

## **Part 1           General**

### **1.1               SUMMARY**

#### **.1               Requirements Included**

- .1       This section outlines the General Requirements that shall be administered by the Contractor. While the specification section establishes the requirements for each trade, the Contractor shall directly supervise and administer all contract requirements to ensure the provision of materials, labour and equipment necessary to complete the work on time and to the quality specified.
- .2       Title and description of work: Rideau Canal National Historic Site of Canada, Poonamalie Lock 32 Heritage Stone Masonry Repairs, 22 Poonamalie Road (off Highway 15), Rideau Lakes, Ontario.
- .3       During construction, provide continuous safe access across the site at all times for the PCA tenant occupying the residence (old Lockmaster's House) on the island to the NW side of the Canal. Include for snow removal along the route, from the tenant parking location to the door of their residence.
- .4       Allow long lead time for stone delivery.

#### **.2               Scope of Work**

- .1       The general scope of work shall include but not be limited to the following:
  - .1       Provide scaffolding and site protection as necessary to perform work of this Contract. Erect temporary bracing as required to perform the work in a safe manner and conforming with the requirements of Section 01 35 30 – Health and Safety Requirements.
  - .2       Provide all necessary access to complete the work, including the approved cofferdam structures, as indicated on the drawings.
  - .3       Provide protective barricades to the work site to prevent public access to the work area.
  - .4       Provide and maintain a safe mode of access to the service road along the island earth dam, during the period of construction.
  - .5       Take all necessary precautions to reduce impact on natural environment and waterway surrounding the site.
  - .6       Prior to start of masonry work, clean the lock to remove zebra mussels, algae and debris. Dispose of waste.
  - .7       Install approved cofferdam structures and turbidity curtains, at location outside of the stop log gain locations, upstream and downstream.
  - .8       Install approved Waste Water Treatment structures/equipment.
  - .9       Dewater floor of lock chamber to allow for concrete and masonry repairs as noted on drawings.
  - .10      Provide enclosure and heating as required.
  - .11      Rake out and remove all loose and deteriorated mortar to the extent noted on the drawings.
  - .12      Repoint as noted on the drawings.
  - .13      Repair/replace quantities of existing stone as necessary.

- .14 Remove and reset stone at locations noted on drawings.
  - .15 Install specified anchors, as required and as noted on drawings.
  - .16 Remove deteriorated concrete and provide concrete or stone repairs, as noted on drawings.
  - .17 Grout voids in centre core of walls, as noted on the drawing.
  - .18 Restore landscaping to original condition, upon completion of project. Re-sod where required.
  - .19 Include for installation and removal of stop logs, or equipment supplied by Contractor, at upstream and downstream log gains, if required, so that work can proceed inside the lock no later than March 14, 2018.
- .2 Sequence of Work – General
- .1 Work on this project is scheduled to be completed in 2 phases during successive, non-navigation seasons of the Rideau Canal. Non-navigation periods are, in general, from October 2017 to May 2018 and from October 2018 to May 2019. Contractor to completely demobilize from site between phases.
  - .2 Work outside the lock chamber, where cofferdams are required to allow for work in dewatered areas, is to be completed in Phase 1. Phase 2 to include work that can be accomplished inside a dewatered lock chamber with only stop logs installed in the lock stop log gains.
- .3 Sequence of Work – Phase 1
- .1 Obtain Historic Canal Regulations Permit before mobilizing to site. Issuance of Permit is contingent upon receipt of Environmental Management Plan, acceptable to PCA Environmental Regulators.
  - .2 All work that can be started without impact on the Public use of the lock, excluding that Work associated with the lock, is to commence as soon as possible after award of Contract.
  - .3 Coordinate cofferdam staging as indicated on drawings, with Parks Canada Agency.
  - .4 Until after Thanksgiving, the Contractor's work area must not impact on the Public. Coordinate with Parks Canada Agency, to transport materials to site via the waterway and set up a staging area.
  - .5 Parks Canada to install stop logs in inlet canal on or before October 26, 2017, to lower water level.
  - .6 After Thanksgiving, expand work area to include lock chamber. Protect against public access, using fencing as per staging plan. Install cofferdams and dewater lock, after October 10, 2017.
  - .7 Complete all in-water work while cofferdams are installed.
  - .8 Complete all work at log gains, (2m inside and all approach masonry walls outside) first, then install logs; work on lower two courses of masonry inside lock and remove cofferdam by March 14, 2018.
  - .9 Do not commence work inside log gains until raking out, backpointing and preparation for stone repairs is completed for areas noted under Item .7 and approved by Departmental Representative.
  - .10 All in-water work is prohibited after March 14, 2018. Cofferdams must be removed by that date.

