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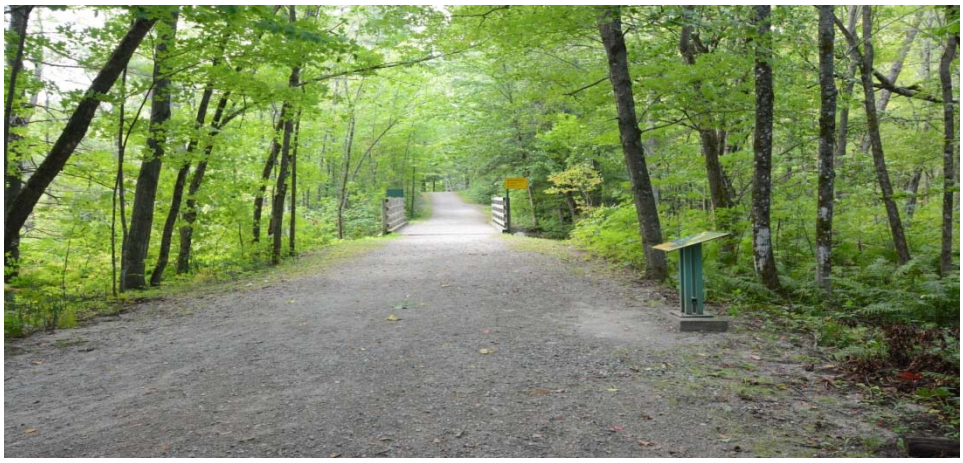

Parks Canada Agency (PCA)

Reconstruction of the footbrige of the seigneurial alley
Montebello, Québec, Canada
Manoir Papineau National Historic Site

Project : # P36954/43581

CONSTRUCTION SPECIFICATION
100% AVANCEMENT

THIS DOCUMENT MUST NOT BE USED FOR CONSTRUCTION PURPOSES

Dossier 647151

June 19, 2018

ENGINEERS RESPONSIBLE FOR COMPLIANCE REVIEWS

The engineers undersigned have prepared and verified the following divisions of this specification:

Division - Title
Division 00 – Procurement and Contracting Requirements
Division 01 – General Requirements
Division 02 – Existing Conditions
Division 05 – Metals
Division 06 – Wood
Division 31 – Earthworks
Division 32 – Exterior Improvements

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END OF SECTION

DRAWING LIST

PARTIE 1 GENERAL

1.1 RELATED SECTIONS

.1 All of the sections of Division 01- General Requirements

1.2 USE OF TERMS

.1 « PCA » designates Parks Canada Agency

.2 «PCA representative» designates the engineer or his / her authorized representative (s), chosen to supervise the works and ensure their conformity with the contractual documents.

.3 «The Contractor» designates the company chosen to perform all of the work described herein in accordance with the standards, specifications and drawings provided for that purpose.

.4 The specifications and plan "A", indicated in the submission form, designate the specifications and engineering drawings mentioned in the attached index, as well as any drawings sent later concerning the same work.

1.3 INTERPRETATION

.1 In case of disparity between the French and English versions of these documents, the French version will prevail.

.2 Words, expressions and abbreviations with a known technical or professional meaning, must be understood in this sense and in the present drawings.

1.4 WORK COVERED BY CONTRACTUAL DOCUMENTS

.1 The work that is the subject of this contract consists of the demolition and reconstruction of the gateway to the seigneurial alley of the Manoir Papineau national historic site as indicated on the bid form and on the plans.

.1 Rehabilitation work may include but is not limited to one or more of the following activities:

.1 The demolition of existing structures, as specified in plans and specifications;

.2 Protection of existing site and structures to be retained;

.3 Protection of vegetation and mature trees;

.4 The creation of an adjacent temporary bridge for the maintenance of user traffic during the demolition and reconstruction of the bridge;

.5 The realization of cofferdams for the construction of new abutments;

.6 The completion of landscaping approaches to the bridge;

.7 Reconstruction of abutments, deck and all elements presented in plans and specifications;

.8 The construction and installation of the patrimonial wooden railing as indicated in the plans and specifications;

.9 All other repair details shown in plans issued under this contract;

.10 Make a detailed statement of the structural elements to be repaired or replaced before the work begins. Validate the exact dimensions and exact profiles of the elements that are the subject of this contract. Complete all required surveys;

.11 Submit detailed shop drawings showing the actual profile of existing structural elements to be repaired or replaced, as well as the proposed final profiles to the PCA Representative for approval. Submitted profiles should be consistent with existing profiles and approaches;

.12 The Contractor is responsible for providing adequate temporary work platforms and support for the work shown on the drawings, specifications and bid slips. No additional costs will be granted to the Contractor in the event that he has to modify his access system during the execution of the work;

.13 The Contractor is responsible for providing all shelters and heating equipment at his own expense to perform the work in cold weather;

.14 Protect the creek from any possible contamination during the work, refer to section "01 35 43 - Protection of the environment";

.15 Keep traffic and pedestrian traffic secure at all times;

.16 Some stages of the work will be filmed by the Departemental Representative. By bidding on the contract the Contractor must be aware of this fact, and cannot in any way oppose to the taking of photo or video during the performance of the work;

.17 Granite screen surface;

.18 Posts and signs;

.2 All construction, demolition and related temporary works shall be carried out in accordance with the standards in force in particular the safety code for construction works s-2.1, r.4 and CSA s350 as well as the safety regulations in force at the Owner’s.

.3 The Contractor shall provide all labour, materials and equipment necessary to perform the work shown in the drawings.

.4 In areas affected by demolition work, the Contractor assumes all responsibility for the protection against dust, the hazards of demolition, the recovery of demolition materials, fine particles and others.

.5 Submit for inspection, drawings, diagrams and details indicating the order of dismantling of the works, the shoring pieces and all temporary works.

.6 Drawings of temporary works must bear the seal of a qualified engineer member of the Order of Engineers of Québec.

.7 Take all necessary measures to prevent any displacement or subsidence of parts of the structure to be retained, repaired or rebuilt at a later date to prevent damage to them and to avoid any risk to the safety of workers or workers. Users of the site. Supply and install parts required for reinforcement and shoring. Perform underpinning work as required. Put in place the necessary measures to ensure the safety of the workers throughout the work.

.8 The Contractor shall coordinate his work according to the dimensions and profile of the existing one and shall submit a suitable profile to the existing one for approval by the Departmental Representative. The Contractor should also provide the shop drawings showing the final profiles and the variants for comments.

.9 The information presented in the plans is not exhaustive. The degradation state, composition, materials, dimensions and profile of the walls can change from one sector to another as well as in the same wall area.

.10 The Contractor must take all necessary measures to maintain pedestrian and bicycle traffic on the way to the seigniorial alley throughout the duration of the work. According to the indications and restrictions of section "01 55 26 - Traffic Control";

.11 The Contractor is responsible for the restoration of the site at the end of the work. he will have to repair all the damage caused to the road, to the ground (tree, sod, vegetation, etc.) as well as any other access during the transport of materials and equipments.

1.5 PERFORMED BY CONTRACTED THIRD PARTIES

.1 Work with other Contractors and follow instructions from Departmental Representative.

.2 Coordinate work with other Contractors. If the performance or performance of any part of the work covered by this contract is dependent on the work of another Contractor, promptly notify the Departmental Representative in writing of any anomalies or defects of the work.

1.6 ORDER OF EXECUTION OF WORK

.1 Carry out work in stages to allow continued use of the premises by the public. Maintain site access to the public as long as the progress of the work prevents the provision of an alternative.

.2 Steps and constraints :

.1 The work cannot begin before July 15, 2018 and must be completed before September 7, 2018, including final acceptance of the work.

.2 The fabrication work of the different prefabricated elements must begin as soon as possible, once the workshop plans for these elements are approved by Parks Canada.

.3 The Contractor must plan to submit construction plans for a temporary bridge before the work begins. This temporary bridge will make it possible to ensure the pedestrian circulation of the seigniorial alley throughout the duration of the works.

.4 The Contractor must also plan to connect the seigniorial alley to the temporary bridge by making a temporary gravel road. The temporary bridge and gravel road plans must be signed and sealed by a member of the OIQ engineer and submitted for approval by the Parks Canada Representative.

.5 Work shall be adjoined to adjacent works and any adjustments to be made to the maintenance of traffic, if any, shall be provided by the Contractor.

.6 Work must be carried out continuously, without interruption, from mobilization to demobilization of the site. No suspension of work is foreseen.

.7 See also « 01 32 16.19 – Construction Progress Schedules Bar (GANTT) Chart ».

.8 Maintain access for firefighting purposes; provide fire-fighting equipment.

.9 Les séquences et méthodes d'opération de l'Entrepreneur devront également se conformer à l'ensemble des sections connexes.

.10 Contractor sequences and methods of operation shall also comply with all related sections).

.11 The Contractor shall, in order to ensure the protection of the public and its work areas, install safety fences all around the site.

.12 The Contractor shall install security fencing in accordance with C.S.S.T. in force. Any fences deemed unsafe by the Parks Canada Representative must be immediately reinstalled to his / her satisfaction.

1.7 SCHEDULING

.1 Organize a kick-off meeting at the beginning of the project, before starting the prefabrication of the elements.

.2 Organize a start-up site meeting, before onsite work begins.

.1 Demolition and reconstruction of the gateway to the seigneurial path

.1 Begin demolition and reconstruction of the gateway of the seigneurial alley on July15, 2018.

.2 At the project start-up meeting, submit to the PCA Representative, the Order of Execution of the Bridge Reconstruction Work, justifying each phase of work.

.1 The Work Order must be prepared by prioritizing certain work to allow the execution of other work, by favoring the execution time.

.2 Within five (5) days of the issuance of the Work Order, the PCA Representative will provide the Contractor with a copy of the Work Order with comments, if any.

.3 At the start-up meeting, submit to the PCA Representative the Work Schedule taking into account the data compiled in the Work Order.

.1 Prepare the Work Schedule respecting the lead times specified in this section of the specifications and the Bid Schedule.

.2 Within five (5) days of the submission of the Work Schedule, the PCA Representative will provide the Contractor with a copy of the Work Schedule and comments, if applicable.

.2 Site Facilities.

.1 At the project start-up meeting, submit to the Departmental Representative the Site Facilities Layout Plan for approval.

.1 Within five (5) days of the submission of the Site Facilities Development Plan, the Departmental Representative shall provide the Contractor with a revised copy of the Plan with comments, if any.

.2 Within five (5) days of the acceptance of the Site Facilities Management Plan, the Contractor shall complete the installation of the construction trailers.

.2 At the kick-off meeting, submit to the PCA Representative temporary traffic control boards during the execution of the work.

.1 Within five (5) days of the delivery of the Temporary Traffic Control Boards, the PCA Representative will provide the Contractor with a copy of the report together with comments, if any.

.2 Within five (5) days of acceptance of Temporary Signage Boards, the Contractor must have completed the installation of these on the site.

.3 At the kick-off meeting, submit to the PCA Representative, the Shop Drawings of the Temporary Access System and the Temporary Gateway for the deviation of pedestrian traffic during the performance of the Work.

.1 Within five (5) days of the delivery of the access system shop drawings and the temporary bridge, the PCA Representative will provide the Contractor with a copy of these with commentary, if any.

.2 Immediately upon approval of temporary access system and temporary gateway shop drawings, and temporary signage established and approved by PCA Representative, implement the temporary access system and the temporary bridge on the site for the maintenance of pedestrian traffic.

.3 The Contractor must submit a signed certificate of conformity, sealed by a member of the OIQ engineer, for the construction of the temporary bridge to the PCA Representative before opening it to the pedestrian traffic.

1.8 USE OF THE AREA BY THE CONTRACTOR

.1 Use of the premises is restricted to areas required for work, storage and access to enable:

- .1 Occupancy of the premises by the Departmental Representative;
- .2 Public use of the premises;
- .3 Execution of work by other Contractors if required;
- .4 Public access to the bicycle path.

.2 Only the limits specified in the plan are made available to the Contractor.

.3 The Contractor must coordinate the use of the premises as directed by the PCA Representative.

.4 The Contractor must identify and pay for the additional work or storage areas required for the performance of the work under this contract.

.5 The Contractor must obtain the necessary permits for the execution of the work. He must also pay the necessary costs to obtain these permits. He will have to comply with all provincial, municipal or federal regulations, and any other law or regulation that pertains to this work. He will be held responsible for any contravention of the relevant laws and regulations.

.6 The Contractor must submit the agreements with the owners to the PCA Representative.

.7 The Contractor must protect, remove or temporarily modify existing structures to avoid damaging the parts to remain in place.

.8 Once the work is completed, the existing structure as well as the work area and all accesses must be in a state equivalent to or greater than the condition it presented before the work began. All existing surfaces altered by the work must be returned to a superior condition or equivalent to the satisfaction of the PCA Representative.

.9 The Contractor acknowledges that he is aware of the geographical location and the existing conditions, constraints of access, delivery, handling, transport and temporary or permanent storage of materials and equipment near the site, sidewalks and in the neighboring streets. He also acknowledges that he is fully aware of the municipality's requirements and regulations in this respect and agrees to comply with it in every respect.

.10 All work must be done within federal property limits, unless agreed to by the Contractor with other authorities.

.11 The Contractor also acknowledges that the work must be carried out taking into account the particular character of the site and the vocation maintained on the path of seigniorial. Perform the work in such a way as to minimize the inconvenience such as interference, disturbances and nuisances (noise, vibrations, odors, dust, etc.). Work causing nuisance must be coordinated with the PCA Representative to agree on an appropriate schedule.

.12 During construction, the Contractor shall ensure that its site facilities or the storage of materials, tools or machinery do not interfere with the safety of existing structures, equipment or users.

.13 The Contractor acknowledges that in certain areas the maneuvering areas are very restricted, or practically nil in places, and that it will have to adapt its phasing to the consequences.

.14 The Contractor must preserve and protect the vegetation and trees present on the site.

.15 The Contractor must protect the creek and the work site from contamination at all times.

1.9 PARTIAL OCCUPANCY OF THE AREA BY THE PCA REPRESENTATIVE

.1 The Departmental Representative will occupy the designated areas;

.2 The Contractor must allow:

- .1 Site access to PCA Representative staff;
- .2 Access to structures for verification of their behavior;
- .3 Use of parking areas;
- .4 Provide site facilities as described in section "01 52 00 - Construction Site Facilities".

1.10 CODES AND STANDARDS

.1 Except as otherwise specified, perform work in accordance with the MTMDET (CCDG) Version 2018 Specifications and General Specifications, the CAN / CSA-S6.14 Road Bridge Design Standard, the National Building Code of Canada. (NBCC), and any other provincial or local code. In the case of omissions or contradictions between these standards, the most stringent requirements will apply.

.2 Work must comply with, or exceed, the requirements of the standards, codes and other documents referenced.

1.11 MODIFICATIONS, ADDITIONS, MAINTENANCE OR REPAIRS TO EXISTING WORKS

.1 Execute work with minimal damage to occupants, public and normal use of premises. Make the necessary arrangements with the PCA Representative to facilitate the execution of the work.

1.12 WORK PROCEDURES AND ENVIRONMENTAL PLAN

.1 In addition to the usual documents, the following documents must be presented at the preconstruction meeting:

- .1 Document describing in details all the work by zone and access procedures to carry out the work according to the established schedule.
- .2 Environmental plan incorporating any special environmental requirements associated with the work and described in the relevant sections of the specifications.
- .3 Plans, sketches, details, methods and order of execution of demolition work of existing structures including shoring, underpinning and all equipment, machinery, Equipment and materials intended for this purpose, for each type of intervention (deconstruction or partial or total demolition).
- .4 Plans, details, methods, attestations and order of execution of temporary bridge and temporary access road works for all stages of construction (construction, maintenance and deconstruction).
- .5 The drawings must bear the seal and signature of a recognized professional engineer and member of the Ordre des ingénieurs du Québec. The costs of the Contractor's engineering services will be borne by the Contractor

.2 The contractor cannot begin work until approval by the Departmental Representative has been given with regard to the above indicated documents.

1.13 ENVIRONNEMENTAL AUTORIZATIONS

.1 The work relating to the reconstruction of the gateway of the seigneurial path is not subject to any application for a certificate of authorization issued by the MDDELCC under section 22 of the Quality Act environment.

.2 Execute all work to be carried out within the boundaries of National Historic Sites, National Historic Parks, National Parks or Historic Canals, in accordance with the provisions of the National Parks Act.

1.14 CONTAMINATED SOIL MANAGEMENT

.1 The Contractor must consider that soils excavated behind existing abutments are likely to contain contaminants with concentrations in the AB range (≤AB) according to the provincial MDDELCC criteria and must be subject to an environmental characterization to establish the degree of contamination of these.

.2 If required, in order to increase the accuracy of the data, the Contractor must carry out a complementary characterization from the beginning of the work in order to establish his contaminated soil management plan.

.3 In the event that characterized backfill material becomes contaminated, a voucher system must be in place to control the quantities of contaminated material or water to be disposed. If applicable, the Contractor must dispose of the materials in an authorized place that is a treatment center or disposal site authorized by the MDDELCC.

.4 Contaminated waters may not be discharged into the creek without decontamination and must be treated in accordance with Section 01 35 43 - Environmental Protection.

.5 The Contractor must refer to section "01 35 13.43 - Special Procedures - Contaminated Sites" for all specific clauses related to the management of contaminated soils. An environmental characterization study was conducted and is presented as an appendix to the specifications and summarized in section 01 35 13.43.

1.15 VIDEO SURVEY

.1 Prior to commencing work, the Contractor shall record in digital video format, in the presence of the Department's representative, the areas in which the Contractor is required to perform work in order to capture on film the pre-construction conditions (Condition of pavement, buildings, walls and walls, landscaping, trees, etc.), and to restore the initial conditions at the end of the work.

.2 A copy of the video (DVD) must be provided to the PCA Representative.

.3 All existing works that have been affected or damaged in the course of the work by temporary installations, machinery, equipment, materials, workers and subcontractors. Shall be repaired at the Contractor's expense and to the satisfaction of the PCA Representative, without causing delays in the delivery of the Work.

1.16 PARTICULARITIES IN CONNECTION WITH THE PROJECT

.1 At all times and throughout the duration of the work, the flow of the creek must be maintained and the cofferdam must be installed to carry out the demolition and rebuilding of the dry abutments.

.2 At all times and throughout the duration of the work, keep the temporary pedestrian crossing open to divert pedestrian traffic.

.3 Special attention must be paid to the preservation and restoration of the site at the end of the work. The Contractor must submit an environmental plan, before the start of the work for approval, this plan must consider all stages of work and the heritage and ecological value of the site.

.4 The creek is considered a type 1 habitat, the contractor must protect this habitat and all aquatic fauna present. The mitigation methods that the Contractor plans to use must be clearly identified in the environmental plan and applied throughout the work.

1.17 STAKING THE LOCATION

.1 From the lines and levels of control indicated on the plans, establish the main landmarks necessary for the execution of the work and provide all the required equipment.

.2 Take the necessary measures to prevent the landmarks from being moved during the work.

.3 Provide all necessary equipment to enable the PCA Representative to make the necessary checks.

.4 The stream water is generally at the approximate level indicated on the plans throughout the year. However, it is possible that the level of the creek is higher during the summer.

1.18 WORK SCHEDULE

.1 The working hours will be from 7:00am to 5:00pm, Monday to Friday.

.2 If the Contractor plans work during Sundays, statutory holidays or nights, he must give written notice to the Departmental Representative at least five (5) days prior to the work. The Departmental Representative reserves the right to approve the request or not, or to impose certain conditions.

.3 The Contractor is responsible for obtaining the authorizations of the municipality if it wishes to carry out works likely to cause nuisance (noise, odors, dust, etc.) outside the authorized hours.

.4 Where appropriate, the Contractor shall be responsible for notifying the residents and residents residing on the site and the local authorities of the hours and work involved.

1.19 REQUIRED DOCUMENTS

.1 Maintain at job site, one copy each document as follows:

- .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 Health and Safety Plan and Other Safety Related Documents.
- .11 Contaminated soil management plan and equipment decontamination area
- .12 Transport Canada Authorizations
- .13 Official authorisations from regulating authorities such as CPN, PPP, etc.
- .14 Other documents as specified.

1.20 RECORDING OF CONDITIONS (AS-BUILT DRAWINGS)

.1 Record information on a set of opaque drawings provided by the PCA Representative.

.2 Record information using red felt-tip markers.

.3 Record information as the work takes place. Do not cover the works before the required information has been recorded.

.4 Contract Drawings: indicate all data to show the works as they are, including the following:

.1 Location, measured in the horizontal and vertical planes, the bottom of excavations, the layer of quarry run and filter stone.

.2 Changes made on site to the dimensions and work details

.3 Changes made as a result of change orders

.4 Details not included on the original contractual documents

.5 Specifications: Register all data to describe the works as performed, including changes made by addenda or change orders.

.6 Other documents: keep the supplier certificates, certificates of inspection and test records from the quarry and site.

1.21 NOT USED

.1 Not used.

PARTIE 2 EXECUTION

2.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 CONSTRUCTION CONSTRAINTS

.1 Execution of work for the project must take into account several constraints, specifically the following:

.1 Availability of land and maritime accesses;

.2 Climatic conditions;

.3 Steps or orders to perform work in accordance with « 01 11 01 – Work Related General Information » ;

.4 Security constraints;

.5 Water levels during flooding which can be higher than the present wharf elevation.

.6 Environnemental constraints (section 01 35 43 – Environmental Protection) especially but not limited to :

.1 The period during which the work is forbidden in this habitat;

.2 The work methods required for environmental protection;

.7 Access Constraints and Land Constraints:

.1 Access to the site shall be as specified in the tender documents. The Contractor shall respect the permissible loads on the driving lanes that are permitted for use.

.2 Contractor's site facilities shall be located within the areas made available to the Contractor and any other facilities contemplated by the Contractor shall be submitted for approval by the PCA Representative.

.3 Construction methods should allow work to be carried out within the limits of maneuvering areas and property boundaries. These limits are indicated or shown on the plans.

