Watford Bridge

Handrail Painting

Bermuda

Annex C
Specifications

Date: January 11, 2016

Project No. 44-11-75

Part 1 GENERAL

1.1 Work Covered By Contract Documents

.1 Project Identification:

This project consists of the painting of the handrails on the bridge and the approaches to the bridge.

.2 Project Location:

Watford Bridge, Bermuda**.**

.3 Project Owner:

Ministry of Public Works,
56 Church Street,
Hamilton, Bermuda, HM12**.**

.4 Project Engineer:

Ministry of Public Works,
Department of Works and Engineering
3rd Floor, 56 Church Street,
Hamilton, Bermuda, HM12**.**

1.2 Form of Contract

.1 Project will be constructed under the FIDIC Short Form of Contract First Edition 1999.

1.3 Work Sequence

.1 Contractor shall schedule the works coordinating all tasks and elements.

1.4 Contractor Use of Site

.1 Ascertain boundaries of Site within which work must be confined.

.2 Use of Site is to be coordinated through the Ministry of Public Works.

1.5 Drawings and Specifications Furnished

.1 Owner Responsibilities:

.1 One electronic copy of drawings and specifications to Contractor.

.2 Contractor Responsibilities:

.1 Pay for additional copies of drawings and specifications if required.

.2 Maintain at Site one complete set of up to date drawings and specifications. Make available to Engineer at any time.

1.6 Supplementary Drawings

.1 Engineer may furnish supplementary drawings to assist proper execution of work. Such drawings will be issued for clarification only and will have same meaning and intent as if included with plans referred to in Contract Documents.

END OF SECTION

Part 1 GENERAL

1.1 Utilities and Services

.1 Existing Cables are known to exist within the site.

.2 The Contractor is responsible for locating and protecting these and any possible other services within the works area.

1.2 Setting Out Stations

.1 The Ministry of Public Works will establish sufficient survey stations for the Contractor to undertake the works.

1.3 Setting out and Dimensions

.1 The Contractor shall be solely responsible for the accurate setting out of the works and shall employ a qualified surveyor whenever necessary. Any damages which may be incurred as a result of the incorrect setting out of the works shall be the responsibility of the Contractor.

.2 The Contractor shall be responsible for the maintenance of all bench marks on the site.

.3 The Contractor shall provide accurate locations for all rock anchors installed.

1.4 Use Of Site

.1 Limit use of site to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated. Confine construction and operations to within the boundary shown on drawings.

.2 Keep driveways and entrances serving all adjacent premises and public property clear and available to the public, owners, owners employees, guests, and both service and emergency vehicles at all times. These areas shall not be used for parking or storage of materials.

1.5 Working Hours

.1 Normal working hours shall be Monday to Saturday 8.00am through to 6.00pm and Sunday working shall be permitted within the hours of 9.00am and 6.00pm.

END OF SECTION

Part 1 GENERAL

1.1 Required Submittals

.1 The Contractor shall submit the following documents to the Engineers Representative:

.1 Schedule of Work

.2 Construction Method Statements

.3 Construction Safety and Health Risk Assessments

.4 Contractor Level 1 and level 3 IRATA certifications

.5 Environmental Method Statements

.6 Samples

.7 Certificates

1.2 Administration

.1 Provide to the Engineer for review the submittals specified. Submit with reasonable promptness and in an orderly sequence so as to not cause delay in the Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with Work affected by the submittal until review is complete.

.3 Review submittals prior to submission to the Engineer. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with the requirements of the Work and Contract Documents. Submittals not stamped, signed, dated and identified as to the specific project will be returned without being examined and will be considered rejected.

.4 Verify that field measurements and affected adjacent Work are coordinated.

.5 Contractor's responsibility for errors and omission in submission is not relieved by Engineer review of submittals.

.6 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Engineer review.

.7 Keep one review copy of each submission on Site.

1.3 Schedule of Work

.1 Prepare schedule in the form of a linked bar chart. All events, activities and constraints shall be numbered and shall be given a title. Details to be given for each event, activity

or constraint should include:

.1 its title

.2 its scheduled start and finish dates

.3 its duration

.4 any relevant "must" start or finish dates

.2 Provide a separate bar for each event, activity, operation or constraint, show proposed progress of all activities. Where applicable, indicate labour, construction crews, plant and equipment to be employed.

.3 The key milestones in the construction process shall also be identified. Schedule milestones will include but not be limited to the following:

.1 Start of construction

.2 Placement of orders for critical equipment items

.3 Delivery dates (to site) for critical equipment items

.4 Final handover (final completion)

.4 Revise and resubmit schedule every two weeks to reflect actual progress of the Works.

.5 With schedule updates, provide written explanations to Engineer as to why previously reviewed schedule is not being met (if applicable).

.6 Show changes in operations proposed (if required), to complete construction works within Contract Time.

.7 No progress payments will be approved until receipt of schedule updates acceptable to the Engineer.

1.4 Method Statements

.1 Provide Method Statement for each key activity and additionally as requested by Engineer, to show construction methods, equipment and general methodology for carrying out the Work. Relate Method Statement to activities shown on Construction Schedule.

.2 Method Statements shall identify, among other things:

.1 Sequencing of works

.2 Methods to ensure appropriate environmental protection

.3 Other key tasks as specified in the Contract Documents, and/or as requested by

the Engineer.

