

TECHNICAL SPECIFICATIONS



Parcs
Canada

Parks
Canada

Chambly Canal N.H.S.

**EXCAVATION OF THE SHOAL IN THE
IROQUOIS RIVER AREA**

CCHM-1522-05



Verified by :

 2008-08-09

Éric Saillant, ing.

PART 1 - GENERAL

1.1 Use of Terms

- .1 Department or Project Owner: Canada, represented by the Parks Canada Agency under the Department of the Environment of the Government of Canada.
- .2 Departmental Representative: The asset manager of the Quebec navigable waterways unit of the Parks Canada Agency, or his authorized representative.
- .3 Contractor: any person, corporation or company that signs a contract with the Parks Canada Agency for the execution of project work and that holds a permit under the Province of Quebec Act respecting building contractor's vocational qualifications. The Contractor is the Main Contractor under the terms of the Act respecting occupational health and safety (L.S.S.T) and must act as such before the Commission des normes, de l'équité, de la santé et de la sécurité du travail (C.N.E.S.S.T.) and meet the obligations entrusted to him as such.
- .4 Plans and specifications: all the invitation to tender documents, including the specifications, the plans, as well as any drawings and addenda subsequently sent on the same work.

1.2 Interpretation

- .1 The words, expressions and abbreviations with a known technical or professional meaning must be understood in this sense in this specification and these drawings.
- .2 The dimensions indicated on the drawings or brought or represented by a module or lines, arrows or otherwise, must take precedence over the drawings.
- .3 Priority is given to the drawings to the largest scales. Similarly, the applicable specifications and drawings are always the most recent ones.
- .4 All incompatibilities between the specification and the drawings must be submitted, to the Departmental Representative in writing so that he can also render a decision in writing without appeal as to their topics.
- .5 The specifications and drawings are complementary, so that

what is required according to one is also required according to the other. The structures to be constructed in accordance with the specifications and drawings, must be complete in its essential parts, that is, it must in particular include all the items normally resulting from the prescriptions of the specification and drawings, even if these articles are not all specifically mentioned. The Contractor must not profit at the expense of Canada from any error that is obviously involuntary or from any omissions that he might discover. When the quality of the work or materials is not specifically indicated, the building trade involved must provide that which is of the best quality.

1.3 Request for
Information

- .1 Any person wishing to obtain technical or administrative information must refer to the general conditions issued in the invitation to tender documents.

1.4 Work Covered by
Contractual Documents

- .1 The work covered by this contract primarily includes, but is not limited to:
- .1 The excavation and disposal of the sediment in the bottom of the canal in a part of the delta formed by the Rivière des Iroquois.
- .2 Specifically, the work mainly includes, but is not limited to:
- .1 the excavation, transportation, and disposal of soil according to the levels of the proposed earthwork and the characterization sheets provided by Parks Canada;
- .2 the transport and disposal of contaminated sediment according to the standards in force.

1.5 Work Schedule

- .1 The Contractor must proceed with diligence and establish his work schedule in **order to carry out the work between october 15 and december 14 of 2018.**
- .2 Within five (5) days of the contract being awarded, the Contractor must submit a schedule to the Departmental Representative showing the various stages of the work and the expected completion date.

1.6 Examination of the Sites

- .1 In order to become familiar with the conditions of the project and to obtain all the necessary information for the proper execution of the contract, examine the worksite. Lack of knowledge of the conditions of the sites will not in any case be a valid reason for claiming an additional payment.

1.7 Permits, Ordinances
and Regulations

- .1 The contractor will be required to obtain the permits necessary for the performance of the work. He must comply with all federal, provincial or municipal regulations and any other law or any other regulation that relates to the present work. He will be required to assume responsibility for any breach of the relevant laws and regulations.
- .2 The Contractor will assume (at his own expense) all obligations relating to safety measures required by the Quebec Act respecting occupational health and safety as well as all the fees arising from such obligations.

1.8 Existing Utility
Services

- .1 Before interrupting utility services, notify the Departmental Representative as well as the utility companies involved and obtain the necessary authorizations.

1.9 Contaminated Soil

- .1 For the entire work area, contaminated soil is likely to be encountered as mentioned in the plans.
- .2 Material characterized above the "A" criteria of the Ministère du Développement Durable, de l'Environnement et de la lutte contre les changements climatiques (MDDELCC) or higher than the recommendations of the Canadian Council of Ministers of the Environment (CCME), Park and residential use, must then be loaded and transported to authorized disposal sites.
- .3. The transport of contaminated soil for disposal purposes must be coordinated with the sites; thus, soil loaded at the worksite must be disposed of at the authorized sites on the same day as the loading.