.4 The Contractor must minimize the movement of machinery on the seigneurial path and minimize the disruption of the site by the used, the Contractor must transport the materials and equipment necessary for the work during the periods of low traffic on the site.

.5 If the Contractor wishes to use other access, he must enter into agreements with the riparian owners and provide evidence to the PCA Representative.

.8 Status of existing infrastructure :

.1 Contractor's work plan should be adapted to the condition of the work. The contractor should ensure that the methods and sequence of work are safe and consider the limited capacity of the work.

.2 The Contractor must submit a demolition plan of the existing bridge and the corresponding working methods and calculation notes, all of these documents must be signed, sealed by an OIQ engineer member with expertise in the field of demolition of structures.

.3 The demolition documents must describe the measures to be followed to prevent the fall of the demolished and construction materials in the creek.

.4 The signatory Engineer of the bridge demolition documents must provide certificates of conformity, before the beginning of the demolition, if the demolition procedure includes the realization of temporary bracing of the bridge.

.9 Heritage Value (Historical/Archeological Character) :

.1 Works are carried out on a site of high heritage value. Rehabilitation of the works adjacent to the wharf is an important component of the project.

.10 Maintenance of circulation :

.1 Respect the restrictions presented in section "01 55 26 - Traffic Control».

.2 The Contractor must install pedestrian crossings of two (2) meters wide safe, to maintain pedestrian traffic and deviate from the site. At the creek level, the Contractor must build a temporary bridge to maintain pedestrian traffic on the seigneurial pathway during the work

.2 The Contractor must take into account these work constraints, since no compensation is granted for overtime or for work performed outside normal working hours (evening, night, weekend).

.3 Work must comply with federal, provincial and local nuisance requirements.

1.2 EMERGENCIES

.1 The PCA Representative may interrupt work at any time in emergency situations if, in their opinion, such interruption is necessary to protect life, structures or surrounding property or in any other event of force majeure, without possible claim on part of Contractor.

.2 Leaders in the field will be confirmed at the inception meeting.

.3 Refer to « 01 35 43 - Environmental Protection » for requirements related to the Environmental Emergency Response Plan.

1.3 ACCESS TO WORK SITE AND CONTRACTOR SITE

.1 Prior to commencing work, the Contractor shall make a topographical and photographic survey of existing infrastructure and structures that may be affected or damaged in the course of the work by its temporary installations, machinery, equipment, Its materials, its workers and those of its subcontractors, etc. All damaged works must be repaired at the Contractor's expense and to the satisfaction of the PCA Representative, without causing delays in the delivery of the work.

.2 If Contractor causes damage to neighbouring roads or facilities, Contractor bears entire responsibility to fix or replace them at own expense and to full satisfaction of the PCA Representative.

1.4 CLEANING AND UPKEEP OF PREMISES AND ENVIRONMENTAL PROTECTION

.1 Contractor must at all times keep premises free of all accumulation of materials, rubbish, waste and debris, and must do a full final clean-up, to satisfaction of the PCA Representative, during and at end of work.

.2 Contractor is responsible for transporting rubbish, waste and debris to appropriate locations.

.3 Refer to section « 01 74 11 – Cleaning » and « 01 35 43 – Environmental Protection » for the cleaning of the traffic ways and the upkeep of the site.

1.5 INSPECTION OF PREMISES

.1 Contractor's decision to partially or completely commence work implies acceptance of existing conditions as satisfying. If Contractor performs work on defective surfaces or in unsatisfactory conditions, corrections or redoing of work will be at Contractor's expense.

.2 The Contractor acknowledges that he is aware of the geographical location and the existing conditions, constraints of access, delivery, handling, transport and temporary or permanent storage of materials and equipment in the vicinity of the site, sidewalks and in the neighboring streets. He also acknowledges that he is fully aware of the municipality's requirements and regulations in this respect and agrees to comply with it in every respect.

.3 The Contractor also acknowledges that the work must be carried out taking into account the particular character of the site and the vocation maintained according to the marina and the Canal de Chambly. Perform work in such a way as to minimize inconveniences such as interference, disturbance and nuisance (noise, vibration, odors, dust, etc.). Work causing nuisance must be coordinated with the Departmental Representative to agree on an appropriate schedule of work.

1.6 BLASTING

.1 No blasting work, of any nature, is allowed.

1.7 ENVIRONMENTAL CONSTRAINTS

.1 Environmental constraints are presented in « Section 01 35 43 – Environmental Protection » and « 01 35 13.43 – Special Procedures for Contaminated Sites ».

1.8 SURVEYING

.1 The Contractor is responsible for implementing different structures according to the PCA Representative's plans. Contractor must survey the existing material and the perimeters of the structures to validate the connections to the existing material. Contractor must also notify the PCA Representative of any unexpected circumstances or anomalies detected and plan for time required for potential verification by the PCA Representative.

.2 The Contractor shall make a detailed statement of the sections of the walls and foundations to be repaired or replaced and of any elements requiring any intervention in connection with this project. The contractor must validate the dimensions and profile of the elements surveyed.

.3 At all times and throughout the duration of the work, the installation of the works shall be carried out using simple, recognized and verifiable methods on the site in such a way that the PCA Representative can validate the accuracy of the dimensions , levels and other landmarks using equipment accessible to the construction site. The Contractor must coordinate with the Departmental Representative and provide implementation files as the work progresses for periodic validation.

.4 At each stage when the PCA Representative deems it necessary and prior to final acceptance of the work, the Contractor shall provide, on a computerized and georeferenced basis, the location plans, including the details, profiles and the dimensions of the repaired, replaced and retained elements (wall, pole, lamppost, drum, guywire, railing, fence, monument, bollard, concrete base, sidewalk, runway, talus, staircase etc.) after installation and realization.

.5 The Contractor shall make survey readings prior to the commencement of the Work, during the work and at the completion of the work for the issuance of Shop Drawings and Final Construction Plans, see Specifications in Section ". 01 33 00 - Documents and samples to be».

1.9 TRANSPORTATION OF MATERIALS

.1 Transport of materials on public roads to the work site can be Monday through Saturday unless otherwise specified by the competent authorities. Transportation will be prohibited on Sundays and legal holidays.

.2 The transport of materials through the municipality, may begin at 7:00 but end at 17:00. Transport outside of these hours will not be permitted. The Contractor shall obtain written permission from the Municipality for transportation outside of these hours.

.3 Refer also to « 01 55 26 - Traffic Control », « 01 74 11 – Cleaning », « 01 35 43 - Environmental Protection » and « 01 35 13.43 - Special Procedures for Contaminated Sites » for the management of traffic and the cleaning of traffic areas in connection with the transport of materials.

1.10 PRESERVATION OF HISTORICAL/ARCHAEOLOGICAL NATURE

.1 The work zone is considered as an important historical site, containing numerous archaeological resources. In the case of an archaeological discovery during work, notify PCA Representative immediately and wait for his written directions prior to pursue the work in the area of the discovery.

.2 The Contractor must make the new guardrail as specified in the plan. Before commencing the manufacture of the log railing, the Contractor must submit the shop floor plans to the PCA Representative. Once the shop floor plans have been approved by the Parks Canada Architects and the PCA Representative, the Contractor will be able to begin the manufacture of the railing.

1.11 REALIZATION OF THE DEVIATION OF THE SEIGNEURALE ALLEY AND THE TEMPORARY GATEWAY

.1 The Contractor must make a deviation of the seigneurial path to bypass the work area and maintain pedestrian traffic on the seigneurial path throughout the work.

.2 Within a minimum of five working days before the date scheduled for the start of the work, the Contractor must submit plans, working methods corresponding to the works necessary for the diversion and maintenance of traffic on the seigniorial alley. . The Contractor must also maintain these works as directed by the Design Engineers of these temporary works.

.3 The Contractor shall provide the plans and working methods of the temporary bridge and access road, signed and sealed by a member engineer in good standing of the Ordre des ingénieurs du Québec.

.4 Following the completion of the temporary bridge and the temporary access road, the Contractor must submit a certificate of conformity signed and sealed by a member of the OIQ, attesting that the work was carried out in accordance with the plans and instructions from the responsible engineer.

.5 Upon receipt of certification by the PCA Representative, will proceed with the verification of temporary structures and temporary signage. The Contractor shall make the corrections requested by the PCA Representative prior to the opening of the temporary diversion road.

.6 For the construction of the deflection path and the temporary bridge, the loads to be considered shall be in accordance with S6-14 and NBC 2015. The carriage width shall be at least 1.8m.

.7 In the choice of the deflection path, the Contractor must avoid cutting down existing trees, in the case where the optimal path requires cutting down certain trees. The Contractor must specify this in the shop floor plans bypass and must have the approval of the Parks Canada Representative.

.8 If the Contractor considers that a geotechnical study, including characterization drilling, is required for the construction of the temporary diversion road, it must be done by the Contractor before the beginning of the work at his own expense.

PART 2 PRODUCTS

1.12 NOT USED

.1 Not used.

PART 3 EXECUTION

1.13 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 DESCRIPTIONS OF THE ITEMS IN THE TENDER PRICE SCHEDULE

1.1.1 SITE SUPERVISION OFFICE AND FIELD LAB

.1 This item is paid on a fixed price basis and includes the management, the organization, the coordination, the purchase, supply and amortization expenses, the installation and removal, as well as the maintenance, of **worksite offices** as written in the requirements of Division 1 (General Requirements) of the construction specifications. The contractor must pay attention to the requirements of the section Worksite Facilities – 01 52 00).

.2 It also includes the costs related to the required equipment and labor (such as workers, technicians and administrators of the networks) for the management, the organization, the installation and the maintenance of services and office facilities.

.3 This item will be paid on the same terms as the items included in the **Worksite Organization** section.

1.1.2 WORKSITE ORGANISATION

.1 This item will be paid according to the following terms:

.1 25% with the first monthly payment, after the mobilization and the installation of site facilities.

.2 50% equally distributed with milestone payments and proportionally to the work progression.

.3 25% with the payment issued upon the Substantial (Provisional) Completion Certificate, after final cleaning.

.2 This item also includes the work organization and all the elements described in this section. It is paid on a flat-rate basis and includes all the requirements outlined in Division 1 (General Requirements) of this specification, as well as all the work that is not included elsewhere in the price schedule but that is necessary for the complete execution of the project.

.3 It also includes mobilization and demobilization, purchase, supply and amortization expenses, and costs related to tools, equipment, labor, material, worksite facilities, as well as any additional mobilization required to meet the work schedule.

.4 Maintenance and operating costs for the maintenance of machinery, equipment and tools in the worksite facilities during the course of the work, and the personnel supporting these facilities are also included.

.5 Ce prix inclut notamment, sans s'y limiter :

.1 Land

.1 Expenses for the acquisition, lease, compensation and use of lands other than those which may be made available to the contractor, either for construction sites or for temporary deposits.

.2 The costs of use and maintenance of the lands made available to the contractor.

.2 Layout of the Worksite Installation Zones

.1 Land layout required for set-up of site facilities.

.2 Site drainage.

.3 Site office of Worksite and of the personnel.

.4 Office of the PCA Representative.

.5 Premises for storage of equipment.

.6 External Storage for materiel and equipment.

.7 Barriers and fencing required throughout the duration of the work, including its eventual movement and all temporary safety devices.

.8 The construction and dismantling of the temporary bridge, as well as the production of all the documents necessary for its realization as specified in the specifications.

.9 The costs of guarding, including surveillance and site security.

.3 Restoration of the premises

.1 All existing works that have been affected or damaged during the work by temporary installations, machinery, equipment, materials, workers and subcontractors, etc. must be repaired at the contractor's expense and to the satisfaction of the PCA Representative, without causing delays in the delivery of the work.

.2 For example, and without limitation, the Contractor shall provide for the rehabilitation of all access (entrances or exits) that will be borrowed by the machinery or equipment. For the path of the seigniorial alley, the Contractor must provide at the end of the work, at least, the repair of the upper foundation (± 150mm) and the installation of new materials such as the existing.

.3 Upon completion of work, existing structures, the work area and all accesses must be in a condition equivalent to or better than the condition they were prior to the work. All existing works, as well as all existing surfaces altered by the work, be it concrete sidewalks and curbs, grassed areas, asphalt surfacing, gravel paths, walkways In pre-cast concrete pavers or any other type of surface, shall be returned to a state superior or equivalent condition to the satisfaction of the PCA Representative.

.4 Machinery, Equipment and Tooling

.1 All machinery, material equipment and tools required to maintain site operations including operation (provide unit prices and hourly rates for each equipment used).

.2 Light trucks.

.3 Scaffolding.

.4 Generators and temporary lighting.

.5 Tools.

.6 Compressors.

.7 Etc.

.5 Temporary works and protective measures, cofferdams and temporary footbridge

.1 Provision and installation of temporary cofferdams, identified or not on the plans, but required for the complete and safe construction of the structure, during excavation along the work limits including dismantling and the restoration of the site at the end of the work.

.2 The installation and dismantling of the temporary footbridge, as well as the layout of its surroundings at the detour of the Worksite.

.3 All necessary measures, actions and supplies, including, but not limited to, labor, equipment, tooling and machinery, materials, professional services and land surveys for transportation, for the temporary support of the following utility facilities.

.4 Contractor agrees to follow supplier's recommendations and the presence of a technician during construction is required to maintain service continuity.

.5 Engineering and expertise as well as design of works and pre-supply of shop drawings (eg assembly drawings) signed and sealed by the Contractor's Engineer and technical data sheets (Materials, equipment, etc.) to the PCA Representative for approval.

.6 The Contractor being responsible for its construction methods, he must plan and set up all other temporary works or protective measures, which are not part of other items of the price schedule and necessary for the completion of the work and for the complete realization of the work.

.6 Networks

.1 On-site toilettes.

.2 Water supply to existing site facilities from existing hydrants.

.3 Fire protection.

.4 Water for compaction of materials and dust suppressant.

.5 Power supply.

.6 Lighting on site.

.7 Telephone and Internet links for use and use of the PCA Representative.

.7 Health and Safety

.1 All equipment, labour, materials, machinery, tooling and accessories required to ensure health and safety in accordance with Section 01 35 29.06 – Health and Safety of the construction Specification and applicable laws and regulations.

.8 Services

.1 This lump sum price includes the total remuneration including the salaries and bonuses of the contractor's site staff and clerical staff who will provide the services of site organization during the duration of the work, including but not limited to:

.1 Superintendence and project management.

.2 Topographic survey services.

.3 Bathymetric surveys to monitor work.

.4 Studies of construction methods.

.5 Quality control.

.6 Health and Safety.

.7 Work planning and subcontractor management.

.8 Supply and Logistics.

.9 Preparation and management of documentation (in accordance with Section 01 33 00 of the construction specifications, including shop drawings, final plans, operating manuals and suppliers).

.10 Commissioning.

.11 Transportation, accommodation and subsistence costs of (indirect) support staff and all workers throughout the duration of the work.

.9 Various

.1 Licenses.

.2 Supply and installation of 1220 mm x 2440 mm works identification sign, corresponding to a 3.0 m² for each worksite access.

.3 All other related costs for completion of work not included in unit and or lump sum prices.

.4 Provision of timetable of work in two formats: (*.mpp & *.pdf) including all the updates and other information required.

1.1.3 TEMPORARY TRAFFIC MAINTENANCE AND TEMPORARY SIGNALING

.1 This item is paid for on a lump-sum basis and includes the management, organization, coordination, purchase, supply and amortization, installation and removal and maintenance of the **temporary signage** as required under the requirements described in the sections of Division 1 (General Requirements) of the construction specification. The Contractor must give pay attention to the requirements of section 01 55 26. It includes all other works which are not part of other items of the price schedule but which are necessary for the complete execution of this work.

.2 It also includes the cost of equipment and required personnel, (such as signalers, the signaling manager, the signaling team, the maintenance team and other personnel), for the management, organization, coordination, monitoring and maintenance of pedestrian, cyclist and motorist traffic in and around the area and at the periphery of the site and all the elements described in this part, throughout the duration of the works.

.3 This price includes but is not limited to:

.1 Costs associated with the preparation of all signs, maintenance plans, site access, signed and sealed by a member of the Ordre des ingénieurs du Québec, and conforming to the standards for Road Works, Volume V "Road Signs" and the requirements of Section 01 55 26;

.2 Costs associated with the preparation, transmission and receipt of all permits to occupy the public domain, as well as the costs of permits to be issued by the boroughs. Closures of traffic lanes and multifunctional runways;

.3 Supplying, mobilizing, maintaining, up-keeping, replacing in the event of breakage or vandalism, putting on or off (masking or unmasking as often as required), moving and demobilizing any temporary signage necessary for the execution of the work on the entire site and at the site (including visual markings, work signs, prescriptions and danger signs, light arrows, detour panels shown in the traffic plans, etc.), and around the site to maintain traffic in accordance with the requirements of Section 01 55 26 as well as the signaling plans produced by the Contractor. The Contractor must plan to mobilize and demobilize the detour path through the temporary footbridge at the beginning and at the end of the work. T-50-1 panel fitter must also be provided on all cross streets and work area approaches for users in the surrounding work area;

.4 The relocation of work signs (T-30, T-40 and T-50-1) around the site depending on work progression (in the streets as well as for the multifunctional lanes), as often as required;

.5 All mark-up required for work areas and closures with visual cues for the duration of the work;

.6 The service of the coordinator of the signaling works and the coordination of the work with the neighboring yards;

.7 Adjustment and displacement of signage according to changes caused by neighboring sites.

.8 Compensation for all signaling personnel including signalers required to ensure the safe movement of machinery, pedestrian and cyclist safety, and accessibility for local residents, as well as the acts of masking and displaying the signs indicating the presence of the signalers according to their presence;

.9 Video recording of existing road signs, masking, dismantling, storage, replacement if broken, movement, relocation or unmasking at the end of the work, costs associated with maintaining the existing sign message as well as any incidental expenses;

.10 Supplying, mobilizing, maintaining, up-keeping, replacing in the event of breakage or vandalism, moving (as often as required) and demobilizing No-parking signs, including their registration;

.11 Supplying, mobilizing, maintaining, up-keeping, replacing in the event of breakage or vandalism, traveling (as often as required), and demobilizing concrete site guardrails including T-RV-11 (mini-beacon);

.12 Supply, mobilization, maintenance, up-keep, replacement in the event of breakage or vandalism, displacement, replacement of liquid during freezing, certificates of conformity signed by a member engineer of the l'Ordre des ingénieurs du Québec and the demobilization of TL-2 impact attenuators, as well as any incidental expenses;

.13 Mobilization, maintenance, movement and dismantling of access to work areas including complete signage for access to site, signalers required to manage traffic at access approaches, temporary signage required to inform users and cyclists of the presence of signalers, the movement of the guards and the impact attenuators required for the openings proposed by the contractor. In addition, all costs (eg impact attenuator, slide movement, lane closure, signage, signposting, signaling, etc.) associated with the accesses to the construction site (those identified in the drawings or additional accesses proposed by the Contractor and subject to the approval of the PCA Representative) shall be at the expense of the Contractor;

.14 The layout of access roads, bypasses and temporary traffic;

.15 Maintaining safe access in the vicinity of the site;

.16 Missing access roads;

.17 Maintenance of access roads (cleaning in summer, snow removal in winter, leveling of gravel roads, installation of dust suppressant, etc.);

.18 Winter maintenance of signage;

.19 Dismantling temporary signage during winter breaks or during snow removal operations, storage of signage and re-installation of signage at work resumption;

.20 Temporary pavement marking and erasure of markings to permit temporary lane layouts and detour paths identified in contract documents (traffic plans and Section 01 55 26 requirements);

.21 Temporary deviations if required, including trimming trees and bushes according to the recommendations of the PCA Representative;

.22 Maintenance of signage and traffic lanes including the vehicle, personnel, equipment, movement and adjustments of signals by the signaling team;

.23 Costs associated with daily signage inspection;

.24 Costs associated with maintaining pedestrian and cycling traffic, and access for reduced mobility, including self-supporting fencing (complementary to section 1.3.2.5.2.7 of section 01 29 00 to confine cyclists to a safe trail, secure storage areas and work areas, secure the premises at the request of the PCA Representative, etc.), signalers, and temporary arrangements in accordance with Section 01 55 26. Snow clearing of roads, multi-purpose lanes, detour roads and temporary bridge.

.25 Reclamation of the area, each pedestrian paths, repair if required and cleaning.

.26 Costs related to public domain maintenance such as cleaning;

.27 Supplying mobilizing, maintaining, up-keeping, replacing in the event of breakage or vandalism, putting on or off (masking or unmasking as often as required), moving and demobilizing any temporary signaling and equipment necessary for the execution of the works from the Lachine Canal maritime network in order to secure the work area and ensure the maintenance of maritime traffic, Section 1.12 of Section 01 11 01, as well as according to signaling plans produced by the Contractor;

.28 All other maintenance costs associated with related work not necessarily mentioned or described in Plans and to Section 01 55 26 but required for completion of works for all the other disciplines of this contract.

.29 Payment of this item will be made based on the progress of the work, as approved by the PCA Representative.

1.1.4 ENVIRONMENTAL PROTECTION AND WATER MANAGEMENT

.1 The payment of this article will be made according to the following:

.1 25% with the first monthly payment, after mobilization and installation of site facilities;

.2 50% also distributed with milestone payments and in proportion to the progress of the work;

.3 25% with payment issued upon issuance of "Substantial (Provisional) Completion Certificate" after final cleaning.

.2 This item includes all work related to the requirements for environmental protection and water management, as well as all the elements described in this part. It is paid on a flat-rate basis and includes all the requirements outlined in Division 1 (General Requirements) of this specification as well as all other work that is not part of other price schedule items but is necessary for the full completion the work.

.3 It also includes the costs of mobilization and demobilization, the cost of purchasing, depreciating or renting machinery, tools and equipment, personnel, materials and any additional mobilization required to meet the work schedule.

