

PART 1 - GENERAL

1.1 SCOPE

- .1 The work covered under this project consists of the furnishing of all plant, labour, equipment, hardware and materials, complete and in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of contract. Bidders are advised that opportunities and requirements may arise that may warrant changes to the work that are in keeping with this general scope of work. Such changes will be made through the change order processes as outlined in the contract documents.

1.2 DESCRIPTION

- .1 The work will generally consist of but will not necessarily be limited to the following:
- .1 Water levels on the Exploits River are going to be manually adjusted by Nalcor Energy (NE) during a two-day period in October, 2016. During this short time limited water flow upstream will be entering the fishway. The dates of this lowering are tentatively scheduled for October 2 and 3, but subject to change. During this time, it is going to be extremely critical to complete some of the new work items which will also require the completion of some critical preparatory work in advance. The Departmental Representative shall confirm exact dates of when the River water levels will be lowered within five (5) days of the contract award.
- .2 Dewater pools #1 and #6 as necessary to complete the new work. Dewatering may be required prior to, during and following the lowering of river water levels by NE. During past repair projects a lined sandbag style berm had limited effectiveness in controlling water flow into pool #5 and #6, under normal flow conditions. This being the case, some preparatory work that needs to be completed in advance of the water lowering by NE may have to be done underwater with divers. It is suggested following the construction of the new concrete sill at pool #6 that this area with stop logs can aid in the construction of a new temporary berm. This shall be confirmed by the contractor as required.
- .3 Some preparatory work required in advance of NE's water lowering shall include, but are not necessarily limited to the following. As noted above, this work may need to be completed underwater with the use of divers.
- .1 Demolition and removal of the existing stop log/steel sill assembly at the entrance to pool #6 including any necessary portions of the

August 2016

interior structural steel frame assembly required to complete the new concrete sill. Interior steel frame shall remain in place until approved for removal by the Departmental Representative.

- .2 Removal of debris from within pool #6 including the removal of debris and other obstructions outside the entrance. It is estimated that approximately (+)1.5 m of loose rock exists outside of pool #6 that needs to be removed to expose the bottom area.
- .3 The supply of all materials and advancement of formwork, reinforcing steel, and dowelling for the new concrete sill at entrance to pool #6.

- .4 Complete construction of new reinforced concrete stop log sill during the period of lowered water by NE. It is critical to maximize curing of the concrete during this period. However, the remaining cure period following the rivers return to normal flow conditions is permitted underwater. Prepare to remove temporary formwork and other accessories underwater with divers unless other methods approved by the Departmental Representative are accepted.
- .5 Removal of debris from within pool #1 including the sump and debris from within the buried attraction flow pipe between pool #1 and #6.
- .6 Demolition and removal of attraction flow screens/gratings in pool #6 along with the remaining portion of the interior structural steel frame assembly. Interior steel frame shall remain in place until approved for removal by the Departmental Representative.
- .7 Demolition and removal of stop logs and attraction flow floor grading in pool #1.
- .8 Removal of any obstructions at entrance to pool #1 which may have to be completed underwater with divers unless other methods proposed are approved by the Departmental Representative.
- .9 Repair deteriorated concrete in pools #1 and #6 including walls, baffles, sills, floor and all remaining steel beam/channel inserts including surfaces and edges.
- .10 New reinforced concrete floor in pool #6.
- .11 New attraction flow screens/gratings in pool #1 and #6 along with new stop logs.
- .12 Investigate, clean and repair as necessary the existing sluice gate valve assembly in pool #6.

1.3 FISH HABITAT/DOMESTIC USAGE .1

Contractors are advised that this project is being carried out in an area where fish habitat may be affected. The contractor will perform the work to

August 2016

conform with all rules and regulations governing fish habitat and in accordance with governing authorities.