1.10 Contaminated Soil Volume
Control

- .1. The Departmental representative will monitor the disposal of excavated soil during execution of the work. In this case the Contractor must plan to notify the Departmental Representative 48 hours in advance for the purposes of monitoring requirements.
- .2. The Departmental Representative must provide the Contractor

with assistance during the implementation of the work and the excavation of the site based on the level of contamination

- .3. The Contractor must provide disposal slips available at the end of each working day stating that the contaminated soil has been sent to a centre authorized by the MDDELCC for treatment or burial. The transport tickets must also be signed by the Departmental Representative prior to shipping to the disposal site, and a copy must be submitted to the Departmental Representative at the end of each working day. The Contractor must submit the weigh tickets of the locations authorized by the MDDELCC to the Departmental Representative. All these supporting documents will be used for payment purposes.
- .4 If the soils are disposed at a location other than an authorized disposal site, the Contractor shall demonstrate that the soils have been disposed of in accordance with the *Guide d'intervention – Protection des sols et réhabilitation des terrains contaminés, Ministère du Développement durable, de l'Environnement et de Lutte contre les changements climatiques, 2016* , or a more recent version

1.11 Material Supplied
by Canada

- .1 N/A

1.12 Use of the Premises
by the Contractor

- .1 The Contractor will have full access to the interior limits of the Chambly Canal NHSC for the area of the work in question.

1.13 Working Hours

- .1 The Contractor responsible for the work must comply with the appropriate work schedules (e.g. from 7:30 a.m.to 5:00 p.m., Monday to Friday) in order to limit the risk of disturbing the residents and the public. The applicable municipal regulations must be followed.

1.14 Transport and Traffic

- .1 The transport of materials and the movement of heavy vehicles must be according to the times and areas permitted by the city of Saint-Jean-sur-Richelieu in order to avoid inconvenience to residents and the public.
- .2 The movement of heavy machinery must preferably be done during the authorized work period.
- .3 Traffic on the site must be arranged so as to not damage the asphalted bike path.

.4. All damage at the asphalted bike path must be repaired at the Contractor's expense.

1.15 Implementation of the Work

.1 The Contractor must comply with the following procedure for the implementation of the structures to be built:

- .1 Establish the alignments, levels and reference points for the structures to be built, these depending on the geometry and elevations indicated on the plans.
- .2 Conduct a joint verification with the Departmental Representative in order to optimize the profile of the finished terrain so as to adapt it to the existing conditions, taking account of existing structures, existing trees and good drainage, etc.;
- .3 In the event of non-compliance of the structures installed by the Contractor, any repetition of the work is at the expense of the Contractor.

1.16 Detour of the Bike Path Traffic

.1 The bike path will not be closed to traffic during the construction period.

- .2 The Contractor shall have a worksite containment plan in place to isolate the site from Sainte-Thérèse Street and the bicycle path adjacent to the work area.
- .3 The detour plan must include all barriers and road signs necessary to ensure public safety.
- .4 The plan must be provided by the Contractor and must conform to the requirements of the MTQ.
- .5 The detour plan must be provided 5 working days in advance for acceptance and comments from the departmental representative.

1.17 Working method of the Contractor

.1 The Contractor is responsible for obtaining approval from the Ministerial Representative of his work methodology. The indications to the plans give the contractor a method to work and parameters in order to allow the execution. The Contractor must comply with his parameters if he wants to propose his own method of work

- .2 The level of the Canal-de-Chambly is represented

approximately on the plans. The level may vary depending on
weather conditions

PART 2 - PRODUCTS

.1 N/A

PART 3 - EXECUTION

.1 N/A

END OF SECTION

PART 1 - GENERAL

1.1 Related sections

- .1 01 35 43 - Environmental protection and 31 23 10 - Excavation, trench digging and filling.

1.2 References

- .1 Transportation of Dangerous Goods Act (1999)
- .2 Canadian Environmental Protection Act (CEPA 1999)
- .3 Documentation of the Canadian Council of Ministers of the Environment (CCME) relating to contaminated soil:
- .4 Canadian environmental quality standards (CCME);
- .5 Canada-wide standards on petroleum hydrocarbons (PHC) in soils (CCME);
- .6 Environmental Quality Act (MDDEP)
- .7 Land Protection and Rehabilitation Policy 1998 MDDEP;
- .8 Regulation respecting contaminated soil storage and contaminated soil transfer stations (MDDEP);
- .9 The generic criteria for the classification of contaminated soil
- .10 Land Protection and Rehabilitation Regulation;
- .11 Regulation Respecting the Burial of Contaminated Soils;
- .12 Regulation Respecting Hazardous materials;
- .13 Regulation Respecting the Landfilling and Incineration of Residual Materials.

1.3 Documents/samples to be submitted

- .1 Before starting the work, submit a working plan for the management of contaminated soil including the location planned for the storage of contaminated soil, the protective measures against wind erosion and runoff, the list of sites where contaminated soil will be disposed of, and proof that they are

sites authorized by the MDDELCC.

- .2 Submit documentation certifying that the personnel responsible for handling and eliminating hazardous materials have been trained, tested and certified and perform the tasks assigned to them in an effective manner. Employees who will have to handle or who may come into contact with hazardous material must have WHMIS training.
- 1.4 Requirements of regulatory agencies
 - .1 Implement measures against erosion and sediment transport.
 - .2 The work must meet or exceed the minimum requirements of the applicable federal and provincial laws and regulations.
 - .1 The Contractor must ensure compliance with changes in laws and regulations, once they are implemented.
 - .2 If the requirements of regulatory agencies exceed the scope of the work or are in conflict with certain specific contractual requirements, immediately notify the Departmental Representative.
- 1.5 Scheduling and timetable for the execution of the work
 - .1 It is prohibited to start work involving contact with contaminated soil and materials likely to be contaminated before the disposal areas are operational and approved by the Departmental Representative.
 - .2. No contaminated soil will be allowed to leave the worksite by the Departmental Representative if the transport time required to get to the disposal site exceeds the closing time of the disposal site.
- 1.6 Vehicle access and parking
 - .1 Maintenance and use
 - .1 Prevent contamination of the access roads. Immediately remove debris and material likely to be contaminated from the access roads according to the instructions of the Departmental Representative. Transport the material removed and deposit it in a designated location approved by the Departmental Representative. Transport the material removed and bring it to an appropriate off-site processing facility. Clean access roads at least once per shift.