.4 Maintenance and operating costs for the maintenance of machinery, equipment and tools as part of the environmental and water management requirements throughout the duration of the work, and the personnel supporting this work are also included.

.5 This price includes, but is not limited to :

.1 All equipment and supplies required to protect the environment, in accordance with the "01 35 43 - Environmental Protection" section of the specifications and applicable laws.

.2 All of the environmental protection measures described in the "01 35 43 - Environmental Protection" section of the specifications and the laws in effect, such as, but not limited to, turbidity curtain, settling / sedimentation ponds, pumping, temporary works, removal and repositioning of wood booms, etc.

.3 Construction / demolition waste management, in accordance with the requirements of all sections of "Division 1 - General Requirements" of the Construction Specification.

.4 The management of the temporary storage area as well as the production, implementation and management and coordination of the "Contaminated Soil Management Plan" as well as the characterization of excavation materials, where applicable. , all in accordance with Section 01 35 13.43 - Special Procedures - Contaminated Sites, including but not limited to :

.1 All additional analysis and laboratory costs, if required;

.2 The temporary storage of excavation materials on the site provided for this purpose within the limits of works, the development and restoration of the land at the disposal site, management and characterization. heaps and the introduction of protective measures;

.3 The "temporary spoil storage area" must be located within the boundaries of the site. Landscaping at the contaminated soil deposition site includes, but is not limited to, removal of topsoil for reuse, provision and installation of protective membranes, handling and temporary pile-up contaminated soils, preparation of the surface to be sodded, provision and application of topsoil of thickness 150mm after settlement, supply and laying of sod including picketing and laying a trellis when the slope of the land requires it, the spreading of a rooting fertilizer, the rolling of the lawn and its watering until its recovery;

.4 The temporary storage of excavated materials on the site provided for this purpose within the limits of works, land development and restoration work at the disposal site, the management and characterization of heaps and the implementation of protective measures;

.5 Management and disposal of sediment water, if any, and contaminated creosote wood.

.6 Management for disposal / disposal of contaminated water.

1.1.5 DEMOLITION OF EXISTING STRUCTURE

1.1.5.1 Demolition, transportation and disposal of concrete or other dismantled material

.1 This price remunerates all necessary measures, actions and supplies such as, but not limited to, labor, equipment, tools and machinery, materials, professional services, land surveys and permits for the demolition, removal, transportation and disposal of concrete, concrete abutments, ballast materials, timber cribs, timber frames, decking, railings and existing stelae, as well as any other material composing the base or the structure of these elements, all according to the requirements and indications to plans and specifications.

.2 The price also includes loading, transportation, materials management and disposition of dismantled items in authorized sites.

.3 The price also includes coordination for the sorting and disposal of materials of a different nature that may be encountered during demolition work on the concrete of the wall (stones, masonry blocks, plants or other) at an authorized site.

.4 The price equally includes, all necessary fees for supplying, installation, mobilization, displacing, removing platforms and access systems.

.5 The price equally includes, all necessary fees needed to realize surveying plans, before start of works, to determine the profile and geometry of all elements present on site as specified on plans and in specifications. The price must equally account for all necessary fees required to revisions of shop drawings, before start of works, as specified on plans and in specifications.

.6 Payment of this item will be made based on the progress of the work, as approved by the PCA Representative.

1.1.6 FOUNDATIONS

1.1.6.1 Excavation :

.1 This price remunerates per cubic meter (m3) all necessary measures, actions and supplies such as, but not limited to, management, labor, tools and machinery, equipment, materials, surveys, permits, professional services and construction engineering for the excavation of materials for the reconstruction of the bridge, all in accordance with the plans and requirements of the specifications.

.2 The price also includes, if required by the Contractor's "Contaminated Materials Management Plan", the loading, transportation and off-site disposal of non-contaminated materials or the temporary storage on site of the work. (where required), at the location identified by the Contractor, excavation material for the purpose of characterization or sorting, and reuse of existing materials in the backfill excavation control in coordination with the PCA Representative.

.3 This price also includes the carrying out of the temporary support of the grounds in the case where the zones of works are restricted.

.4 All necessary costs to complete and provide this item such as, but not limited to, co-ordination with Laboratory and PCA Representative for Soil Characterization, if required prior to disposition, must be included.

.5 The price also includes all costs necessary for the provision, installation, mobilization, removal, removal of work platforms and access systems.

.6 The price also includes all necessary costs for the realization of the survey, prior to the commencement of work, to determine the profile and geometry of any element present in the right of way of the work as specified in the plans and specifications. The price must also include all costs necessary for the realization and revisions of the shop drawings, before the start of the work, as specified in the plans and specifications.

.7 The payment of this item will be made according to the progress of the work as approved by the PCA Representative

1.1.6.2 MG-56 support cushions :

.1 This price remunerates per cubic meter (m^3), all necessary measures, actions and supplies such as, but not limited to, management, labor, tools and machinery, equipment, materials, surveys, permits, professional services and construction engineering for the supply and placement of materials, the placement of Type V geotextile and controlled backfilling for the foundation of abutments with borrowed materials approved granular type MG-56, as indicated in the plans and requirements of the specifications.

.2 All necessary costs to complete and provide this item such as, but not limited to, leveling, placement of geotextile membrane prior to backfilling, watering and compaction as well as coordination with Laboratory and PCA Representative approval for backfill materials must be included.

.3 The payment of this item will be made according to the progress of the work, as approved by the PCA Representative.

1.1.6.3 Box type abutments :

.1 This price remunerates per cubic meter (m3) all measures, actions and supplies necessary such as, but not limited to, management, labor, galvanized hardware, tools and machinery, equipment, materials, surveys, permits, professional services and construction engineering for the supply and

placement of materials, the placement of Type V geotextile and controlled backfilling for the construction of clear box type abutments track-with approved 300-400 mm caliber filler materials, as indicated in the plans and requirements of the specifications.

.2 All necessary costs to complete and provide this item such as, but not limited to, leveling, placement of geotextile membrane prior to backfilling abutments and coordination with the Laboratory and the PCA Representative approval for backfill materials must be included.

.3 The payment of this item will be made according to the progress of the work as approved by the PCA Representative.

1.1.6.4 Filling MG-112

.1 This price remunerates per cubic meter (m3), all necessary measures, actions and supplies such as, but not limited to, management, labor, tools and machinery, equipment, materials, surveys, permits, professional services and construction engineering for the supply and placement of materials and controlled backfilling for the foundation of abutments with MG-112 approved granular material indications to the plans and requirements of the specifications.

.2 All necessary costs to complete and provide this item such as, but not limited to, leveling, placement of geotextile membrane prior to backfill abutment, watering and compaction as well as coordination with Laboratory and the PCA Representative approval for backfill materials must be included.

.3 The payment of this item will be made according to the progress of the work, as approved by the PCA Representative.

1.1.6.5 Ground Foundation MG-20

.1 This price remunerates per cubic meter (m3), all necessary measures, actions and supplies such as, but not limited to, management, labor, tools and machinery, equipment, materials, surveys, permits, professional services and construction engineering for the supply and placement of materials and controlled backfilling for approaches to the MG-20 approved granular borrow pedestrian approaches, as indicated in the plans and requirements of the specifications.

.2 All necessary costs to complete and provide this item such as, but not limited to, leveling, placement of geotextile membrane prior to backfilling, watering and compaction as well as coordination with Laboratory and PCA Representative approval for backfill materials must be included.

.3 The payment of this item will be made according to the progress of the work as approved by the PCA Representative.

1.1.6.6 Stone caliber 300-500

.1 This price remunerates per cubic meter (m3), all necessary measures, actions and supplies such as, but not limited to, management, labor, tools and machinery, equipment, materials, surveys, permits, professional services and construction engineering for the supply and placement of materials, the placement of Type V geotextile and controlled backfilling for stone paving on slopes, with stones of caliber 300-500 mm, according to the indications to the plans and requirements of the estimate.

.2 All necessary costs to complete and provide this item such as, but not limited to, leveling, placement of geotextile membrane prior to backfilling as well as coordination with Laboratory and PCA Representative approval for backfill materials must be included.

.3 The payment of this item will be made according to the progress of the work as approved by the PCA Representative.

1.1.7 Deck

1.1.7.1 Steel work and wind bracings

.1 These prices remunerate per kilogram (kg) all necessary measures, actions and supplies such as, but not limited to, management, labor, machinery and equipment, hardware, equipment, materials, surveys, permits, professional services, expertise and engineering for the supply, transportation, placement in accordance with the requirements of section «05 12 33 - Bridge construction steel».

.2 All necessary costs to complete and provide this item such as, but not limited to, coordination with the Laboratory and PCA Representative for the supervision of the tests and factory control.

.3 The price also includes all necessary costs for the realization of the survey, before the beginning of the work, to determine the profile and the geometry of any element present in the right-of-way of works as specified in plans and specifications. The price must also include all costs necessary for the realization and revisions of the shop drawings, before the start of the work, as specified in the plans and specifications.

.4 The price also includes all necessary costs for the realization of the plans and the methods of work for the lifting and the assembly of the elements of the metal frame as well as the certificates of installation of the metal frame, before the beginning of the works, as specified in plans and specifications.

.5 The payment of this item will be made according to the progress of the work, as approved by the PCA Representative.

1.1.7.2 Wooden decking

.1 This price remunerates per cubic meter (m3), all measures, actions and supplies necessary such as, but not limited to, management, labor, tools and machinery, galvanized hardware, wheel hunting, equipment, materials, surveys, permits, professional services, expertise and engineering for the supply, transportation, establishment, in accordance with the prescriptions of plans and specifications.

.2 All necessary costs to complete and provide this item such as, but not limited to, coordination with the Laboratory and PCA Representative for the supervision of the tests and factory control.

.3 The price also includes all necessary costs for the realization of the survey, before the beginning of the work, to determine the profile and the geometry of any element present in the right-of-way of works as specified in plans and specifications. The price must also include all costs necessary for the realization and revisions of the shop drawings, before the start of the work, as specified in the plans and specifications.

.4 The payment of this item will be made according to the progress of the work as approved by the PCA Representative.

1.1.7.3 Guardrails

.1 These prices remunerate compensate for all necessary measures, actions and supplies such as, but not limited to, management, labor, tools and machinery, hardware, equipment, materials, surveys, permits, professional services, expertise, wood treatment and engineering for the supply, transportation, installation, in accordance with the requirements of plans and specifications.

.2 All necessary costs to complete and provide this item such as, but not limited to, coordination with the Laboratory and PCA Representative for the supervision of the tests and factory control.

.3 The price also include all necessary costs for the realization of the survey, before the beginning of the work, to determine the profile and the geometry of any element present in the right-of-way of works as specified in plans and specifications. The price must also include all costs necessary for the completion and revisions of the shop drawings, before the start of the work, as specified in the plans and specifications.

.4 The payment of this item will be made according to the progress of the work as approved by the PCA Representative.

1.2 APPLICATIONS FOR PAYMENT OF DEPOSIT

Not applicable

1.3 DETAILED ACCOUNT OF AMOUNTS OWING

Not applicable

1.4 PROGRESSIVE RELEASE OF THE HOLDBACK

Not applicable

1.5 FINAL PAYMENT

Not applicable

PART 2 PRODUCTS

1.6 NOT USED

.1 Not applicable

PART 3 EXECUTION

1.7 NOT USED

.1 Not applicable

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 This section addresses Inspections and tests to be performed by the PCA Representative. It completes the sections 01 45 00 Quality Control as well as the particular requirements described in the sections 05 to 32 for the Contractor.

1.2 APPOINTMENT AND PAYMENT

.1 The PCA Representative will designate a laboratory services for control tests in addition to those required by the Contractor to meet the requirements stipulated in the contractual documents. Laboratory costs to be covered by the PCA Representative, except:

.1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.

.2 Inspection and testing performed exclusively for Contractor's convenience.

.3 Mill tests and certificates of compliance.

.4 Tests specified to be carried out by Contractor under supervision of the PCA Representative.

.5 Additional control tests which must be carried out following Contractor errors.

.6 Coordination for the tests of fill materials environmental characterisation.

.2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, the Contractor will pay costs for additional tests or inspections as required by the Departmental Representative to verify acceptability of corrected work.

1.3 CONTRACTOR'S RESPONSIBILITIES

.1 Supply labour and facilities to:

.1 Provide access to work for inspection and testing.

.2 Facilitate inspections and tests.

.3 Make good work altered by inspection and testing.

.4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.

.2 Notify the PCA Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.

.3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.

.4 Pay costs for uncovering and making good work that is covered before required inspection or testing will have been completed and approved by the PCA Representative.

.5 Coordinate laboratory work according to progression of the work.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 OVERVIEW

1.1 RELATED SECTIONS

.1 All sections of Division 01 – General Requirements

1.2 ADMINISTRATIVE PROCEDURES

.1 Provide for the holding of project meetings throughout the course of the work, at the request of the PCA Representative who is responsible for the management of the project.

.2 Representatives of the Contractor, subcontractors and suppliers attending project meetings are empowered and authorized to act on behalf of the parties they represent.

1.3 MEETING BEFORE THE START OF THE WORKS

.1 Within 15 days following the awarding of the contract a meeting of the parties to the contract is held to discuss the administrative procedures and define the responsibilities of each.

.2 Must be present at this meeting: The representative of the PCA, the Contractor, representatives of the Contractor and subcontractors and any other party deemed necessary according to the Representative of the PCA, who are able and authorized to intervene on behalf of the parties they represent.

.3 The time and location of the meeting and notification to the parties concerned will be forwarded at least five (5) days prior to the meeting.

.4 Main items on the agenda :

.1 Appointment of the official representatives of the participants of the works.

.2 Schedule of the Works, in accordance with section 01 32 16.07 – Work Scheduling – GANTT Chart

.3 Schedule of Submission of Shop Drawings, Product Samples, Color Samples and Datasheets, in accordance to « 01 33 00 – Submittal Documents and Samples », « 01 33 00A – Documents required by the contractor » and « 01 33 00B – Shop drawings –presentation sheet ».

.4 Requirements for the regulation of vehicular and pedestrian traffic on the outskirts and around the perimeter of the work, in accordance with section "01 55 26 - Traffic Regulation".

.5 Requirements concerning health and safety on the construction site, according to section « 01 35 29.06 – health and safety ».

.6 Requirements for temporary installations, site signage, offices, sheds and warehousing facilities, utilities and fences, as described in « 01 52 00 – Site Facilities ».

.7 Requirements for access and temporary protection work, as described in « 01 56 00 – Temporary access and protection works ».

.8 Proposed amendments, change orders, procedures, approvals required, Permitted Margin Percentages, Time extensions, Overtime and other Administrative Arrangements.

.9 Drawings to be placed in the project file, as per the section « 01 33 00 - Documents and samples to be submitted ».

.10 Procedures for the delivery and receipt of work and warranties, in accordance with « 01 78 00 - Documents and elements to be delivered on completion of the work ».

.11 Requests for monthly installments, administrative procedures, photos, deductions.

.12 Designation of inspection and testing organizations and firms.

.13 Insurance, policy statements.

.14 Procedures for supervision of works

.15 Environmental Restrictions.

.16 Continuity of operations

.17 Legal and Environmental Requirements

1.4 MEETINGS ON THE ADVANCEMENT OF THE WORK

.1 Meetings will be held every two weeks during the course of the work or more when required as designated by the Ministry Representative.

.2 Must be present at this meeting: The representative of the Ministry, the Contractor, representatives of the Contractor and subcontractors and any other party deemed necessary according to the Representative of the Ministry, who are able and authorized to intervene on behalf of the parties they represent.

.3 Main items on the agenda

.1 Reading and approval of the minutes of the previous meeting.

.2 Review of progress since last meeting.

.3 On-site observations; Problems and conflicts.

.4 Problems affecting the work schedule.

.5 Review of delivery schedules for products manufactured off-site.

.6 Procedures and corrective actions to address delays to ensure timely compliance of the schedule.

.7 Revision of the work schedule.

.8 Examination of the timing of progress (calendar), during the successive stages of the work.

.9 Revision of the timetable for submission of required documents and samples; Acceleration of the process as required.

.10 Maintenance of quality standards

.11 Review of Proposed Changes and Possible Impacts on the Work Schedule and Completion Date.

.12 Miscellaneous

PART 2 PRODUCTS

2.1 NOT APPLICABLE

.1 Not applicable.

PART 3 EXECUTION

3.1 ROLES OF STAKEHOLDERS

.1 The Representative of PCA will prepare the agenda.

.2 The PCA Representative will chair the meeting.

.3 The PCA Representative will prepare the minutes and distribute them within 5 days of the meeting.

END OF SECTION

PARTIE 1 **GENERAL**

1.1 RELATED SECTION

.1 All sections of Division 1 - General Requirements

1.2 DEFINITIONS

.1 Activity: Specified work performed as part of a project. An activity is expected to have an expected duration, expected cost and expected resource requirements. Activities can be subdivided into tasks.

.2 Bar chart (GANTT chart): Graphical representation of data related to project schedule. In the usual bar chart, activities or other elements of the project are presented from top to bottom, at the left of the graph while the dates are shown at the top, from left to right; the duration of each activity is indicated by horizontal segments placed between the dates. In general, the bar chart is generated from a commercially available computerized project management system.

.3 Core reference: Approved initial plan (for a project, a work package or an activity), taking into account the approved modifications to the scope of the project.

.4 Week of work: Week of five (5) days, Monday to Friday, defining working days for bar chart submission (GANTT chart).

.5 Duration: Required number of work periods (excluding holidays and other non-working periods) for the performance of an activity or other element of the project. The duration is usually expressed in working days or weeks.

.6 Master Plan: Summary program outlining key activities and milestones.

.7 Milestone: An important event in the completion of the project, most commonly the completion of a significant (deliverable) product.

.8 Implementation schedule: Timelines for implementation of activities and achievement of milestones. Dynamic and detailed program of the tasks or activities necessary to reach the milestones of a project. The monitoring and control process is based on the implementation schedule for the execution and monitoring of activities; it determines the decisions that will be made throughout the duration of the project.

.9 Scheduling - Project Planning, Monitoring and Control: A comprehensive system managed by the Ministry representative to track project implementation against specific milestones or milestones.

1.3 REQUIREMENTS

.1 Ensure that the Master plan and implementation schedule are operable and within the prescribed contract duration.

.2 The master plan must provide for the completion of the work in accordance with the prescribed milestones, within the agreed time.

.3 The schedule must provide for each activity the time required for the submittal of shop drawings, a reasonable period of time for approval, ordering and delivery of materials to the site, and any other relevant information.

.4 The critical path of the project should be clearly indicated

.5 Any changes to the work related to requests for additional work from the Ministry representative or unsuspected work site conditions must be incorporated into the project schedule. The Contractor must

exercise due diligence in order to reorganize its schedule and avoid any additional delays. In the event that additional delays are unavoidable, the Contractor shall immediately notify the Ministry representative and provide an update of the timeline showing the implication of the amendment on the critical path of the project

.6 The Contractor shall clearly specify and display any changes made to the original schedule in the revised programs. Any additional work accepted by the Ministry representative and having an impact on the timeline should appear on the follow-up to see the importance of this work on the critical path. The Contractor shall also include in this follow-up the explanations of the delays accumulated per work and the measures which it plans to put in place to meet the contractual period. These explanations will be discussed at the site meeting.

.7 The Contractor shall start the work immediately after providing the Certificate of Insurance to the satisfaction of the contracting authority.

.8 Implementation schedule and bar graph (GANTT) must take into account the restrictions on the work and described in the related sections.

.9 Divide the main steps in the implementation schedule by work areas.

.10 Any failure by the Contractor to deliver to the Ministry representative, the original project schedule or weekly work schedule or daily planning for the daily meeting for each day of delay, a sum of One thousand dollars ($ 1,000) will be deducted from the overall amount of the contract as damages paid in advance. This deduction also applies if the Ministry Representative deems the documents incomplete or unrepresentative of the existing situation or unrealistic about the schedule.

1.4 DOCUMENTS / SAMPLES TO BE SUBMITTED FOR APPROVAL / INFORMATION

.1 Submit required documents and samples in accordance with Section 01 33 00 - Documents and samples to be submitted.

.2 All native files in ".mpp" format to ".pdf" must be provided to the Ministry representative.

.3 Submit a bar chart (GANTT chart) produced by MS Project, 2010 version or later, to the Ministry representative, within ten (10) working days of contract award, that will be used as Master Plan and work monitoring of work, and the production of progress reports.

.4 When presenting the detailed schedule, a time estimate based on the type of repair should be included. That is, how long it will take for a typical team to do the work, depending on the type of repair or reconstruction, the equipment, the number of workers, the maintaining of traffic, etc.

.5 The work schedule must be approved by the PCA representative before the Contractor is mobilized.

.6 The Execution Schedule file and two (2) legible hard copies must be forwarded to the Supervisor on Monday noon (12 noon) every two (2) weeks.

.7 In addition to the schedule and planned and ongoing activities, the Contractor shall submit to all site meetings a table that indicates for each of the items in the slips:

.1 Initially planned quantity;

.2 Predicted quantity at end of work;

.3 Quantities completed to date.

.8 In addition to the schedule, the Contractor must provide a weekly schedule detailing the activities for two (2) weeks, those scheduled for the current week and those scheduled for the following week. This weekly follow-up must be given to the Supervisor every Monday before noon (noon).

.9 He shall submit his demolition and repair or reconstruction sequence on a daily basis to each of the executed jobs, substructure by substructure, with associated shop drawings. This planning of the work is necessary for the organization of the daily activities of the various participants (Ministry representative and laboratory). However, the Ministry Representative reserves the right to establish a work authorization procedure by type of work such as concrete castings, work requiring immediate joint measurement or qualitative or profile control.

1.5 PROJECT MILESTONES

.1 The following project milestones are essential to the contract and must be set out in the implementation schedule.

.1 Start of Work (Mobilization): The Contractor will not be able to mobilize before October 16, 2017.

.2 Periods of Work Restrictions:

.1 Comply with requirements for work order, steps to be taken and various constraints or restrictions described in sections "01 11 01 - General Work Information" and "01 14 00 - Restrictions For the construction work ".

