1" = 55m)



AREA MAP: Sleeping Bear Dunes National Lakeshore

SCALE IN MILES (Drawn at 1" = 3.75m)



VICINITY MAP: Sleeping Bear Point and Glen Haven

SCALE IN MILES (Drawn at 1" = .3 m)

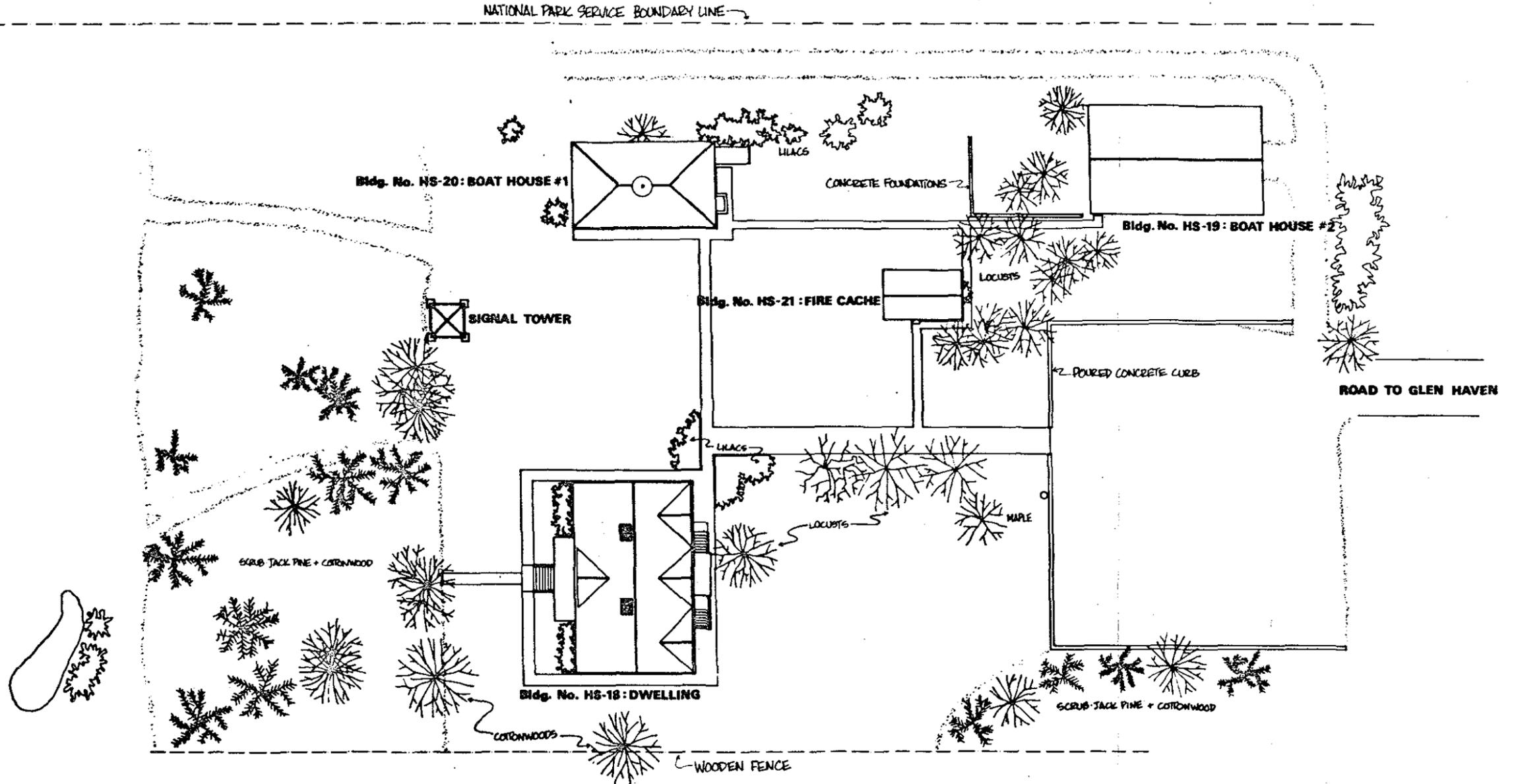
LOCATION MAPS: GLEN HAVEN COAST GUARD STATION

Sleeping Bear Dunes National Lakeshore

PREPARED	DRAWING NO.
DESIGNED	634
DRAWN	28001
CHECKED	PKG NO.
DATE	124
	SHEET
	1
	OF 15

LAKE MICHIGAN

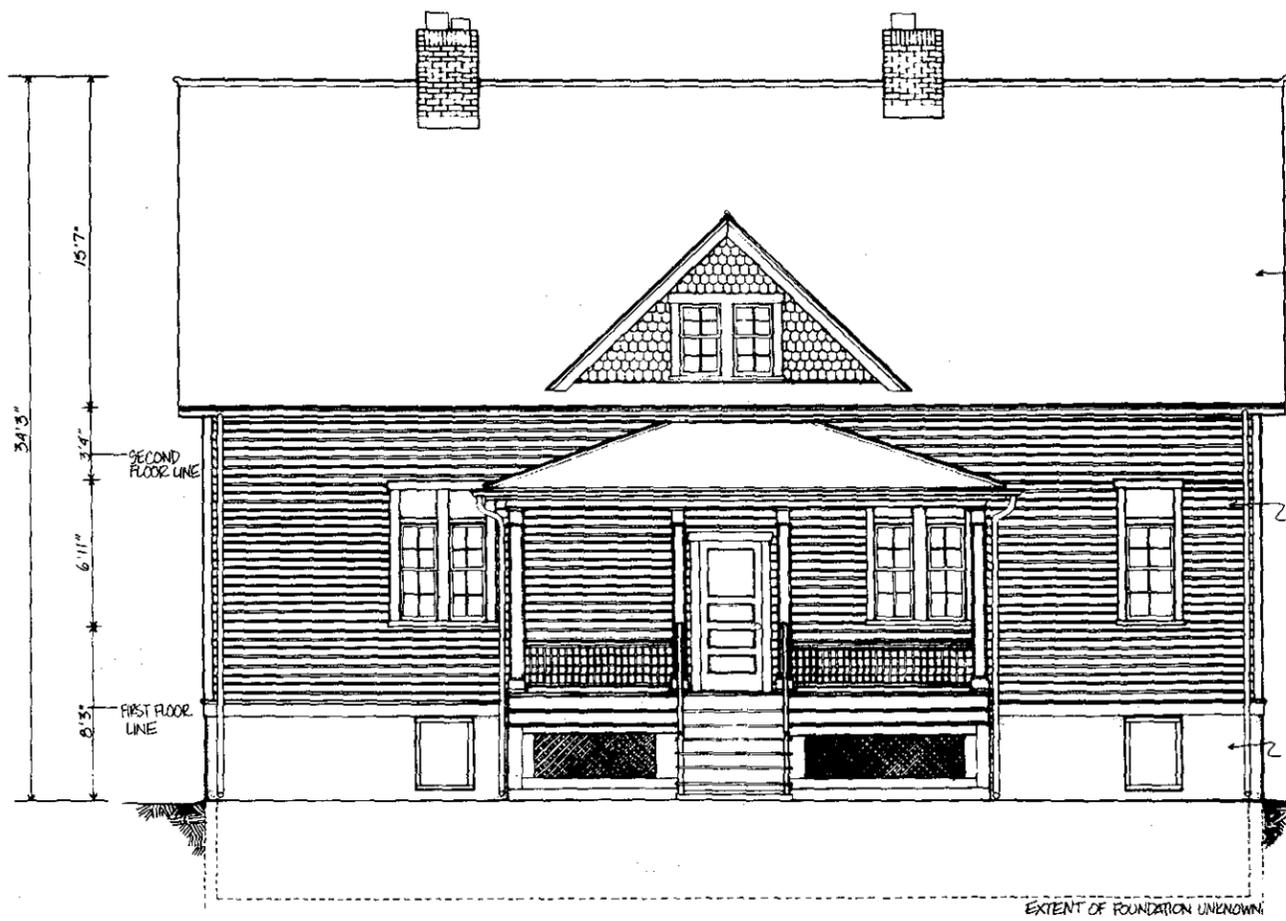
NATIONAL PARK SERVICE BOUNDARY LINE



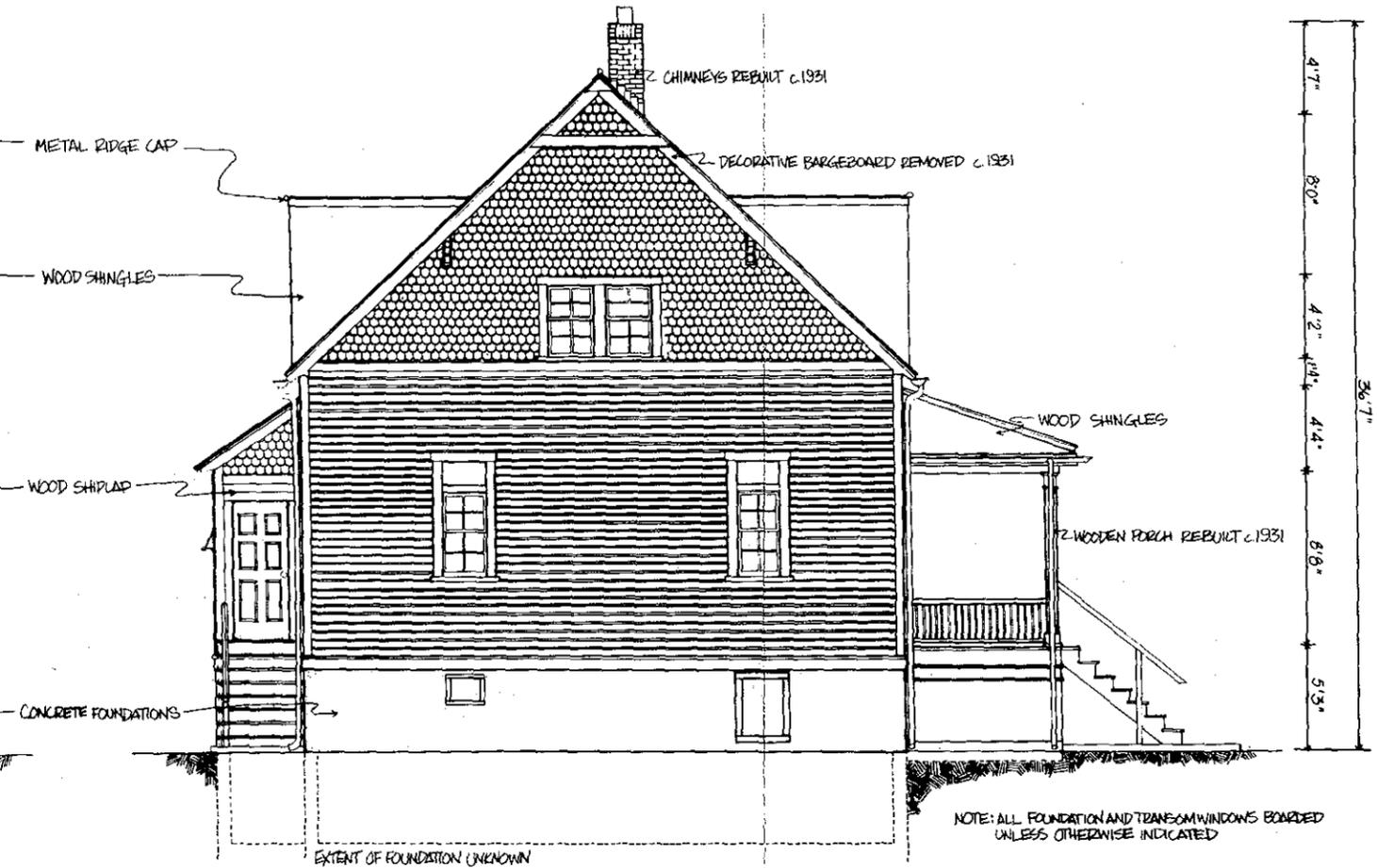
SITE PLAN: GLEN HAVEN COAST GUARD STATION