- .11 Work may continue inside log gains past March 14, 2018, if stop logs are installed in the gains. Include for stop log removal at end of work Phase.
- .12 Parks Canada to remove stop logs in inlet canal beginning April 30, 2018.
- .13 Demobilize from site by May 4, 2018. No extensions of time are possible. Remove all material and equipment from site. No storage over the summer is allowed.
- .4 Sequence of Work – Phase 2
  - .1 Contractor may remobilize to site after October 9, 2018.
  - .2 Install stop logs in stop log gains. Include for dewatering the lock.
  - .3 Complete all work, including masonry work inside log gains, removal of stop logs, landscaping and deficiencies by May 3, 2019. No extensions of time are possible.

## 1.2 PROJECT COORDINATION

- .1 Coordination
  - .1 Coordinate work between sub-trades and own forces to ensure that the complete scope of work detailed in the Contract Documents is completed.
  - .2 Coordinate progress of the Work, progress schedules, submittals, use of site, temporary utilities, construction facilities, with the Departmental Representative.
  - .3 Execute the Work to cause minimum interference to adjacent locks, waterway and canal wall structure. Public boat traffic is to take priority over Contractor. Lock will only be operational during business hours. Do not operate the lock under any circumstances.
  - .4 Take reasonable measures to control noise during construction.
  - .5 Working hours other than normal business hours shall be subject to the approval of the Departmental Representative. Coordinate work with the Departmental Representative.
  - .6 Maintain one copy of each of the following at the job site for reference purposes:
    - .1 Drawings
    - .2 Specifications
    - .3 Addenda (if applicable)
    - .4 Change Orders
    - .5 Reviewed Shop Drawings
    - .6 Reports from Independent Inspection/Testing Agencies
    - .7 Health and Safety Standards
    - .8 Schedule
    - .9 Basic Impact Analysis (BIA)
    - .10 Environmental Management Plan (EMP)
    - .11 Historic Canal Regulations Permit
- .2 Hours of Operation
  - .1 Work can only be performed in accordance with local by-laws for Smiths Falls, unless specifically authorized by Departmental Representative. Work can be performed on Saturdays between 9:00am and 5:00pm. No work permitted during

Sundays and Statutory Holidays unless approved in advance by the Departmental Representative.

- .3 Noise Control
  - .1 Adhere to local noise by-laws; notify residents of planned activities that may cause disturbance.
  - .2 Take all necessary precautions to reduce impact noise transmitting through structure which may have environmental implications to area wildlife.
- .4 Health and Safety
  - .1 Refer to Section 01 35 30 Health and Safety Requirements.
- .5 Hazardous Materials Abatement and Protection Requirements
  - .1 Provide all measures and procedures for hazardous materials abatement in accordance with the Departmental Representative's recommendations.
  - .2 Be responsible for disposing of all hazardous materials, including all effluent, in conformance with Ministry of Environment and Ministry of Labour guidelines, PCA Environmental Standards and Guidelines for Ontario Waterways (ESG) and EMP.
  - .3 Provide all equipment required to clean the Work and access stage/platform in conformance with all applicable statutes and guidelines.
- .6 Taxes
  - .1 Pay all taxes properly levied by law (including Federal, Provincial and Municipal).
- .7 Fees, Permits and Certificates
  - .1 Pay all fees and obtain all permits. Provide authorities with plans and information for acceptance certificates. Provide inspection certificates as evidence that work conforms to requirements of Authority having jurisdiction.

### **1.3 CUTTING AND PATCHING**

- .1 Approvals
  - .1 Submit written request in advance of cutting or alteration which affects:
    - .1 Structural integrity of any element of the Project.
    - .2 Integrity of weather-exposed or moisture-resistant elements.
    - .3 Efficiency, maintenance, or safety of any operational element.
    - .4 Visual qualities of sight-exposed elements.
    - .5 Work of Departmental Representative or separate contractor.
- .2 Inspection
  - .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
  - .2 After uncovering, inspect conditions affecting performance of work.
  - .3 Inspect and record photographically, condition of existing landscaping prior to commencement work on site and submit a detailed list of noted defects to the

Departmental Representative. On completion of project, ensure the site is returned to a condition which is the same or better than existing condition, prior to start of project.

- .4 Inspect and become familiar with all perimeter conditions of cofferdam, prior to submitting design and shop drawings for approval.
- .5 Beginning of cutting or patching and installation of cofferdams, means acceptance of existing conditions.

