

**General Requirements – Summary of Work**  
**Section 01 11 00**

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**PART 1 GENERAL**

**1.1 DESCRIPTION OF FACILITIES**

- .1 The national historic site of Canada of Saint-Ours Canal is located on the Richelieu river, 52 km downstream of Chambly. At this location, on each side of Darvard Island, we can find de Dam and the Saint-Ours lock.
- .2 The dam allows to higher the water level so that the river between Saint-Ours and Chambly is navigable. The actual concrete dam has been built in 1967 in replacement of the old wood dam.
- .3 The lock consists of upstream and downstream wooden doors. The four doors are activated by four rack and pinion systems located in pits on the side of each door. These systems are driven by a motor and a gearbox. The filling and draining of the lock are done by delivering water through 2 underground tunnels located on each side of the lock. Water is controlled by 4 butterfly valves. There are 2 butterfly valves per tunnel, one on the upstream side and the other downstream. These valves are operated by hydraulic cylinders located in the valve pits. Two control stations (upstream and downstream) allow operating the doors and the butterfly valves. Dewatering of the lock is made possible by installing stop logs in the guides on the upstream and downstream sides of the lock.

**1.2 OBJECT**

- .1 This document defines the works including labor supply, materials and equipment and all works required for the supply and the installation of electrical and mechanical equipment systems and associated civil work as part of the Saint-Ours Lock rehabilitation Project, in accordance with the drawings, the related technical specifications and the associated requirements from Parks Canada.

**1.3 EXIGENCES CONNEXES**

- .1 Section 02 41 16 – Structure Demolition
- .2 Section 02 50 13 – Management of Waste
- .3 Section 05 50 00 – Metal - Metal Fabrications
- .4 Section 06 05 73 – Wood Treatment
- .5 Section 11 90 00 – Mechanical Systems – Valves, Gates and Mechanisms
- .6 Section 26 05 00 – Electricity – Common Work Results for Electrical
- .7 Section 26 05 03 – Electricity - Commissioning
- .8 Section 26 05 20 – Electricity – Wire and Box Connectors
- .9 Section 26 05 21 – Electricity – Wires and Cables
- .10 Section 26 05 22 – Electricity – Connectors and Terminations
- .11 Section 26 05 31 – Electricity - Splitters, junction, pull boxes and cabinets
- .12 Section 26 05 34 – Electricity - Conduits Fastenings

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- .13 Section 26 12 16.01 – Electricity – Dry type, Medium Voltage Transformers
- .14 Section 26 24 16.01 – Electricity – Distribution Panels
- .15 Section 26 24 19 – Motor Control Centers
- .16 Section 26 27 26 – Wiring Devices
- .17 Section 26 29 03 – Control Devices

**1.4 CONTRACT TYPE**

- .1 Work shall be subject to a Lump Sum contract.

**1.5 WORK BY OTHERS**

- .1 Cooperate with other Contractors, if required, in carrying out their respective works and carry out instructions from Parks Canada Agency.
- .2 Coordinate work with that of other Contractors, if required. If any part of work under this Contract depends for its proper execution or result upon work by another Contractor, report promptly to Parks Canada Agency, in writing, any anomalies or defects which may interfere with proper execution of Work.

**1.6 WORK SEQUENCE**

- .1 Portion of works shall be executed during the closing period of the canal for navigation. This period begins the week following Thanksgiving (in October) until the end of April.
- .2 Saint-Ours shall be dewatered by the Contractor. Information related to dewatering is provided in Appendix A for information only. The final methodology remains the responsibility of the Contractor.

**1.7 CONTRACTOR'S USE OF PREMISES**

- .1 The use of the premises is limited to required areas for work, storage and access roads to allow work to be performed by other contractors, if required;
- .2 Coordinate use of premises under direction of Parks Canada Agency.
- .3 Obtain and pay for use of additional storage or work areas needed for this Contract.
- .4 Remove or alter existing work to prevent damage to portions of existing work which remain.
- .5 Repair or replace portions of existing work which have been altered during construction to match existing or adjoining work, as directed by the Parks Canada Agency.
- .6 At completion of construction, the existing works condition shall be equal to or better than that which existed before work.
- .7 The available mobilization areas are identified in Appendix C.