- .2 There shall be no fishing in and around the construction site during the regulated fishing season, even if the employees are in possession of a legal fishing license.
- .3 The Contractor is advised that a number of restrictions exist which could affect the scheduling and completion of the work, including:
 - .1 Work affecting the fish habitat can only commence and be carried out during specific times of the year. This can vary from year to year depending on when the salmon move up the river;
 - .2 The Contractor shall confirm the times, dates, and extent of work required under these categories with local fish habitat authorities;
 - .3 Contact the Department of Fisheries and Oceans (DFO) at least 48 hours in advance of starting any work on site. The lowering of water levels on the exploits river are tentatively scheduled for October 2nd and 3rd, 2016. It is extremely critical during this time to complete some of the new work items described herein.
- .4 For inquiries regarding fish habitat please contact Tilman Bieger (email: tilman.bieger@dfo-mpo.gc.ca or phone: 772-4029) with DFO Fisheries Protection Program.

1.4 SITE OF WORK

- .1 Work will be carried out at the existing fishway in Bishop's Falls, NL in the location as shown on the accompanying drawings.

1.5 SCHEDULING AND WORK METHODOLOGY

- .1 The Contractor must arrange and schedule their construction operations to complete all work within the allocated timeframe. Specifically, the following measures must be taken into account:
 - .1 Prior to commencing any work on and around the fishway, obtain all requirements and approvals of fish habitat and related regulatory authorities for carrying out the work.
 - .2 Develop a detailed work schedule and methodology for all work and submit to Departmental Representative and applicable regulatory authorities for review and approval. Contractor's schedule and methodology shall address all restrictions placed on work by regulatory authorities and indicate how the work plan will address such issues. Contingency plans shall also be outlined for use in the event of unexpected problems or delays.

August 2016

- .3 From a fish habitat perspective, DFO policy restricts any work on this project during the salmon migration period between the dates of May 15, to September 30, each year. In this respect, the Contractor shall consider the following in establishing their construction schedule and methodology as follows:
- .1 The entire project shall be completed at least 2 months prior to the start of the salmon migration period as per the calendar dates indicated above.
 - .2 Water levels on the Exploits River are going to be manually adjusted (lowered) by Nalcor Energy (NE) during a two-day period in October, 2016. During this short time limited water flow upstream will be entering the fishway. The dates of this lowering are tentatively scheduled for October 2nd and 3rd, but subject to change. During this time, it is going to be extremely critical to complete some of the new work items which will also require the completion of some critical preparatory work in advance. The Departmental Representative shall confirm exact dates of when the river water levels will be lowered within five (5) days following the contract award.
 - .3 Dewater pools #1 and #6 as necessary to complete the new work. Dewatering may be required prior to, during, and following the lowering of river water levels by NE. During past repair projects a lined sandbag style berm had limited effectiveness in controlling water flow into pool #5 and #6 under normal flow conditions. This being the case, most of the preparatory work that needs to be completed in advance of the water lowering by NE may have to be done underwater with divers. It is suggested following the construction of the new concrete sill at pool #6 that this area with new stop logs can aid in the construction of a new temporary berm. This shall be confirmed by the Contractor, as required.
 - .4 Some preparatory work required in advance of NE's water lowering shall include, but are not necessarily limited to the following. As noted above, this work may need to be completed underwater with the use of divers.
 - .1 Demolition and removal of the existing stop log/steel sill assembly at the entrance to pool #6 including any necessary portions of interior structural steel frame assembly required to complete the new concrete sill. Interior steel frame shall remain in place until approved for removal by the

August 2016

- Departmental Representative.
- .2 Removal of debris and steel frame from within pool #6. Removal of rock and other obstructions outside the entrance. It is estimated that approximately (+) 1.5 m of loose rock exists outside of pool #6 that needs to be removed to expose the bottom area.
- .3 The supply of all materials and advancement of formwork, reinforcing steel and dowelling for the new concrete sill at entrance to pool #6.
- .5 Complete construction of new reinforced concrete stop log sill during the period of lowered water by NE. It is critical to maximize curing of the concrete during this period. However, the remaining cure period following the rivers return to normal flow conditions is permitted to be underwater. Prepare to remove temporary formwork and all other accessories underwater with divers unless other methods approved by the Departmental Representative are accepted.
- .6 To complete the work within the restricted schedule it is expected that fall/winter construction shall occur and thus all labour, materials and equipment costs including temporary shelters, heaters, snow clearing, additional safe measures and all other necessary items to deal with working in potential adverse conditions shall be included in the cost to complete this work. No additional reimbursement by Canada will be considered for winter construction.
- .7 To maintain schedule the contractor shall strongly consider longer working days with the use of temporary lighting equipment and an increased work force.
- .8 Work shall initially commence in the area of pool #6 in preparation for the construction of the new concrete sill.
- .9 Access to and from the fishway site is down over a staircase which shall be maintained at all times throughout the project.
- .4 Work on the fishway upgrades must be carried out in the dry unless otherwise noted or approved by the Departmental Representative. Where berms are required to accomplish this, the design of such berms is to be carried out by a professional engineer licensed to practice in Newfoundland and Labrador. Drawings of the berm design, stamped by the Engineer, are to be submitted to the Departmental Representative before any work starts. In areas permitting work in water, all in-water conditions specified herein must apply.