PREPARED	DRAWING NO.
DESIGNED	634
DRAWN	28001-A
CHECKED	PKG. NO.
DATE	124
	SHEET
	2
	OF 17

Filed as 634/28001-A



NORTH ELEVATION



EAST ELEVATION

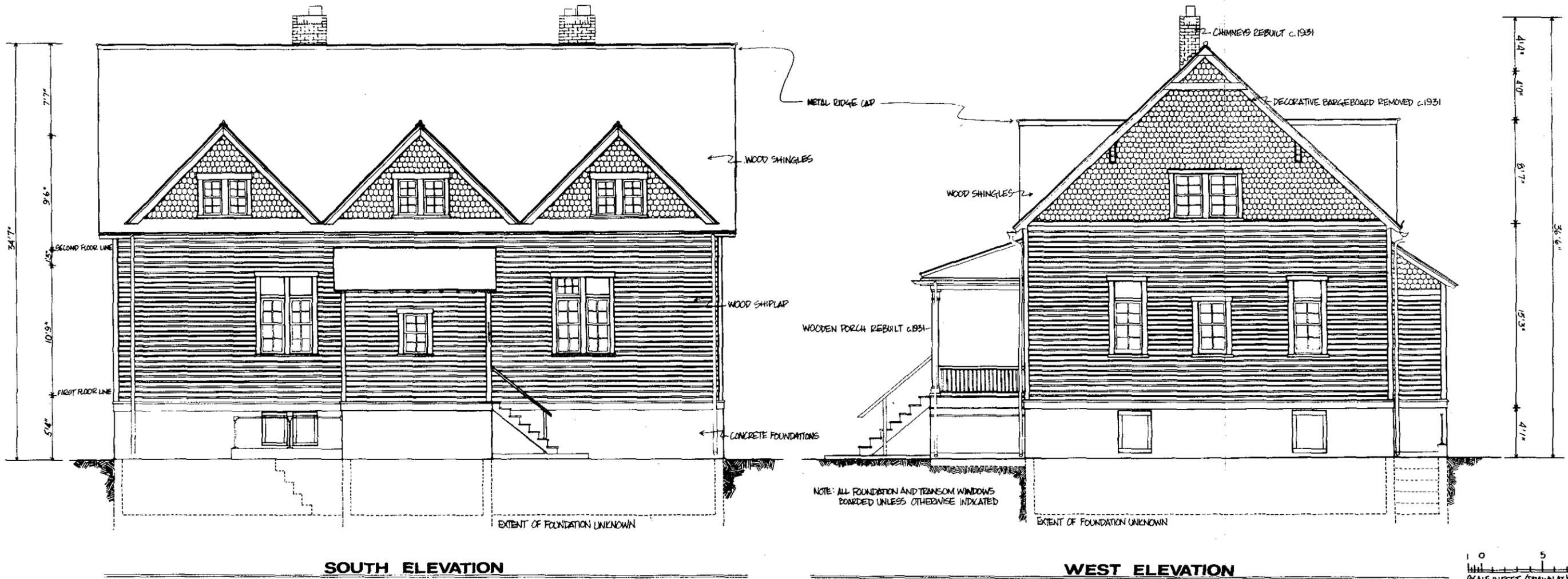
NOTE: ALL FOUNDATION AND TRANSOM WINDOWS BOARDED UNLESS OTHERWISE INDICATED

1 0 5 10
SCALE IN FEET (DRAWN AT 1/4"=1'-0")

DWELLING ELEVATIONS: GLEN HAVEN COAST GUARD STATION

DESIGNED WMA	PREPARED WMA	DRAWING NO. 28002
DRAWN HENDERSON	PKG NO. 129	SHEET 3
CHECKED 9-77	DATE	OF 12

ON MICROFILM
FILMED AS 634/28001-A

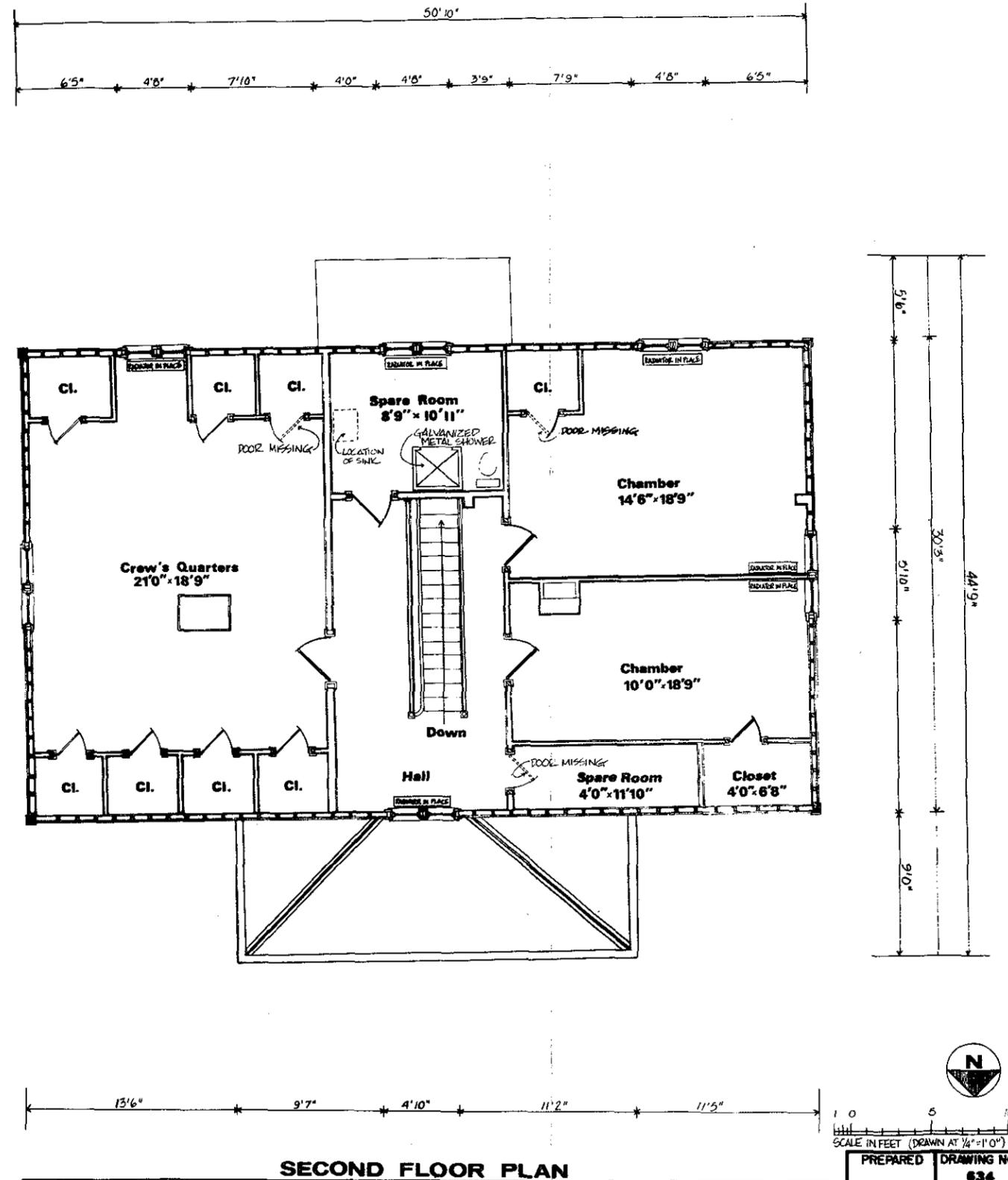
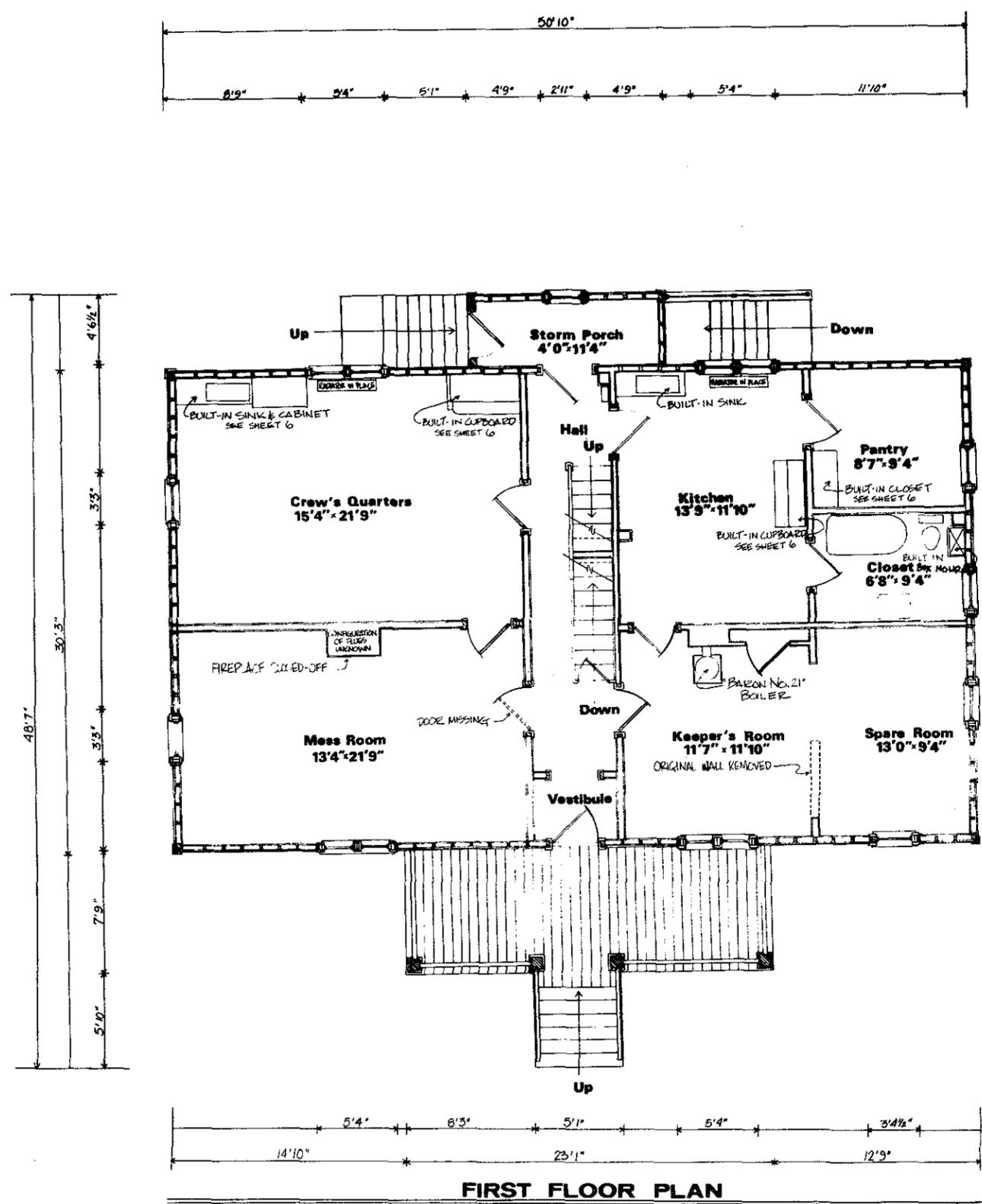