**1.8 OWNER OCCUPANCY**

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- .1 The Owner will use the premises during the entire construction period for normal operation.
- .2 Coordinate with the Owner in scheduling activities to minimize conflicts and facilitate operation by Owner.

**1.9 EXISTING SERVICES**

- .1 Notify the Parks Canada Agency and utility companies of intended interruption of services and obtain required authorizations.
- .2 Establish location and extent of existing services located in work area before starting work. Notify the Parks Canada Agency of any findings.
- .3 Submit a schedule and obtain approval from Parks Canada Agency for any shut-down or temporary closure of services or facilities including power and communication services. Adhere to approved schedule and provide notices to affected parties.
- .4 Provide temporary services as directed by Parks Canada Agency to maintain existing services.
- .5 Where unknown services are encountered, immediately notify the Parks Canada Agency and record findings in writing.
- .6 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by required authorities.
- .7 Record location of maintained, re-routed and abandoned utility lines.
- .8 Install temporary barriers in accordance with Section 01 56 00 – Temporary Barriers and Enclosures.

**1.10 RIGHTS, PERMITS AND INSPECTION**

- .1 The Navigation Protection Act (NPA) applies to this work. Submit all required documents (Notice of Works form and Works Plan) to the Parks Canada Agency so that he can obtain all approvals or permits required.
- .2 Pay all required fees.
- .3 If required, Drawings and Specifications required by Hydro-Québec will be providing free by the Parks Canada Agency.
- .4 At the end of the work, obtain from authorities having jurisdiction, an acceptance certificate and forward it to Parks Canada Agency.

**PART 2 PRODUCTS**

**2.1 NOT USED**

- .1 Not used.

**PART 3 EXECUTION**

**3.1 SCOPE OF WORK**

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- .1 General
  - .1 The work covered by this contract shall include the supply of all materials, labour, tools, equipment, protection and transportation required to complete the work in accordance with the requirements specified on the drawings and in the specification.
  - .2 The coordination and distribution of work for subcontractors is the Contractor's responsibility and any reference to documents referring to subcontractors shall not be construed as binding the Parks Canada Agency to such a distribution.
- .2 Saint-Ours Lock
  - .1 Lock dewatering by the Contractor
    - .1 The work covered by this contract shall include but not be limited to:
      - .1 Loading of the Stoplogs at Parks Canada Agency, transport and installation of the upstream and downstream stoplogs. Before the installation of the stoplogs, Contractor shall make sure that there's no debris on the upstream and downstream sills so that the installation of the lower stoplogs are not compromised. Furthermore, Contractor shall consider the fact that the stoplogs are not 100% watertight. It is the responsibility of the Contractor to make sure that sealing between the stoplogs sections is acceptable (e.g., addition of Rodofam or sealing membrane).
      - .2 Docks and safety barriers remain at the center of the lock during winter. Contractor shall move them at his own cost if required.
      - .3 Lock dewatering and pumping of the excess of water during work period. See section 01 35 43 for environment requirements.
      - .4 The supply and installation of pumps or agitators allowing for water circulation to prevent ice formation on the stoplogs surfaces (upstream and downstream) during the dewatering period.
      - .5 Filling of the lock at the end of works.
      - .6 Removal of all dewatering equipment at the end of the works.
      - .7 The removal of upstream and downstream stoplogs, transport and unloading of the stoplogs at Parks Canada Agency.
  - .2 Civil Work
    - .1 The civil work covered by this contract shall include but not be limited to:
      - .1 The removal and disposal of the existing gratings and their fixing systems.
      - .2 The supply, fabrication, transport and installation of new gratings and hinged trap.
      - .3 The supply, fabrication, transport and installation of new stairs.
      - .4 The supply, fabrication, transport and installation of new removable handrails.
      - .5 The supply, transport and installation of anchor points for the rescue system.
      - .6 Construction of a new trench in the existing building as shown on drawings including steel cover and demolition and excavation works.