-
- 1.6 DATUM .1 Datum used for this project is bench mark PWC BM 1 and PWC 3-2001 with geodetic elevations as shown on the drawings.
- .2 Bidders are advised to consult the Department of Fisheries & Oceans - Hydro, Flows and Linear Development Department in order to make sure of changing water level conditions affecting work.
- 1.7 EXAMINATION OF SITE .1 Before submitting a bid, it is recommended that bidders visit the site and its surroundings to review and verify the form, nature and extend of work, materials necessary for the completion of the works, the means of access to the site, severity, exposure and uncertainty of weather, soil conditions, any accommodations they may require, and in general shall obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.
- .2 Contractors, bidders or those they invite to site are to review specification Section 01 35 29 - Health and Safety Requirements before visiting site. Take all appropriate safety measures for any visit to site, either before or after acceptance of bid.
- 1.8 ARCHIVAL PHOTOGRAPHS.1 Archival photographs of the existing site are included in Appendix B. These photos are intended to give the contractors an appreciation of site conditions, general understanding of the project scope of work and clarify some existing features not fully detailed on the drawings. Repairs have been ongoing to this structure over the years and the condition of some items may have likely worsened. Therefore, what is depicted in the photos may not be an accurate assessment of the present state of the fishway. These photos should in no way be considered a replacement to an actual site visit. Contractors are encouraged to visit the site as per part 1.7 of this specification section. Any interpretations and/or assumptions made with respect to these photos are the contractor's responsibility.
- 1.9 ARCHIVAL VIDEO FOOTAGE .1 Underwater videos taken in August 2016 of areas within the fishway and surroundings are available for viewing by contacting the contracting office and scheduling an appointment.

1.10 WORK SCHEDULE

- .1 Submit within seven (7) working days of notification of acceptance of bid, a construction schedule showing commencement and completion of all work within the time stated on the bid and acceptance form and the date stated in the bid acceptance letter.
- .2 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.
- .3 As a minimum, work schedule to be prepared and submitted in the form of bar (GANTT) charts, indicating work activities, tasks and other project elements, their anticipated durations and planned dates for achieving key activities and major project milestones provided in sufficient details and supported by narratives to demonstrate a reasonable plan for completion of project within designated time (e.g., show target dates for completion of each work task, if applicable). Breakdown the Fishway elements to indicate target dates for completion of each element. Generally, bar charts derived from commercially available computerized project management systems are preferred but not mandatory.
- .4 Submit schedule updates on a minimum monthly basis and more often, when requested by Departmental Representative, due to frequent changing project conditions. Provide a narrative explanation of necessary changes and schedule revisions at each update.
- .5 The schedule, including all updates, shall be to the Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.
- .6 All work on the project will be completed within the time indicated on the Bid and Acceptance Form.
- .7 Should contractor find that he cannot maintain schedule as originally intended, he will immediately submit a revised schedule without being requested to do so by Departmental Representative.
- .8 Work schedule to be consistent with scheduling and methodology restrictions previously noted in Part 1.5.