SOUTH ELEVATION

WEST ELEVATION

DWELLING ELEVATIONS: GLEN HAVEN COAST GUARD STATION

1 0 5 10	
SCALE IN FEET (DRAWN AT 1/4"=1'-0")	
PREPARED	DRAWING NO.
DESIGNED WMA	634
DRAWN WMA	28002
CHECKED LEWIS	PKG. NO. 124
DATE 9-77	SHEET 4
	OF 17



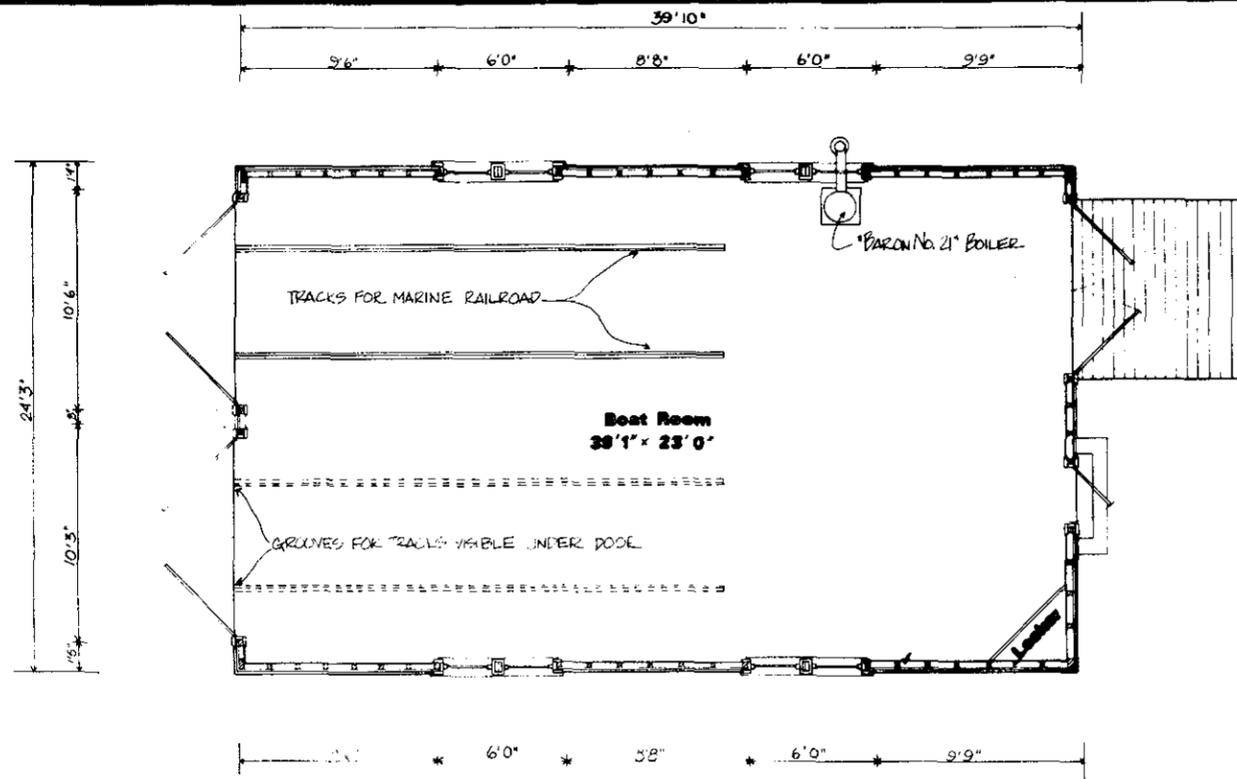
DWELLING PLANS: GLEN HAVEN COAST GUARD STATION

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SCALE IN FEET (DRAWN AT 1/4"=1'0")

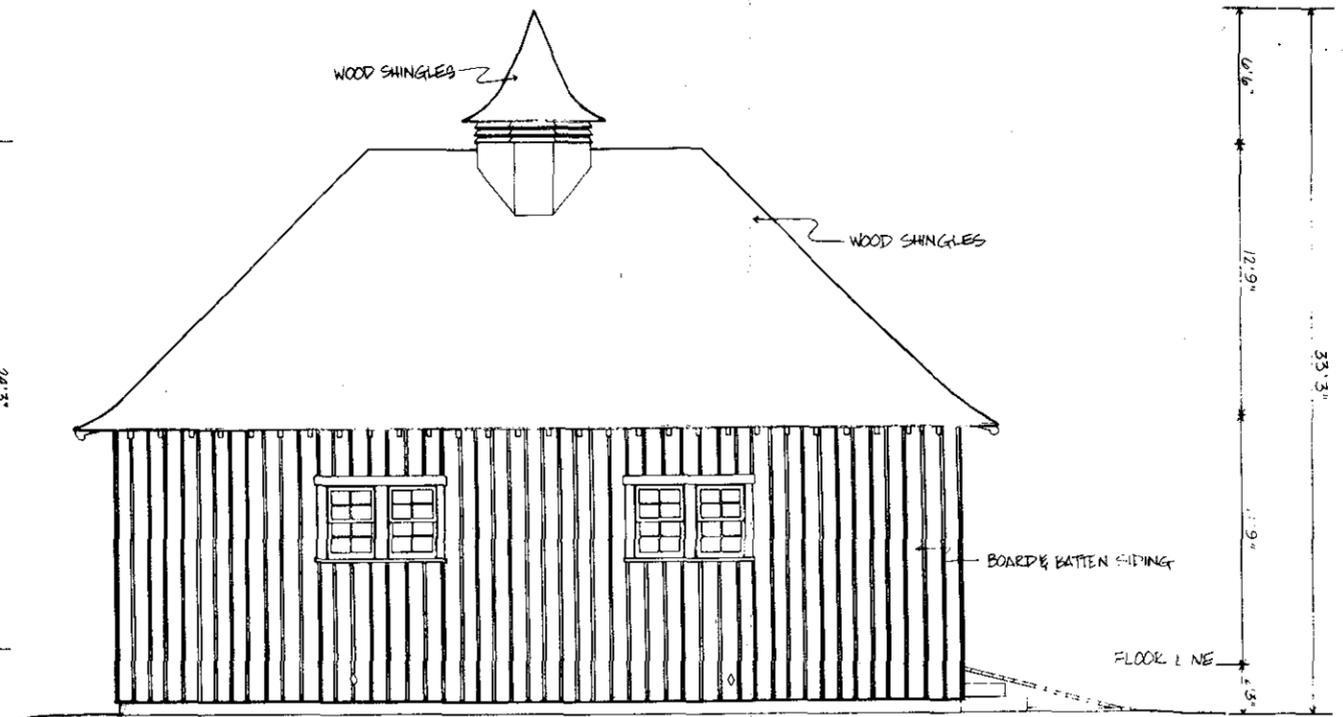
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DESIGNED 634
DRAWN 28003
CHECKED HENDERSON
DATE 9-77

