

CHAPTER 4: HISTORIC STRUCTURE REPORT

MICHIGAN ISLAND INTRODUCTION

The following sections commence the HSR for Michigan Island. The disciplines of Architecture, Structural, Mechanical (HVAC and plumbing), Electrical and Environmental Engineering are addressed individually (refer to Volume I, Chapters 1 and 2 for more details on report organization and methodology). Michigan Island's extant buildings include:

- Old Michigan Island Lighthouse
- Keepers Quarters
- Second Tower
- Assistant Keepers Quarters and Workshop
- Power House
- Shed
- Privy

The original construction of each building is discussed, followed by its specific history/chronology of alterations (determined by studying historic photos, historic drawings, examining park records and archives and on-site investigations and observations by the Study Team).

The Physical Description section describes the current conditions, by discipline and by component, as observed on-site during the September 2009 site visit. Each component has been given a condition rating (as outlined in Volume I, Chapter 2: Methodology) in the Condition Assessment section. Treatment Recommendations are based on the preferred alternative of the May 2010 Value Analysis/CBA conducted at the park.

Historic Photographs



Historic Image MI-01: Old Lighthouse, 1904 (Source: NPS APIS Archives)

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No Dormers

Existing Shed

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Historic Image MI-02: Old Lighthouse and Shed, c.1910 (Source: NPS APIS Archives)

4



No Dormers

Original Brick Oil House

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Historic Image MI-03: Old Lighthouse and Oil House, 1913 (Source: NPS APIS Archives)

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Nonextant Boat
House

Nonextant Dock

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Historic Image MI-04: Boathouse and dock with Lighthouse in background, 1913 (Source: NPS APIS Archives)



Dormers Visible

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Historic Image MI-05: Old Michigan Island Lighthouse, 1929 (Source: NPS APIS Archives)

1



Stone Fire Pit/
Planter

Historic Image MI-06: Second Tower Base with stone fire pit/planter, c.1930 (Source: NPS APIS Archives)



Wood Stairs to Site

Historic Image MI-07: Wood stairs, unknown date (Source: NPS APIS Archives)



Screened-In Porch

Historic Image MI-08: Keepers Quarters screened-in front porch, c.1939 (Source: NPS APIS Archives)



Fresnel Lens, Replaced in
1972 by Modern Optic

Historic Image MI-09: Second Tower Lantern and Lens, 1972 (Source: NPS APIS Archives)



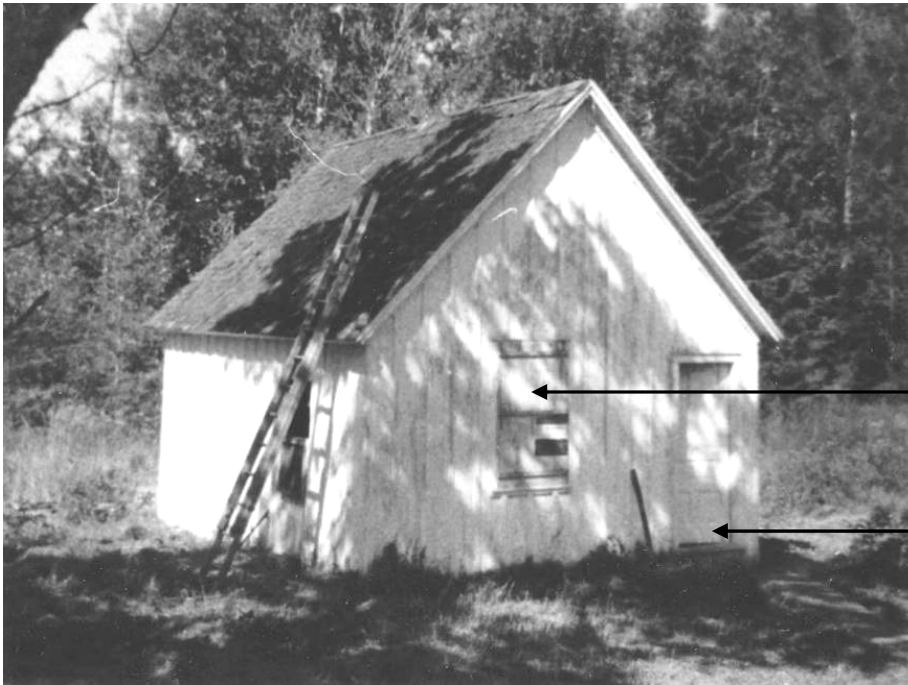
Keepers Quarters Windows
Covered



Historic Image MI-11: Keepers Quarters Living Room, 1975 (Source: NPS APIS Archives)



Historic Image MI-12: Keepers Quarters Dining Room, 1975 (Source: NPS APIS Archives)



Shed Window Covered

Note Grade to
Door Relationship

Historic Image MI-13: Shed, south elevation, 1975 (Source: NPS APIS Archives)