.3 Execution

- .1 Execute cutting, fitting, and patching including excavation and fill to complete the Work.
- .2 Remove and replace defective and non-conforming work.
- .3 Execute Work to avoid damage to other work.
- .4 Prepare proper surfaces to receive patching and finishing.
- .5 Restore work with new products in accordance with Contract Documents.
- .6 Refinish work to match adjacent finishes, unless otherwise noted.

.4 Protection

- .1 Provide adequate protection to the public and property.
- .2 Protect existing vegetation, shoreline and waterway from any damages resulting from performing work on this Contract. Incurred damages to be repaired, without cost to the Departmental Representative.
- .3 Protect new work from damages from any cause. All finished surfaces must be protected so that no marks or scratches mar the finished surfaces prior to acceptance of work.
- .4 Protect and be responsible for all new finished and unfinished work which is exposed and susceptible to vandalism or theft.
- .5 Where security has been reduced by work of this Contract, provide temporary means to maintain security.

**1.4 EXAMINATION**

- .1 The Drawings are, in part, diagrammatic and are intended to convey the scope of work and indicate general and approximate locations and arrangement of the Work.
- .2 Obtain more accurate information from measurements made at the site in conjunction with the Drawings and become familiar with all site conditions before proceeding with the Work. Notify the Departmental Representative immediately, should any discrepancy be discovered. No allowances will be made later for any expense incurred by the Contractor through their failure to make this examination.

**1.5 PROJECT MEETINGS**

.1 Administrative

- .1 The Departmental Representative will schedule and administer biweekly project progress meetings. More frequent meetings will be scheduled, in the event the schedule is not being adhered to.
- .2 The Departmental Representative will prepare a template for agenda and minutes.

- .3 The Departmental Representative will record minutes. Include significant proceedings and decisions. Identify “Action By” parties.
- .4 The Departmental Representative will reproduce and distribute copies of minutes within three days after each meeting and transmit to meeting participants and affected parties not in attendance.
- .5 Record the minutes, when the Departmental Representative is not present. Include significant proceedings and decisions. Identify “Action By” parties.

## 1.6 SUBMITTALS

- .1 Administrative
  - .1 Submit to Departmental Representative submittals listed for review, refer to Section 01 33 00 Submittal Procedures.
  - .2 Do not proceed with Work affected by the submittal until review is complete.
  - .3 Verify field measurements and coordinate affected adjacent Work.
  - .4 Prior to beginning work, submit to the Departmental Representative for approval, proposed pedestrian and vehicular control measures, signing, site security, sediment and erosion control measures. Do not proceed until written approval is given, EMP is approved and a permit under the Historic Canal Regulations is granted. Modify procedures when required by the Departmental Representative and at no cost to the Departmental Representative.
  - .5 Health and Safety Plan: Submit Health and Safety Plan within 10 working days of award of Contract.
  - .6 Environmental Management Plan: Submit within 10 working days of award of Contract.
  - .7 Keep record of all HST paid on Labour and Materials. Submit information to Departmental Representative monthly.
  - .8 Contract Price Breakdown
    - .1 Provide a complete Contract price breakdown by construction element within five (5) working days from receipt of the Contract or Letter of Intent. The breakdown must be representative of the full contract price as identified in the Contract or Letter of Intent.
- .2 Shop Drawing and Product Data
  - .1 Refer to Section 01 33 00 - Submittal Procedures.
- .3 Samples
  - .1 Samples: examples of materials, equipment, quality, finishes, workmanship. Refer to Section 01 33 00 – Submittal Procedures.
  - .2 Submit for review, samples as requested in respective specification Sections.
  - .3 Deliver samples prepaid to Departmental Representative's business address.
  - .4 Reviewed and accepted samples will become standard of workmanship and material quality, against which installed work will be verified.
- .4 Photographs

- .1 Submit to the Departmental Representative, colour digital photography in jpg format, fine resolution, detailing the as found condition of the masonry prior to start of construction.
- .2 Submit progress photographs to Departmental Representative bi-weekly at progress meeting.
- .5 Record Drawings
  - .1 Accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by the Departmental Representative.
  - .2 Identify drawings as "Project Record Copy." Maintain in new condition and make available for inspection on site by the Departmental Representative.
  - .3 On completion of Work and prior to final inspection, submit record documents to the Departmental Representative.