PKG. NO. 124
SHEET 5
OF 17

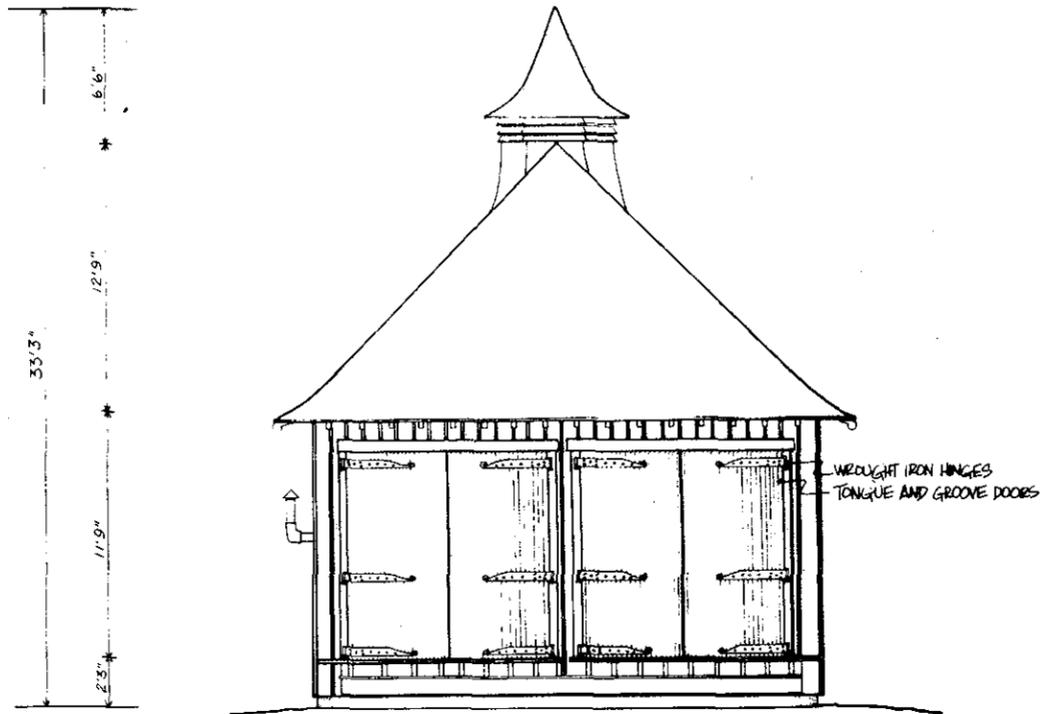
ON MICROFILM
FILMED AS 634/28001-A



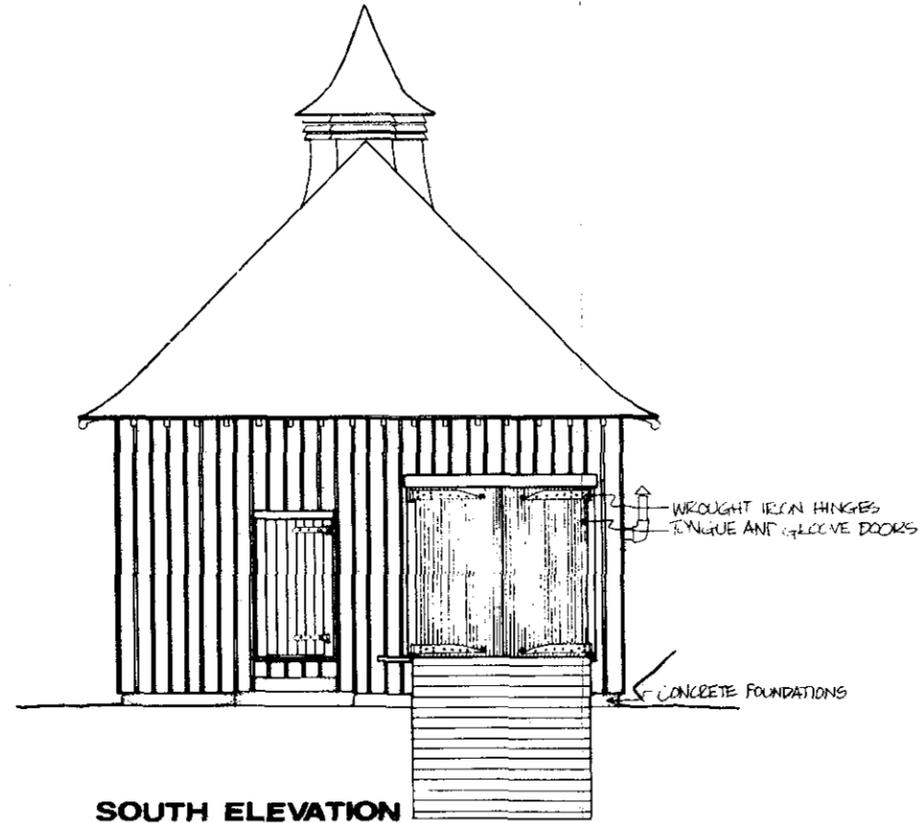
PLAN



WEST ELEVATION
EAST ELEVATION similar



NORTH ELEVATION



SOUTH ELEVATION

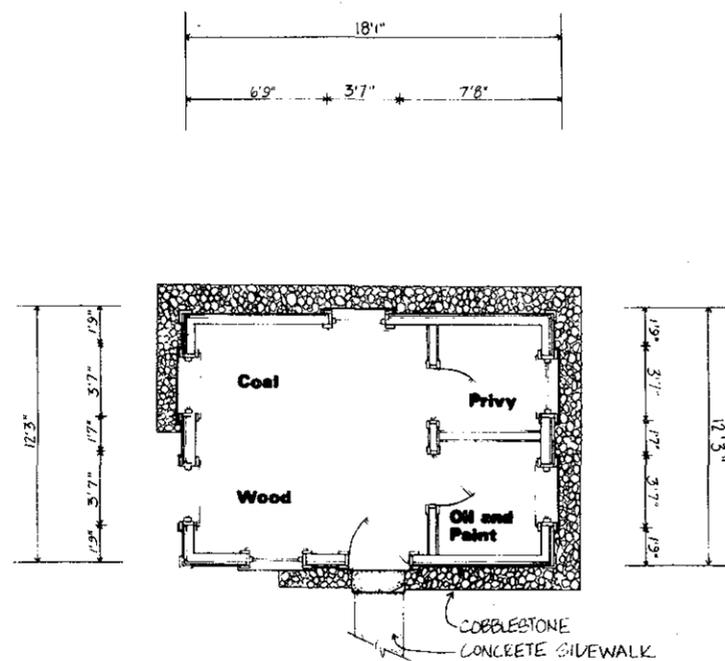
BOAT HOUSE #1 PLAN & ELEVATIONS: GLEN HAVEN COAST GUARD STATION

1 0 5 10
SCALE IN FEET (DRAWN AT 1/4"=1'-0")

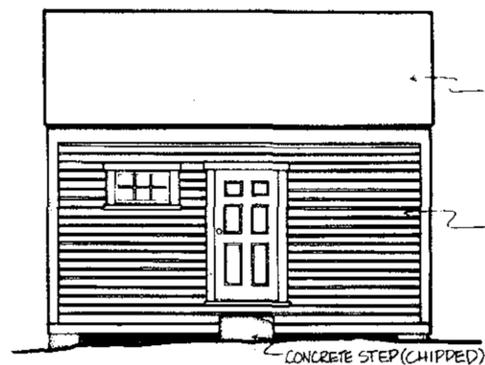
PREPARED	DRAWING NO.
DESIGNED	634
WMA	28004
DRAWN	PKG. NO.
NEEDSON	124
CHECKED	SHEET
9-77	7
DATE	OF 17

GPO: 1977 777-370

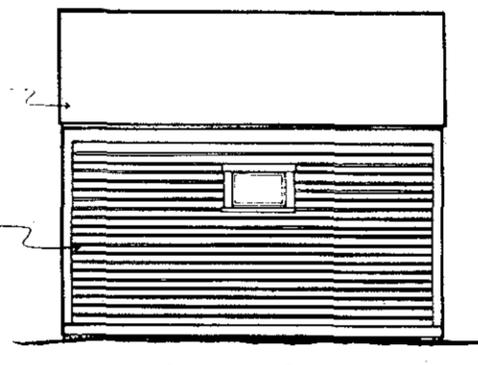
FILMED AS 634/28001-A ON MICROFILM



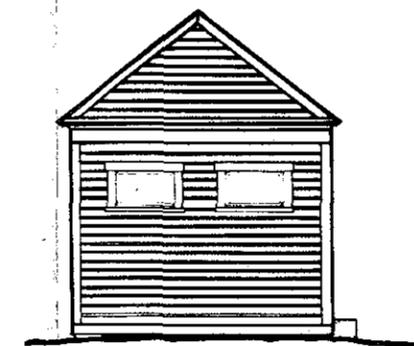
PLAN



WEST ELEVATION



EAST ELEVATION



NORTH ELEVATION
SOUTH ELEVATION similar

WOOD SHINGLES
WOOD SHIPLAP

NOTE: WINDOW BOARDED

NOTE: ALL WINDOWS BOARDED



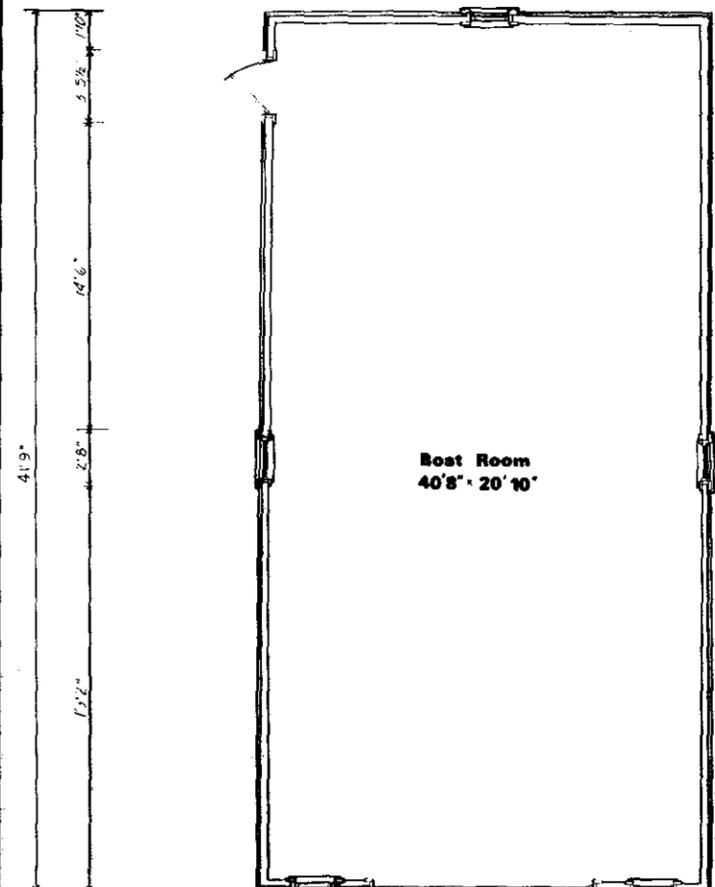
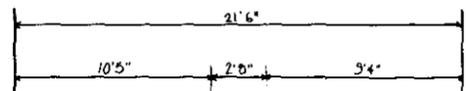
DESIGNED WMA	DRAWING NO. 634
DRAWN	28006
CHECKED	PKG. NO. 124
DATE 9-77	SHEET 8
	OF 17

FIRE CACHE PLAN & ELEVATIONS : GLEN HAVEN COAST GUARD STATION

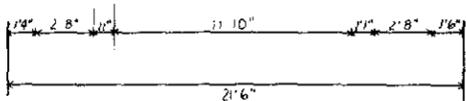
FILMED AS 634/28001-A

ON MICROFILM

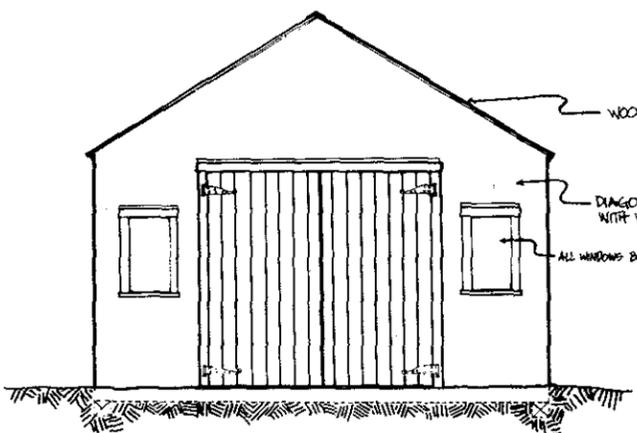
GPO-1977-777-370



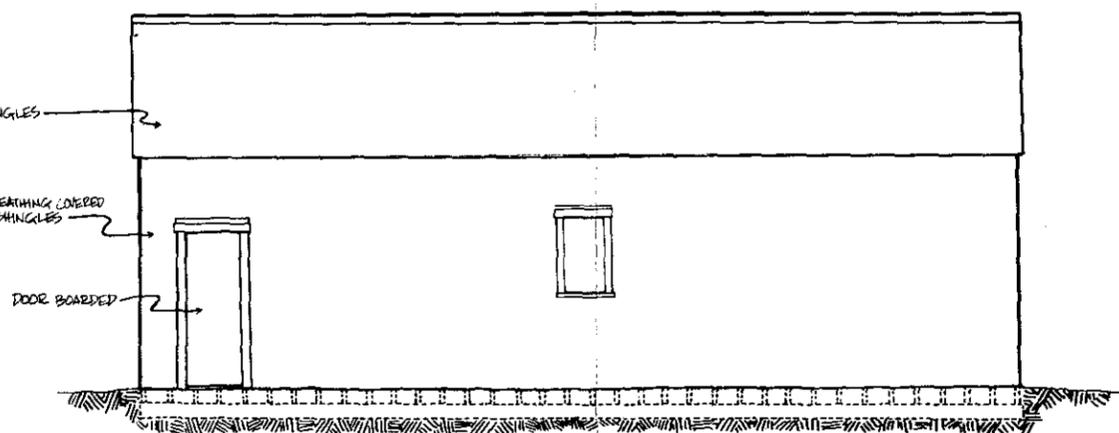
Rest Room
40'8" x 20'10"