Historic Image MI-14: Tram Cart, 1975, possibly from Outer Island and not original to Michigan Island (Source: NPS APIS Archives)



Historic Image MI-15: Old Michigan Island Lighthouse without shutters, 1975 (Source: NPS APIS Archives)



Shutters Reinstalled

Historic Image MI-16: Old Michigan Island Lighthouse with shutters, 1976 (Source: NPS APIS Archives)



Window Uncovered

Door Missing

Historic Image MI-17: Aerial of the Shed, 1978 (Source: NPS APIS Archives)



Nonextant Platform and Stair
to Beach from Tramway

Historic Image MI-18: Tramway to Power House from beach, 1978 (Source: NPS APIS Archives)



Nonextant Platform and Stair
to Beach from Tramway

Historic Image MI-19: Tramway to Power House from beach, 1978 (Source: NPS APIS Archives)

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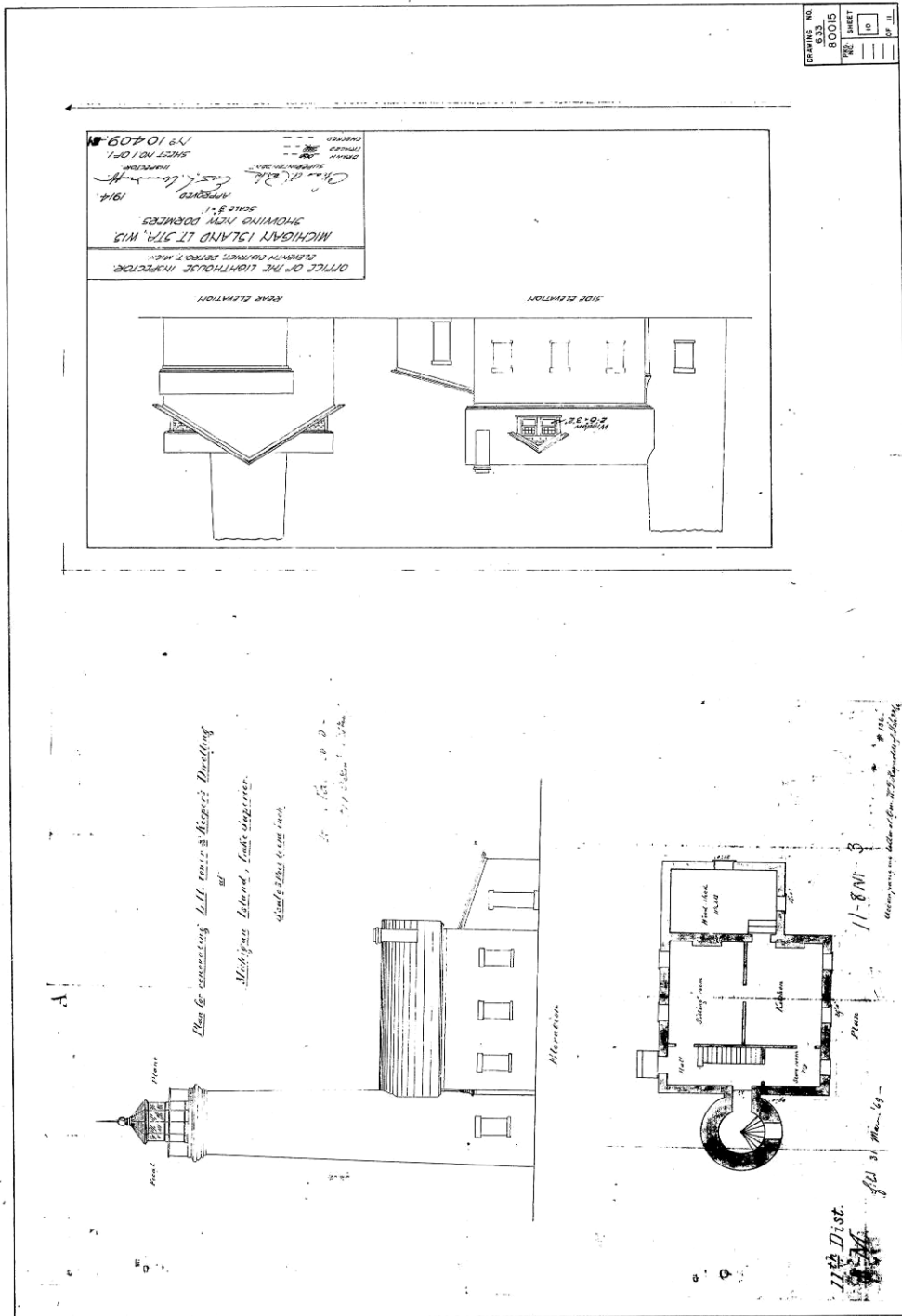
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Historic Image MI-20: Second Tower Light Base, 1980 (Source: NPS APIS Archives)