.3 Completion of work including correction of deficiencies: December 14, 2018.

1.6 MASTER PLAN

.1 Structuring the execution schedule to allow for orderly planning, organization and execution of jobs according to the bar chart (GANTT chart).

.2 The PCA representative will review the schedule and submit it to the Contractor no later than five (5) working days thereafter.

.3 If the schedule is deemed workable, revise it and resubmit it no later than five (5) working days after receipt.

.4 The agreed revised calendar will become the Master Plan, which will serve as a reference for updates.

.5 The master plan (reference schedule) must be approved by the Departmental Representative prior to commencement of work.

1.7 IMPLEMENTATION SCHEDULE

.1 Develop a detailed implementation schedule based on the Master Plan

.2 The detailed implementation schedule shall include at least the following steps for the following activities:

.1 Award of contract.

.2 Identification of materials whose delivery is critical to the schedule including:

.1 Date of Issue and Approval of Drawings

.2 Date of order

.3 Delivery dates

.3 Issue of shop drawings, samples and technical data sheets.

.4 Permits.

.5 Mobilization.

.6 Works delimited by work areas including, but not limited to:

.1 Environmental Protection Work

.2 Work on the deviation road and the temporary footbridge

.3 Installation of cofferdams and dewatering of the work area

.4 Decommissioning and demolition work

.5 Excavation and earthworks

.6 Transport of Excavation Materials to Characterization Site

.7 Manufacture of prefabricated elements and date of delivery

.8 Mounting sequences of prefabricated elements on site

.9 Infrastructure Reconstruction and Backfilling

.10 Approach development, landscaping and site restoration

1.8 STATUS OF WORK PROGRESS

.1 Update implementation schedule one (1) times per week to reflect changes in activities, completion of activities and activities in progress.

.2 Attach a narrative report to the implementation schedule, indicating the progress of the work, comparing progress against the reference schedule and presenting current forecasts, anticipated delays, impacts, and measures Mitigation options.

.3 Provide update of schedule to all stakeholders two days prior to site meeting.

1.9 SITE MEETINGS

.1 The schedule given to the first site meeting will be considered as reference schedule.

.2 Discuss schedule during periodic meetings held on site; Identify activities that are behind schedule and provides ways to address these delays. Late activities are considered to have a start date or end date that exceeds the respective approved dates in the reference schedule.

.3 Also discuss delays due to bad weather and negotiate remediation measures.

PARTIE 2 PRODUCT

2.1 NOT APPLICABLE

.1 Not pplicable

PART 3 EXÉCUTION

2.2 NOT APPLICABLE

.1 Not Applicable.

END OF THE SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 This section deals with document management and completes all of the special requirements outlined in the sections of Divisions 01 to 35 for the Contractor.

1.2 ADMINISTRATIVE PROCEDURES

.1 As soon as possible and in a predetermined order not to delay the execution of the work, submit the required documents and samples to the Departmental Representative for review. A delay in this regard cannot constitute a sufficient reason for obtaining an extension of the time limit for completion of the work and no such request will be accepted.

.2 The Contractor shall provide a list of subcontractors and proof of contracts with the Contractor at the latest maximum of two (2) weeks following the award of the contract with Parks Canada

.3 Do not undertake work requiring the filing of documents and samples before the examination of all submitted parts has been completed.

.4 Specifications shown on shop drawings, data sheets and product and work samples shall be expressed in metric units (SI).

.5 Examine documents and samples before handing them over to the Departmental Representative. The Contractor confirms that the requirements applicable to the work have been or will be determined and verified and that each of the documents and samples submitted has been examined and found to be in conformity with the requirements of the work and contract documents. Documents and samples that are not stamped, signed, dated and identified in connection with the particular project will be returned without examination and will be considered rejected.

.6 Notify the Departmental Representative in writing, when filing documents and samples, of any deviations from the requirements of the contract documents and the reasons for them.

.7 Ensure the accuracy of on-site measurements in relation to adjacent works affected by the work.

.8 The fact that the documents and samples submitted are reviewed by the Departmental Representative does not relieve the Contractor of his responsibility to transmit complete and accurate documents.

.9 The fact that the documents and samples submitted are reviewed by the Departmental Representative does not in any way relieve the Contractor of his responsibility to transmit documents that meet the requirements of the contract documents.

.10 Retain a verified copy of each submitted document.

.11 Submit Material Safety Data Sheets (MSDS) in accordance with the Workplace Hazardous Materials Information System (WHMIS).

.12 Perform detailed survey of footbridge. Determine the exact profile of the existing footbridge and validate their actual dimensions. Submit detailed shop drawings showing the existing profiles and final profiles for the footbridge as well as the dimensions and materials to be used

1.3 DOCUMENTS REQUIRED FROM THE CONTRACTOR

.1 The list of documents required from the Contractor throughout the work is presented in appendix A. This list is not exhaustive.

.2 The Contractor shall also consult and refer to all sections of Divisions 01 to 35 of the Specifications.

.3 In some areas, crowns may be unstable or spilled. The Contractor shall inspect the premises prior to the commencement of work in conjunction with the Departmental Representative to identify any crown sections that may pose a risk to the health and safety of workers during the performance of the work.

.1 The Contractor shall submit a temporary support plan for any corona section deemed unstable by the Contractor or the Departmental Representative. This plan must be signed, sealed by a member engineer in good standing of the OIQ.

.2 Prior to commencement of work, the Contractor shall submit to the Departmental Representative a signed, sealed certificate approving that the support of the unstable or spilled crowns has been made as specified in the sealed signed plans of the temporary support of these coronations.

.4 Prior to commencement of work, the Contractor must submit a plan specifying the trees to be deforested and the areas of deforestation necessary for the completion of the work. This plan must be approved by the Departmental Representative prior to commencement of work.

1.4 CERTIFICATES AND MINUTES

.1 Submit to the Departmental Representative, immediately after the award of the contract, the documents required by the body having jurisdiction for the protection of workers in the event of an accident at work.

1.5 SHOP DRAWINGS AND DATA SHEETS

.1 The term "shop drawings" means drawings, diagrams, illustrations, charts, performance or performance charts, leaflets and other documentation to be provided by the Contractor to show in detail part of the the work concerned.

.2 Quality: Shop drawings will be provided by e-mail as an original in electronic PDF format. No shop drawings will be accepted as a fax for clarity.

.3 The drawings must bear the seal and signature of a qualified engineer recognized or licensed to practice in Québec.

.4 The shop drawings shall indicate the materials to be used and the methods of construction, fastening or anchorage to be used and shall contain the installation diagrams, details of connections, relevant explanatory notes and any other Information necessary for the execution of the work. Where works or elements are connected or attached to other structures or other elements, indicate on the drawings that there has been coordination of the requirements, irrespective of the section at the end of which the structures or elements will be provided and installed. Make references to preliminary specifications and drawings.

.5 Changes made to the shop drawings by the Departmental Representative should not vary the contract price. If this is the case, however, notify the Departmental Representative in writing prior to commencing work.

.6 Submitted documents must be accompanied by a Letter of Transmittal containing the following information:

.1 the date;

.2 designation and project number;

.3 the name and address of the Contractor;

.4 the designation of each document and the number submitted;

.5 any other relevant data.

.7 Submitted documents must be accompanied by a presentation form (see Appendix B) summarizing the following information:

.1 date of preparation and revision dates;

.2 designation and project number;

.3 the name and address of the Contractor, subcontractor, supplier and manufacturer;

.4 the designation of each design, data sheet and sample and the number submitted;

.5 any other relevant data.

.8 The Contractor shall be responsible for the reproduction of the "Presentation sheet “of shop drawings and shop drawings in sufficient quantity for all subcontractors and their suppliers and an additional copy for the Departmental Representative as well as additional copies for operation and maintenance booklets.

.9 Documents submitted must bear or indicate the following:

.1 Date of preparation and revision dates;

.2 Project designation and number;

.3 Name and address of:

.1 The subcontractor;

.2 The supplier;

.3 The manufacturer;

.4 the Contractor's stamp, signed by the authorized representative of the Contractor, certifying that the documents submitted are approved, that the measures taken on site have been verified and that the assembly complies with the requirements of the contract documents;

.5 Relevant details for portions of work involved:

.1 Manufacturing materials and details;

.2 Layout or configuration, including dimensions, including on-site dimensions, clearances and clearances;

.3 Details on mounting or adjustment;

.4 Characteristics such as power, throughput or capacity;

.5 Performance characteristics;

.6 Reference standards;

.7 Operational mass;

.8 Wiring diagrams;

.9 Single line diagrams and block diagrams;

.10 Links to adjacent structures.

.11 References to project drawing sheets.

.10 Perform a detailed survey of the sections of the footbridge to be replaced and the equipment (eg railings, bollards, ladders, stairs, public utilities, benches, etc.). Determine the exact profile of the footbridge and validate their actual dimensions. Submit detailed shop drawings showing the existing profiles as well as the final profiles proposed.

.11 No shop drawings shall be considered unless submitted in accordance with the procedure described.

.12 Before submitting shop drawings to the Departmental Representative for verification, the Contractor shall:

.1 Number each page;

.2 Point all equipment and/or accessories that are part of the workshop design;

.3 Verify that shop drawings conform to plans and specifications for quality, characteristics and space requirements.

.13 The Departmental Representative shall have ten (10) working days for the verification of the shop drawings from the day the documents are received at his office.

.14 Verification of shop drawings by the Departmental Representative is an intermediate quality control step and should not constitute an order to change contract documents.

.1 The Departmental Representative will verify the Contractor's drawings with respect to the general layout of the equipment only. The examination of this document does not in any way relieve the Contractor or the supplier of his responsibility as to the accuracy of this document or its conformity with the contractual documents and the conditions of the work site. Moreover, the annotations made by the Departmental Representative on the drawings are not exhaustive.

.15 The four (4) annotations on the Departmental Representative's audit stamp are:

.1 "NO CORRECTIONS " means that the Contractor may proceed in accordance with his design;

.2 "MAKE CORRECTIONS INDICATED" means that the Contractor may proceed in accordance with his drawing and taking into account the annotations added by the Representative of the Ministry; The copy of the design becomes the official copy and the Contractor does not have to resubmit the design;

.3 "RE-SUBMIT" means that the information contained in the drawing is incomplete or that the design is incomplete, illegible, etc., and that this information does not allow the Departmental Representative to make a judgment on compliance with the drawings and specifications; In such a case, the Departmental Representative of the Ministry may indicate on the drawing the points which the Contractor must specify or complete before resubmitting the drawing;

.4 "REJECTED" means that the design relates to materials or works not in accordance with the drawings and specifications; In such case, the Contractor shall transmit to the Departmental Representative another design which relates to what is required of the plans and specifications.

.16 Change the shop drawings changes as requested by the Departmental Representative in accordance with the requirements of the contract documents. When submitting the drawings again, notify the Departmental Representative in writing of any changes that have been made in addition to those required.

.17 If no shop drawings are required due to the use of a standard manufacturing product, submit one (1) electronic copy of the manufacturer's technical specifications or documentation as prescribed in the technical sections of the specification and required by the Departmental Representative.

.18 Retain one (1) annotated copy of appendix B "Workshop Drawings - Presentation Form" and shop drawings at the worksite and ensure that they are always available for inspection reference.

.19 Submit one (1) electronic copy of the prescribed test reports in the technical sections of the estimate and required by the Departmental Representative.

.1 The report signed by the official representative of the testing laboratory must certify that the materials, products or systems identical to those proposed in the course of the work have been tested in accordance with the prescribed requirements.

.2 Tests must have been completed within three (3) years prior to contract award date.

.20 Submit one (1) electronic copy of the prescribed certificates in the technical sections of the specifications and required by the Departmental Representative.

.1 The documents, printed on the manufacturer's official correspondence paper and signed by a representative of the manufacturer, must certify that the products, materials, equipment and systems provided comply with the requirements of the specifications.

.2 Certificates must bear a date after the award of the contract and indicate the designation of the project.

.21 Submit one (1) electronic copy of the manufacturer's instructions prescribed in the technical sections of the specifications and required by the Departmental Representative.

.1 Preprinted documents describing method of installation of products, materials and systems, including special instructions and MSDSs indicating impedances, risks and safety measures to be implemented.

.22 Submit one (1) electronic copy of the reports of on-site inspections by the manufacturer as prescribed in the technical sections of the specifications and required by the Departmental Representative.

.23 Submit reports of tests and checks performed by the manufacturer's representative to confirm conformity of the products, materials, materials or systems installed in accordance with the manufacturer's instructions.

.24 Submit one (1) electronic copy of the operating and maintenance records prescribed in the technical sections of the Specifications and required by the Departmental Representative

.25 Delete information not applicable to the work.

.26 In addition to routine information, provide all additional details that apply to the work.

.27 Where shop drawings have been verified by the Departmental Representative and no errors or omissions have been identified or only minor corrections have been made, the prints are returned and the workmanship and/installation can then be undertaken. If the shop drawings are rejected, the annotated copy (s) shall be returned and the corrected and the shop drawings shall be submitted again in accordance with the above instructions before the work of forming and installation can be undertaken.

.28 The Departmental Representative's examination of shop drawings is intended solely to verify compliance with the general concept of the data indicated on the drawings.

.1 This examination does not imply that the Departmental Representative approves the detailed design presented in the shop drawings, which is the responsibility of the Contractor submitting them, nor does it relieve the Contractor from the obligation to transmit complete and accurate shop drawings, and to comply with all contract requirements and contract documents.

.2 Without limiting the generality of the foregoing, it is important to clarify that the Contractor is responsible for the accuracy of the on-site confirmed dimensions, the furnishing of information regarding processing methods or construction techniques and installation and coordination of work performed by all the trades.

.29 Upon receipt of the Letter of Intent from the Departmental Representative, the successful bidder will have thirty (30) working days to provide all shop drawings for approval.

1.6 SAMPLES

.1 The Contractor shall submit for the approval of the Departmental Representative standardized manufacturers' samples that the Departmental Representative may reasonably require. Samples shall bear a label indicating their origin and intended use in the work and shall conform to the requirements of the contract documents.

.2 Contractor shall provide specified samples of complex or sized products and components.

.3 No order, purchase or production of products or materials shall take place until written approval of the samples required in the estimate has been obtained.

.4 Products and works are similar to approved samples.

.5 Ship samples to the business office of the Departmental Representative.

.6 Notify Departmental Representative in writing, when submitting product samples, of deviations from the requirements of contract documents.

.7 Where color, pattern or texture is prescribed, submit the entire range of samples required.

.8 Changes made to the samples by the Departmental Representative are not intended to vary the contract price. If this is the case, however, notify the Departmental Representative in writing prior to commencing work..

.9 Provide samples that may be requested by the Departmental Representative while respecting the requirements of the contract documents.

.10 The samples examined and approved will become the reference standard from which the quality of materials and the quality of the finished and installed works will be assessed.

1.7 TESTS AND MIXES OF MIXTURES

.1 The Contractor shall provide the Departmental Representative with the results of the tests and the mixes of the mixtures that may be requested by the Contractor.

.2 In particular, no concrete casting or laying of paving shall be permitted until the Contractor has proved the perfect conformity of the materials.

1.8 PHOTOGRAPHIC DOCUMENTATION

.1 Submit, on a weekly basis with the Progress Report, as directed by the Departmental Representative, one (1) copy of the high resolution, color digital photograph file in electronic and paper format.

.2 Identification of project: designation and number of the project and date taken.

1.9 FINAL DRAWINGS

.1 Documents to be kept:

.1 Provide one (1) set of drawings and indicate, as and when required, any changes made during the course of the work.

.2 Report weekly the information recorded on the copy of the reproducible drawings in such a way that they show as they are actually installed.

.3 Keep these drawings on site and make them available for reference and verification purposes.

.2 Final Drawings (“As Built”)

.1 Before beginning the tests, balance and adjustment of the systems, complete the drawings according to execution.

.2 Identify each drawing in the lower right-hand corner, in letters at least 12 mm high, as follows: DRAWINGS: THIS DRAWING HAS BEEN REVISED AND INDICATES WORKS AND SYSTEMS AS INSTALLED [(Signature of Contractor) (Date)).

.3 Submit drawings to Departmental Representative for approval and make corrections as required.

.4 Submit reproducible copies, completed with completed drawings with Operations and Maintenance Manual.

.5 Submit one copy of each completed design and incorporate it into the final report on testing, balancing and adjustment of systems and installations.

1.10 DOCUMENTS IN COMPUTERIZED FORMAT

.1 The documents required for the various articles of the estimate must be sent in MS Word® (format.doc) for texts and in MS Excel® file (format.xls) for tables and graphs.

.2 Lists of survey points must be compatible as ASCII text files. The work schedule is sent as an MS Project® file, version 2007, or later and in PDF format. The submission, construction and "as-built" plans must be provided in Autocad® (format.dwg), version 2004, and Acrobat® (format.pdf) files (only for "as-built").

.3 Transmitted documents shall be clearly identified and the contents shall be purified of figures not necessary for processing the data.

.4 The cost related to the transmission of computer files is allocated to all unit and aggregate prices of the vouchers.

PART 2 PRODUCTS

2.1 REQUESTS FOR SUBSTITUTION

.1 With respect to the materials or equipment specified in the contract, the Contractor wishing to submit an application for substitution with materials or equipment that he considers equivalent must first request written authorization from the Departmental Representative, transmitting to him:

.1 Reasons for substitution.

.2 The price of the specified material (s) and the name of the supplier.

.3 The price of the material (s) of his choice and the name of the supplier.

.4 The amount of credit it offers to PWGSC.

.5 Where applicable, impacts on the project as a whole.

.6 Demonstration of equivalence of equipment or materials certified by a member of the Ordre des ingénieurs du Québec (OIQ).

.2 The proof of equivalence shall be the sole responsibility of the contractor and shall include the following:

.1 Provide specifications, technical specifications and other useful information describing the materials offered and compare them with those of the specified materials.

.2 Provide all test results of resistance or behavior required by the Departmental Representative and performed by a recognized laboratory;

.3 Provide any other information, condition of maintenance, test or report required by the Departmental Representative.

.3 These materials must meet the criteria for compliance with the standards set out in the contract. The Contractor must submit, at the time of his application, the impacts of the substitution on other parts of the works and/or work. The Departmental Representative approves or rejects the substitutions and will only analyze applications that will include all required information. The Contractor shall be liable for any delay caused directly or indirectly by such substitutions. The modifications to the other parts of the work necessitated by these substitutions shall be carried out at the expense of the Contractor.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

Appendix A – Documents Required from the Contractor
Appendix B – Shop Drawings – Presentation Sheet

APPENDIX A - DOCUMENTS REQUIRED FROM THE CONTRACTOR

PART 1 DOCUMENTS REQUIRED AT THE BEGINNING OF THE WORK SITE

.1 These documents must be completed and furnished in accordance with the requirements of the General Conditions of Contract upon grant, including:

- .1 List of subcontractors and contact information
- .2 List of suppliers with addresses and contact persons
- .3 List of machinery used
- .4 List of hourly rates of labour and machinery
- .5 List of project staff and contact information
- .6 Schedule of work
- .7 Safety program
- .8 Opening of work at the CNNEST
- .9 Environmental protection plan

PART 2 DOCUMENTS REQUIRED UNDER CONSTRUCTION UNTIL PROVISIONAL ACCEPTANCE

.1 These requirements must be completed before the request for provisional acceptance (prior to obtaining it) for receipt of the work with reservations.

- .1 List of shop Drawings
- .2 Shop Drawings
- .3 Test report (eg, septic tank seal testing)
- .4 Manufacturers' Instruction
- .5 Test reports and factory verification
- .6 Testing program and in situ verification
- .7 Test report
- .8 Start-up and service programs
- .9 Operating manual
- .10 Supplier manual
- .11 Final plans
- .12 Staff training program
- .13 Spare parts list

END OF APPENDIX A

GENERAL ENTREPRENEUR OR PROJECT MANAGER	
Responsable :	
Phone: ( )	Email :

SPECIALIZED CONTRACTOR : Adress:	
Responsable :	
Phone: ( )	Email :

SPECIALITY (disciplined**):**	
Workshop Drawing n^{o} :	**Number of pages:**
Delivery time (after verification):	
DESCRIPTION OF THE WORKSHOP DESIGN:	
Reference to plan:	
Reference to quotation: Section : Article : Page :	

DISTRIBUTOR: Adress:	
Responsable :	
Phone: ( )	Fax : ( )

PRODUCT SUBMITTED	**DRAWING ISSUED FOR**
☐ For as is ☐ Equivalent ☐ Substitution	☐ Verification ☐ Information ☐ Coordination ☐ Other :

REVISION	**EMISSION DATE**
NOTES :	

COMPLIANCE VERIFICATION

Nature and extent of verification ☐ Compliai
☐ Other :

This audit does not in any way constitute a detailed and comprehensive design review.

☐ No correction reported
☐ Make corrections indicated
☐ Correct and resubmit
☐ Refuse

Signature ☐ Engineer ☐ Other _____ Date _____

Name _____ N^{o} membre of l'OIQ _____

Verification of this document is restricted to the nature and extent indicated. It does not in any way release the person or company that prepared it from its obligations of any kind.

END OF APPENDIX B

PART 1 GENERAL

1.1 SCOPE OF SECTION 01 35 13.43

.1 This section is part of the management of potentially contaminated materials resulting from the reconstruction project of the gateway of the seigneurial avenue, in Montebello, QC (Canada). Since the project requires the excavation of soils at the rear of the abutments, the dismantling of concrete structures from the foundations and treated wood, this section is part of a context of management of potentially contaminated materials and not in a context of environmental rehabilitation of the site.

.2 The work described in this specification must be done in a consistent manner with all other work. The Contractor is required to collaborate with the Departmental Representative (Owner and Consultant (s)) and to plan site development and workflow in a manner that minimizes any delays that may be incurred by the Contractor from the work described in this specification.

.3 Any delays in the management of potentially contaminated materials shall not be used by the Contractor as grounds for any claim or demand of any kind against the Departmental Representative.