PLAN



SOUTH ELEVATION



WEST ELEVATION

NOTE: SHINGLES REMOVED FROM WALLS AT TIME OF FIELD MEASUREMENTS (6-77)



SCALE IN FEET (DRAWN AT 1/4"=1'-0")

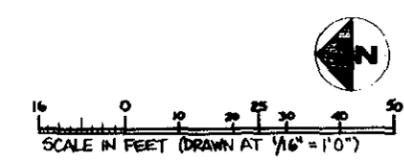
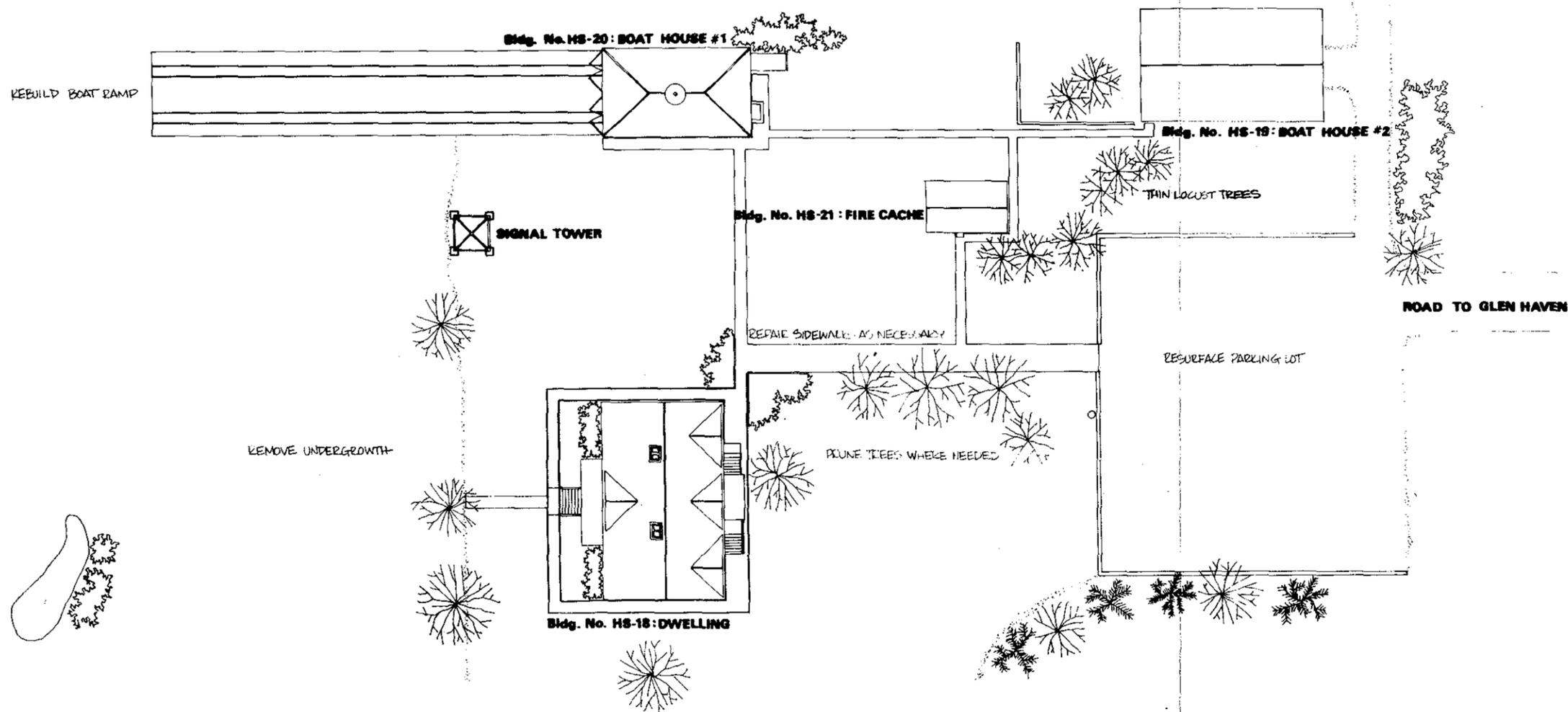
BOAT HOUSE #2 PLAN & ELEVATIONS: GLEN HAVEN COAST GUARD STATION

DESIGNED WMA	DRAWN WMA	CHECKED WMA	DATE 9-77	PREPARED	DRAWING NO. 634 28006
				PKG. NO. 124	SHEET 9 OF 17

GPO: 1977-777-300

ON MICROFILM
FILMED AS 634/28001-A

LAKE MICHIGAN



DESIGNED IN/MA-DRAWN	PREPARED	DRAWING NO. 634 28007
CHECKED 9-77	DATE	PKG. NO. 128
		SHEET 10 OF 17

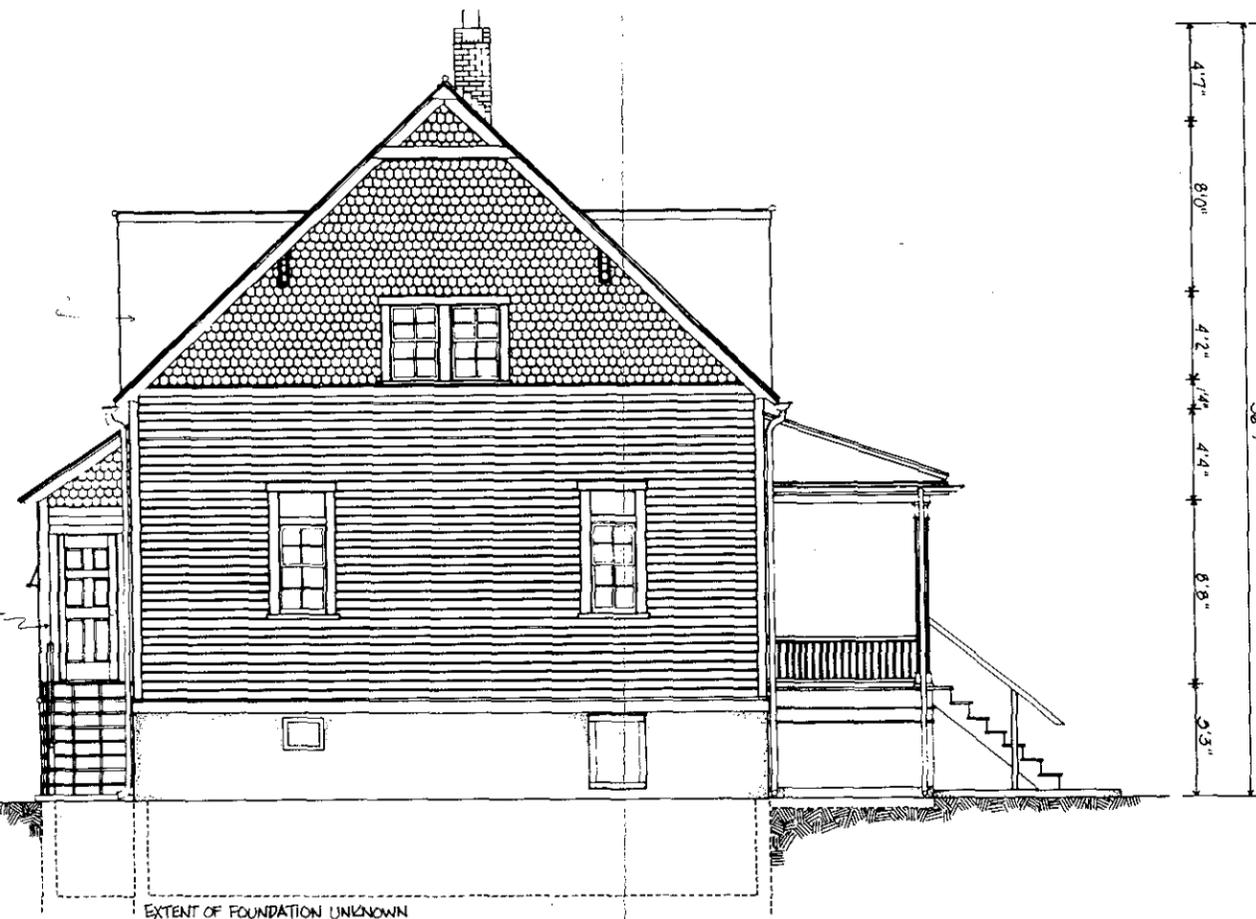
SITE PLAN: GLEN HAVEN COAST GUARD STATION