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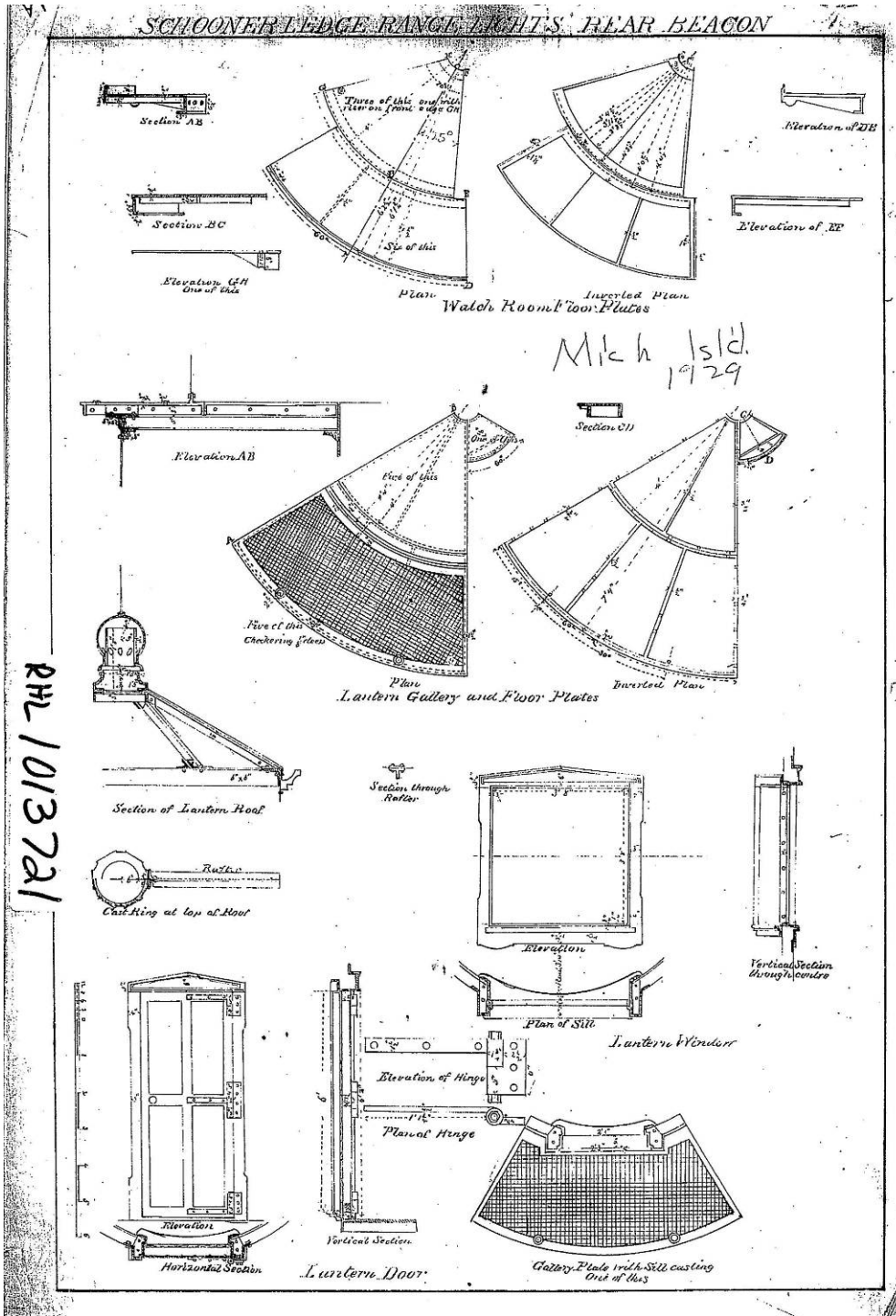
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HISTORIC DRAWINGS