1.2 RELATED REQUIREMENTS

.1 Section 01 11 01 - General Information on Work

.2 Section 31 23 33.01 - Excavation, trenching and backfilling

1.3 REFERENCE STANDARDS

.1 Canadian General Standards Board (CGSB)

.1 CGSB 51-GP-51M-81, Polyethylene Sheet for Use in Building Construction.

.2 Canadian Council of Ministers of the Environment (CCME) Documentation

.3 Gouvernement du Québec, MDDELCC

.1 Loi sur la qualité de l’environnement (LRQ, c. Q-2)

.2 Règlement sur l’enfouissement des sols contaminés (Q-2, r.18)

.3 Règlement sur le stockage et les centres de transfert de sols contaminés (Q-2, r.46)

.4 Guide d’intervention – Protection des sols et réhabilitation des terrains contaminés, MDDELCC, 2016

.5 Politique de protection des sols et de réhabilitation des terrains contaminés – Plan d’action 2017-2021, MDDELCC, 2017

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submittals: in accordance with Section 01 33 00- Submittal Procedures.

.2 Submit, within at least one week before the start of work, the report and the results of excavation soil characterization. If there is a contaminant in the soil submit a contaminated soil management plan. The contaminated soil management plan must, among other things, include a management plan for the temporary storage area for the excavated material. The plan must be submitted for approval to the Departmental Representative

.3 Submit, within a week or more of work, a management plan for the decontamination area of equipment used to handle contaminated soil. The plan must be submitted for approval to the Departmental Representative.

.4 Submit, within at least one week before the start of the work, an off-site management plan for excavated material. The plan must be submitted for approval to the Departmental Representative. The Contractor is responsible for the research and the choice of the authorized disposal sites, he must provide, before the beginning of the excavation work, the certificates of authorization (CA) of the authorized sites and this, for each type of contaminated materials according to the ranges identified in the regulations to ensure that contaminated soils are accepted at sites according to their level of contamination.

.5 Documents to be submitted for progress meetings: submit the following documents at least 24 hours before the project follow-up meeting every two weeks:

.1 Survey of volumes of cut stored in the temporary storage area.

.2 Copies of air sampling results.

.3 Copies of transport manifests, trip tickets, and disposal receipts for waste materials removed from work area.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION OF WORK

3.1 NATURE OF THE WORK

.1 All excavated and potentially contaminated soils shall be disposed of in accordance with the Contaminated Soil Management Plan prepared by the Contractor as a result of the soil characterization work and approved by the Departmental Representative. Where appropriate, if soils are to be temporarily set aside for additional or additional environmental characterization purposes, they must remain within the site boundaries, in an area previously approved by the Departmental Representative.

.2 Excavation and disposal as well as the temporary storage of excavated material should be carried out selectively so as not to mix excavated material with potentially different levels of contamination. At no time should excavated material be mixed. There should also be no segregation of the types of cuttings

.3 Once the degree of soil contamination in temporary storage is known, the Contractor shall route the soil to a treatment center or disposal site authorized by MDDELCC.

.4 Contaminated soils must be placed in approved, previously approved sites in Quebec.

3.2 REGULATORY REQUIREMENTS

.1 Work to meet or exceed minimum requirements established by federal and provincial laws and regulations which are applicable.

.1 Contractor: responsible for complying with amendments as they become effective.

.2 In event that compliance exceeds scope of work or conflicts with specific requirements of contract notify Departmental Representative immediately.

.3 The Contractor is responsible for the research and selection of the licensed disposal sites and shall obtain and provide to the Departmental Representative the required authorizations (AC) under applicable federal and provincial laws and regulations.

3.3 SEQUENCING AND SCHEDULING

.1 The Contractor may not commence soil excavation work until the management plan of the temporary spoil storage area, the equipment decontamination area management plan and the management plan off-site material is approved by the Departmental Representative.

3.4 TEMPORARY STORAGE OF EXCAVED SOILS AND SEDIMENTS

.1 Reserving excavated material for off-site characterization and disposal is carried out exclusively within the boundaries of the site.

.2 Provide, use and maintain stocking/storage facilities as specified in the management plan for temporary excavated material storage area.

.3 The management plan for the temporary excavation reserve area shall include, as a minimum, measures to:

.1 Prevent contact between contaminated excavated materials or leachate from contaminated material with existing soil.

.2 Prevent the dispersal of contaminated material from the temporary storage area due to runoff from rainwater, snowmelt or wind erosion.

.3 Prevent dispersal of leachate from dredging of contaminated material from temporary spoil storage area.

.4 Prevent dispersal of leachate from dredging of contaminated material outside the spoil storage area.

.5 Recovery of leachate from contaminated excavated materials.

.6 Permit sampling of excavated material and leachate by Departmental Representative.

.7 Clearly identifying different categories of excavated material.

.8 Maintain impermeable cover membrane on excavated material when not handled.

.9 Avoidance of equipment that may have been contaminated by contact with excavated material and not circulate outside the temporary storage area without decontamination.

.10 Prevent unauthorized persons from entering temporary excavated materials storage area.

.4 Provide Departmental Representative with excavation machinery required for excavation sampling.

.5 The Contractor must construct medium-sized sampling or storage stacks in the range of 100 to 200 cubic meters for soil characterization to ensure that the soil is stable and not at risk to sag.

3.5 EQUIPMENT DECONTAMINATION INSTALLATION

.1 Prior to commencing work involving equipment contact with potentially contaminated materials, construct equipment decontamination pad to accommodate largest piece of on-site potentially contaminated equipment.

.1 Provide, use and maintain decontamination facilities as specified in the equipment decontamination area management plan.

.2 The management plan for the equipment decontamination area shall include, as a minimum, measures to:

.1 Mechanically remove packed dirt, grit, and debris by scraping and brushing without using steam or high-pressure water to reduce amount of water needed and to reduce amount of contaminated rinsate generated. Use high-pressure, low-volume, hot water or steam supplemented by detergents or solvents as appropriate and as approved by Departmental Representative. Pay particular attention to tire treads, equipment tracks, springs, joints, sprockets, and undercarriages. Scrub surfaces with long handle scrub brushes and cleaning agent. Rinse off and collect cleaning agent. Air dry equipment in Clean Zone before removing from site or travelling on clean areas. Perform assessment as directed by Departmental Representative to determine effectiveness of decontamination.

.2 Assess the effectiveness of decontamination as directed by the Departmental Representative.

.3 Maintain inspection record on site which includes: equipment descriptions with identification numbers or licence plates; time and date entering decontamination facility; time and date exiting decontamination facility; and name of inspector with comment stating that decontamination was performed and completed

.4 Permit departmental representative to inspect decontaminated equipment before removal from site and/or removal to clean areas.

.5 Take appropriate measures necessary to minimize drift of mist and spray during decontamination including provision of wind screens.

.6 Collect decontamination wastewaters and sediments which accumulate on equipment decontamination pad. Transfer wastewaters to designated wastewater storage tank.

.7 Transfer sediments to soil staging area.

3.6 REMOVAL AND DISPOSAL

.1 Dispose off-site of all equipment and materials stored in the temporary storage area in accordance with the off-site excavated materials management plan approved by the Departmental Representative.

.2 Provide, use and maintain equipment as specified in off-site excavated materials management plan.

.3 The off-site excavation materials management plan shall include, as a minimum, measures to:

.1 Provide certificates of authorization (CA) for approved sites before excavation begins for each type of contaminated material according to the ranges identified in the regulations to ensure that contaminated soils are accepted in the sites according to their level of contamination.

.2 Provide recovery kits for spills on the site with “spill kits”.

.3 Disposal of excavated material and leachate from excavated material in sites authorized by MDDELCC.

.4 Minimize dust emission from loads of excavated materials. Tarpaulins should be installed on all trucks carrying the excavated material.

.5 Prevent spillage of excavated material or leachate. The leachate should be transported in watertight tanks or containers.

.6 Obtain a transport manifest for each load of soil or leachate to be transported off to an authorized disposal site. The manifest of transport is prepared by the DepartmentalRepresentative and then handed over to the driver/carrier. The required information on the transport manifest is as follows:

.1 Name of carrier.

.2 Vehicle registration.

.3 The date.

.4 Departure time and arrival time.

.5 The origin of the load.

.6 Type of soil transported ("A-B", "B-C", "> C").

.7 The destination of the load.

.8 Signature of Departmental Representative (issuer of coupon).

.9 Signature of Disposal Site Representative.

.4 Distribute copies of the manifest of carriage as follows:

.1 A copy of the transport manifest shall be retained by the Departmental Representative at the site.

.2 A copy of the transport manifest shall be retained by the Representative of the disposal site.

.3 A copy of the transport manifest shall be returned to the Contractor and to the completed supervisor for compilation in the payment slip.

.4 A copy shall be retained by the carrier.

.5 Ensure Departmental Representative takes possession of weighing tickets issued at the disposal site upon return of trucks to worksite.

3.7 FINAL DECONTAMINATION

.1 The portion of the land used as a temporary excavation material storage area shall be returned to its original condition upon completion of the work. . Provide pre-storage receptor soil characterization.

.2 It is the responsibility of the Contractor to demonstrate, if required by the Departmental Representative, that the chemical quality of the soil and groundwater underlying the storage area has not been altered. In the event of contamination caused by its activities, the Contractor must rehabilitate the premises at his own expense.

3.8 RECORD KEEPING

.1 The Contractor shall submit to the Departmental Representative a daily report of the work indicating the quantities of excavated material stockpiled and the quantities of excavated material removed from the site.

PART 4 WORK SUPERVISION

4.1 CONSULTANT'S RESPONSIBILITIES

.1 Environmental supervision of excavation and waste management work is the responsibility of the Departmental Representative. The duties of the Departmental Representative will include:

.1 Approval of material disposal sites following research and preliminary selection of disposal sites by the Contractor;

.2 Supervise the completion of characterization work;

.3 Supervise excavation work and assist the Contractor in the segregation of different types of excavated material;

.4 Monitor temporary stacking of different types of cuttings;

.5 Monitor off-site disposal of excavated material;

.6 Supervise or carry out characterization work on stacked cuttings, as well as excavation bottoms and walls, where required;

.7 Compile the weigh tickets.

.2 Responsibilities of the Contractor

.1 The Contractor shall perform, at his expense, a soil characterization in place prior to commencement of work under the supervision of the Departmental Representative.

.2 The Contractor must prepare and provide the contaminated soil management plan (s), management of the equipment decontamination area, management of the temporary dumping reserve area and off-site management, if required.

.3 The Contractor shall provide all necessary coordination for sampling by the Departmental Representative, provision of a hydraulic excavator for characterization purposes, and wait times for test results. Regular time of analysis should be in the order of 5 working days.

.4 The Contractor shall notify the Departmental Representative at least 48 hours prior to the performance of any work covered by this section of the specifications.

.5 The Contractor is responsible for ensuring the compliance of disposal or disposal sites that he recommends. It must also ensure that contaminated materials can be transported without any problem, depending on their level of contamination, regardless of their water content.

.6 The Contractor shall conduct research and preliminary selection of the disposal sites and provide the ACs for approval to the Departmental Representative.

.7 The results of the chemical analyzes carried out on the samples of certain dubious environmental quality materials and put in piles will make it possible to identify their mode of management. No complaint will be admissible because of the analysis time. A minimum delay of 5 working days must be provided for the analysis time that refer to the receipt of samples in the laboratory, provided that they are received before 2 pm.

.8 The Contractor shall follow the instructions of the Departmental Representative in all stages of environmental monitoring of excavation and excavation work.

END OF SECTION

PART 1 GENERAL

GENERAL NOTE: In this section, the term « site » extends to all installations located on the site where the site is being constructed (site itself, buildings, access, infrastructure, parking lots, docks, etc.).

1.1 RELATED REQUIREMENTS

.1 No used.

1.2 REFERENCES

.1 Quebec Province

.1 *Loi sur la santé et la sécurité du travail*, L.R.Q., c. S-2.1 (Act respecting occupational health and safety).

.2 *Code de sécurité pour les travaux de construction, L.R.Q., c. S-2.1*, r.4 (Safety code for the construction industry)

.2 Canadian Standards Association (CSA International)

.1 CAN/CSA-W117.2-F12 – Welding, Cutting and Related Procedures

.2 CSA Z462-F15, Safety in the Workplace

.3 CAN/CSA-Z94.4-F11 (C2016), Selection, Use and Maintenance of Respirators

.4 CAN/CSA-Z259.1-F05 (C2015) Work belts and saddles for holding and working.

.5 CAN/CSA-Z259.10-F12 (C2016) – Safety Harnesses

.6 CAN/CSA Z275.1-F16, Hyperbaric Installations

.7 CAN/CSA Z275.2-F15, Safety Requirements for Diving Workers..

.8 CAN/CSA Z275.4-F12, Competence Standard for Diving, the Use of Hyperbaric Cases and Driving Remotely Controlled Vehicles.

1.3 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL / INFORMATION

.1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit to Departmental Representative, and the CNESST the site-specific prevention program, as outlined in the article “GENERAL REQUIREMENTS”, at least 10 days prior to the start of work.

.3 Departmental Representative will review Contractor’s site-specific prevention program and provide comments to Contractor within 10 days after receipt of the document. Revise plan as appropriate and resubmit to Departmental Representative within 5 days after receipt of comments from Departmental Representative. Departmental Representative reserves the right not to authorize the start of work on the construction site as long as the content of the prevention program is not satisfactory. The Contactor shall then update his prevention program and resubmit it to the Departmental Representative if the scope of work changes or if the working methods of the Contractor differ from his initial plans or for any other applicable new condition.

.4 Departmental Representative’s review of Contractor’s site-specific prevention program should not be construed as approval of the program and does not reduce the Contractor’s overall responsibility for construction Health and Safety during the work.

.5 Submit copies of Contractor's authorized representative's construction site health and safety inspection reports to Departmental Representative, at least once a week.

.6 Submit to Departmental Representative within 24 hours a copy of any inspection report, correction notice or recommendation issued by Federal, Provincial and Territorial health and safety inspectors.

.7 Submit to Departmental Representative within 24 hours an investigation report for any accident involving injury and any incident exposing a potential hazard.

The investigation report shall contain at least the following:

.1 date, time and place of accident;

.2 name of sub-contractor involved in the accident;

.3 number of persons involved and condition of wounded;

.4 witness identification;

.5 detailed description of tasks performed at the time of the accident;

.6 equipment being used to accomplish the tasks performed at the time of the accident;

.7 corrective measures taken immediately after the accident;

.8 causes of the accident;

.9 preventive measures that have been put in place to prevent a similar accident.

.8 Submit to Departmental Representative WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittals and Section 02 81 01 - Hazardous Materials. Contractor must also keep one copy of these documents on the construction site.

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

.10 Submit to Departmental Representative an on-site Emergency Response Plan at the same time as the prevention program. The Emergency Response plan must contain the elements listed in the article "GENERAL REQUIREMENTS" of this section.

.11 Submit to Departmental Representative copies of all training certificates required for the application of the prevention program, in particular (if applicable) for the following:

.1 first aid in the workplace and cardiopulmonary resuscitation;

.2 work likely to release asbestos dust (mandatory for all work where asbestos is present);

.3 work in confined spaces (mandatory for all work in confined spaces);

.4 lockout-tagout procedures (mandatory for all work requiring lockout);

.5 safely operating forklift trucks (mandatory for all forklift usage);

.6 safely operating elevating work platforms (mandatory for the use of all elevating platforms);

.7 any other requirement of Regulations or the safety program.

In addition, the certifications of the *Cours de santé et sécurité générale pour les chantiers de construction (General Health and Safety Training for Construction Sites)* shall be available on demand on the construction site.

.12 Engineer's plans and certificates of compliance: Contractor must submit to the Departmental Representative and to the Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST) a copy signed and sealed by engineer of all plans and certificates of compliance required pursuant to the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry) or by any other legislation or regulation or by any other clause in the specifications or in the contract. The Contractor must also submit a certificate of conformity signed by an engineer once the facility for which these plans were prepared has been completed and before a person uses the facility. A copy of these documents must be available on site at all times.

1.4 FILING OF NOTICE OF CONSTRUCTION SITE OPENING

.1 Notice of construction site opening shall be submitted to the CNESST before work begins. A copy of such notice and acknowledgment of receipt from the CNESST shall be submitted to Departmental Representative.

At the completion of all the work, a notice of construction site closing shall be submitted to the CNESST, with a copy to Departmental Representative.

.2 The Contractor shall assume the role of being the Principal Contractor in the limits of the construction site and elsewhere where he must execute work within the framework of this project. The Contractor shall recognize the responsibility of being the Principal Contractor of the project and identify himself as such in the notice of the construction site opening he provides to the CNESST.

.3 The Contractor shall accept to divide and identify the construction site adequately in order to define time and space at all times throughout the course of the project.

1.5 HAZARD ASSESSMENT

.1 The contractor must perform construction site specific safety hazard assessment related to project.

.2 It is the responsibility of the Contractor to carry out checks to ensure the safety of work carried out near existing footbridge. These checks are required to avoid risks of instability or collapse.

1.6 MEETINGS

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

.2 Contractor's representative with decision power must attend any meetings at which construction site safety and health issues are to be discussed.

.3 If it is anticipated that there will be 25 workers or more on the construction site at any given time, the Contractor shall set up a worksite committee and hold meetings as required by the *Code de sécurité pour les travaux de construction* (S-2.1, r. 4) (Safety code for the construction industry). A copy of the minutes of the meetings of the committee shall be provided to the Departmental Representative no later than 5 days after the committee meeting.

1.7 REGULATORY REQUIREMENTS

.1 Do the Work in accordance with Section 01 1400 01 Work Restrictions and section 41 00 - Regulatory Requirements].

.2 Comply with all legislation, regulations and standards applicable to the construction site and its related activities.

.3 Comply with specified standards and regulations to ensure safe operations on a site containing hazardous or toxic materials.

.4 Always use the most recent version of the standards specified in the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry), notwithstanding the date indicated in that Code.

1.8 COMPLIANCE REQUIREMENTS

.1 Comply with *the Loi sur la santé et la sécurité du travail* (L.R.Q., c. S-2.1) (Act Respecting Occupational Health and Safety) and the *Code de sécurité pour les travaux de construction* (S-2.1, r. 4.) (Safety code for the construction industry) in addition to respecting all the requirements of this specification manual.

1.9 RESPONSIBILITIES

.1 The Contractor must acknowledge and assume all the tasks and obligations which customarily devolve upon a principal Contractor under the terms of the *Loi sur la santé et la sécurité du travail* (L.R.Q., ch. S-2.1) (Act Respecting Occupational Health and Safety) and the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry).

.2 The Contractor must be responsible for health and safety of persons on construction site, safety of property on construction site and for the protection of persons adjacent to construction site and the environment to the extent that they may be affected by conduct of the work.

.3 No matter the size or location of the construction site, the Contractor must clearly define the limits of the construction site by physical means and respect all specific regulation requirements applicable in this regard. The means chosen to define the limits of the construction site must be submitted to the Departmental Representative.

.4 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 prevention Plan.

1.10 WORK PERFORMED BY EXTERNAL CONTRACTORS

.1 On this construction site, it is anticipated that work will be performed by an external contractor that has not been hired by the Contractor:

.1 Not used

.2 The Contractor must take the necessary steps to protect the health and safety of external contractors that have no contractual link with the Contractor but have been mandated by the Departmental Representative to perform certain work. In return, these external contractors are obligated to submit to the authority of the Contractor (Principal Contractor). A subordination agreement must be signed by the Contractor and by each external contractor to this effect and submitted to the Departmental Representative prior to the start of the work of each contractor (see the wording in the article HEALTH AND SAFETY SUBORDINATION AGREEMENT).

1.11 RISKS - GENERAL REQUIREMENTS

.1 Before undertaking the work, prepare a site-specific prevention program based on the hazards identified according to the article “HAZARD ASSESSMENT” and the article “RISKS INHERENT TO THE WORKSITE” in this section. Apply this program in its totality from the start of the project until demobilization of all personnel from the construction site. The prevention program shall take into consideration the specific characteristics of the project and cover all the work to be executed on the construction site.

.2 The safety program must include at least the following:

.1 company safety and health policy;

.2 description of the stages of the work;

.3 total costs, schedule and projected workforce curves;

.4 flow chart of safety and health responsibilities;

.5 physical and material layout of the construction site;

.6 risk assessment for each stage of the work, including preventive measures and the procedures for applying them;

.7 identification of the preventive measures relative to the specific risks inherent to the worksite indicated in the article “RISKS INHERENT TO THE WORKSITE”;

.8 identification of preventive measures for health and safety of employees and / or public works site as indicated in the article “SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF OCCUPANTS AND PUBLIC”;

.9 training requirements;

.10 procedures in case of accident/injury;

.11 written commitment from all parties to comply with the safety program;

.12 construction site inspection cheklist based on the preventive measures;

.13 emergency response plan which shall contain at least the following:

.1 construction site evacuation procedures;

.2 identification of resources (police, firefighters, ambulance services, etc.);

.3 identification of persons in charge of the construction site;

.4 identification of the first-aid attendants;

.5 communication organizational chart (including the person responsible for the site and the Departmental Representative);

.6 training required for those responsible for applying the plan;

.7 any other information needed, in the light of the construction site’s characteristics.

If available the Departmental Representative will provide the evacuation procedures to the Contractor who shall then coordinate the construction site procedure with that of the site and submit it to the Departmental Representative.

The Departmental Representative will provide the Contractor with the evacuation procedure for the site, if applicable; the latter must then link the procedure of the site with that of the site and forward it to the Departmental Representative.

.3 Departmental Representative may respond in writing, where deficiencies or concerns are noted in the prevention program and may request resubmission with correction of deficiencies or concerns.

.4 In addition to the prevention program, during the course of the work the Contractor shall elaborate and submit to the Departmental Representative specific written procedures for any work having a high risk factor of accident (for example: demolition procedures, specific installation procedures, hoisting plan, procedures for entering a confined space, procedures for interrupting electric power, etc.) or at the request of the Departmental Representative.