ON MICROFILM
FILMED AS 634/28001-A

GPO: 1977-777-370



NORTH ELEVATION



EAST ELEVATION

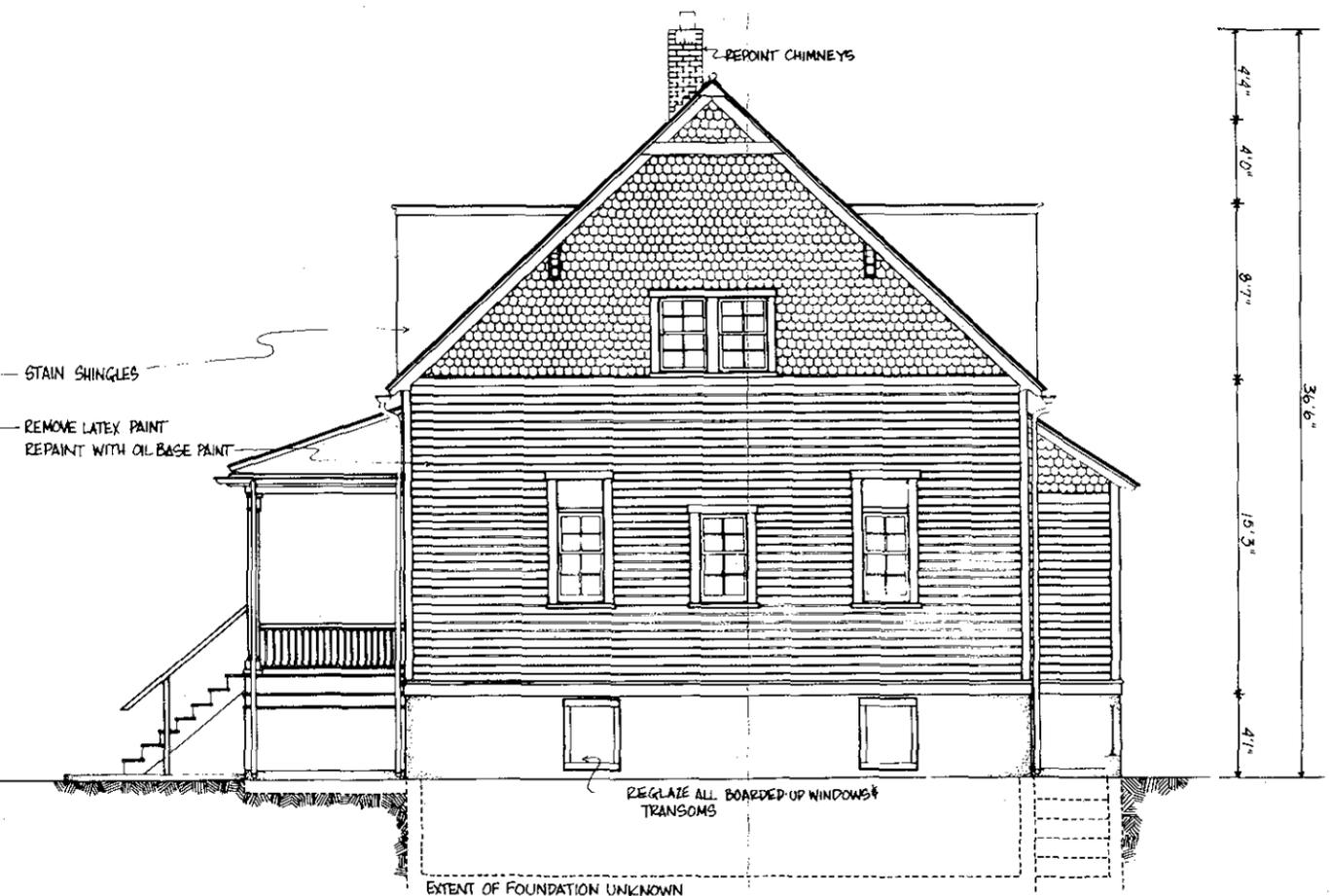
DWELLING ELEVATIONS: GLEN HAVEN COAST GUARD STATION

SCALE IN FEET (DRAWN AT 1/4"=1'-0")	
DESIGNED WMA	DRAWING NO. 634
DRAWN WMA	28007
CHECKED HENDERSON	PKG NO. 124
DATE 9-77	SHEET 11
	OF 17

ON MICROFILM
FILMED AS 634/28001-A



SOUTH ELEVATION



WEST ELEVATION

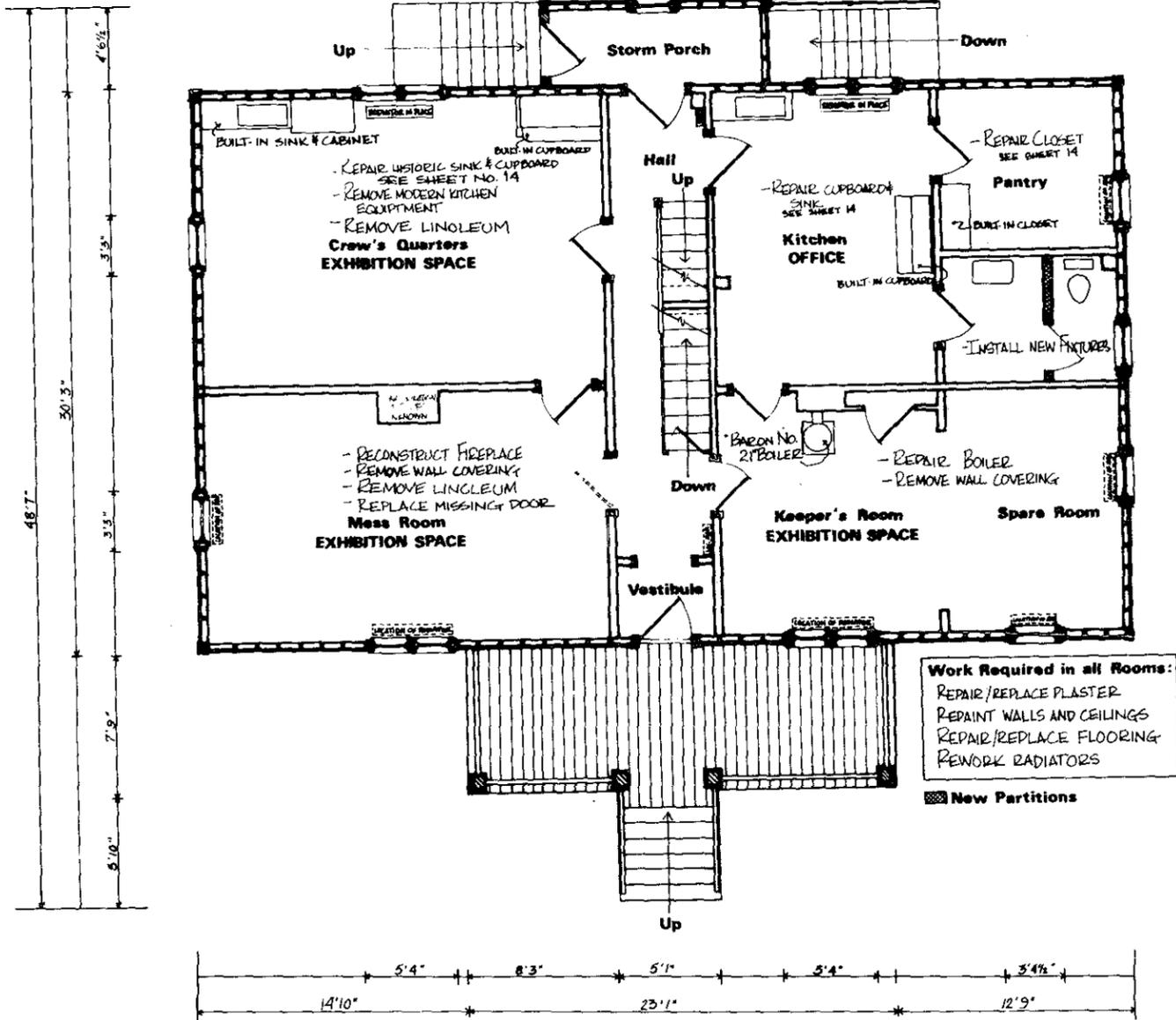
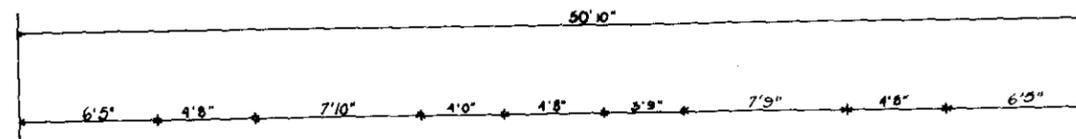
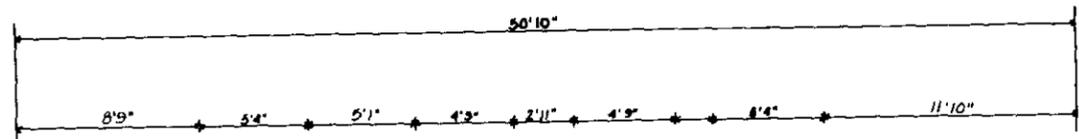
0 5 10
SCALE IN FEET (DRAWN AT 1/4"=1'-0")