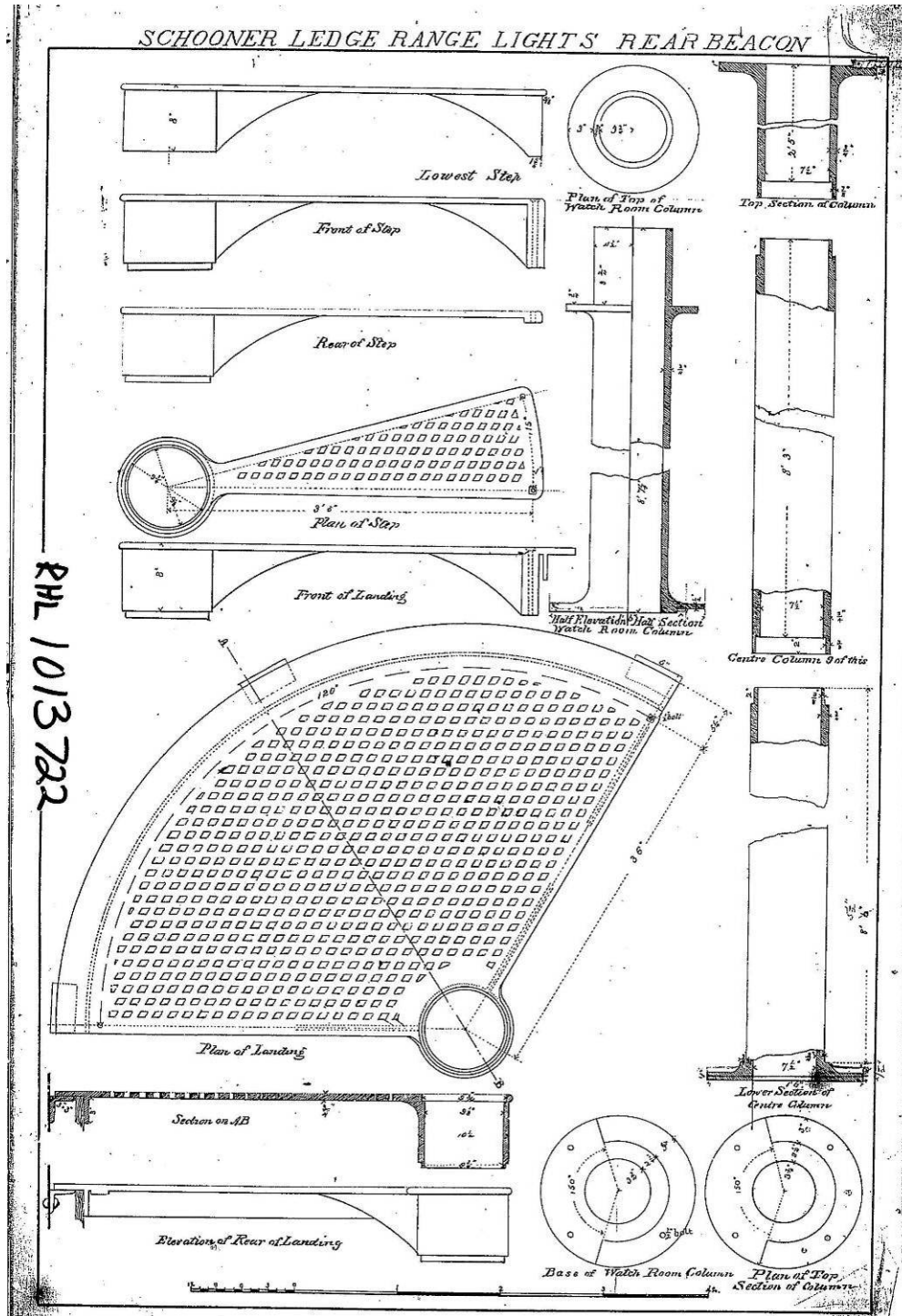
Historic Drawing MI-01: 1869 Plan of Old Michigan Lighthouse with 1914 dormers drawn in

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Historic Drawing MI-02: Pre-1919 Drawing of Details of Schooner Ridge Light, moved in 1919 to Michigan Island and erected as Second Tower in 1929



Historic Drawing MI-03: Pre-1919 Drawing of Details of Schooner Ridge Light, moved in 1919 to Michigan Island and erected as Second Tower in 1929

SPECIFICATIONS:

FOR A CYLINDRICAL HELICAL BAR LANTERN FOR MICHIGAN ISLAND LIGHT STATION, WISC.
MATERIALS AND WORKMANSHIP.

The materials used in the construction of this work are to be first class in every particular. Bolt heads and nuts will be hexagonal unless otherwise specified, screw threads must be full, sharp, and clean, and the bolts are to be of sufficient length to give full bearing to the nuts. All castings must be free from imperfections affecting the strength or appearance of the finished work; they must be true to pattern, out of wind, and have smooth, clean surfaces, and well-rounded fillets. The machining and fitting must be neatly and accurately done, and the entire job must present a neat and well-finished appearance. The contractor must furnish the lantern complete in every detail and will be held responsible for the correct fitting of all the parts, and should any errors or omissions be discovered in the drawings as the work progresses, the contractor shall immediately notify the Commissioner of Lighthouses before proceeding with that part of the work.

CAST IRON.

The cast iron must be light gray, close-grained, and of such quality that test bars 1 inch square, cast in sand from the same heat as the regular castings, supported on knife-edges 12 inches apart, will not break under a concentrated load of less than 2,250 pounds, applied at the center.

STEEL.

The steel shall be of a quality and grade best suited to the purpose for which it is to be used, and shall conform to the latest revised specifications of the Association of American Steel Manufacturers for that grade of steel.

BRONZE.

The bronze shall be composed of 88 per cent copper, 10 per cent tin, and 2 per cent zinc. No scrap is to be used in making this bronze. The minimum physical properties required of a specimen 2 inches long between measuring points and one-half inch in diameter shall be as follows: Ultimate tensile strength, 30,000 pounds per square inch; elastic limit, 15,000 pounds per square inch; elongation, 15 per cent.