- .2 The Departmental Representative may take soil samples for the purpose of chemical analysis from the traffic surfaces of the built and existing access roads, before, during and after the execution of the work. Clean soil that has been contaminated by the Contractor's activities must be excavated and then eliminated without additional charge to the Departmental Representative.

1.8 Dust and particulate
emissions

- .1 Execute the work in such a way as to produce the least amount of dust possible.
- .2 Immediately implement anti-dust and anti-particle measures as required by the Departmental Representative and keep them in force during construction according to provincial and municipal regulations.
- .3 Take effective measures to prevent airborne particles from dispersing into the atmosphere. Use potable water to supply a water spray system to prevent the production of dust and particles.
- .4 Obtain the written approval of the Departmental Representative before adding chemicals to the water spray system to reduce the production of dust and particles.
- .5 Trucks used for the transport of fine or dusty material or contaminated soil must have a tarp or a cover at all times. The dumpsters of trucks used to transport soil must be carefully cleaned between loads of contaminated soil and those of clean fill material, as well as at the end of the work.
- Transport of contaminated soil must be done using trucks equipped with watertight dumpsters. No water seepage or loss of material will be tolerated during transport.
- .6 Prevent dust from spreading to adjacent land.
- .7 The Departmental Representative can stop the work at any time if he considers that the means taken by the Contractor to reduce dust and particles are inadequate given the wind conditions at the site.
- .8 The work must be interrupted if the measures implemented by the Contractor to combat dust and particle emissions into the atmosphere are inadequate. The Contractor must reveal the means he plans use to correct the situation, and he must change

operations as needed before resuming any activity (excavation, handling, processing, etc.) that is likely to generate dust and particles.

1.9 Anti-pollution measures

- .1 Provide the methods, means and facilities necessary to prevent contamination of the soil, water and the atmosphere by harmful toxic substances and by pollutants caused by the construction activities.
- .2 The Contractor must be prepared to contain, clean up and evacuate spills or releases that may occur into the water or on land. He must keep on the site readily accessible equipment, materials and supplies required for the cleaning of spills or discharges.
- .3 Immediately report any spill or release likely to cause damage to the environment:
 - .1 To the Ministry of the Environment Canada
 - .2 To the Ministère du Développement durable, de l'Environnement et des Parcs.
 - .3 To the owner of the pollutant if he is known;
 - .4 To the person responsible for the pollutant, if he is known;
 - .5 To the Departmental Representative.
- .4 Immediately take steps, including the use of all available resources, to limit and mitigate the impact of the spill or release on the environment and on persons.
- .5 In the event of a spill, provide the intervention material and equipment, including containers, absorbents, shovels and personal protective equipment. The spill response materials that will be used to handle or transport materials or hazardous waste must be accessible at all times and be compatible with the type of material to be handled.

1.10 Water regulations

- .1 It is prohibited to discharge from the site or into the municipal sewage system contaminated water, water runoff or groundwater that may have been in contact with material and equipment likely to be contaminated.
- .2 Prevent precipitation from infiltrating deposited soil or from streaming away from the deposit area. Cover deposited soil with a waterproof membrane during periods of work

interruption and after each working day, as directed by the Departmental Representative.

- .3 Divert surface drainage runoff water that has not been in contact with materials and equipment likely to be contaminated toward the existing surface drainage networks.
- .4 Monitor surface drainage; that is, among other things, ensure that the gutters are free, that water does not flow over sidewalks or other hard surfaces but that it flows through approved piping or ditches and properly constructed chutes, and ensure that the runoff from non-stabilized areas is intercepted and directed to a suitable device.
- .5 Dispose of water so as to not endanger the health and safety of persons, and not compromise the integrity of property and of any part of the work that has been completed or is nearing completion.
- .6 Provide, operate and maintain proper equipment with sufficient power or flow rate to keep excavations, collection areas and other work areas free of water.
- .7 The Contractor must have at his disposal the appropriate pumping equipment with a sufficient flow rate as well as the related tanks and machinery in good working order to deal with ordinary emergencies, including power outages. He must have in his service workers with the skills needed to operate the pumping equipment.

1.11 Draining of the
work

- .1 Drain the different parts of the work, including, but without limitation, excavations, structures, foundations and work areas.
- .2 Use construction and operating procedures and precautions that ensure that the work, including excavations, is stable, dry, and that it does not shift.
- .3 The draining of the work can be achieved through the following methods: Lagging, shoring; groundwater control, surface water or open water control by means of ditches, deviations, gullies, channels and/or by pumps and any other means necessary to ensure that the work is carried out in a dry state.
- .4 Provide the person-power, tooling and equipment needed to keep the work areas dry; also provide backup equipment to ensure the continuous operation of the drainage system.

