

Lighthouse Restoration Phase 2 Machias Seal Island R.080316.001	Metal Fabrications	SECTION 05 50 00  PAGE 1 July 2017
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## **PART 1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Division 1 - General Requirements
- .2 Section 09 03 61 - Historic Repainting

### **1.02 REFERENCES**

- .1 ASTM International
  - .1 ASTM A 53/A 53M-07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
  - .2 ASTM A 269-08, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
  - .3 ASTM A 307-07b, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .2 CSA International
  - .1 CSA G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2 CAN/CSA G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3 CSA S16-09, Design of Steel Structures.
  - .4 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding(Developed in co-operation with the Canadian Welding Bureau).
  - .5 CSA W59-M03(R2008), Welded Steel Construction (Metal Arc Welding) [Metric].
- .3 Environmental Choice Program
  - .1 CCD-047-98(R2005), Architectural Surface Coatings.
  - .2 CCD-048-98(R2006), Surface Coatings - Recycled Water-borne.
- .4 Green Seal Environmental Standards (GS)
  - .1 GS-11-2008, 2nd Edition, Paints and Coatings.
- .5 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .6 The Master Painters Institute (MPI)
  - .1 Architectural Painting Specification Manual - current edition.

### **1.03 ACTION AND INFORMATION SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for sections, pipe, bolts and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies of WHMIS MSDS
    - .1 For finishes, coatings, primers, and paints applied on site:
      - indicate VOC concentration in g/L.
- .3 Shop Drawings:
  - .1 Submit shop drawings of new lantern railing and custom glazing stops for lantern stamped and signed by professional engineer registered or licensed in Province New Brunswick, Canada.
  - .2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

### **1.04 QUALITY ASSURANCE**

- .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certifications: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

### **1.05 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

.1 Store materials indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Replace defective or damaged materials with new.

.4 Packaging Waste Management: remove for reuse as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

.1 Steel sections and plates: to CSA G40.20/G40.21, Grade 300W 350W.

.2 Steel pipe: to ASTM A 53/A 53M standard weight galvanized finish.

.3 Welding materials: to CSA W59.

.4 Welding electrodes: to CSA W48 Series.

.5 Bolts and anchor bolts: to ASTM A307.

.6 Bronze 0.5mm thick.

**2.02 FABRICATION**

.1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.

.2 Use self-tapping shake-proof flat headed screws on items requiring assembly by screws or as indicated.

.3 Where possible, fit and shop assemble work, ready for erection.

.4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

## **2.03 FINISHES**

.1 Lantern railing Galvanizing: hot dipped galvanizing with zinc coating 600 g/m<sup>2</sup> to CAN/CSA-G164.

.2 Ladders and Lantern Components - Zinc primer: zinc rich, ready mix to MPI-EXT 5.2C in accordance with chemical component limits and restrictions requirements and VOC limits of CCD-047a.

.3 Refer to section 09 03 61 Historic Repainting for paint system specifications.

## **2.04 ISOLATION COATING**

.1 Isolate aluminum from following components, by means of bituminous paint:

- .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
- .2 Concrete, mortar and masonry.
- .3 Wood.

## **2.05 SHOP PAINTING**

.1 Primer: VOC limit 250 g/L maximum to GS-11.

.2 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.

.3 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 degrees C.

.4 Clean surfaces to be field welded; do not paint.

## **2.06 NEW PIPE RAILINGS**

.1 Steel pipe: 55mm posts and bottom rail. 46mm top rail. Nominal outside diameter, formed to shapes and sizes as indicated.

.2 Connections: Custom cast. Type 1 & Type 2 as shown on drawing. Mechanically secured with threaded ends and bolts.

.3 Galvanize exterior pipe railings after fabrication.

## **2.07 RESTORATION OF EXISTING ACCESS LADDERS**

.1 Stringers: as shown on drawing. Replacement to extent shown on schedule.

.2 Steel Rungs: Existing to be restored.

.3 Brackets: sizes and shapes as indicated, on structural drawings.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for metal fabrications installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Departmental Representative.

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied by Departmental Representative.

### **3.02 ERECTION**

.1 Do welding work in accordance with CSA W59 unless specified otherwise.

.2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

.3 Provide suitable means of anchorage acceptable to Departmental Representative such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.

.4 Exposed fastening devices to match finish and be compatible with material through which they pass.

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<b>Lighthouse Restoration Phase 2 Machias Seal Island R.080316.001</b>	<b>Metal Fabrications</b>	<b>SECTION 05 50 00  PAGE 6 July 2017</b>
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.5 Supply components for work by other trades in accordance with shop drawings and schedule.

.6 Make field connections with bolts to CSA S16 or Weld field connection.

.7 Deliver items over for casting into concrete and building into masonry together with setting templates to appropriate location and construction personnel.

.8 Touch-up rivets, field welds, bolts and burnt or scratched surfaces with primer after completion of:

.1 Primer: maximum VOC limit 250 g/L to GS-11.

.9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

.1 Primer: maximum VOC limit 250 g/L to GS-11.

### **3.03 PIPE RAILINGS**

.1 Install pipe railings to lantern balcony as per details on structural drawings.

### **3.04 LANTERN VENT**

.1 Remove existing lantern vent assembly for cleaning and recoating.

.2 Reuse existing fastener holes in metal roof.

.3 Install new separation gasket between dissimilar metals.

.4 Prime and paint.

### **3.05 RESTORATION OF EXISTING ACCESS LADDERS**

.1 Remove all existing coatings and examine condition of metal surfaces to confirm the final extent of repair required.

.2 Temporarily support or remove ladders to allow for the replacement of the connections to the concrete structure.

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<b>Lighthouse</b>	<b>Metal Fabrications</b>	<b>SECTION 05 50 00</b>
<b>Restoration Phase 2</b>		
<b>Machias Seal Island</b>		<b>PAGE 7</b>
<b>R.080316.001</b>		<b>July 2017</b>

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### **3.06 RESTORATION OF LANTERN ELEMENTS**

.1 Remove all existing coatings and examine condition of metal surfaces to confirm the final extent of repair required.

.2 Prime and paint.

### **3.07 CLEANING**

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

### **3.09 PROTECTION**

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by metal fabrications installation.

**END OF SECTION**