.5 The Contractor shall plan and organize work so as to eliminate the danger at source or ensure collective protection, thereby minimizing the use of personal protective equipment.

.6 Equipment, tools and protective gear which cannot be installed, fitted or used without compromising the health or safety of workers or the public shall be deemed inadequate for the work to be executed.

.7 All mechanical equipment (for example, but not limited to: hoisting devices for persons or materials, excavators, concrete pumps, concrete saws) shall be inspected before delivery to the construction site. Before using any mechanical equipment, the Contractor shall obtain a certificate of compliance signed by a qualified mechanic dated less than a week prior to the arrival of each piece of equipment on the construction site; the certificate shall remain on the construction site and transmitted to the Departmental Representative on demand.

.8 Ensure all inspections (daily, periodic, annual, etc.) for the hoisting devices for persons or materials required by the current standards are carried out and be able to provide a copy of the inspection certificates to the Departmental Representative on demand.

.9 The Departmental Representative can at all times, if he suspects a malfunction or the risk of an accident, order the immediate stop of any piece of equipment and require an inspection by a specialist of his choice.

.10 The Departmental Representative must be consulted for the location of storing gas cylinders and tanks on the construction site.

1.12 RISKS ON THE WORK SITE

.1 In addition to the hazards associated with the work to be performed, site personnel will be exposed to the following hazards inherent in the work site. The Contractor must include these elements in its prevention program, but not limited to.

At the site of the work, there will be:

.1 materials containing asbestos;

.2 materials containing lead;

.3 mold;

.4 other hazardous materials (specify);

.5 enclosed spaces;

.6 overhead power lines;

.7 underground services (electricity, gas, steam, aqueduct, etc.);

.8 laboratories;

.9 trees and landscaping to conserve and protect;

.10 potentially unstable soils;

.11 barbed wire fences;

.12 nearby body of water;

.13 contaminated sediment;

1.13 SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF OCCUPANTS AND PUBLIC

.1 The worksite is occupied by employees and/or the public. The Contractor shall consider the following specific requirements for the protection of employees and / or the public:

.1 Présence of a boat launch rampe

.2 Presence of a marina

.3 Public site (National Historic Site of Chambly Canal)

These requirements must be included in the Contractor's site-specific safety plan as well as any other measures provided by the Contractor to protect the health and safety of employees and / or the public on the site.

1.14 UNFORESEEN HAZARDS

.1 Whenever a source of danger not defined in the specifications or identified in the preliminary construction site inspection arises as a result of or in the course of the work, the Contractor must immediately suspend work, notify the person responsible for health and safety on the construction site, take appropriate temporary measures to protect the workers and the public and notify Departmental Representative, both verbally and in writing. Then the Contractor must do the necessary modifications to the prevention program or apply the security measures required in order to resume work.

1.15 PERSON IN CHARGE OF HEALTH AND SAFETY

.1 If the construction site meets the requirements of article 2.5.3 of the *Code the sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry), the Contractor needs to hire a competent person authorized as a safety officer and appoint this person full time from the beginning of the work. This person's tasks shall solely be dedicated to the management of health and safety on the construction site. This safety officer must have the following qualifications:

.1 have a safety officer certificate issued by the CNESST since at least 10 years;

.2 have site-related working experience specific to the activities associated with the present project;

.3 have working knowledge of occupational health and safety regulations in the workplace;

.4 be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter the construction site to perform work;

.5 be responsible for implementing, enforcing in detail and monitoring site-specific Contractor's Health and prevention program;

.6 be on construction site at all times during execution of work;

.7 inspect the work and ensure compliance with all regulatory requirements and those indicated in the contract documents or the site-specific prevention program.

.8 Keep a daily log of actions taken and submitting a copy to Departmental Representative each week.

The safety officer's certificate shall be submitted to the Departmental Representative before the start of the work.

.2 When the hiring of a safety officer is not required or if this person is hired by the Departmental Representative, the Contractor shall designate a competent person to supervise and take responsibility for health and safety, no matter the size of the construction site or how many workers are present at the workplace. This person shall be on construction site at all times and be able to take all necessary measures to ensure the health and safety of persons and property at or in the immediate vicinity of the construction site and likely to be affected by any of the work. The Contractor shall submit the name of this person to the Departmental Representative before the start of work.

1.16 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on construction site in accordance with Acts and Regulations of the Province, and in consultation with Departmental Representative.

.2 At a minimum, the following information and documents must be posted in a location readily accessible to all workers:

.1 notice of construction site opening;

.2 identification of principal Contractor;

.3 company OSH policy;

.4 site-specific prevention program;

.5 emergency plan;

.6 minutes of worksite committee meetings;

.7 names of worksite committee representatives;

.8 names of the first-aid attendants;

.9 action reports and correction notices issued by the CNESST.

1.17 INSPECTION OF THE CONSTRUCTION SITE AND CORRECTION OF NON-COMPLIANCES

.1 Inspect the construction site and complete the construction site inspection checklist and submit it to the Departmental Representative in accordance with the article “ACTION AND INFORMATIONAL SUBMITTALS” in this section.

.2 Immediately take all necessary measures to correct any situations deemed non-compliant during the inspections mentioned in the previous paragraph or noticed by the authorities having jurisdiction or the Departmental Representative or his agent.

.3 Submit to Departmental Representative written confirmation of all measures taken to correct the situation in case of non-compliance in matters pertaining to health and safety.

.4 The Contractor shall give the safety officer or, where there is no safety officer, the person assigned to safety and health responsibilities, full authority to order cessation and resuming of work as and when deemed necessary or desirable in the interests of safety and health. This person should always act so that the safety and health of the public and construction site workers and environmental protection take precedence over cost and scheduling considerations.

.5 The Departmental Representative or his agent may order cessation of work if the Contractor does not make the corrections needed to conditions deemed non-compliant in matters pertaining to health and safety. Without limiting the scope of the preceding articles, the Departmental Representative may order cessation of work if, in his view, there is any hazard or threat to the safety or health of construction site personnel or the public or to the environment.

1.18 PREVENTION OF VIOLENCE

.1 Health and safety management of Public Works and Government Services Canada construction sites includes the implementation of measures designed to protect the psychological health of all persons who access the construction site where the work is taking place. Consequently, in addition to physical violence, verbal abuse, intimidation and harassment are not tolerated on the construction site. Any person who demonstrates such actions or behaviors will receive a warning and/or could be definitely expelled from the construction site by the Departmental Representative.

1.19 BLASTING

.1 Not used.

1.20 POWDER ACTIVATED DEVICE

.1 Use powder actuated devices only after receipt of written permission from Departmental Representative.

.2 Any person using a sealing gun must have a training certificate and meet all requirements of section 7 of the Code de sécurité pour les travaux de construction (S-2.1, r. 4) Safety Code for construction.

.3 Any other cartridge device shall be used as specified by the manufacturer and in accordance with applicable standards and regulations.

1.21 USE OF PUBLIC ROADS

.1 Where it is necessary to encroach on a public road for operational reasons or to ensure the security of the workers, the occupants or the public (for example: the use of scaffolding, cranes, excavation work, etc.), the Contractor shall obtain at his own expense any authorizations and permits required by the competent authority.

.2 The Contractor shall install at his own expense any signage, barricades or other devices needed to ensure the safety and security of the public and the Contractor's own facilities.

1.22 LOCKOUT-TAGOUT

.1 For all work on electrically or otherwise energized equipment, the Contractor shall draw up and implement a general lockout-tagout procedure and submit it to the Departmental Representative.

.2 Supervisors and all workers concerned by work requiring lockout-tagout must have received training on lockout-tagout procedures by a recognized organization; Contractor shall submit training certificates to the Departmental Representative.

.3 Before starting the lockout-tagout procedure of a piece of equipment on an occupied site, Contractor must coordinate his work with the representative of the site if the interruption of the power sources can have an impact on the operations of the site or on its occupants.

.4 Contractor must designate a qualified person as responsible for the lockout-tagout and must make sure that that person prepares a lockout-tagout data sheet for each piece of equipment involved. The lockout-tagout data sheet must be submitted to the Departmental Representative at least 48 hours before the beginning of the work. The Departmental Representative will review the data sheet with the representative of the site if the work takes place in an existing building. The data sheets for lockout-tagout must contain at least the following information:

.1 description of work to carry out;

.2 identification, description and location of the circuit and/or piece of equipment to lockout-tagout;

.3 identification of energy sources that feeds the piece of equipment;

.4 identification of each cutout point;

.5 sequence of lockout-tagout and the release of residual energy as well as the sequence of unlocking;

.6 list of material needed for the lockout-tagout;

.7 method of verification of zero energy implementation;

.8 name and signature of the person who prepared the data sheet.

.5 When required by the Departmental Representative, Contractor must record all this information on the site's representative form.

.6 At the time of lockout-tagout, the person responsible must date the data sheet and ensure that each worker involved in the work on the circuit/piece of equipment to lockout-tagout puts his name on the data sheet and signs it.

1.23 ELECTRICAL WORK

.1 Contractor shall ensure that all electrical work is executed by qualified employees in accordance with the provincial regulation respecting vocational training and qualification.

.2 Contractor shall respect all requirements of standard CSA Z462 Workplace Electrical Safety Standard.

.3 No repairs or alterations shall be carried out on any live equipment except where complete disconnection of the equipment is not feasible.

.4 Contractor shall respect all requirements prescribed in paragraph "LOCKOUT-TAGOUT" in this section.

.5 Contractor shall advise in writing the Departmental Representative of all the work that cannot be done with de-energized equipment and obtain his authorization. Contractor shall demonstrate to the Departmental Representative that it is impossible to do the work with de-energized equipment and provide all the information necessary to request and obtain an energized electrical work permit (indicate working procedures, arc flash hazard analysis, protective perimetre, protective equipment, etc.) before the beginning of the work, excluding for the exceptions indicated in standard CSA Z462 Workplace electrical safety.

.6 The energized electrical work permit on must contain at least the following elements:

.1 description of the circuit and equipment and its location;

.2 justification for having to do the work in an energized condition;

.3 description of safe work practices to apply;

.4 results of the shock hazard analysis;

.5 limit of the protective perimetre against electric shocks;

.6 results of the arc flash hazard analysis;

.7 description of the arc flash protection boundary;

.8 description of the personal protective equipment required;

.9 description of the means to limit access to unqualified persons;

.10 proof that an information session has been carried out;

.11 approval signature of the energized electrical work (by a person in authority or by the owner).

.7 If for the operational requirements of the occupants of the site the representative of the site requires that the Contractor performs work in an energized condition, the Contractor shall obtain all the information required to request and obtain obtain an energized electrical work permit (indicate working procedures, arc flash hazard analysis, protective perimetre, protective equipment, etc.) and have it signed by the representative of the site assigned by the Departmental Representative before the beginning of the work.

1.24 EXPOSURE TO ASBESTOS

.1 It is not anticipated that the work covered by the present specifications involves the manipulation of materials containing asbestos; however, if the Contractor or the Departmental Representative or his agent discover materials which are susceptible of containing asbestos, the Contractor must immediately stop the

work and advise the Departmental Representative. If more investigation demonstrates that the materials do contain asbestos, the Contractor shall comply with the following requirements.

.2 Prior to starting any work likely to emit asbestos dust, the Contractor must:

.1 Provide a written procedure for the work, identifying the risk level of the work (low, moderate, high), as defined in section 3.23 of the *Code the sécurité pour les travaux de construction S-2.1, r- 4*, (Safety code for the construction industry). This procedure must take into account all the requirements of that section 3.23.

.2 Submit certificates that demonstrate that all workers involved in the work have received training on asbestos hazards and on the procedure required in the preceding paragraph.

.3 Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

1.25 FUNGAL CONTAMINATION

.1 It is not anticipated that the work covered by the present specifications involves the manipulation of materials contaminated by mould; however, if the Contractor or the Departmental Representative or his agent discover materials which are susceptible of being contaminated by mould, the Contractor must immediately stop the work and advise the Departmental Representative. If more investigation demonstrates that the materials do contain mould, the Contractor shall comply with the following requirements.

.2 Prior to starting any work where workers are likely to be in contact with materials contaminated by mould, the Contractor must:

.1 Provide a written procedure for the work which respects all the requirements of the *Code the sécurité pour les travaux de construction S-2.1, r- 4*, (Safety code for the construction industry), as well as the requirements indicated in the document “Mould Guidelines for the Canadian Construction Industry” published by the Canadian Construction Association (http://www.cca-acc.com/documents/electronic/cca82/cca82.pdf).

.2 Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

1.26 EXPOSURE TO SILICA

.1 For any interior or exterior work generating silica, the Contractor must respect the following requirements, in addition to those in the *Code de sécurité pour les travaux de construction S-2.1, r.4* (Safety code for the construction industry).

.1 Work in wet environment or use tools with the inflow of water in order to reduce dustiness, if not, collect dust at the source and retain it with a high-efficiency filters not to propagate dust in the environment.

.2 Clean surfaces and tools with water, never with compressed air.

.3 Sand and pickle surfaces by using an abrasive containing less than 1% of silica (also called amorphous silica).

.4 Install shields or other containment device to prevent silica dust from migrating toward other workers or the public.

.5 Wear individual respiratory and ocular protection equipment during all the operations that could generate silica dust in accordance with the requirements of the *Code de sécurité pour les travaux de construction, S-2.1, r.4* (Safety code for the construction industry).

.6 Wear coveralls to prevent contamination outside the construction site.

.7 Do not eat, drink, or smoke in a dusty environment.

.8 Wash hands and face before drinking, eating or smoking..

1.27 SANDBLASTING

.1 Prior to starting any sandblasting work, the Contractor must:

.1 Provide a written procedure of the work that meets the requirements of section 3.20.of the *Code de sécurité pour les travaux de construction, S-2.1, r.4* (Safety code for the Construction Industry).

.2 Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

.3 All sanding and sandblasting work shall be done by using an abrasive containing less than 1% of silica.

1.28 LEAD-BASE PAINT REMOVAL

.1 Prior to all work where workers are likely to handle materials containing lead-base paint or other substances containing lead, the Contractor must:

.1 Provide a written procedure for the work which respects all the requirements of the Code de sécurité pour les travaux de construction S-2.1, r- 4, (Safety code for the construction industry), as well as the requirements indicated in the document “Guideline for Lead on Construction Projects” published by the Ontario Ministry of Labour (http://www.labour.gov.on.ca/english/hs/pdf/gl_lead.pdf). If there is a discrepancy between the Québec regulation and the Ontario document, the most stringent requirement shall apply.

.2 Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

1.29 EXPOSURE TO ANIMAL’S FECAL DROPPINGS

.1 Prior to all work where workers are likely to come in contact with materials contaminated by animal’s fecal droppings, the Contractor must:

.1 Provide a written procedure for the work which respects all the requirements of the *Code the sécurité pour les travaux de construction* S-2.1, r- 4, (Safety code for the construction industry), as well as the requirements indicated in the document “*Des fientes de pigeons dans votre lieu de travail: méfiez-vous”* (Pigeon droppings in your workplace: Beware” published by the CNESST (http://www.csst.qc.ca/publications/100/Documents/DC100_1331_1web2.pdf)

.2 Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

1.30 RESPIRATORORY PROTECTION

.1 Contractor must ensure that all workers who must wear a respirator as part of their duties have received training for that purpose as well as fit testing of their respirator, in accordance with CSA Standard Z94.4 Selection, use and care of respirators. Submit the certificates of the fit testings to the Departmental Representative on demand.

1.31 FALL PROTECTION

.1 Plan and organize work so as to eliminate the risk of fall at the source or ensure collective protection, thereby minimizing the use of personal protective equipment. When personal fall protection is required, workers must use a safety harness that complies with CSA standard CAN/CSA -Z259.10. A safety belt must not be used as fall protection.

.2 Every person using an elevating platform (scissors, telescopic mast, articulated mast, rotative mast, etc.) must have a training regarding this equipment.

.3 The use of a safety harness is mandatory for all elevating platforms with telescopic, articulate or rotative mast.

.4 Define the limits of the danger zone around each elevating platform.

.5 All openings in a floor or roof must be surrounded by a guardrail or provided with a cover fixed to the floor able to withstand the loads to which it could be exposed, regardless of the size of the opening and the height of the fall it represents.

.6 Everyone who works within two metres from a fall hazard of three metres or more must use a safety harness in accordance with the requirements of the regulation, unless there is a guardrail or another device offering an equivalent safety.

.7 Despite the requirements of the regulation, the Departmental Representative may require the installation of a guardrail or the use of a safety harness for specific situations presenting a risk of fall less than three metres.

1.32 SCAFFOLDINGS

.1 In addition to the requirements of the *Code de sécurité pour les travaux de construction L.R.Q.,C.S-2.1,r.4* (Safety code for the construction industry), the Contractor who uses scaffoldings must respect the following requirements:

.1 Foundation

.1 Scaffoldings shall be installed on a solid foundation so that it does not slip or rock.

.2 Contractors wishing to install scaffoldings on a roof, overhang, canopy or awning shall submit their calculations and loads, as well as plans signed and sealed by an engineer to the Departmental Representative and obtain his authorization before beginning installation.

.2 Assembly, bracing and mooring

.1 All scaffoldings shall be assembled, braced and moored in accordance with the manufacturer's instructions and the provisions of the *Code de sécurité pour les travaux de construction L.R.Q.,C.S-2.1,r.4* (Safety code for the construction industry).

.2 Where a situation requires the removal of part of the scaffoldings (e.g., crosspieces), the Contractor shall submit to the Departmental Representative an assembly procedure signed and sealed by an engineer certifying that the scaffolding assembled in that manner will allow the work to be done safely given the loads to which it will be subject.

.3 For scaffoldings where the span between two supports is greater than three metres, the Contractor shall provide the Departmental Representative an assembly plan signed and sealed by an engineer.

.3 Protection against falls during assembly

.1 Workers exposed to the risk of falling more than three metres shall be protected against falls at all times during assembly.

.4 Platforms

.1 Scaffolding platforms shall be designed and installed in accordance with the provisions of the *Code de sécurité pour les travaux de construction L.R.Q.,C.S-2.1,r.4* (Safety code for the construction industry).

.2 If planks are used, they shall be approved and stamped in accordance with section 3.9.8 of the *Code de sécurité pour les travaux de construction L.R.Q.,C.S-2.1,r.4* (Safety code for the construction industry)

.3 Scaffoldings of four sections (or six metres) high or more shall have a full platform covering the entire surface between the putlogs every three metres high or fraction thereof, and the components of that platform shall not be moved at any time to create an intermediate landing.

.5 Guardrails

.1 A guardrail shall be installed on every landing.

.2 Cross braces shall not be considered as guardrails.

.3 If the platforms are not covering the entire surface between the putlogs, the guardrail must be installed just above the edge of the platform so that there is no empty horizontal space between the platform and the guardrail.

.4 Where scaffoldings has four sections (or six metres) high or more and full platforms are required, the guardrails shall be installed on each landing at the start of work and shall remain in place until the work is completed.

.6 Access

.1 The Contractor shall ensure that access to the scaffoldings does not compromise worker safety.

.2 Where the platforms of the scaffoldings are comprised of planks, ladders shall be installed in such a way that planks extending beyond the platform do not block the way up or down.

.3 Notwithstanding the provisions of the *Code de sécurité pour les travaux de construction L.R.Q.,C.S-2.1,r.4* (Safety code for the construction industry), stairs shall be installed on all scaffoldings that have six or more rows of uprights or is six sections (or nine metres) high or higher.

.7 Protection of the public and occupants

.1 When scaffoldings are installed in a zone accessible to the public, the Contractor shall take the necessary measures to prevent the public from having access to them and, if applicable, to the work or storage area located in the vicinity of these scaffolding.

.2 Contractor must install covered walkways, nets or other similar devices to protect workers, the public and the occupants against falling objects. The means of protection must be approved by the Departmental Representative.

.8 Engineering plans

.1 In addition to those required by the *Code de sécurité pour les travaux de construction L.R.Q.,C.S-2.1,r.4* (Safety code for the construction industry), the Departmental Representative reserves the right to require engineering plans for other types or configurations of scaffoldings.

.2 A plan signed and sealed by an engineer is required for all scaffoldings that will be covered with a canvas, a tarpaulin or any other material that has wind resistance.

.3 A certificate of conformity signed by an engineer is required in all cases where an engineering plan is required for the installation and this, before anybody uses the facility. A copy of these documents must be available on the construction site at all times.

1.33 CONFINED SPACES

.1 In addition to the requirements of the provincial regulation applicable to confined spaces, the Contractor must respect the requirements in the following paragraphs.

.2 The Departmental Representative reserves the right, depending on the nature of the risk of the confined spaces, of the work to be done and/or of the level of competence in confined spaces demonstrated by the Contractor, to require from the latter that he use the services of a firm specialized in health and safety or in confined space work to perform the analysis of the risks inherent to the confined spaces, to complete the entry permit, to conduct surveillance of the work or for any other task related to the work in confined spaces.

.1 Information on confined spaces existing on the construction site

.1 The following presents a non-exclusive list of the confined spaces that the Contractor will likely have to access during this project:

.1 Not used

.2 The Contractor shall take into consideration each of these confined spaces and must also add to this list the confined spaces that he is likely to build/install during this project.

.3 Person in charge of the health and safety for the work in confined spaces

.1 The Contractor shall designate a person to be in charge of the health and safety for the work in confined spaces. This person shall be qualified, as defined in the article 297 of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Occupational Health and Safety Regulation). This person must be present at all times during work in confined spaces and must make sure that all the requirements of the regulation and the ones specified in this section are respected. This person must amongst other things fill out and issue the entry permit for the confined spaces.

.4 Training

.1 All persons having access to a confined space, including the person in charge and the watcher of the confined space shall have completed training on entry in confined spaces.

.2 All persons who have to use supplied-air respirator to access the confined spaces shall have completed training on the use of these apparatus.

.3 All persons identified as rescuers for confined spaces shall have completed training on confined spaces rescue.