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- .5 Take the necessary precautions to prevent the heaving of any structure or of any conduit or pipe so as to prevent the excavations from being flooded or otherwise damaged by runoff.
- .6 Drainage water must subject to a quality check and analysis, and then, as necessary, be processed in order to satisfy disposal or processing criteria.
- 1.12 Control of erosion and the transport of sediments
- .1 Use construction methods that allow the control and disposal of surface water from excavation or backfill work, from the waste borrow or disposal areas, from storage areas, collection areas and other work areas. Prevent soil erosion and sediment transport.
- .2 Avoid exposing large areas at the same time. As quickly as possible, stabilize soil that has been shifted so as to reduce erosion. Remove from adjacent surfaces, disposal systems and watercourses any accumulations of sediment resulting from construction activities and, as directed by the Departmental Representative, repair the damage caused by soil erosion and sediment transport.
- .3 Provide and maintain temporary means which may include the following: silt fences, straw or hay bales, geotextiles, disposal works, berms, terraces, temporary drainage pipes, sedimentation ponds, plant cover, dikes, and any other work required to prevent erosion and silt, sludge and sediment migration, and other debris escaping from the site, or to other areas of the site where they could cause damage, as well as any other means that may be required by law, by the Departmental Representative, or by a regulation. The measures against the transport or movement of sediment must be capable of implementation during construction.
- .4 Straw or hay bales: Use bales that are secured with wire or cord and firmly anchored to the ground using at least two rebars driven through the bale and into the ground to a depth of 300 to 450 mm. Wedge straw or hay into the spaces between the bales to prevent water from passing through. The bales must be buried to a depth of at least 100 mm in the ground.
- .5 Silt fence: Pre-assembled, ready to be installed unit, consisting of a geotextile attached to poles that can be driven into the ground. The geotextile must have a uniform texture and appearance; it must be free of any defects, weak points or tears

likely to compromise its physical characteristics. The geotextile must incorporate a UV inhibitor and stabilizers in order to provide a useful life of at least two years of outdoor use.

- .6 Turbidity curtains: Pre-assembled, ready to be installed unit, consisting of a highly resistant permeable geotextile membrane, floats and ballast cables. Opening of filtration of 60 µm. The geotextile must incorporate a UV inhibitor and stabilizers in order to provide a useful life of at least two years of outdoor use.
- .7 Posts: wooden, pointed, square section of about 50 mm, extending past the geotextile at the base, of sufficient length so that the geotextile is driven at least 450 mm into the ground. The interval between the posts must not exceed 2.4 metres. The geotextile and support net must be attached to the post with the appropriate clips.
- .8 Plan the construction so as to avoid damage to structures or equipment encroaching on the water bodies or on the slopes of drainage ditches. Quickly take the necessary measures to mitigate the consequences of damage, if any. Restore banks and water bodies that have suffered damage to their initial state.
- .9 Installation
 - .1 Build temporary erosion control works according to directions. Seek guidance from the Departmental Representative concerning the installation and/or the location of the various components.
 - .2 Do not place hay/straw bales or silt fences in watercourses or drainage ditches.
 - .3 Check the erosion control and the sediment transport work once per week and after every rainfall. Check them daily during extended periods of rain.
 - .4 The straw/hay bales and/or silt fences can be removed at the beginning of the working day and re-installed at the end of the day if they interfere with the work.
 - .5 When work such as removal of vegetation or re-shaping are the cause of soil erosion and sediment transport, remove the material thus eroded or transported from the adjacent surfaces, the disposal systems and water courses, and repair the damage as quickly as possible.
 - .6 Before or during construction, the Departmental Representative may require work or the installation of

equipment in order to correct a temporary situation: berms, mulch, sediment traps, water retention and retaining ponds, ground levelling work, plants, retaining walls, gutters, piping, guard rails, temporary roads and other necessary measures.

Temporary improvements must remain in place as long as they are needed or until otherwise ordered by the Departmental Representative.

- .7 Repair the damaged hay/straw bales; replace those located at the extremities of the work carried out and prevent washout beneath the bales.
- .8 Unless otherwise directed by the Departmental Representative, remove the temporary devices for combating erosion and sediment transport once the work is completed. Spread the accumulated sediment in order to form an adequate surface for seeding, or remove it and then profile the area concerned so as to allow natural drainage, to the satisfaction of the Departmental Representative. The removed material becomes the property of the Contractor.
- .10 To construct the backfill areas, put materials in place on a selective basis in order to not create erosive clayey or silty areas on the surface.
- .11 Do not disturb the existing embankments or their protection.
- .12 Do a periodic inspection of the earthworks in order to detect signs of erosion and sediment transport; implement appropriate corrective measures without delay.
- .13 If the material constituting the soil and debris accumulate in low points, storm drains, roads, gutters, ditches or other areas deemed inappropriate by the Departmental Representative, remove it and restore the premises to their original condition.

1.13 Cleaning as the
work progresses

- .1 Maintain the cleanliness of the site and adjacent areas in accordance with local, provincial and federal laws, ordinances, codes and regulations with regard to safety and fire protection.
- .2 Coordinate the activities of cleaning with disposal operations in order to prevent the accumulation of dust, dirt, debris, waste

materials and rubbish.

1.14 Final
decontamination

- .1 Perform the final decontamination of the facilities, equipment, and material that could have been in contact with materials and equipment likely to be contaminated before they are removed from the site.
- .2 Perform the decontamination according to instructions to the satisfaction of the Departmental Representative. If necessary, the Departmental Representative may ask the Contractor to perform additional decontamination work.