-
- 1.11 ABBREVIATIONS .1 Following abbreviations of standard specifications have been used in this specification and on drawings.
- CGSB - Canadian Government Specifications Board
CSA - Canadian Standards Association
NLGA - National Lumber Grades Authority
ASTM - American Society for Testing and Materials.
- .2 Where these abbreviations and standards are used in this project, latest edition in effect on date of tender call will be considered as applicable.
- 1.12 LAYOUT OF WORK .1 Set grades and layout work in detail from control points and grades established by Departmental Representative.
- .2 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated or as directed by Departmental Representative.
- .3 Provide devices needed to layout and construct work.
- .4 Supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.
- .5 Supply stakes and other survey markers required for laying out work.
- 1.13 QUARRY AND EXPLOSIVES .1 Contractor will make own arrangements with Provincial authorities and owners of private properties, for the quarrying and transportation of rock and all materials and machinery necessary for work over their property, roads, or streets as case may be.
- 1.14 SITE OPERATIONS .1 Arrange for sufficient space adjacent to project site for conduct of operations, storage of materials and so on. Exercise care so as not to obstruct or damage public or private property in area. Do not interfere with normal day to day operations in progress at site. All arrangements for space and access will be made by contractor. All clearing and grubbing work, including tree preservation, to be in accordance with applicable specification sections.
- .2 At completion of work, restore area to its original condition. Damage to ground and property will be repaired by contractor. Remove all construction materials, residue, excess, etc., and leave site in

a condition acceptable to Departmental Representative.

- .3 Contractor will take adequate precautions to protect existing concrete and asphalt when operating tracked equipment.
- .4 Remove snow and ice as required to maintain safe access in a manner that does not damage existing structures or interfere with the operations of others.
- .5 Space adjacent to cabin is limited and may affect contractor's equipment, this could include the use of cranes and large boom trucks.

1.15 PROJECT MEETING

- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording minutes.
- .2 Project meetings will take place on site of work unless so directed by Departmental Representative.
- .3 Departmental Representative will assume responsibility for recording minutes of meetings and forwarding copies to all parties present at meetings.
- .4 Have a responsible member of firm present at all Project Meetings.

1.16 PROTECTION

- .1 Store all materials and equipment to be incorporated into work to prevent damage by any means.
- .2 Repair or replace all materials or equipment damaged in transit or storage to the satisfaction of, and at no cost to, the Departmental Representative.

1.17 EXISTING SERVICES

- .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to site operations, pedestrian, vehicular traffic, and tenant operations.
- .2 Before commencing work, establish locations and extent of service lines in area of work and notify Departmental Representative of findings.
- .3 Submit schedule to and obtain approval from Departmental Representative for any shutdown or closure of active service or facility. This includes disconnection of electrical power and communication

August 2016

services to tenants operational areas. Adhere to approved schedule and provide notice to affected parties.

- .4 Provide temporary services to maintain critical facility systems.
- .5 Provide adequate bridging over trenches which cross walkways or roads to permit normal traffic.
- .6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .7 Protect, relocate or maintain existing active services as required. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction over service. Record locations of maintained, re-routed and abandoned service lines.

1.18 DOCUMENTS REQUIRED

- .1 Maintain at job site, one (1) copy each of the following:
 - .1 Contract drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed shop drawings.
 - .5 List of outstanding shop drawings.
 - .6 Change Orders.
 - .7 Other modifications to contract.
 - .8 Field test reports.
 - .9 Copy of approved work schedule.
 - .10 Site specific Health and Safety Plan and other safety related documents.
 - .11 Permits and Regulatory Approvals and Requirements.
 - .12 Other documents as stipulated elsewhere in the Contract Documents.

1.19 TAXES AND PERMITS

- .1 Obtain and pay for all permits, certificates and licenses as required by Municipal, Provincial, Federal and other authorities.
- .2 Provide appropriate notifications of project to Municipal and Provincial inspection authorities.
- .3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of Municipal, Provincial and Federal authorities as applicable to the performance of work.
- .4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.

- .5 Submit to Departmental Representative, copy of quarry permit, if applicable, prior to start of quarry operations.
- .6 Comply with all requirements, recommendations and advice by all regulatory authorities unless otherwise agreed in writing by Departmental Representative. Make requests for such deviations to these requirements sufficiently in advance of related work.
- .7 See Appendices for Regulatory Approvals and Responses already obtained by Canada for this project.

1.20 EXISTING
SUB-SURFACE CONDITIONS

- .1 Information pertaining to the existing sub-surface conditions may be available by contacting the Departmental Representative.
- .2 Contractors are cautioned that any previous investigations that may be available for review, were intended to provide general site information only. Any interpolation and/or assumption made relative to any previous investigations is the Contractor's responsibility.