## **1.7 SCHEDULE**

- .1 Schedules Required
  - .1 Construction Progress Schedule, in Gantt Chart format. Indicate Critical Path on Schedule. Summarize work activities into work packages and highlight key milestones to satisfaction of Departmental Representative. Incorporate items into schedule, as requested by Departmental Representative.
  - .2 Monthly Cash Flow Document: Submit to Departmental Representative, a breakdown on the Contract Amount in detail as directed by the Departmental Representative and aggregating the total amount of the Contract Price, so as to facilitate evaluation of application for payment.
- .2 Submission
  - .1 Submit initial schedules within 5 working days after award of Contract, indicating the timing of the work, including the sequence of all operations involved therein, in order to meet the completion date. Work on site cannot commence until schedule is approved.
  - .2 Submit updated Project Schedule at minimum two days prior to the site meeting, or at shorter intervals as changes to schedule dictate.
  - .3 Submit initial Cash Flow Document within 10 working days after award of Contract. Progress Claims cannot be authorized until this document has been approved by the Departmental Representative.

## **1.8 SITE INSTRUCTION**

- .1 When a clarification or modification of the work is required which does not require an adjustment of the contract price or contract time, the Departmental Representative will issue a Site Instruction.
- .2 Upon receipt of a Site Instruction, proceed promptly with the work.

## **1.9 QUALITY CONTROL**

- .1 Provide sufficient, safe and proper facilities at all times for review of the Work by the Departmental Representative.

.2 Independent Inspection Agencies

- .1 Independent Inspection/Testing Agencies will be engaged by the Departmental Representative for the purpose of inspecting and/or testing portions of Work and regularly inspecting the EMP requirements, as identified in the Specifications. Cost of such services will be borne by the Departmental Representative.
- .2 Provide equipment, samples of materials, design mix, tools, storage, safe access and assistance as required for executing inspection and testing by the appointed agencies.
- .3 Cost of reinspection of unacceptable work to be borne by Contractor.

.3 Reports

- .1 Submit one copy of inspection and test reports promptly to the Departmental Representative.

**1.10 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

.1 Installation/Removal

- .1 Provide construction facilities and temporary controls in order to execute the work expeditiously.
- .2 Prior to substantial performance, remove from site all such work.
- .3 Make good any damage to, or disturbance of existing property caused by such work.

.2 Site Office

- .1 Position temporary site office/trailer at location designated by Departmental Representative.
- .2 Maintain facility in clean and tidy condition.
- .3 Keep access doors closed at all times.
- .4 Provide heating. Arrange Hydro hook-up under separate meter.

.3 Site Storage/Loading

- .1 Do not load or permit to be loaded, any part of the Work with a weight or force that will endanger the safety of the Work.
- .2 Space on site is limited to the boundaries set out by the Departmental Representative. Keep storage requirements to a minimum. Interior storage is not available.
- .3 Store products, materials, equipment in locations indicated by the Departmental Representative. All construction material and equipment must be stored inside the fenced area.
- .4 Maintain equipment to avoid leakage of fuels and liquids. Ensure measures are in place to minimize impacts of accidental spills. Keep an emergency spill kit at the site and deploy immediately, should a spill occur. In the case of a spill contact Departmental Representative and notify Ontario Spill Action Center immediately at 1-800-268-6060. All provincial and federal regulations are to be adhered to. Maintain an adequate supply of clean up materials on-site. Include this information in the EMP, following the guidelines of the ESG.
- .5 Store all oils, lubricants, fuels and chemicals in secure areas on impermeable pads.



- .6 Conduct refuelling and maintenance of equipment off slopes and away from water bodies on impermeable pads or buried liners to allow full containment of spills at a recommended distance of 30 meters from any watercourse.
- .7 Do not discharge chemical and cleaning agents in or near aquatic habitats. Dispose of all such substances at a facility licensed to receive them.
- .4 Sanitary Facilities
  - .1 Provide sufficient sanitary facilities for construction personnel in accordance with local health authorities. The Departmental Representative will designate a location for the contractor to place the facility.
  - .2 Maintain the facilities in clean and sanitary condition.
  - .3 Provide hand sanitation station.
  - .4 Do not use public washrooms.
- .5 Water Supply
  - .1 Provide a supply of potable water to facilitate the Work.
  - .2 Running water is not available on site.
- .6 Temporary Power
  - .1 Provide and pay for temporary power as required during construction.
  - .2 There is no power source on site. Provide a generator as required to complete the work.
- .7 Communication Facilities
  - .1 Provide Site Superintendent with a cell phone, to ensure he/she can contact or be contacted by the Departmental Representative at all times during working hours.
  - .2 Provide a means of communication on site in the form of a computer with printer or tablet, in order to facilitate the dispatch of Construction Review Reports and Site Instructions directly to the site office.
- .8 Project Cleanliness
  - .1 Maintain the Work in tidy condition, free from the accumulation of waste products and debris.
  - .2 Remove waste material and debris from the site and deposit in waste container at the end of each working day. Do not burn waste materials on site.
- .9 Dust Control
  - .1 Take every precaution to control dust.
  - .2 Keep the surface area damp to minimize dust where removals are in progress.
- .10 No Smoking Environment
  - .1 Comply with existing no smoking laws.
- .11 Security
  - .1 Submit a list of all workers on site.
- .12 Parking