1.15 Removal and
disposal

- .1 Remove the surplus materials and equipment and the temporary installations from the site.
- .2 Remove waste, garbage, debris and uncontaminated waste from the site.
- .3 It is prohibited to burn or bury waste and refuse materials on the site.
- .4 It is prohibited to discharge volatile or hazardous waste such as solvent naphtha, oils and paint thinners into the storm or sanitary sewers.
- .5 Do not discharge waste into watercourses or waterways.
- .6 Process the materials below at an appropriate off-site facility determined by the Contractor and approved by the Departmental Representative:
 - .1 Debris, including surplus construction materials;
 - .2 Non-contaminated garbage and waste material;
 - .3 Disposable personal protective equipment worn for the final cleaning;
 - .4 The wastewater drained from the wastewater storage tank;
 - .5 The wastewater produced by the final decontamination operations, including the cleaning of the wastewater storage tank;
 - .6 The lumber from the decontamination areas.
- .7 Reduce the production of hazardous waste as much as possible. Take the necessary measures to avoid clean waste being mixed with contaminated waste.

- .8 Specify and evaluate the options such as recycling and recovery as alternative solutions to disposal on land, for example:
 - .1 Recycling and reuse of hazardous waste in a way that constitutes disposal;
 - .2 Burning of hazardous waste for the purpose of energy recovery;
 - .3 Recycling of lead-acid batteries;
 - .4 Recycling of hazardous waste containing precious metals that can be recovered profitably.

PART 2 - PRODUCTS

2.1 N/A .1 N/A

PART 3 - EXECUTION

3.1 N/A .1 N/A

END OF SECTION

PARTIE 1 - GÉNÉRALITÉS

1.1 Related requirements

- .1 Section 31 23 10 - Excavation.

1.2 References

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Quebec
 - .1 An Act Respecting Occupational Health and Safety, R.S.Q., c. S-2.1- updated 2014.

1.3 Action and informational submittals

- .1 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .2 Submit 1 copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative.
- .3 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .4 Submit copies of incident and accident reports.
- .5 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 2 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 2 days after receipt of comments from Departmental Representative.

.6 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

.7 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.

1.4 Filin notice

.1 File Notice of Project with authorities prior to beginning of Work.

1.5 Safety assessment

.1 Perform site specific safety hazard assessment related to project.

1.6 Meetings

.1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.7 General requirements

.1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.

.2 Departmental may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.8 Responsibility

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.9 Compliance requirements

- .1 Comply with Occupational Health and Safety Act, Industrial and Commercial Establishments Regulation, R.R.Q.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.10 Unforeseen hazards

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing

1.11 Correction of non-compliance

- .2 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .3 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .4 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.12 Work stoppage

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

END OF SECTION

PART 1 - GENERAL

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| <u>1.1 Related Sections</u> | .1 | Section 31 23 10 - Excavation, trench digging and backfilling. |
| <u>1.2 Definitions</u> | .1 | Pollution and environmental damage: presence of substances or chemical, physical or biological agents that have an adverse effect on the health and well-being of persons, that alter the ecological balance which is important for humans and that have an impact on species which play an important role for humans or that degrade the aesthetic, cultural or historic character of the environment. |
| | .2 | Protection of the environment: prevention/control of pollution and of the disturbance of habitat and the environment during construction. The prevention of pollution and damage to the environment covers the protection of soil, water, air, biological and cultural resources. It also includes the management of visual aesthetics, of noise, solid, chemical, gaseous and liquid waste, of radiant energy, radioactive material and other pollutants. |
| <u>1.3 Documents and Samples to be Submitted</u> | .1 | Before the start of construction activities or the delivery of material and equipment to the worksite, submit an environmental protection plan to the Departmental Representative for review and approval. The plan must present a comprehensive overview of the known or potential environmental issues to be solved during construction. |
| | .2 | Before The Contractor shall provide for approval by the Departmental Representative evidence that all machinery that runs on shore within 15 meters of the water shall use a biodegradable vegetable oil hydraulic system. |
| <u>1.4 Fire</u> | .1 | Fires and the burning of waste on the worksite is prohibited. |
| <u>1.5 Waste Disposal</u> | .1 | It is prohibited to dispose of waste material or volatile materials such as mineral oils or paint thinners by discharging them into a watercourse, a storm drain or sanitary sewer. |

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| <u>1.6 Drainage</u> | .1 | Provide a plan of measures against erosion and sediment transport in accordance with provincial regulations. This plan must indicate the means that will be implemented, including supervision of the work and the production of reports to ensure that these measures are in accordance with the laws and federal, provincial and municipal regulations. |
| | .2 | A stormwater pollution prevention plan can replace the plan for measures against erosion and sediment transport. |
| | .3 | It is forbidden to pump water containing contaminants into a watercourse, a sewer system, a disposal or drainage system. |
| | .4 | If necessary, a rolling surface should be installed in such areas which can be removed if necessary without damaging the shoreline. |
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| <u>1.7 Worksite Clearing and Protection of Plants</u> | .1 | N/A |
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| 1.8 Work Carried Out Near Watercourses | .1 | Do not discharge excavated material, waste material or debris into the watercourses. |
| | .2 | Maintenance, refueling and cleaning of machinery and equipment containing petroleum products must be carried out more than 30 meters from the body of water on a site designed for this purpose where there is no risk of Contamination of soils, groundwater and surface water. |
| | .3 | The machinery must arrive on site in a clean state and free from leakage of liquids, invasive species, noxious weeds and soil from another location. |
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| <u>1.9 Pollution Prevention</u> | .1 | Maintain temporary facilities designed to prevent erosion and pollution, and installed under the terms of this agreement. |
| | .2 | Control the emissions from equipment and machinery in accordance with the requirements of local authorities. |
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| <u>1.10 Notice of Non-Compliance</u> | .1 | A written notice of non-compliance will be issued to the Contractor by the Departmental Representative whenever non-compliance with a law, an act, a regulation or a federal, provincial or municipal permit is observed, or for any other element of the plan for the protection of the environment |
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implemented by the Contractor.