DWELLING ELEVATIONS: GLEN HAVEN COAST GUARD STATION

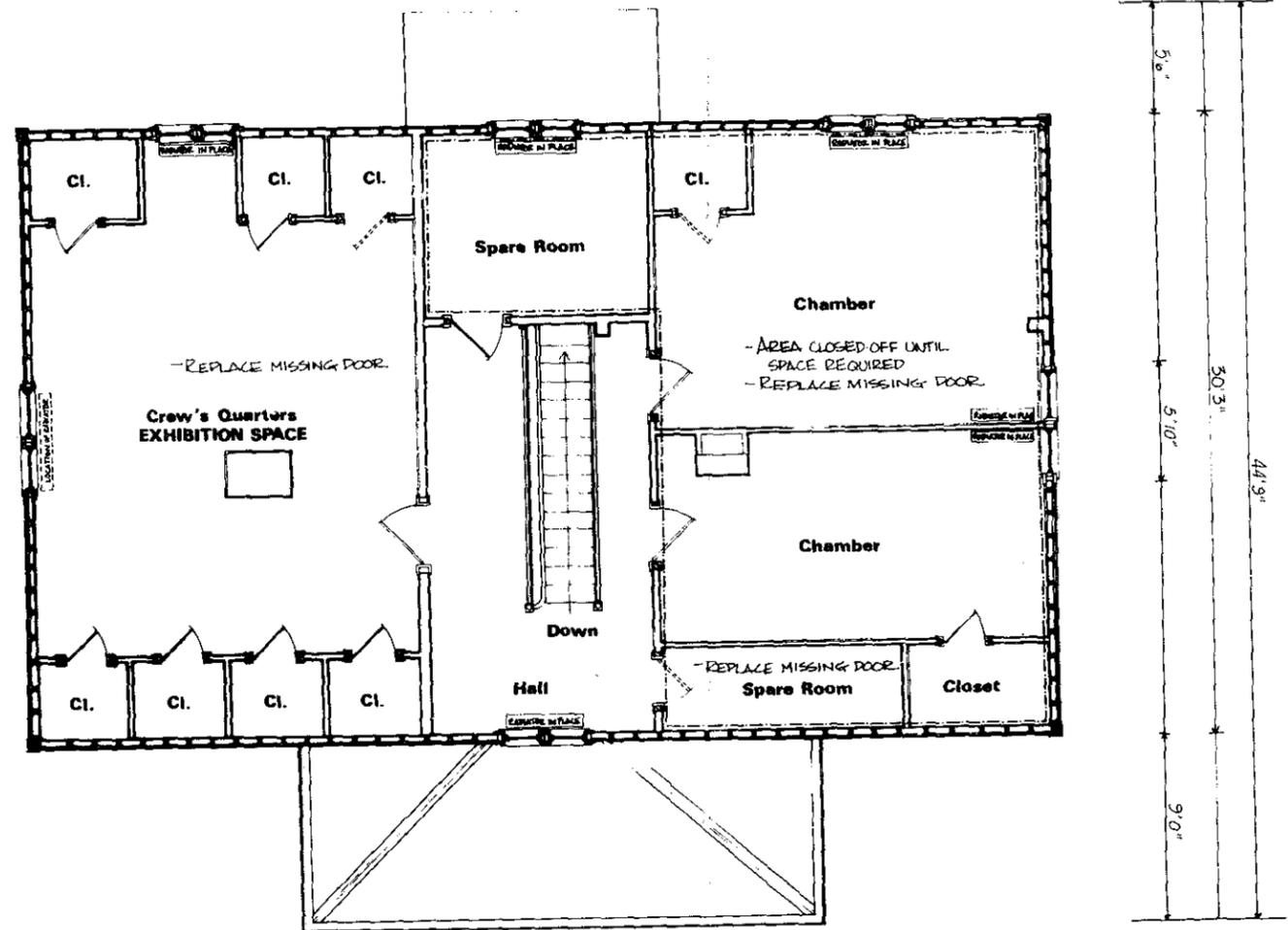
DESIGNED	WVA	DATE	9-77
DRAWN	WVA	CHECKED	HENDERSON
DATE	9-77		

PREPARED	DRAWING NO.
634	28007
PKG. NO.	124
SHEET	12
OF 17	

ON MICROFILM
FILMED AS 634/28001-A



FIRST FLOOR PLAN



SECOND FLOOR PLAN

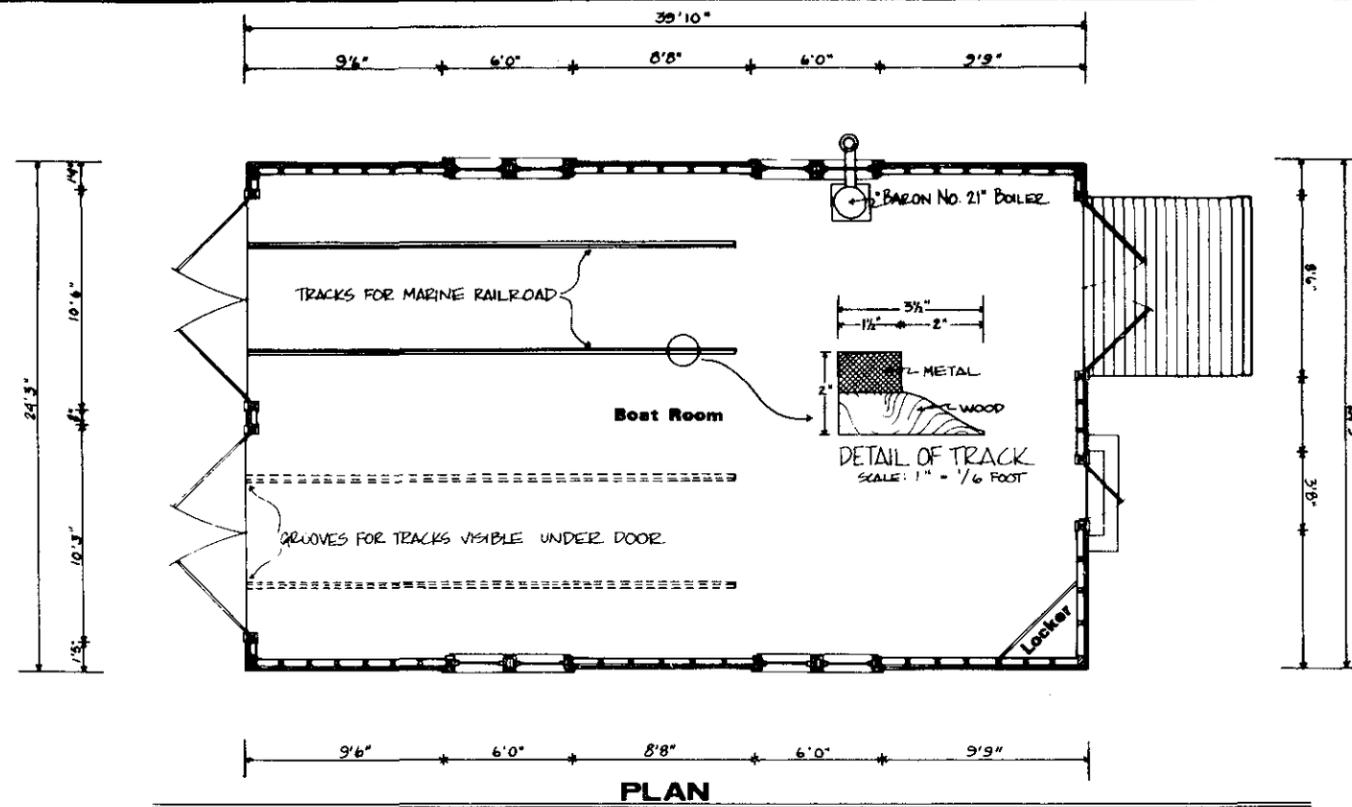
DWELLING PLANS: GLEN HAVEN COAST GUARD STATION

1 0 5 10
 SCALE IN FEET (DRAWN AT 1/4"=1'-0")

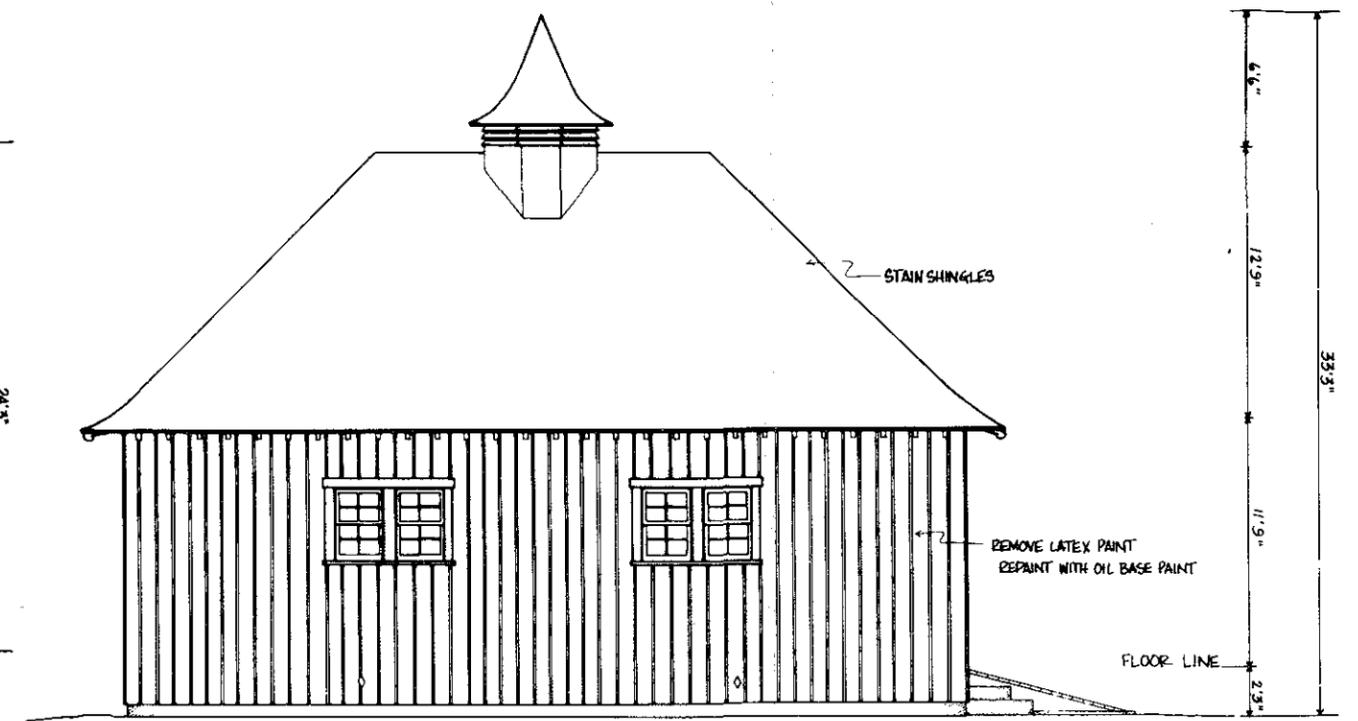
PREPARED BY W.A.A. DESIGNED BY W.A.A. DRAWN BY W.A.A. CHECKED BY HENDERSON DATE 9-77