1.21 CONTRACTOR'S USE
OF SITE

- .1 The contractor is advised that the construction operations, including storage of materials, for this contract must not interfere with the normal operations at the site.
- .2 The contractor will be solely responsible for arranging the storage of materials on or off the site, and any materials stored at the site which interfere with any of the day to day activities at or near the site will be moved promptly at the contractor's expense upon request by the Departmental Representative.
- .3 Exercise care so as not to obstruct or damage public or private property in the area.

1.22 WORK COMMENCEMENT

- .1 Mobilization to project site is to commence immediately after acceptance of bid and submission of site specific Safety Plan, unless otherwise directed by Departmental Representative.
- .2 Project work on site is to commence as soon as possible with a continuous reasonable workforce unless otherwise directed by Departmental Representative.
- .3 Weather conditions, winter construction, site

August 2016

restrictions, delivery challenges and the location of the work site may require the use of longer working days and additional workforce to complete the project within the specified completion time.

- .4 Make every effort to ensure that sufficient material and equipment is delivered to site at the earliest possible date after acceptance of bid and replenished as required.

1.23 NOTICE TO SHIPPING/MARINERS

- .1 Notify the Marine Communications and Traffic Services Centre of Fisheries and Oceans Canada, at (709) 772-2083, 10 days prior to commencement and upon completion of the work in order to allow for the issuances of Notice to Shipping/Mariners.
- .2 During construction any vessels or barges utilized must be marked in accordance with the provisions of the Canada Shipping Act Collision Regulations.

1.24 ACCEPTANCE

- .1 Prior to the issuance of the Certificate of Substantial Performance, in company with Departmental Representative, make a check of all work. Correct all discrepancies before final inspection and acceptance.

1.25 WORKS COORDINATION

- .1 Responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other.
- .2 Convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required. Provide each trade with the plans and specifications of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
- .3 Canada will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor and shall be resolved at no extra cost to Canada.

1.26 INTERPRETATION OF DOCUMENTS

- .1 Supplementary to the General Conditions, the Division 01 sections of the specifications take precedence over technical specification in other divisions of the specifications.

-
- 1.27 FORM OF TENDER
- .1 The Form of Tender includes one lump sum priced item and several unit priced items.
 - .2 The total tendered price shall be the sum of the lump sum items plus the amounts calculated from the unit price items based on the approximately quantities identified for each of the unit price items.
 - .3 There are unit price items included in this Contract for possible work which may or may not be required to complete the project, for which an accurate assessment of the quantity of the item cannot be made until the work is in progress.
 - .4 The Contractor in submitting their Tender for the project understand that they will only be entitled for payment under the unit price items when prior written authorization has been received from the Departmental Representative for utilization and then only to the extent of the work authorized by the Departmental Representative.
 - .5 Additional instructions for measurement and/or payment for items of the work may be contained in specific sections of the Technical Specifications.
 - .6 The submitted tender prices will be inclusive of all costs for the complete supply and installation of all materials, labour and equipment required to complete the work. No separate payment will be made for any testing, inspections and approvals required by Contractor.
 - .7 Tender prices for unit price items shall be inclusive of the costs for supply, placement and compaction.
- 1.28 BIODEGRADABLE HYDRAULIC OILS
- .1 Equipment working in and adjacent to water way shall be equipped with biodegradable hydraulic oils specifically intended for environmentally sensitive areas. Contractor shall submit MSDS and Technical Data sheets on hydraulic oil to be used for approval by the Departmental Representative.
- 1.29 MEASUREMENT FOR PAYMENT
- .1 No separate measurement for payment shall be made for items under this section. Include costs for General Instructions in the Lump Sum portion of the work on the Bid and Acceptance Form.
 - .2 No separate measurement for payment shall be made for diving services required to complete any aspects of this work. Include costs for diving services in the

PWGSC
Fishway Upgrades - Phase 2
Bishop's Falls, NL
Job No. R.075582.004

General Instructions

Section 01 10 10
Page 14

August 2016

lump sum portion of the work on the bid and acceptance form.

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.1 NOT USED