.4 Each training session required in the preceding paragraphs must be provided by a firm specialized in health and safety or in confined spaces.

.5 The training certificates of the persons mentioned above must be submitted to the Departmental Representative before the beginning of the work in confined spaces.

.5 Risk assessment of confined spaces

.1 For each of the confined spaces listed at the beginning of this article, the Contractor must obtain the necessary information from the site representative and proceed to the assessment of the risk inherent to each confined space and relative to:

.1 the prevailing internal atmosphere, namely the concentration of oxygen, inflammable gases and vapours, combustible or explosive dusts as well as the categories of contaminants likely to be present in this enclosed area or nearby;

.2 the fact that the natural or mechanical ventilation is insufficient

.3 The materials that are present there and that can cause the worker to sink, to be buried or to drown, such as sand, grain or a liquid;

.4 the interior configuration;

.5 pipes and conduits penetrating the confined space;

.6 energies such as electricity, moving mechanical parts, heat stress, noise and hydraulic energy;

.7 ignition sources such as open flames, lighting, welding and cutting, static electricity or sparks;

.8 all other particular circumstances, such as the presence of vermin, rodents or insects.

.2 These risk assessments must be done by the person in charge of the health and safety of the work in confined spaces. They must be submitted to the Departmental Representative for analysis at least 10 days before the proposed date for the work in confined spaces and they must also include the following information:

.1 location of the confined space;

.2 description of the confined space;

.3 dimensions of the confined space;

.4 number, location and dimensions of the openings;

.5 content of the confined space (material, substances, etc.)

.6 date of the assessment;

.7 name and signature of the person who conducted the assessment and the name of his employer.

.3 The Contractor must repeat the same process for each of the confined spaces that he will build/install during this project.

.6 Confined spaces entry permits

.1 At least 5 days before the scheduled date for the work in a confined space the Contractor must submit for analysis to the Departmental Representative a copy of each entry permit specific to the confined spaces where he must access. The entry permits must be completed by the person in charge of the health and safety of the work in confined spaces, and must contain the following information as a minimum:

.1 description of the work that will be carried out and the method of work, including the materials and tools needed to do this work;

.2 description of the risks and corresponding preventive measures according to the risk assessment inherent to the confined space done previously and according to the work to be carried out;

.3 safety equipment that will be used to control the risks of confined spaces (e.g.: fan, gas detectors, local exhaust ventilation, personal protective equipment, etc.);

.4 rescue procedure covering at least the following:

- o means of communication between the supervisor of the confined space and the workers in the confined space;
- o lifesaving equipment specific to each confined space;

- o confirmation that the municipal emergency response service has been advised that work in confined spaces would be going on at this specific construction site and that they may intervene do to a confined space rescue; otherwise, the Contractor must identify the workers on the construction site that will act as rescuers in a confined space in the case where such rescuers must enter the confined space (rescue training is mandatory);
- o location of telephone and phone number of the municipal emergency response service (if applicable);

.5 date of entry permit;

.6 name of person who issued the permit and the name of his employer;

.7 name of the confined space safety watcher and the name of his employer;

.8 name of the workers who must enter the confined space and the name of each one's employer.

.2 In cases where the site representative requires the use of a confined space entry permit specific to his site, the Contractor must comply with the requirements of that permit.

.7 Medical surveillance

.1 The Contractor must submit to the Departmental Representative a medical certificate dated in the last two years for all persons who must use a supplied-air respirator. The certificate must confirm the ability of each person to use this type of apparel.

.2 It is recommended that the persons who have to work in sewer collection systems or other similar systems be vaccinated against diphtheria, tetanus and hepatitis "B".

.8 Requirements while working in confined spaces

.1 Before each entry into a confined space, the person in charge of the health and safety for the work in confined spaces shall take readings of oxygen concentration, flammable gases and all toxic gases likely to be present and record these readings on the entry permit required earlier.

.2 No worker can access the confined space if the following requirements are not respected:

.1 the concentration of oxygen shall be greater than or equal to 19.5% and less than or equal to 23%;

.2 the concentration of inflammable gases or vapours shall be less than or equal to 10% of the lower explosion limit;

.3 the concentration of other gases must not exceed the standards prescribed in annex I of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Occupational Health and Safety Regulation).

.3 If the oxygen and gas concentrations measured respect the regulatory values, the person in charge of the health and safety for the work in confined spaces must ensure that all preventive measures indicated on the permit are in place and then must complete the entry permit (date, time, signatures, etc.) before issuing the permit and allow entry into the confined space.

.4 A permit is only valid for one work shift; the Contractor must submit a new permit for each extra shift.

.5 During the work inside the confined space, the gas concentration must be measured continuously and the gas detector must be installed at the level of the breathing area of the workers. If the conditions inside the confined space are such that the workers might not hear/see the detector's alarm, the Contractor must find a way for the confined space safety watcher to watch the concentration measures while maintaining the measurements at the level of the breathing zone of the workers.

.6 If the work is organized in a way that the workers are scattered far away from each other in a large confined space, the Contractor needs to provide additional gas detectors.

.7 The Contractor must provide the gas detectors and maintain them in good condition. He must be able to show that the gas detectors used have been calibrated and adjusted by the person in charge of the health and safety for the work in confined spaces or by a qualified person, in accordance with the manufacturer's recommendations. The Departmental Representative can at all times have the accuracy of the measuring devices checked. In the event of the failure of a detection device, the work must be stopped immediately and all workers must leave the confined space.

.8 The manufacturer's manual of the gas detectors must be available on the construction site.

.9 The Contractor shall provide a ventilation system to keep concentrations of contaminants below the regulatory limits.

.10 If work generating contaminants are performed (welding, use of products, etc.), the Contractor must, if needed, install an aspiration system for the contaminants so that the regulatory values of air quality can be maintained at all times.

.11 If a detecting device alarm goes off, all workers shall leave the confined space. The measured levels of concentration must then be recorded on the entry permit. The Contractor shall then find the source of contamination, neutralize it, ventilate the confined space to eliminate contaminant residues and authorize access to the confined space only when concentrations of oxygen and gas have returned to normal.

.12 Compressed gas cylinders or welding equipment shall not be brought into confined spaces: this equipment shall remain outside and shall not block entrances or exits; all cylinders shall be properly secured.

.13 Tools and electrical devices used to work in the confined spaces shall be grounded and, when necessary, designed to be explosion-proof. All equipment must be connected to a ground fault interrupter outlet or to a step-down transformer. The Contractor shall, at his own cost, hire a qualified electrician to adjust power receptacles and/or circuit breakers that he intends to use which do not meet these criteria.

.14 The Contractor shall obtain a Hot Work Permit and respect the requirements to that effect when the work to be carried out includes hot work.

.15 The Contractor must assign a competent person to assume the duties of confined space safety watcher. The supervisor shall be exclusively dedicated to these duties and must constantly remain outside of the confined space as long as there is a worker in it. He must also:

.1 ensure that the entry permit has been filled, signed and posted near the confined space;

.2 must be familiar with the work procedure specific to the confined space and ensure that it is respected;

.3 ensure continuous communication with all the workers in the confined space and ensure that all the equipment required in case of emergency is present;

.4 have a good knowledge of the backup ventilation systems and ensure their proper functioning for the duration of the work;

.5 prevent access to unauthorized persons;

.6 ensure that the conditions around the confined space zone is not a health or security risk for the workers inside the confined space;

.7 initiate the emergency procedure if needed.

.16 The same person may act as a confined space safety watcher and as the person in charge of the health and safety of the work in confined spaces, provided all requirements of both functions are met.

1.34 EXCAVATION WORK

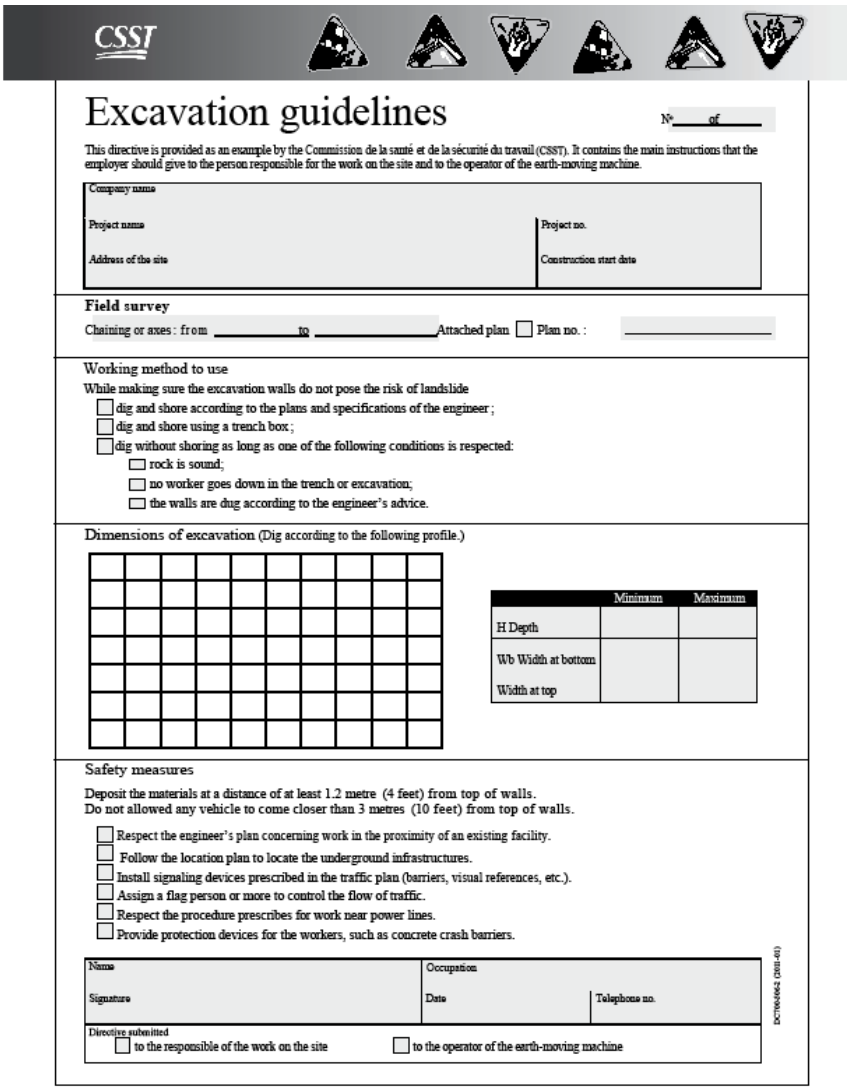
.1 In addition to the requirements of the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry), the Contractor who performs the digging of trenches or excavations must respect the following requirements:

.1 Fill out the following form and submit it to the Departmental Representative before beginning to excavation work.

.2 Submit to the Departmental Representative, as appropriate, the following documents:

.1 plans and specifications, signed and sealed by an engineer, of the shoring needed to be installed for the excavation work; or

.2 engineer's advice specifying the wall angles of the trench or excavation.



CSST

Excavation guidelines

N° ____ of ____

This directive is provided as an example by the Commission de la santé et de la sécurité du travail (CSST). It contains the main instructions that the employer should give to the person responsible for the work on the site and to the operator of the earth-moving machine.

Company name	
Project name	Project no.
Address of the site	Construction start date

Field survey

Chaining or axes : from _____ to _____ Attached plan ☐ Plan no. : _____

Working method to use

While making sure the excavation walls do not pose the risk of landslide

- ☐ dig and shore according to the plans and specifications of the engineer ;
- ☐ dig and shore using a trench box ;
- ☐ dig without shoring as long as one of the following conditions is respected:
  - ☐ rock is sound;
  - ☐ no worker goes down in the trench or excavation;
  - ☐ the walls are dug according to the engineer's advice.

Dimensions of excavation (Dig according to the following profile.)

	Minimum	Maximum
H Depth		
Wb Width at bottom Width at top		

Safety measures

Deposit the materials at a distance of at least 1.2 metre (4 feet) from top of walls.
Do not allowed any vehicle to come closer than 3 metres (10 feet) from top of walls.

- ☐ Respect the engineer's plan concerning work in the proximity of an existing facility.
- ☐ Follow the location plan to locate the underground infrastructures.
- ☐ Install signaling devices prescribed in the traffic plan (barriers, visual references, etc.).
- ☐ Assign a flag person or more to control the flow of traffic.
- ☐ Respect the procedure prescribes for work near power lines.
- ☐ Provide protection devices for the workers, such as concrete crash barriers.

Name	Occupation	
Signature	Date	Telephone no.

Directive submitted
☐ to the responsible of the work on the site ☐ to the operator of the earth-moving machine

DC700-6062-(2001-01)

1.35 LIFTING LOADS WITH CRANE OR BOOM TRUCK

.1 Unless specified otherwise, the Contractor must prepare a hoisting plan and submit it to the Departmental Representative for all lifting operations done with a crane or a boom truck at least 5 days before these lifting operations begin. The hoisting plan must contain at a minimum the information listed at the end of this article.

.2 The hoisting plan must be signed and sealed by an engineer for the following lifting operations:

.1 lifting of concrete panels;

.2 lifting mechanical/electrical equipment on a roof or on the floor of a building;

.3 lifting of loads encroaching on the public road;

.4 lifting large dimensions or very heavy loads;

.5 all other lifting operation, in accordance with the requirements of the Departmental Representative.

.3 In addition to the above requirements, the Contractor must plan the hoisting operations in a way as to avoid that the loads pass over the occupied zones on the site. When there is no alternative, the hoisting plan must absolutely be signed and sealed by an engineer and must guarantee the security of the occupants in that zone; the plan must also be approved by the Departmental Representative. The Departmental Representative can, if he deems necessary, require that the work be done at night or on weekends.

.4 Upon the beginning of the work on the construction site, the Contractor must submit the list of the hoisting plans anticipated for the whole project to the Departmental Representative. That list shall be updated as needed if changes occur during the work.

.5 In addition to the mechanical service inspection certificate, the annual inspection certificate and the crane logbook must be aboard all cranes and boom truck cabs.

.6 The entire lifting area shall be marked off to prevent the entry of non-authorized persons.

.7 The Contractor shall carefully inspect all of the slings and lifting accessories and make sure that those in poor condition are destroyed and scrapped.

.8 Compressed-gas cylinders shall be lifted with a basket specially designed for this purpose.

.9 MINIMUM CONTENT OF HOISTING PLAN

.1 Sketch indicating at a minimum, the location of the crane, the surrounding facilities, the zone covered by the hoisting operations, the pedestrian’s pathways and vehicular routes, the security perimetre, etc.

.2 Weight of loads

.3 Dimensions of loads

.4 List of hoisting devices and weight of each

.5 Total weight lifted

.6 Maximum height of obstacles to clear

.7 Height of loads lifting relative to the surface of the roof (in the case of loads to be placed on roofs)

.8 Use of guide cables

.9 Type of crane used

.10 Crane capacity

.11 Boom length

.12 Boom angle

.13 Crane's radius of action

.14 Deployment of stabilizers

.15 Percentage usage of the crane's capacity

.16 Verification confirmation of hoisting equipment

.17 Identification of the crane operator and the person responsible for the hoisting operations with date and signatures

1.36 HOT WORK

.1 Hot work means any work where a flame is used or a source of ignition may be produced, i.e., riveting, welding, cutting, grinding, burning, heating, etc.

.2 Welding and Cutting

.1 In addition to the requirements prescribed in the preceding paragraphs, the Contractor must respect the following requirements:

.1 Welding and cutting work must be carried out in accordance with the requirements of the *Code de Sécurité pour les travaux de construction,* S-2.1, r.4 (Safety code for the construction industry) and CSA standard W117.2, Safety in Cutting, Welding and Allied Processes.

.2 Air extraction system with filters must be used for all welding and cutting work performed inside.

.3 Stop all activities producing flammable or combustible gas, vapours or dust in the vicinity of the welding or cutting work.

.4 Store all compressed gas cylinder on a fireproof fabric and make sure that the room is well ventilated.

.5 Store all oxygen cylinders more than 6 metres from a flammable gas cylinder (ex: acetylene) or a combustible such as oil or grease, unless the oxygen cylinder is separated from it by a wall made of non-combustible material as mentioned inthe article 3.13.4 of the *Code de sécurité pour les travaux de construction*, S-2, r. 6 (Safety code for the construction industry)

.6 Store the cylinders far from all heat sources.

.7 Not to store the cylinders close to the staircases, exits, corridors and elevators.

.8 Do not put acetylene in contact with metals such as silver, mercury, copper and alloys of brass having more than 65% copper, to avoid the risk of an explosive reaction.

.9 Check that welding equipment with electric arc has the necessary tension and are grounded.

.10 Ensure that the conducting wires of the electric welding equipment are not damaged.

.11 Place the welding equipment on a flat ground away from the bad weather.

.12 Install fireproof canvas when the welding work is done in a superposition and where there is the risk of falling sparks.

.13 Move away or protect the combustible materials which are closer than 15 metres from the welding work.

.14 Prohibition to weld or cut any closed container.

.15 Do not perform any cutting, welding or work with a naked flame on a container, a tank, a pipe or other container containing a flammable or explosive substance unless:

.1 they have been cleaned and air samples indicating that work can be done without danger has been taken; and

.2 provisions to ensure the safety of the workers have been made.

1.37 ROOFING WORK

.1 Not used

1.38 STEEL STRUCTURE ERECTION OR DISMANTLING WORK

.1 In addition to respecting section 3.24 du *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry), the Contractor must also respect the requirements described in the following paragraphs.

.2 Contractor must submit the following documents to the Departmental Representative before the beginning of steel structure erection work:

.1 erecting procedures in accordance with article 3.24.10 du *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry);

.2 rescue procedures for the release of a worker suspended in a safety harness within a maximum of 15 minutes; procedures must be adapted to the construction site and in accordance with article 3.24.4 of that same code; the procedure must be accompanied by a written confirmation that it has been tested;

.3 statement from an engineer that the anchor rods have been installed in accordance with the anchoring plan as required by the article 3.24.12 of that same code;

.4 hoisting procedures in cases where the lifting is done in one of the ways described in the article 3.24.15 of that same code;

.5 name of the individual identified as rescuer and his rescue training certificate;

.6 name of the individual identified as first-aid attendant and his first-aid training certificate.

.3 The Contractor must make sure that the following documents are available for consultation on construction site at all times:

.1 Steel structure manufacturer's erection plan in accordance with the requirements of article 3.24.9 du *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry);

.2 Column anchor rods's anchoring plan in accordance with the requirements of article 3.24.11 du *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry).

1.39 WORK NEAR BODIES OF WATER

.1 For all work done near a body of water (such as work above water, work on a wharf, work on the edge of a watercourse, etc.), the Contractor must respect the requirement of the following paragraphs in addition to those in article 2.10.13 du *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry).

.2 The Contractor must plan his work in a way to implement safety measures to prevent any worker from falling in the water. The use of these measures should be favoured over the wearing of a life jacket.

.3 If no other safety measure can protect the workers, ensure that they all wear a life jacket that is able to maintain their head out of the water and keep them afloat without any effort of the arms.

.4 Submit the following documents to the Departmental Representative before the beginning of the work:

.1 description of the body of water;

.2 description of the work done next to this body of water;

.3 plan of transportation on water adapted to the work and to the characteristics of the body of water;

.4 rescue plan adapted to the work and to the characteristics of the body of water;

Each of the document listed above must contain at a minimum the information required in section 11 of the *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry).

If there is the possibility that all or part of the work can be done during the winter, the safety measures included in the documents required above must be adapted accordingly.

.5 The Contractor must submit to the Departmental Representative the certificate of training required in article 11.2 du *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry). for the following individuals:

.1 the person assigned to prepare the documents required in the preceding paragraph; and

.2 each person responsible for the transport or rescue operations.

.6 If the rescue plan stipulates the use of a vessel, the Contractor must submit to Departmental Representative the competency card or certificate for the individuals in the rescue team for his work, issued by Transport Canada.

.7 The Contractor must include in his weekly inspection checklist the devices required in the articles 11.4 and 11.5 du *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry).

.8 Ensure that a rescue vessel moored and in the water is available at each place where a worker may fall in the water. However, a vessel may serve more than one workplace on the same construction site provided the distance between any of these workplaces and the vessel is less than 30 m.

.9 Where the construction site is a wharf, a pier, a quay or any similar structure, a ladder with at least two (2) rungs below the surface of the water shall be installed on the front of the structure every 60 m.

1.40 INTERIOR USE OF INTERNAL COMBUSTION ENGINES

.1 In addition to respecting article 3.10.17 of the *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry), the Contractor must also respect the requirements described in the following paragraphs.

.2 The use of a gas-powered equipment inside a building is prohibited even if the building is provided with openings.

.3 The use of other equipment powered by an internal combustion engine inside a building must be submitted to the approval of the Departmental Representative.

.4 For the use of any piece of equipment powered by an internal combustion engine inside a building, even if the building is provided with openings, the Contractor must install a ventilation system able to maintain the concentrations of toxic gases below the regulatory values. The stale air shall be exhausted outside the building.

.1 Before using equipment powered by an internal combustion engine, the Contractor must plan and write the following:

.1 number of fans to install;

.2 power of the fans;

.3 location of the fans;

.4 dimensions of the openings that will be open during the work.

.5 During the operation of equipment with internal combustion engine, the Contractor must measure the concentrations of carbon monoxide and nitrogen oxides in the work area and at the breathing area of the workers; the concentration levels measured must be recorded in a register every 30 minutes that must be available for consultation.

.6 If work is in an occupied building, the Contractor must also measure the concentrations of carbon monoxide and nitrogen oxides in the rooms next to the work area and the concentration levels measured must be recorded in a register every 30 minutes.

.7 If the carbon monoxide or nitrogen oxides detector alarm goes off during the work, the Contractor must stop the work and take the corrective measures required before resuming the work.

.8 A portable fire extinguisher must be available at all times in the work area during the use of equipment with internal combustion engines.

.9 The equipment must be maintained at a safe distance from all combustible material.

.10 The storage of fuel for any equipment with internal combustion engine is prohibited inside a building.