BRASS.

Where brass is called for it shall be a good quality of commercial brass suited to the purpose for which it is used.

SHEET IRON.

All sheet iron entering into this construction must be pure iron, guaranteed by the manufacturers to contain not less than 99.90 per cent pure iron.

TESTS.

All material for the metal work shall be tested in the presence of a representative of the Bureau of Lighthouses, and all expense of such tests borne by the contractor, or in lieu thereof the contractor shall furnish the lighthouse inspector a certified statement from the manufacturer or some reputable engineering laboratory, showing that the materials furnished conform to the foregoing specifications.

CURTAINS.

The curtains are to be of the best quality Irish linen of the width shown on the drawings. They must be neatly and strongly hemmed around all their edges, securely fastened to the rollers, and provided at their lower edges with a nickel-plated brass curtain rod, one-eighth by one-half inch, to which must be securely fastened two nickel-plated brass pulling rings each. The curtains must be so arranged that when in place the upper ones will overlap the lower, as shown on the

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drawings. The spring rollers mentioned above must be strong enough to take up easily the whole length of the curtain, which must roll evenly, neatly, and closely upon the rollers, and must not be over the diameter shown on the drawing when the length is taken up. The rollers must be of good quality sheet tin, free from all defects, and thoroughly japanned inside and out before attachments are secured. They are to be provided at one end with a simple journal and at the other with the best quality of spring-ratchet attachment, both of which are to be securely fastened concentric to the rollers. The rollers must also be perfectly straight and round and provided with a groove or slot along their length in which the curtains are to be secured.

LANTERN GLASS.

The panes must be of the best quality of selected clear plate glass; their surfaces must be perfectly smooth and highly polished, free from distorted reflections, flaws, or cloudiness. The panes must be neatly and correctly cut to the dimensions shown on the drawings and bent as shown, and the edges must be straight and smooth. They must be thoroughly annealed after bending, and allowances must be made and the proper precautions taken before annealing in order that the panes be of the proper shape, form, and curvature after the final cooling. The panes must be interchangeable, and must fit the sash without forcing and must completely fill the opening in the sash. The contractor for the lantern will be held responsible for the quality and correct fitting of the panes. Should any chipping of the panes be required to make them fit the sash, the chipped edges must be rubbed or ground until they are smooth and even. Should any of the panes show that they are not up to the requirements of the specifications, they will be rejected, and the faulty panes must be promptly replaced by others acceptable in every respect to the Government.

ERECTION AT THE SHOP.

The entire lantern shall be erected at the shop, including glass, curtains, railings, sheet-metal lining, etc. Sufficient bolts or other fastenings will be used in the erection to properly hold the various parts in their respective positions, and the parts must not be taken down until inspected by a representative of the Lighthouse Service. Each part of the metal work must be plainly marked with a steel die, in accordance with the erecting diagram. Where the work is painted, these numbers are to be duplicated in large figures painted on with white lead.

OILING AND PAINTING.