DRAWING NO. 634 28007
 PKG. NO. 124
 SHEET 13 OF 17

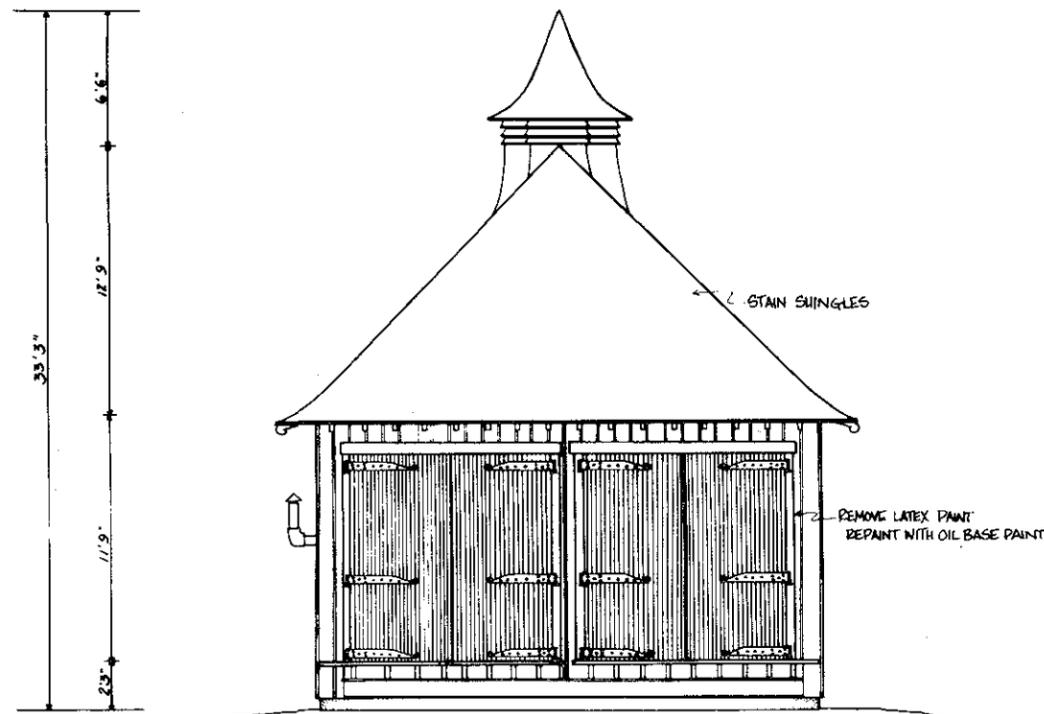
ON MICROFILM
 FILMED AS 634/28001-A



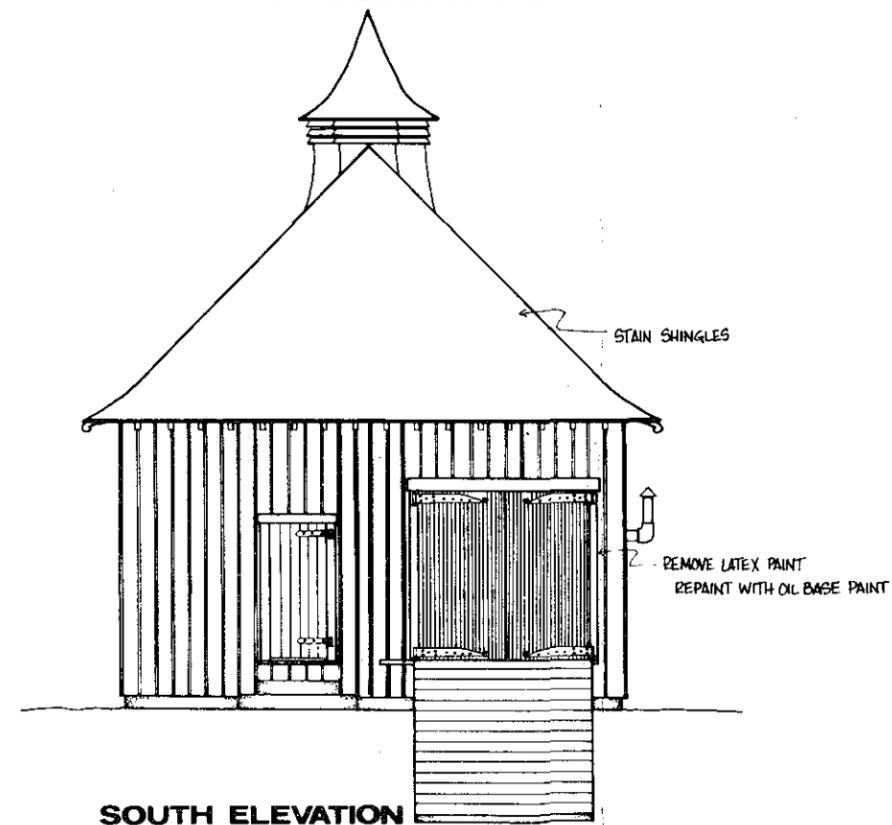
PLAN



WEST ELEVATION
EAST ELEVATION similar



NORTH ELEVATION



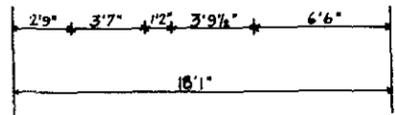
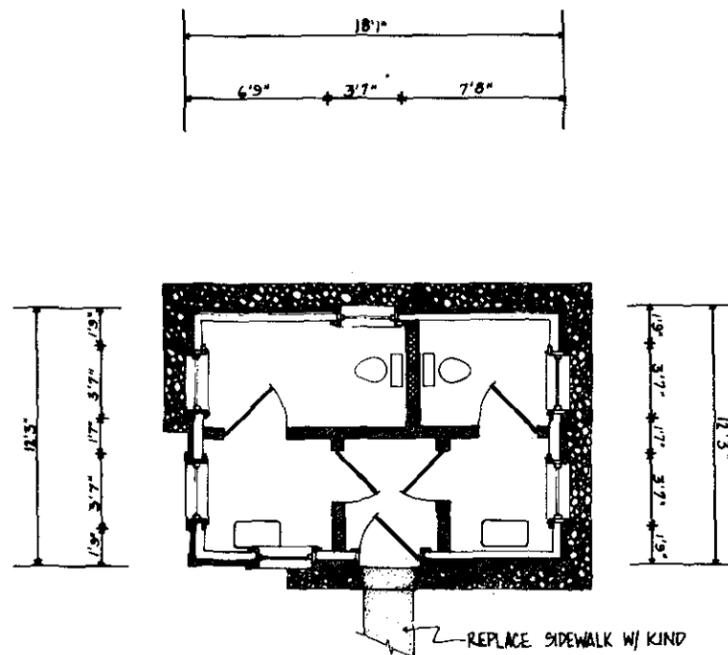
SOUTH ELEVATION

BOAT HOUSE #1 PLAN & ELEVATIONS: GLEN HAVEN COAST GUARD STATION

1 0 5 10
SCALE IN FEET (DRAWN AT 1/4"=1'-0")

PREPARED	DRAWING NO.
DESIGNED	634
DRAWN	28007
CHECKED	PRG NO.
9-77	124
DATE	SHEET
	15
	OF 17

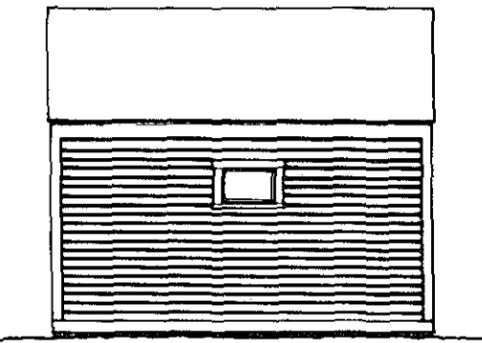
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PLAN
 ■ New Partitions

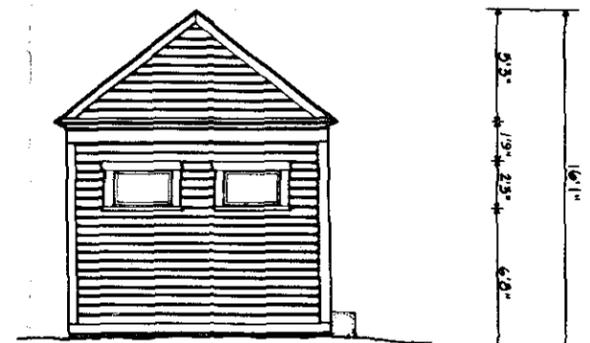


WEST ELEVATION

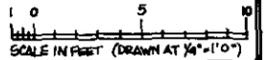


Work Required on all Facades:
 - STAIN SHINGLES
 - REMOVE LATEX PAINT
 - REPAINT WITH OIL BASE PAINT
 - REGLAZE BOARDED UP WINDOWS

EAST ELEVATION



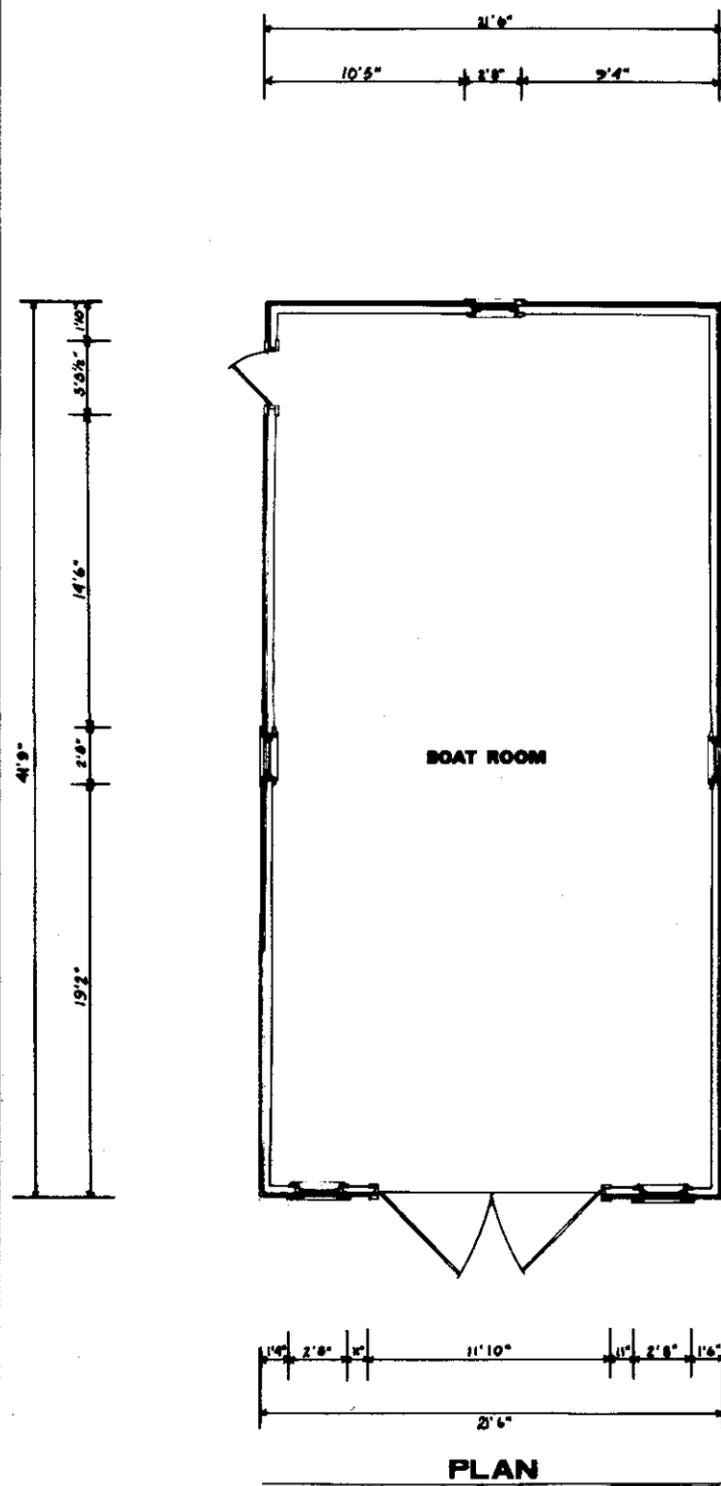
NORTH ELEVATION
SOUTH ELEVATION similar



PREPARED	DRAWING NO.
DESIGNED ULMA	634 28007
DRAWN HENRIKSON	PKG. NO. 124
CHECKED 9-77	SHEET 16
DATE	OF 17

FIRE CACHE PLAN & ELEVATIONS : GLEN HAVEN COAST GUARD STATION

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PLAN

SOUTH ELEVATION

WEST ELEVATION

BOAT HOUSE #2 PLAN & ELEVATIONS: GLEN HAVEN COAST GUARD STATION

PREPARED	DRAWING NO.
DESIGNED	634
WYMA	28007
DRAWN	
HENDERSON	PKG NO.
CHECKED	124
9-77	SHEET
DATE	17
	OF 17

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