



Swing Bridge Repairs to the Approach Spans

Bermuda

Annex C Specifications

Date: December 15, 2016

Project No. 44-02-77



Part 1 GENERAL

1.1 Standard Specification

- .1 The standard specifications shall be “The Ministry of Works and Engineering, Standard Specification 1993”, modified to include these specific specifications.
- .2 All codes, standards and reference documents in the “The Ministry of Works and Engineering, Standard Specification 1993” are to be modified to be the most current editions.
- .3 The Ministry of Works and Engineering, Standard Specification 1993, is available from the Ministry of Works and Engineering.

1.2 Work Covered By Contract Documents

- .4 Project Identification:

This project consists of the repairs to the seven Approach Spans to Swing Bridge.
- .5 Project Locations:

This project is located at Swing Bridge, St Georges Parish, Bermuda
- .6 Project Owner:

Ministry of Public Works,
56 Church Street,
Hamilton, Bermuda, HM12.
- .7 Project Engineer:

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

1.3 Form of Contract

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

1.4 Work Sequence

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

1.5 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.

1.6 Drawings and Specifications Furnished

- .1 Owner Responsibilities:
 - .1 Provide 2 paper and 1 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.

1.7 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 Progress Claims

- .1 Contractor's Responsibilities:
 - .1 Submit progress claim to Engineer within 5 working days after each month end. Claim to cover preceding month.
 - .2 Progress claim to show estimate of percentage of work completed against each item of Form of Tender.
 - .3 Progress claim to include all labour and materials incorporated in the Work and all materials stored at the Site.
 - .4 Progress claim to include all agreed extras and deductions.
 - .5 Supply documentation to support claim for materials on site in the form of itemized lists or unpriced purchase orders showing quantities.
 - .6 Supply other evidence required by Engineer in support of progress claim.
- .2 Engineer's Responsibilities:
 - .1 Review Contractor's claim; prepare Progress Payment Certificate and issue to Owner within 28 days following receipt of Contractor's claim.
 - .2 Engineer's estimate of percentage of work completed will govern calculation of payment on all Progress Payment Certificates.
 - .3 Inform Contractor of amendments to claim by copy of Progress Payment Certificate.

1.2 Change Orders

- .1 Complete and promptly return all change price requests issued by Engineer, quoting unit and/or lump sum prices as requested. Include appropriate supporting documentation to verify prices.
- .2 Do not proceed with work affected by price request until authorized to do so by Change Order.
- .3 Make no change in Work unless Change Order issued. Change Order is only valid when signed by Engineer, Owner and Contractor.
- .4 Design, construct and maintain scaffolding in rigid, safe and secure manner.
- .5 Remove promptly when no longer required.

Part 2 PRODUCTS

- .1 None

Part 3 EXECUTION



.1 None

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.
- .2 The coordinates and levels of these stations shall be provided to the Contractor at least 1 week prior to commencement of site works.

1.3 Setting out and Dimensions

- .1 Upon taking possession of the site, the Contractor shall verify all levels, angles, grades, rises and dimensions.
- .2 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's
- .3 The Contractor shall be responsible for the maintenance of all bench marks on the site.

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, owner's employees, guests, and both service and emergency vehicles at all times. These areas shall not be used for parking or storage of materials.
- .3 The roadway shall remain passable by one lane of traffic at all times. The Contractor shall provide temporary ramps onto temporary surfaces, advance warning signage and steel decking plates to span temporary excavations in the carriageway.

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 Requirements Included

- .1 Works schedule
- .2 Cash flow forecast
- .3 Work Plans including but not limited to the following:
 - .1 Drawings and calculations showing details of staging required.
 - .2 Drawings showing details of enclosures for confinement of lead waste and protective enclosures for painting.
 - .3 Methods for surface preparation of steelwork
 - .4 Methods for handling and disposal of waste materials
 - .5 Methods for application of paints.
- .4 Traffic Control Plan
- .5 Quality Control Plan
- .6 Health and Safety Plan
- .7 Product data
- .8 Samples

1.2 Administrative

- .1 Provide to 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 co-ordinated 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 Contractor's responsibility for errors and omission in submission is not relieved by Engineer review of submittals.
- .5 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Engineer review.
- .6 Keep one review copy of each submission on Site.

1.3 Works Schedule



- .1 Prepare schedule in the form of a horizontal bar chart in electronic Microsoft Project format. If other equivalent critical-path scheduling software is used, provide the Engineer with a copy of the software.
- .2 Provide a separate bar for each trade or operation. Show proposed progress of all activities for main work items and sub trades of Contract. Where applicable, indicate labour, Works crews, plant and equipment to be employed.
- .3 No progress payments will be approved until a schedule acceptable to the Engineer is received.

1.4 Work Plans

- .1 Provide Work Plan for each key activity, as requested by Engineer, to show methods and general methodology for carrying out the Work. Relate Work Plan to activities shown on Works Schedule.
- .2 Work Plans shall identify, among other things:
 - Sequencing of works
 - Access details
 - Temporary works
 - Temporary staging
 - Events affecting traffic, both road and marine
 - Events requiring work at night if necessary.
 - Tasks involving lifting, hoisting, and/or specified crane set-ups.
 - Methods to ensure appropriate environmental protection including containment and disposal of lead paint debris.
 - Safety procedures for dealing with lead based paints.
 - Safety procedures for working at height, over water, and in confined spaces.
 - Other key tasks as requested by the Engineer.
- .3 Work plans must include, where necessary, drawings and calculations.

1.5 Traffic Control Plan

- .1 Submit a Traffic Control Plan, per Section 01570.

1.6 Quality Control Plan

- .1 Submit a Quality Control Plan, per Section 01400.