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.7 Demolition, excavation and enlargement of two pull boxes on the upstream side of the lock, as shown on drawings including the steel checkered cover.

.3 Mechanical work

.1 The mechanical work covered by this contract shall include but not be limited to:

- .1 The supply, design, fabrication, transport and installation of new wooden top beams on the upstream doors only. The reference drawings of the downstream doors are provided in annex. The replacement methodology shall be provided for review and approval by the Parks Canada Agency.
- .2 The supply, fabrication, transport and installation of eight door upper pivot retaining blocks as shown on drawings.
- .3 The supply of the shop drawings of the new wooden top beams of the upstream doors and doors upper pivot retaining blocks for review and approval by the Parks Canada Agency.
- .4 The removal and disposal of the butterfly valves hydraulic power units.
- .5 The removal and the disposal of the existing butterfly valves.
- .6 The supply, fabrication, transport and installation of eight bronze bushings for the new butterfly valves.
- .7 The design, supply, fabrication, transport and installation of new butterfly valves.
- .8 The design, supply, fabrication, transport and installation of new butterfly valves operating systems.
- .9 The supply of design briefs (calculation notes) and fabrication drawings for the new butterfly valves and their operating systems for review and approval by the Parks Canada Agency.
- .10 The supply, transport and installation of new gear motors and couplings for the door opening mechanisms and the removal/disposal of the existing gearboxes. The existing motors shall be handed over to Parks Canada Agency.
- .11 The supply, fabrication, transport and installation of new gear motor steel bases.
- .12 The supply of shop drawings of the new gear motors steel bases for review and approval by the Parks Canada Agency.
- .13 The supply and installation of new anchors for the trash racks.
- .14 The supply and installation and new rack stainless steel bolts on all lock doors.
- .15 The commissioning of the mechanical equipment.

.4 Electrical work

.1 The electrical work covered by this contract shall include but not be limited to :

- .1 The removal and disposal of the 200 A breaker in the «HQ Incoming and Metering» section, the 600 V distribution panel (except for the 60 A breaker supplying the panel “F” which shall be handed over to Parks Canada), three section of 600-120/240 V transformers and 120/240 V distribution panels and two sections of motor control center. These equipment are located in the Lockhouse.



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.2 The removal and disposal of the power and control cables for the hydraulic valve system and the door opening systems, including to the control cabinets located in the upstream and downstream control cubicles.

.3 The removal and disposal of all unused cables in the cable trench and conduits crossing the lock (for cost estimation purpose, consider 350 m of 3c#10 AWG).

.4 The removal and disposal of all electrical devices located in the valve and door opening system pits.

.5 The supply, manufacturing, transport, installation and commissioning of a new 600 V motor control center.

.6 The supply and installation of a new 600 V 200 A breaker in the «HQ Incoming and Metering» section.



.7 The supply and installation of a 600 V 200 A receptacle and a cabinet with a 600 V, 200 A manual transfer switch for the generator connection.



.8 The relocation of the 60 A and 100 A receptacles located on the downstream side of the lock near the downstream control cubicle.

.9 The supply and installation of junction boxes, disconnect switches, emergency push-button stations in the valves and opening door system pits.

.10 The supply and installation of the proximity sensors for the door opening systems.



.11 The supply and installation of three 4 inches conduits crossing the lock on the upstream side, as indicated on drawings.

.12 The cleaning of the empty 4-inches conduits on the downstream side of the lock (with a mandrel) and the evaluation of their condition.

.13 The connection of the motor control center to the 200 A breaker located in the «HQ Incoming and Metering» section.

.14 The supply, installation and connection of all electrical cables (power and control) indicated on drawings.

.15 The connection of all loads non-relative to the lock systems to the motor control center (including their 120/240 V distribution panels). If necessary, use junction boxes if some cables are too short.

.16 The modification of the control cabinets in the upstream and downstream control cubicles as indicated on drawings, including the dismantling of all actual components. The superior face of the cabinet is reused.

.17 The commissioning of all electrical equipment.

**END OF SECTION**