- .2 After receipt of a notice of non-compliance, the Contractor must propose corrective measures to the Departmental Representative and implement them with the approval of the Representative.
- .3 The Departmental Representative will order a stop to the work until satisfactory corrective measures are taken.
- .4 No additional delay or adjustment will be granted for the stoppage of the work.

PART 2 - PRODUCTS

2.1 N/A

.1 N/A

PART 3 - EXECUTION

3.1 N/A

.1 N/A

END OF SECTION

PART 1 - GENERAL

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| <u>1.1 Content of the Section</u> | .1 | This section includes all the facilities needed for the worksite, i.e.:
.1 On-site storage, storage of material, equipment and tools, sanitary facilities, construction site traffic signs, protection and cleaning |
| <u>1.2 Related Sections</u> | .1 | N/A |
| <u>1.3 Documents and Samples to be Submitted</u> | .1 | Submit the documents and samples required in accordance with this section. |
| <u>1.4 Installation and Removal of Material</u> | .1 | Prepare a location plan showing the proposed location and the size of the area used by the Contractor, the access roads to the fenced area and the fencing installation details. |
| | .2 | Indicate the areas that must be covered with gravel to prevent deposits of mud. |
| | .3 | Indicate any additional area or transit area |
| | .4 | Provide, install or improve the worksite facilities to allow execution of the work in the shortest time. |
| | .5 | Disassemble the equipment and remove it from the worksite when there is no further need for it. |
| <u>1.5 Parking and Access to the Worksite</u> | .1 | Parking will be prohibited on the worksite. |
| | .2 | Arrange suitable access roads to the worksite and maintain them. |
| | .3. | Protect the bituminous coating of the bike path and its surroundings. The method of protection must be submitted in writing and approved by the Departmental Representative, five (5) working days before the beginning of the work. |
| | .4 | Clean the paths and traffic lanes if they were used by the |

construction equipment.

1.6 Storage of Material ,
Equipment and Tools

- .1 Provide lockable sheds that are weatherproof for the storage of material, equipment and tools, and keep them clean and in good order.
- .2 Leave material and equipment that does not have to be protected from the weather on the worksite, but ensure that it hinders progress of the work to the least extent possible.
- .3 The general maintenance and fuel supply of engines and vehicles as well as the handling and storage of hydrocarbons will be done outside the Parks Canada site at a minimum distance of 30 metres from the shore.
- .4 No equipment can be left in the bottom of the canal at the end of a working day.

1.7 Sanitary Facilities

- .1 Provide sanitary facilities for workers in accordance with the relevant ordinances and regulations.
- .2 Post the required notices and take all the precautions required by local health authorities. Keep the premises and the sector clean.

1.8 Worksite Sign

- .1 N/A

1.9 Cleaning

- .1 Perform the daily cleaning operations in accordance with Section 01 74 11 Cleaning.
- .2 Dispose of construction site debris, waste and packaging materials every day.
- .3 Remove dust and mud from paved roads.
- .4 Store the material/equipment recovered during demolition work.

PART 2 - PRODUCTS

2.1 N/A

- .1 N/A

PART 3 - EXECUTION

3.1 N/A

.N/A

END OF SECTION

PART 1 - GENERAL

- 1.1 Content of the Section .1 Cleaning to be performed during the execution of the work.
- 1.2 Cleanliness of the Worksite.
- .1 Keep the worksite clean and free of any accumulation of debris and waste material, including that generated by the sub-contractors.
 - .2 Dispose of the debris and waste material outside of the worksite on a daily basis at pre-determined times or dispose of it according to the instructions of the Departmental Representative. Waste material must not be burned on the worksite.
 - .4 Make the necessary arrangements and get the permits from the competent authorities for the purpose of disposing of debris and waste material.
 - .5 At the worksite, provide containers for the disposal of debris and waste material.
 - .6 For recycling, provide and use separate and identified containers.
 - .7 Store volatile waste in closed metal containers and dispose of it off site at the end of each work period.
 - .8 Only use cleaning products recommended by the manufacturer of the surface to be cleaned and use them according to the cleaning product manufacturer's recommendations.
 - .9 Establish the cleaning schedule so that dust, debris and other raised dirt does not fall back on wet, freshly painted surfaces and does not contaminate adjacent buildings.
- 1.3 Final Cleaning
- .1 Upon substantial completion of the work, remove surplus materials, tools, equipment and construction materials that are no longer required for the execution of the rest of the work.
 - .2 Remove debris and waste material and leave the premises clean and ready to be occupied.