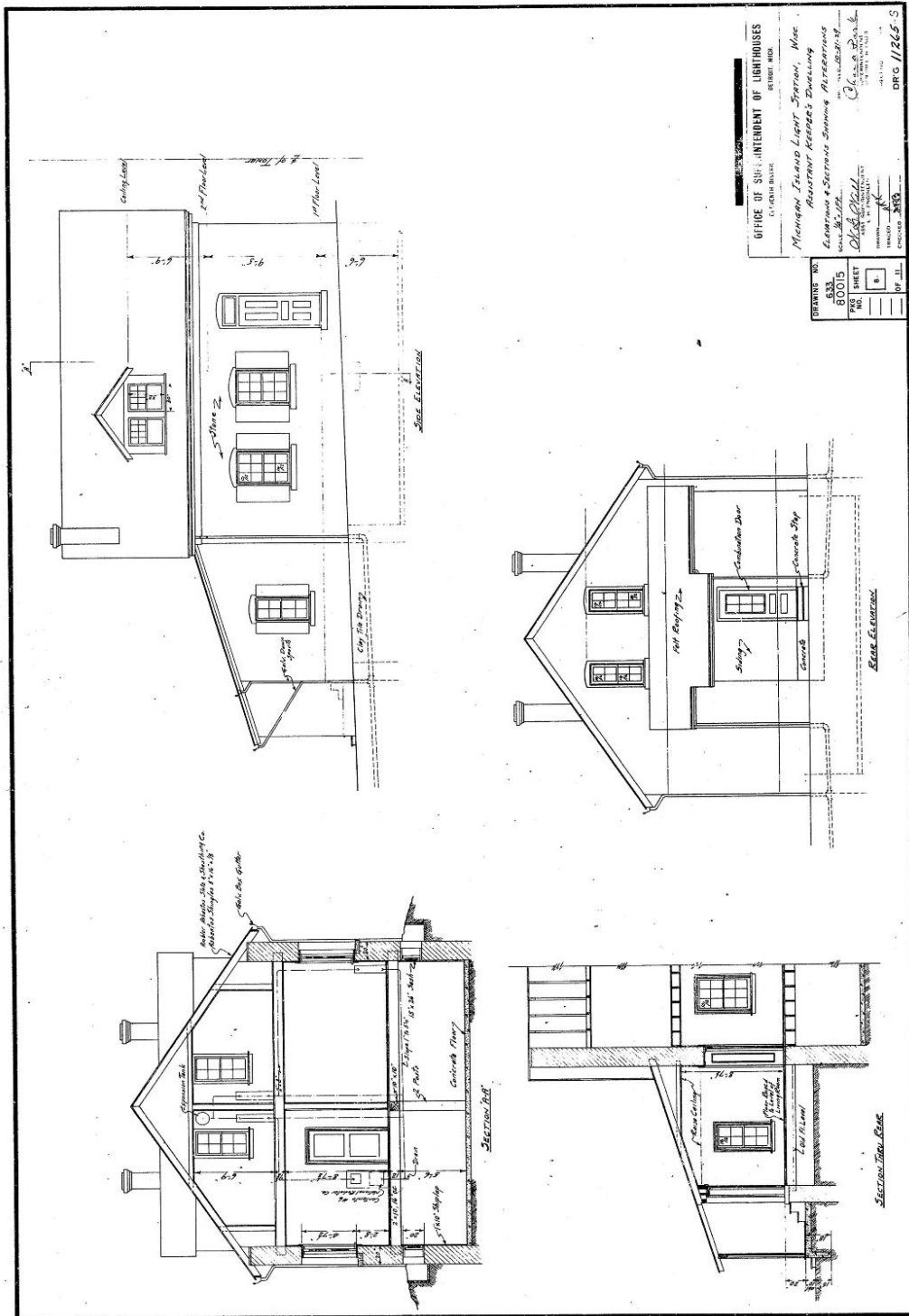
Only the iron and steel shall be painted at the shop. After the castings have been thoroughly cleaned of sand, rust, etc., and when the surfaces are perfectly dry, they are to receive one coat of linseed oil, applied hot. When this coat has thoroughly dried, it shall be followed by one coat of best quality red lead, ground in linseed oil. All other iron and steel shall receive one coat of best quality red lead, ground in linseed oil. All planned, turned, and finished iron and steel surfaces shall be given a coat of white lead and tallow.

MISCELLANEOUS.