1.5 Certificates

.1 Submit certificates of insurances within 10 days after award of Contract and before any work begins at the Site.

END OF SECTION

Part 1 GENERAL

1.1 Environmental Measures

.1 Meet or exceed the requirements of all Bermuda environmental legislation and regulations, including all amendments up to project date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

Part 2 EXECUTION

2.1 Fires

.1 Fires and burning of rubbish on site will not be permitted.

2.2 Disposal of Rubbish and Waste Materials

.1 Collect all rubbish and waste material and dispose of in accordance with the latest editions of the Ministry of Public Works Waste Management Plan.

2.3 Environmental Protection

.1 When, in the opinion of Engineer, negligence of Contractor results in damage or destruction of local flora and or fauna, or other environmental or aesthetic features beyond work areas as shown on contract drawings, the Contractor shall be responsible, at his expense, for complete restoration including replacement to satisfaction of Engineer.

2.4 Pollution Control

.1 Control emissions from equipment and plant to Bermuda authorities' emission requirements.

.2 Prevent extraneous materials from contaminating air, land or water, by vacuum, temporary enclosures, screens, traps or other devices.

.3 Spills of deleterious substances should be immediately contained and cleaned up in accordance with provincial regulatory accordance with provincial regulatory requirements. Spills should be reported forthwith to the Engineer.

2.5 Storage And Handling Of Fuels And Dangerous Fluids

.1 Locate fuel storage facility a minimum of 100 m from any water body in an area approved by the Engineer and construct impermeable dykes so that any spillage is contained.

.2 Prevent spillage of gasoline, diesel fuel and other oil products into the water and on land. Clean up spills promptly at own cost in accordance with Bermuda regulatory requirements. Report any fuel spills immediately to Engineer.

.3 Proper use of primers, grouts, bonding adhesives and other hazardous substances will be undertaken to prevent their entry into the water. Substances are to be stored and

mixed on protected surfaces away from site to prevent their entry into waterways and contamination of soils.

.4 Collect and dispose of used oil filter cartridges and other products of equipment maintenance at industrial waste facility to satisfaction of Engineer.

END OF SECTION

1 GENERAL

1.1 Description

.1 This section describes the work related to removal of paint, cleaning and painting of the handrails on the bridge an on the approaches to the bridge.

1.2 Related Work

.1 Section 01561, Environmental Protection.

1.3 Reference Standards

.1 Ministry of Works and Engineering and Housing "Specification and Standard for the Painting of Metal Surfaces"

1.4 Samples

.1 No paints shall be used on project without approval from the Engineer. Submit test certification and test results to Engineer at least 1 week prior to commencement of painting confirming that paint meets all specification requirements including requirements of the manufacturer. Ensure test results can be correlated with actual paint shipped to site.

.2 Enable Engineer to take two ½ gallon samples of each paint delivered to site, one sample from manufacturer's containers and one sample from painters' pot, if required.

1.5 Environmental Protection

.1 Comply with the requirements of the environmental section 01561 when performing the removal of paint, rust and other extraneous material. Temporary enclosures for collection, capture and disposal of all paint, debris and other extraneous material must be used to satisfy Bermuda laws and regulations.

.2 Grit blasting and needle scalers to be used to remove paint, lead paint, rust and other materials from structural steel in combination with Trelawny backpack pneumatic vacuums or approved equal equipment capable of ensuring that the production of airborne particles is negligible.

2 PRODUCTS

2.1 Materials

.1 Paint system:

.1 All paints shall be in accordance with Specification and Standard for the Painting of Metal Surfaces.

3 EXECUTION

3.1 Preparation

.1 Surfaces shall be thoroughly cleaned with HP potable water wash to remove all traces of chloride and pollutant contamination.

.2 All surfaces shall be power tool cleaned to remove all loose and poorly adherent coatings to a sound firm substrate and feathered.

.3 Exposed aluminium shall have all traces of oxide corrosion removed.

.4 All coatings shall be brush applied unless otherwise authorised by the Owner's Representative.

.5 Spray application shall not be permitted.

.6 The Contractor shall ensure compatibility of fresh coats applied to existing coatings.

.7 Exposed aluminium shall be coated with the following coating system:

.1 Chromate free etch primer at a dry film thickness of 25µm.

.2 One coat surface tolerant epoxy to a dry film thickness of 100 µm.

.8 All surfaces shall be coated with the following coating system:

.1 One coat surface tolerant epoxy to a dry film thickness of 50µm.

.2 One coat two pack polyurethane coating to a dry film thickness of 40µm.

3.2 Mixing Paint

.1 Mix paint in accordance with Specification and Standard for the Painting of Metal Surfaces.

.2 Provide a copy of paint manufacturer's instructions to Engineer.

3.3 Application

.1 Apply paint in accordance with Specification and Standard for the Painting of Metal Surfaces.

3.4 Inspection

.1 Inspection procedures shall be in accordance with Specification and Standard for the Painting of Metal Surfaces.

3.5 Inspection By Paint Manufacturer

.1 Arrange to have a representative of the coating manufacturer on site to approve the method of preparation of surfaces and application of coatings, and provide written certification of same to the Engineer.

END OF SECTION