- .3 Prior to the final inspection, remove excess materials, tools, equipment and construction materials.
- .4 Remove debris and waste material including that generated by the sub-contractors.
- .5 Dispose of the debris and waste material outside of the worksite at pre-determined times or dispose of it according to the instructions of the Departmental Representative. Waste material must not be burned on the worksite.
- .6 Make the necessary arrangements and get the permits from the competent authorities for the purpose of disposing of debris and waste material.
- .7 Remove the dust, stains, marks and scratches found on the decorative works, the mechanical and electrical equipment, furniture, walls and floors.
- .8 Clean the reflectors, diffusers and other lighting surfaces.
- .9 Examine the finishes, accessories and materials to ensure that they meet the requirements as to the functioning and quality of execution.
- .10 Sweep and clean the sidewalks, steps, the section of the bike path located on the site and other exterior surfaces. Sweep or rake the rest of the property.
- .11 Remove the dirt and other items that detract from the outside surfaces.
- .12 Clear the crawl spaces and other accessible hidden spaces of surplus debris or material.
- .13 Remove snow and ice from the worksite access roads.

1.5 Management and Disposal .1 Sort the waste for re-use and recycling.
of Waste

PART 2 - PRODUCTS

2.1 N/A .1 N/A

PART 3 - EXECUTION

3.1 N/A

.1 N/A

END OF SECTION

PART 1 - GENERAL

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| <u>1.1 Measurement for the Purpose of Payment</u> | .1 All excavations, trench digging and backfilling are paid for at a unit rate according to the percentage of the work completed. |
| <u>1.2 References</u> | .1 American Society for Testing and Materials International (ASTM) <ul style="list-style-type: none"> .1 ASTM C 117-04, Standard Test Method for Material Finer than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing. .2 ASTM C 136-05, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates. .3 ASTM D 422-63/2002, Standard Test Method for Particle-Size Analysis of Soils. .4 ASTM D 698-00a/1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³). .5 ASTM D 1557-02e/1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³). .6 ASTM D 4318-05, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils. .2 Canadian General Standards Board (CGSB) <ul style="list-style-type: none"> .1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series. .2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric. .3 Canadian Standards Association (CSA)/CSA International <ul style="list-style-type: none"> .1 CAN/CSA-A3000-F03, Cementitious materials compendium (Consists of A3001, A3002, A3003, A3004 and A3005). <ul style="list-style-type: none"> .1 CSA-A3001-F03, Cementitious Materials for Use in Concrete. .2 CSA-A23.1/A23.2-F04, Concrete: Concrete materials and methods of concrete construction/Test methods and standard practices for concrete. .4 U.S. Environmental Protection Agency (EPA)/Office of Water <ul style="list-style-type: none"> .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices. |

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- .5 Compendium of general clauses and specifications "Road Infrastructure - Construction and repair (CCDG) Ministère des Transports du Québec.
- 1.3 Definitions
- .1 Classes of excavated material: a class of excavation material is recognized as reusable, namely, ordinary excavation material with a contamination level less than A or CCME residential/parks.
- .1 Ordinary excavated material: any excavation material of any kind whatsoever, other than rock excavations.
- .2 Non-classified excavation material: deposits of any kind whatsoever found in the course of the work.
- .3 Topsoil
- .1 Any clean material to promote the growth of plants that can be used as additional earth for landscaping or for seeding
- .2 Any material reasonably free of subsurface material, clods of clay, scrub, noxious weeds and other debris, and free of pebbles, roots and other harmful material greater than fifteen (15) millimetres.
- .4 Waste material: surplus material or excavated material that is unusable for the purposes of the present work.
- .5 Borrow material: material from areas located outside the area to be levelled and necessary for the depositing of backfill or other parts of the work.
- .6 Recycled backfill material: material considered to be inert, from different sources and modified to meet the requirements of the backfill areas.
- .7 Unfit material
- .1 Compressible, chemically unstable, low load-bearing capacity material.
- .2 Frost-sensitive material
- .1 Fine-grained soil with a plasticity index less than 10 according to the ASTM D 4318 test and a particle size within the prescribed limits according to the requirements of the CCDG.

- .2 Table
Designation of % screen underflow
screen
2.00 mm [100]
0.10 mm [45 - 100]
0.02 mm [10 - 80]
0.005 mm [0 - 45]

- .3 Coarse-grained soil for which the % of screen underflow passing the 0.075 mm screen is greater than 20% by mass.

1.5 Quality Assurance

- .1 Retain the services of a competent engineer recognized or authorized to practice in Canada, in the province of Quebec, and charge him with the responsibility for the design and inspection of the cofferdams and shoring works, the cross-bridging and underpinning used during the execution of the work.
- .2 Do not use soil before the written report of the analysis results is reviewed and accepted by a laboratory designated by the Departmental Representative.

1.6 Management and Disposal of Waste

- .1 Sort the waste for its re-use/re-employment and recycling.
- .2 Send the surplus aggregates that can be reused to a recycling facility

1.7 Existing Conditions

- .1 Examine the soil analysis report provided in Appendix I of this specification for the area to be excavated.
- .2 Buried utility conduits
- .1 Before starting the work, verify the location of the buried utility conduits located on or near the worksite.
- .2 Take the necessary steps with the competent authorities to reroute buried conduits that are likely to adversely affect the execution of the work, and assume the costs of this work.
- .3 Remove obsolete buried conduits that are within two (2) metres of the foundations and seal the cut ends with female plugs.
- .4 The details on the dimensions, location and depth of the structures and utility conduits are given for information

only and are thus not necessarily accurate or complete.