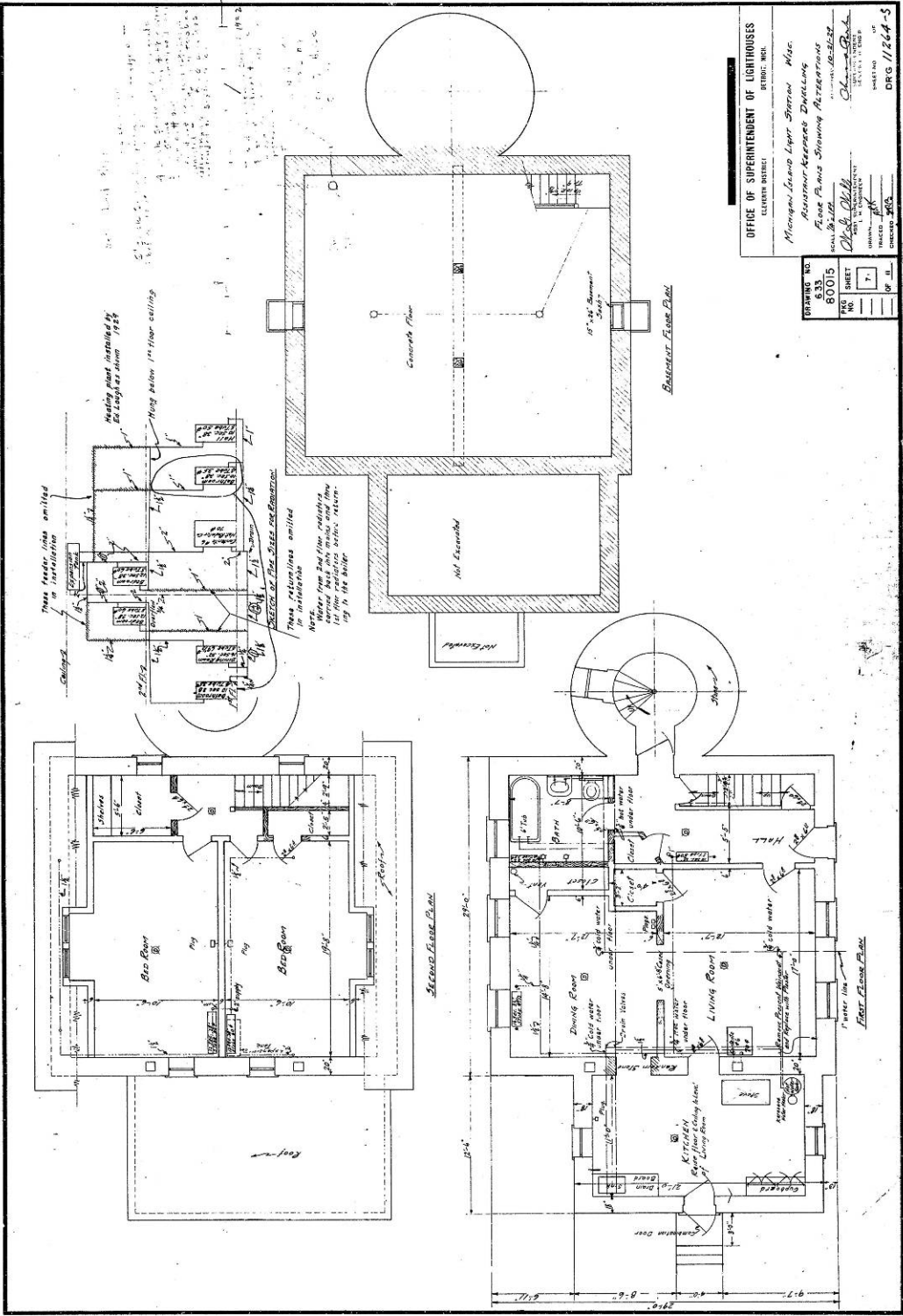
All portions of the metal work must be thoroughly inspected before painting, and the contractor must afford the Government inspector every assistance necessary to perform this inspection. All bolts, screws, etc., necessary for the complete erection of the lantern must be furnished, including an extra 5 per cent of the lining screws. The weights of all pieces and box numbers are to be entered on this sheet which is to be returned to the inspector. All pieces liable to damage in transportation must be securely crated or boxed, including bolts, screws, and other small parts.