1.7 Shop Drawings and Product Data



- .1 The term “shop drawings” means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of any portion of the Work including temporary access platforms.
- .2 Indicate materials, methods of Work and attachment or anchorage, erection, diagrams, connections, explanatory notes and other information necessary for completion of Work.
- .3 Adjustments made on shop drawings by the Engineer are not intended to change the Contract Amount. If adjustments affect the value of Work, state such in writing to the Engineer prior to proceeding with the Work.
- .4 Make such changes in shop drawings as the Engineer may require, consistent with Contract Documents. When resubmitting, notify the Engineer in writing of any revisions other than those requested.
- .5 Submit two (2) copies of product data sheets or brochures for requirements requested in specification Section and as the Engineer may reasonably request.
- .6 Submit two (2) prints of shop drawings for each requirement requested in specification Sections and as the Engineer may reasonably request. Engineer will return one print marked as follows:
 - .1 “REVIEWED” - Make and distribute additional copies as required for own execution of the Work.
 - .2 “REVIEWED AS MODIFIED” - Drawings will be marked “REVIEWED AS MODIFIED” when the Engineer requires revision or correction to the details shown on the drawing, but does not require resubmission of the drawing. This procedure will not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the Contract. Revise the drawing as noted, and make and distribute additional copies as required for own execution of the Work.
 - .3 “REVISE & RESUBMIT” - Make the necessary revisions and resubmit revised drawings for review. Show the drawing number of the first such revised drawing and show the latest revision number applicable to the drawing by adding a suffix to the drawing numbers as – “REV. 1”, “REV .2”, etc.
 - .4 “NOT REVIEWED” - This notation indicates when the Engineer has not reviewed the drawing. It may also be used in combination with the notation to revise and resubmit the drawing where the Engineer lacks sufficient information to complete his review and required to resubmit the drawing for review after revision.
- .7 Use only those shop drawings on the work that bear the “REVIEWED” or “REVIEWED AS MODIFIED” notation.
- .8 Do not revise shop drawings marked “REVIEWED” unless resubmitted to the Engineer for further review.



- .9 Catalogue pages or drawings applicable to an entire family or range of equipment or materials will not be accepted as shop drawings unless they are clearly marked to show the pertinent data for the particular materials.
- .10 Submissions that are illegible or unclear will not be accepted and they will be returned to the Contractor unreviewed.
- .11 Submit all submissions under cover of a transmittal listing the individual items in the submission, and indicating whether or not they are revisions to a previous submission.
- .12 Owner may deduct, from payments due to Contractor, costs of additional Engineering work incurred if correct shop drawings are not submitted after one review by Engineer.
- .13 Review by the Engineer is for the sole purpose of ascertaining conformance with the general design concept. This review does not mean that the Engineer approves the detail design inherent in the shop drawings, responsibility for such remains with the Contractor, and such review does not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job-site, for information that pertains solely to fabrication processes or to techniques of Work and installation and for co-ordination of the work of all sub-trades.

1.8 Samples

- .1 Submit for review samples as requested in respective specification Sections. Label samples as to origin and intended use in the Work.
- .2 Deliver samples prepaid to Engineer's or testing company's business address as directed.
- .3 Notify the Engineer in writing, at the time of submission, of deviations in samples from requirements of Contract Documents.
- .4 Adjustments made on samples by the Engineer are not intended to change the Contract Amount. If adjustments affect the value of Work, state such in writing to the Engineer prior to proceeding with the Work.
- .5 Make changes in samples which the Engineer may require, consistent with Contract Documents.

1.9 Certificates

- .1 Immediately after award of Contract, submit certificates of insurances.

Part 2 PRODUCTS



.1 None

Part 3 EXECUTION

.1 None

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 PRODUCTS

- .1 None

Part 3 EXECUTION

3.1 Fires

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

3.2 Disposal of Wastes

- .1 Do not bury rubbish and waste materials on site.
- .2 Collect all rubbish and waste material and dispose of in accordance with the current requirements of the Solid Waste Management Section of the Ministry of Works and Engineering and Housing.
- .3 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .4 Do not allow any debris or other foreign material to enter the water.

3.3 Work Adjacent to Water

- .1 Do not dump waste materials or debris in water.
- .2 Works performed in and around water will be carried out in accordance with regulations of Bermuda authorities having jurisdiction.
- .3 Remove immediately any solid objects dropped into the water. On conclusion of the Work, dispose of all debris to prevent its entry into the water.
- .4 If necessary provide debris confinement booms to contain debris and particles dropped in the water. Dispose of all debris captured by the booms.
- .5 Re-fuelling of machinery must take place at a safe distance from the water as designated by the Engineer.



3.4 Drainage

- .1 Provide temporary drainage and pumping as necessary to keep site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with Bermuda authority requirements.

3.5 Plant Protection

- .1 When, in opinion of Engineer, negligence of Contractor results in damage or destruction of vegetation, or other environmental or aesthetic features, the Contractor shall be responsible, at his expense, for complete restoration including replacement of trees, shrubs, grass, etc. to satisfaction of Engineer.

3.6 Pollution Control

- .1 Maintain temporary erosion and pollution control features installed under contract.
- .2 Control emissions from equipment and plant to Bermuda authorities' emission requirements.
- .3 Prevent extraneous materials from contaminating air, land or water, by vacuum, temporary enclosures, screens, traps or other devices.
- .4 Spills of deleterious substances should be immediately contained and cleaned up in accordance with Bermuda regulatory requirements. Spills should be reported forthwith to the Engineer.
- .5 Noise levels emitted from Work activities are subject to Bermuda government requirements.
- .6 During work at night, all necessary steps must be taken to minimize noise.

3.7 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. Fuelling of vehicles or equipment will not be permitted within 100 m of any water body.
- .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.

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