- .1 There is substantial parking available on site. Allow for parking for up to two Parks Canada service vehicles at all times.
- .13 Loading/Unloading and Garbage Container
  - .1 Do not use the Departmental Representative's garbage container to store or dispose of contract waste.
  - .2 Provide garbage container, sufficient to accommodate contract waste. Locate where directed by Departmental Representative in Laydown Area.

## **1.11 MATERIAL AND EQUIPMENT**

- .1 Product and Material Quality
  - .1 Unless otherwise specified in the Contract Documents, products provided shall be new. Products which are not specified, will be of a quality consistent with those specified, and their use acceptable to the Departmental Representative.
- .2 Storage, Handling and Protection
  - .1 Do not unreasonably encumber site with materials or equipment. Move stored materials or equipment when directed by the Departmental Representative.
  - .2 Handle and store Products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
  - .3 Store packaged or bundled Products in original and undamaged condition with manufacturer's seals and labels intact.
  - .4 Store loose granular materials on solid flat surfaces, in a well drained area. Prevent mixing with foreign matter.
  - .5 Store products subject to damage from weather in weatherproof enclosures.
  - .6 Obtain and pay for use of additional storage or work areas if needed for operations.
  - .7 Provide trailer for duration of project to be used as meeting room and lunch room for workers. The trailer can be located as noted on Drawings.
  - .8 Store products in a heated facility, trailer or container to maintain manufacturer's temperature requirements.
- .3 Manufacturer's Instructions
  - .1 Unless otherwise indicated in the specifications, install or erect Products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
  - .2 Notify the Departmental Representative in writing, of conflicts between the specifications and manufacturer's instructions, so that the Departmental Representative may establish the course of action.
  - .3 Improper installation or erection of Products, due to failure in complying with these requirements, authorizes the Departmental Representative to require removal and re-installation at no increase in Contract Price.
- .4 Workmanship
  - .1 Ensure workmanship is of the best quality, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the

Departmental Representative if required Work is such as to make it impractical to produce required results.

- .2 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with the Departmental Representative, whose decision is final.

## **1.12 PROJECT CLOSEOUT**

### **.1 Final Cleaning**

- .1 Remove stains, dirt and smudges from finished surfaces.
- .2 Clean exposed, finished surfaces in accordance with respective material manufacturers' recommendations.
- .3 Broom clean and wash pathways and surfaces affected by the work.
- .4 When work is substantially performed, remove surplus products, tools, construction machinery and equipment. Remove waste products and debris.
- .5 Restore landscaping and vegetation to as found condition. Re-sod damaged areas, including re-watering until grass has been cut twice. Replace all damaged shrubs, with shrubs of equal or better quality.

### **.2 Documents**

- .1 Collect reviewed submittals and assemble documents executed by Subcontractors, suppliers, and manufacturers.
- .2 Submit material prior to final Application for Payment.
- .3 Submit operation and maintenance data, record (as-built) drawings.
- .4 Provide guarantees, warranties, and bonds where requested, fully executed and notarized.
- .5 Departmental Representative will issue a final Change Order, reflecting approved adjustments to Contract Price for agreed measured quantities for all unit rate items.

### **.3 Inspection/Takeover Procedures**

- .1 Prior to application for certificate of Substantial Performance, the Contractor and all Sub-Contractors shall carefully inspect the Work and ensure it is complete, that major and minor construction deficiencies are complete, defects are corrected and the site is in clean condition. Notify the Departmental Representative in writing, of satisfactory completion of the Work and request an inspection.
- .2 During the Departmental Representative inspection, a list of deficiencies and defects will be tabulated. Correct same.
- .3 When the Departmental Representative considers deficiencies and defects have been corrected and it appears requirements of the Contract have been substantially performed, make application for certificate of Substantial Performance.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

**Part 3            Execution**

**3.1                NOT USED**

.1                Not Used.

**END OF SECTION**