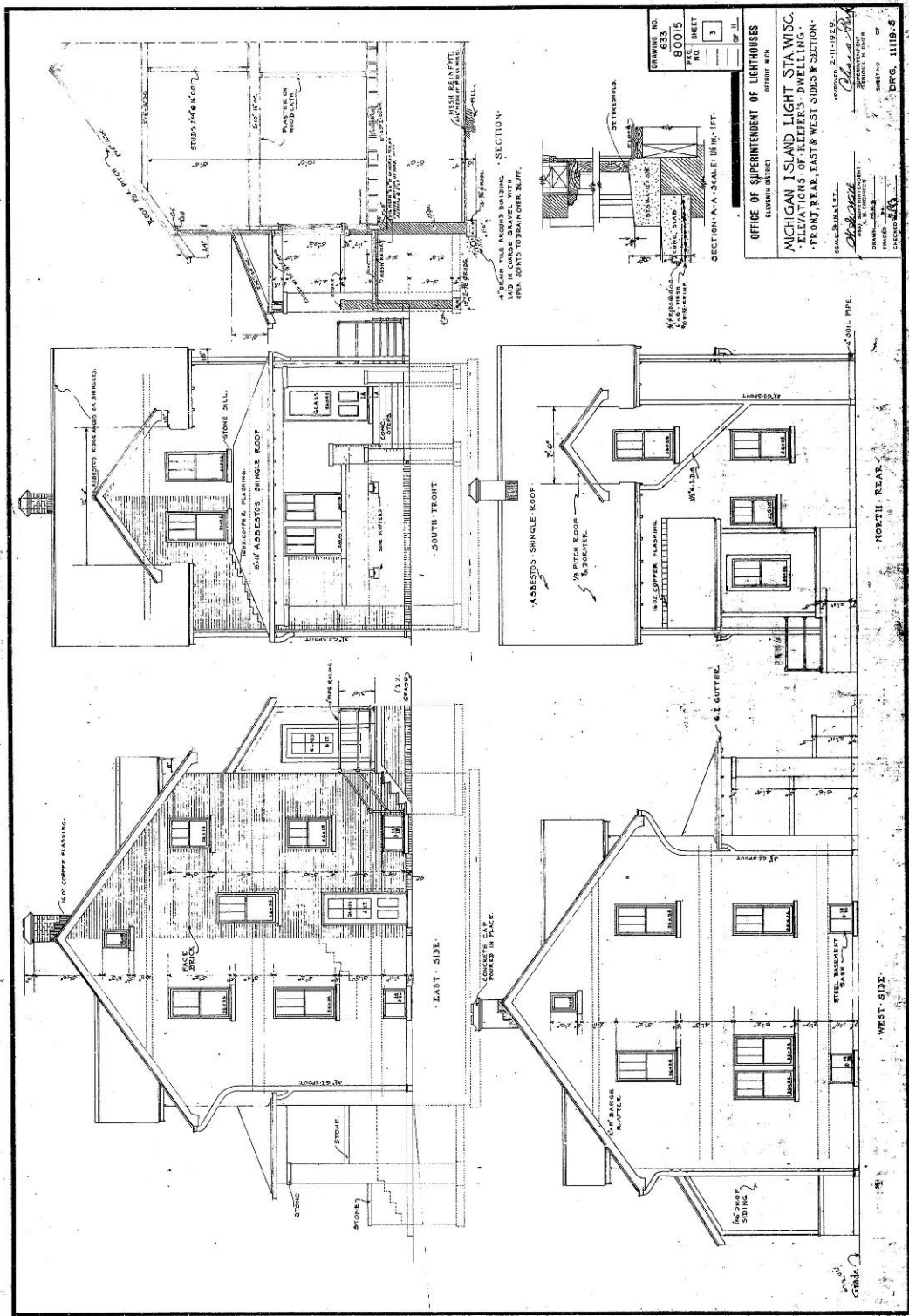




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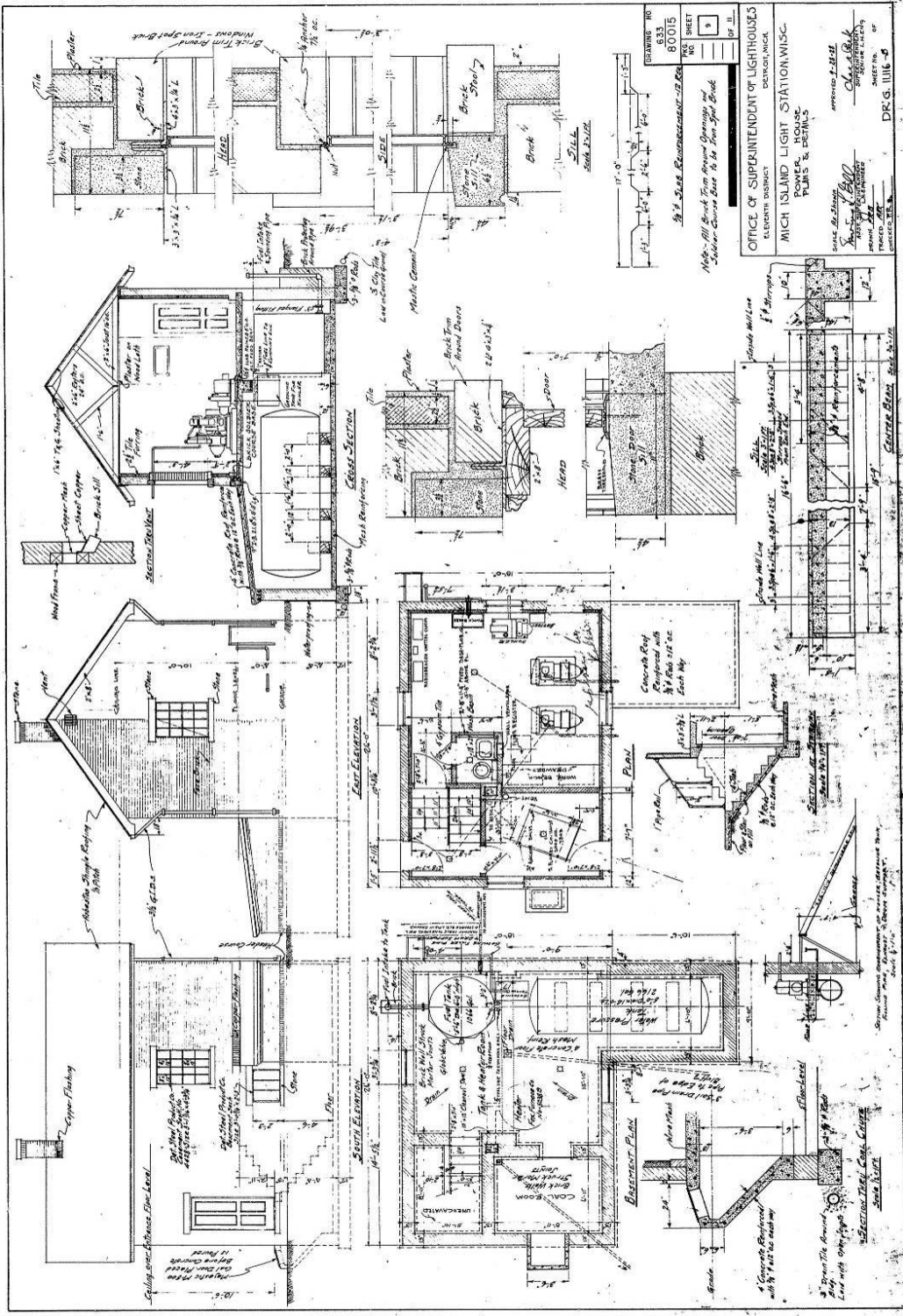
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Historic Drawing MI-09: 1929 elevations of Keepers Quarters







Historic Drawing MI-12: 1929 elevations, details, and plans of Power House

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