- .5 Before starting the excavation work, determine the location and state of the existing structures and underground networks and notify the Departmental Representative of this information. The Departmental Representative must clearly identify these locations in order to avoid any interruption of service during the execution of the work.
 - .6 Confirm the location of underground utility conduits by carefully performing test excavations.
 - .7 Maintain and protect water, sewage, gas, electricity and telephone conduits as well as other conduits or other structures identified against any damage.
 - .8 Get the appropriate directives from the Departmental Representative before re-routing or removing a utility conduit or a structure found in the excavation area.
 - .9 Take note of the location of retained, re-routed or abandoned underground conduits.
- .3 Buildings and structures present on the site
- .1 In the presence of the Departmental Representative, check the condition of the buildings, trees and other plants, lawns, fences, connection poles, cables, roadbed surfacing, barrier poles and grade points that may be affected by the work.
 - .2 During the execution of the work, protect buildings and other structures on the site against any damage. In case of damage, immediately repair the affected structures as directed by the Departmental Representative.

PART 2 - PRODUCTS

2.1 Equipment/Material .1 N/A

PART 3 - EXECUTION

- 3.1 Means for the Control of Erosion and Sediment .1 Implement temporary means to combat erosion and sediment deposit intended to prevent the loss of soil that can result from stormwater runoff or wind erosion, and the washout of this soil onto adjacent property and pedestrian walkways. These means must comply with the requirements of the competent authorities.
- 3.2 Preparatory Work . 1. Protect the existing graded areas. Traffic is prohibited on existing graded surfaces (pavers, stone screening paths, wood decking).

- .1 Keep excavations clean, free of stagnant water and friable soil.
- .2 When the soil can vary substantially in volume because of fluctuations in moisture content, cover it and protect it to the satisfaction of the Departmental Representative.
- .3 Protect the natural and artificial elements that must remain in place. Unless otherwise stated, or unless they are located in an area to be built, protect existing trees from any damage.
- .4 Protect the utility conduits that must remain in place.

3.4 Topsoil Stripping

- .1 N/A

3.5 Stockpiling

- .1 Stockpile backfill material in locations designated by the Departmental Representative.
 - .1 Stockpile granular material so as to prevent any segregation.
- .2 Protect backfill material against any contamination.
- .3 Take the appropriate erosion and sedimentation control measures to prevent the migration of sediment out of the site boundaries and into the watercourses.

3.6 Excavation

- .1 During the excavation work, remove concrete work, masonry, surface coatings, sidewalks, rubble and demolished foundations as well as any other obstruction.
- .2 Excavation work must in no way change the bearing capacity of adjacent foundations.
- .3 Excavate the surfaces so as to maintain a minimum of 300 mm of clean soil consistent with CCME residential/park or lower than criteria B in relation to the finished level for the entire area affected by the work.
- .4 Soils higher than class B must be sorted at the worksite so as to remove all material with a particle size greater than 150 mm.
- .4 Do not disturb the ground beneath the branches of trees or shrubs that must remain in place.
 - .1 If excavating must be done among roots, dig by hand and

cut the roots with an axe or a sharp saw.

- .5 Unless the Departmental Representative authorizes it in writing, it is prohibited to dig more than 50 metres of trench before proceeding with the installation of the items to be buried, and the length of the non-backfilled trench must not exceed fifteen (15) metres at the end of the working day.
- .6 Excavated and stockpiled material must be located at a sufficient distance from the trench, according to the indications of the Departmental Representative.
- .7 Limit the work done with construction equipment in the immediate proximity of non-backfilled trenches.
- .8 Dispose of unsuitable or surplus excavated material in the designated area on the worksite or outside of the worksite.
- .9 Do not obstruct the flow of runoff water or natural watercourses.
- .10 The bottoms of earth excavations must be level and made up of undisturbed subsoil, free of organic matter and loose or non-resistant substances.
- .11 Inform the Departmental Representative when the level planned as the excavation base is reached.
- .12 Completed excavations must be approved by the Departmental Representative.
- .13 Clear the trench bottoms of any unsuitable material, including material located under the side of the required level, over the extent and to the depth determined by the Departmental Representative.
- .14 Overbreaks must be corrected according to the methods described.
- .15 Profile the excavations by hand, strengthen the walls and remove any non-adhering material and the debris found there.
 - .1 If the material at the bottom of the excavation has been disturbed, compact it until a density at least equal to that of the non-disturbed soil has been obtained.
 - .2 Clean the cracks observed in the rock and fill them with grout or concrete mortar to the satisfaction of the Departmental Representative.

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| 3.11 Restoration of the
Property | <ol style="list-style-type: none"> .1 Once the work is completed, remove the waste material and debris. Level the slopes and correct the defects as directed by the Departmental Representative. Remove any temporary improvements made to carry out the work. .2 Clean and restore the areas affected by the work, as directed by the Departmental Representative. .3 Protect newly graded areas from erosion, prevent traffic on them and keep them free of waste or debris. |
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