1.41 TEMPORARY HEATING

.1 In addition to respecting section 3.11 of the *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry), the Contractor must also respect the requirements described in the following paragraphs.

.2 A portable fire extinguisher must be available at all times near the heating units, no matter what type of heating is used.

.3 The heating units must always be used in accordance with the manufacturer's specifications.

.4 If applicable, the canvas or tarpaulins used next to the heating units must be solidly fixed so as not to be projected on the heaters, on the pipes connected to the heaters or on any other heat source.

.5 The gas cylinders must be installed in a way that they are protected from vehicle and other equipment traffic.

.6 For the use of heating units other than electric, the Contractor must install a carbon monoxide detector in the work area, next to the heating units and/or the workers, throughout the course of the heating period. The Contractor must immediately apply the corrective measures required to the heating units if the detector's alarm goes off.

.7 The Contractor must ensure a minimum surveillance of the heating units outside the hours of work (nights and weekends). He must submit a surveillance plan to the Departmental Representative before the use of the heating units.

1.42 WORK NEAR OVERHEAD POWER LINES

.1 When there is an overhead power line in the work zone and that the Contractor chooses to apply paragraph b) of article 5.2.2 of the *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry), a copy of the agreement with the electrical power company and a copy of the work process, required in the article 5.2.2 b), must be submitted to the Departmental Representative before the beginning of the work in relation to these documents.

1.43 DIVING OPERATIONS

.1 In accepting this contract, the Contractor agrees to satisfy the following requirements:

.1 Compliance with all the requirements of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Regulation respecting occupational health and safety), more precisely section XXVI. I, entitled *Travail effectué en plongée* (Underwater Work). Compliance, furthermore, with the latest editions of standards CAN/CSA Z275.2 – Occupational Safety code for Diving Operations, CAN/CSA Z275.1 – Hyperbaric Chambers and CAN/CSA Z275.4 – Competency Standard for Diving Operations. In the event of conflict between these requirements, the most stringent requirement shall apply.

.2 In addition to the above, in cases where construction work is involved, compliance with the *Code de sécurité pour les travaux de construction, L.R.Q.,C.S-2.1, r.4.* (Safety code for the Construction Industry).

.3 Before starting the work, submit to the Departmental Representative the following documents, as per the *Règlement sur la santé et la sécurité au travail* (S-2.1, r.19.1) (Regulation respecting occupational health and safety):

.1 the professional diving training certificate of each member of the dive team OR a document recognizing the skills of those persons in accordance with the Competency Standard for Diving Operations, CAN/CSA Z275.4-02, as per section 312.8 of the Regulation;

.2 the workplace first-aid training certificate of each member of the dive team;

.3 the medical certificate of each member of the dive team;

.4 for each dive included in this contract, a dive plan containing the following information, in addition to that required under the *Règlement sur la santé et la sécurité au travail* (S-2.1, r.19.1) (Regulation respecting occupational health and safety):

- the thermal protection to be used;
- the repetitive dive factor;
- the no-decompression limit;
- the circumstances in which the dive must be terminated;
- the procedures to be followed to ensure that machinery, equipment or devices that could create a hazard have been locked out;
- the decompression table to be used, as required;

.5 notification confirming that a system for communicating with the *Service d'assistance médicale pour les urgences en plongée* (Medical assistance service for diving emergency) is available at the diving station at all times.

.4 The Contractor shall take into account the following specific characteristics of the worksite, and adapt its dive plan accordingly:

.5 Where the dive takes place at one of the following locations, provide the Departmental Representative confirmation that the authorities concerned have been notified:

.1 upstream or downstream from a hydraulic structure or submerged water line;

.2 in marine waterways;

.3 in port facilities.

.6 If the dive station is more than 2 metres above the water, provide the Departmental Representative:

.1 a drawing of the equipment used to transport the worker through the air-water interface, if a device other than a stage is used for that purpose;

.2 a drawing of the device used to hoist the stage or other device, unless that device is a crane or boom truck.

.7 If the dive is carried out from a vessel, provide the Departmental Representative the following documents:

.1 proof of qualification of the vessel operator;

.2 the vessel's certificate of compliance from Transport Canada.

.8 Before starting the work, carry out an underwater rescue simulation at the site, as required under section 312.31 of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.19.1) (Regulation respecting occupational health and safety).

.9 On a daily basis, complete and provide to the Departmental Representative a checklist confirming the presence and condition of the equipment required at the dive site as per the dive plan.

.10 Ensure that all other documents required under section XXVI of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.19.1) (Regulation respecting occupational health and safety) are available at the construction site at all times (diving logbook, diver's logbook, etc.).

1.44 HEALTH AND SAFETY SUBORDINATION AGREEMENT

Project: _____ **Address:** _____

EXTERNAL CONTRACTOR

I hereby agree to submit to the authority of (name of the Principal Contractor's business) _____, which is the Principal Contractor for the project indicated above during the entire duration of our work on the construction site. Accordingly, I confirm that I have reviewed the Principal Contractor's prevention program, and I agree to:

- inform my employees of the content of the Principal Contractor's prevention program and ensure that its content are complied with at all times;
- apply the prevention program that is specific to the activities that we carry out under this project;
- inform the Principal Contractor of my actions or dealings on the construction site and obtain the Principal Contractor's agreement before the start of work; and
- follow the health and safety directives provided by the representative of the Principal Contractor on the construction site and, depending on requirements, attend training sessions and health and safety meetings organized by the representative of the Principal Contractor.

Name of representative: _____

Name of business: _____

Description of work to be done on the construction site: _____

Approximate dates of work (start-end): _____

Signature: _____ Date: _____

PRINCIPAL CONTRACTOR

I hereby agree to allow the business (name of external contractor) _____ to perform the work under this project indicated above and, as Principal Contractor, to take the necessary steps to protect the health and safety of workers on the construction site. Should the Contractor repeatedly refuse or fail to comply with my directives, I agree to inform PWGSC's Departmental Representative of this and to provide documentary evidence of my actions or dealings with the Contractor.

Name of representative: _____

Name of the Principal Contractor's business: _____

Signature: _____ Date: _____

Submit a completed and signed copy to PWGSC's Departmental Representative

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 Section 02 50 13 – Management of Toxic Waste

.2 Section 02 81 01 – Hazardous Material

.3 Section 31 23 33.01- Excavating, Trenching and Backfilling

.4 Section 01 74 11 – Cleaning

.5 Section 01 35 29.06 – Health and Safety

1.2 REFERENCES

.1 Loi sur la qualité de l'environnement (LRQ, c. Q-2)

.2 Loi canadienne sur la protection de l'environnement (1999) (L.C. 1999, ch. 33)

.3 Règlement sur les matières dangereuses (Q-2, r. 32)

.4 Règlement sur l'assainissement de l'atmosphère (Q-2, r. 4.1)

.5 Règlement sur les déchets solides (Q-2, r. 13)

.6 Règlement sur l'enfouissement des sols contaminés (Q-2, r. 18)

.7 Règlement sur l'enfouissement et l'incinération de matières résiduelles (ch. Q-2, r. 19)

.8 Règlement sur le stockage et les centres de transfert de sols contaminés (Q-2, r. 46)

.9 Loi sur la conservation et la mise en valeur de la faune (LRQ, ch. C-61.1)

.10 Loi de 1994 sur la convention concernant les oiseaux migrateurs (L.C. 1994, ch. 22)

.11 Règlement sur les habitats fauniques (C-61.1, r.18)

.12 Loi sur les pêches (LRC 1985, c. F-15)

.13 Lignes directrices relatives à la gestion du bois traité (MDDELCC, octobre 2011)

.14 Politique de protection des sols et réhabilitation des terrains contaminés (MDDELCC, 1998)

.15 Critères de qualité de l'eau de surface (MDDELCC, 2015)

.16 Recommandations canadiennes pour la qualité de l'environnement (CCME, 1999)

.17 Standards pancanadiens relatifs aux hydrocarbures pétroliers (HCP) dans le sol (CCME, 2008)

.18 Étude de caractérisation environnementale, (Terrapex, 2017)

.19 Règlement relatif à la lutte contre la propagation de l'agrile du frêne sur le territoire de la ville de Montréal (15-040)

.20 Règlement numéro 2008-47 sur l'assainissement des eaux de la Communauté métropolitaine de Montréal (CMM, 2008).

.21 Norme BNQ 2410-300 – Produits utilisés comme abat-poussières pour routes non asphaltées et autres surfaces similaires (BNQ, 2009).

.22 Règlement relatif à l'assainissement de l'air et remplaçant les règlements 44 et 44-1 de la Communauté (Règlement n^{o} 90 de la C.U.M., modifié par les Règlements n^{os} 90-1, 90-2 et 90-3) (CMM, 1986).

.23 Limites et lignes directrices préconisées par le ministère du Développement durable, de l'Environnement et des Parcs relativement aux niveaux sonores provenant d'un chantier de construction (MDDELCC, mars 2015).

.24 Règlement sur les canaux historiques (DORS/93-220).

.25 Règlement sur le bruit (R.R.V.M. c. B-3) (Ville de Montréal, 1994).

.26 Règlement no RCA13 22003 – Règlement modifiant le Règlement sur le bruit (R.R.V.M., chapitre B-3).

1.3 DESCRIPTION

.1 This section describes the environmental requirements related to the reconstruction of the footbridge. The Contractor is responsible for meeting these requirements at all times during the work covered by these specifications.

.2 Other sections may also contain specific requirements pertaining to environmental procedures. These specific requirements are supplementary to the requirements set out in this section. In the event of contradiction, the most stringent requirement shall apply

1.4 DEFINITIONS

.1 Species with Special Status: Wild, fauna or flora species, which is legally protected under the Quebec Wildlife and Wildlife Conservation Act and / or the Species at Risk Act (Canada).

.2 Invasive species: Species foreign to the ecosystem in which it is found, but capable of reproduction and likely to adversely affect the economy, the environment or human health. Other than plants, this type of harmful organism also includes certain animals, mushrooms and microorganisms that are a threat to biodiversity.

.3 MDDELCC: Ministère du Développement Durable, de l'Environnement et de la Lutte contre les Changements Climatiques (Ministry of Sustainable Development, Environment and the Fight against Climate Change).

.4 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.

.5 Environmental protection: Prevention/control of contamination, pollution and habitat or environment disruption during construction. Prevention of environmental pollution and damage requires consideration of soil, water and air; biological and cultural resources; and includes management of visual esthetics; noise; solid, chemical, gaseous and liquid waste; radiant energy and radioactive material, as well as other pollutants.

1.5 CONTRACTOR'S OBLIGATIONS

.1 The Departmental Representative holds environmental permits for the planned work. The Contractor shall comply with the requirements of the conditions associated with each environmental permit

.2 The work must be completed to the satisfaction of the Departmental Representative regarding standards and environmental regulations. The Contractor shall comply with the environmental guidelines of this analysis and this must include the costs associated with these requirements.

.3 The Contractor must ensure that his work complies with:

.1 The laws and legislation of the municipal environmental provincial and federal authorities;

.2 The requirements established in this specification;

.3 The requirements associated with each of the conditions of the environmental permits;

.4 To the other standards and guidelines that may be established by the supervisor designated by the Departmental Representative.

.4 In the event of work not planned and stated in the environmental permits, the Contractor must, in addition to notifying and obtaining the consent of the of Departmental Representative, obtain from organizations concerned authorizations and permissions necessary to complete his work. Costs and delays related to compliance and enforcement of environmental requirements contained in these licenses and permits will be provided and borne entirely by the Contractor.

.5 An environmental protection plan shall be prepared by the Contractor and submitted to the Departmental Representative.

1.6 NOTICE OF NON-COMPLIANCE

.1 A notice of non-compliance will be issued in writing to the Contractor by the Departmental Representative every time a non-compliance with a law, regulation or a federal permit, provincial or municipal, or other element of the environmental protection plan to be implemented by the Contractor is observed.

.2 After receiving a notice of non-compliance, the Contractor must propose corrective measures to the Departmental Representative and must implement them within a short period with the approval of the latter.

.3 The Contractor shall wait to have obtained written approval from the Departmental Representative prior to the implementation of the proposed measures

.4 If necessary, the Departmental Representative may order the cessation of work until satisfactory corrective action is taken.

.5 No additional delay and no adjustment will be granted following the work stoppage.

1.7 FIRES

.1 Fires and burning of rubbish on site is not permitted.

.2 Provide supervision, attendance and fire protection measures as directed, according to section 01 35 29.06 – Health and Safety.

1.8 DRAINAGE

.1 Provide temporary drainage and pumping required to keep excavations and site free from water.

.2 Runoff water in the work areas must be confined, sampled and treated, if required.

.3 Working methods should be adapted accordingly if a sudden increase in suspended solids occurs (eg slowing down work, decreasing pumping rates, adding settling ponds, etc.).

.4 The Contractor must obtain authorisation from the Departmental Representative prior to making any outfall into the environment.

.5 Precipitation, runoff and pumping water shall be diverted or directed to a sedimentation basin or filtration structure to reduce particulate inputs to the Stream. The discharge of water to a watercourse, sewage system or drainage or drainage system will have to meet MDDELCC's surface water quality criteria (protection of aquatic life - acute effect) and by regulation number 2008-47 of the Communauté métropolitaine de Montréal (CMM). For discharge to the storm water system or watercourse, the maximum

allowable release standard for suspended solids (TSS) is 25 mg/L more than the average background noise in the discharge area. The sampling point is at the outlet of the pipe at the point of discharge.

1.9 POLLUTION PREVENTION

.1 Choose products with present less toxic effect on the environment and human health.

.2 Maintain temporary erosion and pollution control features installed under this Contract.

.3 Control emissions from equipment and plant in accordance with local authorities' emission requirements.

.4 Prevent sanding materials, dust generated and other foreign matter from contaminating the air and the waterways beyond the area of application. Provide temporary shelters where indicated according to the directives of the Departmental Representative.

.5 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

.6 Surface wash water should be confined to the work area and treated (if required) to ensure that they meet surface water quality criteria of MSDEFCC - Protection of aquatic life - Acute effect, before discharge to the environment. The Contractor must obtain permission from the Departmental Representative or his environmental representative prior to any discharge to the environment.

.7 All necessary measures will be taken to minimize the suspension and transport of fine particles. Any accidental spill of concrete in the work zone must be gathered and the concrete residue will be disposed of with the construction waste in an authorised site.

1.10 PRESERVATION OF HISTORICAL/ARCHEOLOGICAL CHARACTER

.1 Provide a protection plan that defines the procedures for identifying and protecting historic wetlands, historic, archaeological, cultural and biological resources of known existence on the site and defining other procedures to be followed In the event of unforeseen discovery of such elements, on the site or in the nearby area during construction.

.2 The plan shall include methods for the protection of known or discovered resources (including the protection of archaeological grounds against the movement of machinery), as well as channels of communication between the Contractor's staff and the Contractor's Representative. Ministry.

.3 Excavation must be carried out in accordance with Section 01 14 00 - Restriction of Work and Section 31 23 33 01 - Excavation, Trenching and Backfilling.

.4 Comply with all specific requirements established by the Departmental Representative with respect to archaeological monitoring. In the case where archaeological surveillance is not required for the works and an archaeological vestige (vestige of construction or development, object and fragment of object) is discovered accidentally during the excavations, The Contractor shall suspend work in the immediate area of discovery and notify the Departmental Representative, who shall take the necessary steps to protect and conserve the said archaeological remains. Work may continue in another area.

1.11 PROTECTION OF VEGETATION

.1 Limit movement of machinery near trees and shrubs.

.2 Stripping, felling and pruning shall be kept to a minimum. Only trees that hinder the work can be destroyed. Trees to be felled must be previously identified and authorized by the Departmental Representative. Where necessary, felling, stripping and pruning should be carried out outside the nesting period of the main bird species, which runs from mid-April to the end of August.

.3 Deforestation activities that include the presence of ash trees must meet the requirements of the Regulation respecting the control of the spread of the emerald ash borer on the territory of the City of Montréal.

.4 Removal of riparian and aquatic vegetation shall be minimized and authorized in advance by the Departmental Representative.

.5 Trees and shrubs and their root systems located near site or inside work areas must be protected (eg, precise delineation, protective mat). The damaged vegetation will be replaced and/or restored by the Contractor.

.6 No storage shall be carried out within the projection area of the branches. Branches, trunks and roots must be protected (eg protective mattress).

.7 Trees and shrubs shall be protected in the following manner:

.1 Installing a fence around the perimeter of trees or shrubs;

.2 Clearance of work area and authorized sanitary pruning, if required;

.3 Use of wooden boards or other carpets to protect surface roots.

.8 If the root system of a tree to be retained is to be damaged by work, the following measures shall be applied:

.1 Creation of root cuts using a concrete saw (15 cm) and progressive pickling where roots are or may be present;

.2 Use of geotextile to cover exposed roots;

.3 Affected trees and shrubs should be irrigated regularly and extensively during construction;

.4 At the end of the work:

.1 depending of the percentage of root system loss, crown/root balance should be restored by compensatory pruning, where the same percentage of branches is removed, prioritizing diseased, weak, and/or poorly placed branches ;

.2 the level of the ground must be the same as that which was present before the work;

.3 the soil must be aerated and a fertilizer rich in phosphorus may also be applied to stimulate root development.

1.12 INVASIVE EXOTIC SPECIES

.1 Maintenance and cleaning of machinery and equipment used must be carried out before and after completion of work to avoid colonization of the area by invasive alien species (IAS), both terrestrial and aquatic.

.2 Cleaning equipment that has had contact with IAS should be away from the Stream and areas where seed germination is likely.

.3 If IAS are to be cut, place them in a tight container to prevent dispersal and dispose of in an authorized site.

.4 Inspection of shorelines and seagrasses in different work areas must be carried out prior to work to identify IAS. Inspection must also be carried out after work (3 months or next growing season) in order to ensure that such species have not been introduced during their production and in order to avoid spread). Corrective work could be requested from the Contractor if IAS were to be introduced into the environment.

1.13 PROTECTION OF FISH HABITAT

.1 An authorization under section 35 (1) of the Fisheries Act is not required for this project as activities and work can be designed and planned to minimize loss or disruption of aquatic habitat. However, the following specific measures must be carefully applied:

.1 Permanent encroachment is not permitted in fish habitat.

.2 Temporary encroachments shall be minimized so as not to result in loss of fish habitat and must be approved in advance by the Departmental Representative.

.3 Duration of work in water should be kept to a minimum. The use of dry working methods minimizes work directly in the water.

.4 Work in water should be planned outside periods of high water, wind and rain, which may contribute to increased erosion and sedimentation.

.5 Activities and work in the stream should be designed and planned to minimize disturbance to aquatic habitat and to avoid sensitive spawning habitats.

.6 Temporary encroachment shall be minimized during the completion of the work.

.7 Establishment of temporary structures shall be carried out in 60 m sections. A maximum of two sections of 60 m can be constructed continuously for a maximum of 120 m. Other temporary structures could be set up at the same time but should be spaced at least 100 m apart from existing structures.

.8 Construction materials used in a watercourse shall be handled and used in a manner that prevents the release or leaching into the water of substances that may be harmful to fish.

.9 A response plan must be developed and implemented immediately in the event of sediment discharge or release of a deleterious substance and an emergency spill clean-up kit on site.

.10 Removal of riparian vegetation and bottom of stream should be minimized.

.11 The work area shall be clearly delineated from the water body.

.2 No machinery or equipment is permitted to be moved directly into the stream without prior authorization from the Departmental Representative.

1.14 SPECIAL WORKS

.1 Measures should be in place to prevent the dispersion of paint particles or other coatings (eg flow rate settings, screens).

.2 Use of products with the least adverse effects will be prioritized.

.3 Adequate recovery of residues will be achieved through the use of shelter and tarpaulin to retain residues.

.4 Concrete will be used for some work and surplus will be recovered in containers or watertight forms.

.5 The wash water of cement mixers shall be collected in such a way as to prevent any discharge into the natural environment 30 m from the stream. The cleaning area must be located 30 m from the stream within the property boundaries and must be authorized in advance by the Departmental Representative. In the event of impracticability, the cleaning area must be impermeable and have the capacity to contain all wash water in case of spills or leaks. All these activities must be carried out under constant supervision of the Contractor.

PART 2 PREPARATION

2.1 DOCUMENTS/SAMPLES TO SUBMIT FOR APPROVAL/INFORMATION

.1 Product Data:

.1 Refer to Section 02 81 01 - Hazardous Materials.

.2 Environmental and Emergency Preparedness Plans.

.1 An environmental protection plan and contingency plan (including a communication protocol) shall be made and used by the selected Contractor. These plans will identify potential hazards, protective measures and planned interventions in the event of an accident or spill. They will provide the contact details of the persons in charge and the persons to be advised on the sites and outside. The PCA emergency plan and the City of Montreal emergency plan must also be considered, where applicable

.2 Include in Environmental Protection Plan:

.1 Name of person responsible for ensuring adherence to Environmental Protection Plan.

.2 Name and qualifications of the person responsible for manifesting hazardous waste to be removed from site.

.3 Name and qualifications of person responsible for training site personnel.

.4 Descriptions of environmental protection personnel training program;

.5 Erosion and sediment control plan identifying type and location of erosion and sediment To minimize the risk of sedimentation of the water body at all stages of the project. A prevention plan for storm water pollution can replace the plan of erosion control measures and sediment transportation.

.6 A plan for cutting and/or protecting plants. The plan must be approved by the Departmental Representative prior to the commencement of clearing or excavation work.

.7 An IAS management plan describing the measures that will be taken to prevent their introduction and/or dispersal. This plan should include methods of disposal.

.8 Drawings indicating locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.

.9 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plans to include measures to minimize amount of material transported onto paved public roads by vehicles or runoff.

.10 A plan of the work zone showing the planned activities in each part of the work zone indicating areas of limited use or non-use. Plan to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.

.11 A plan for the management and disposal of non-hazardous residual materials and hazardous or special residual materials (eg treated wood) including management methods and final disposal locations

.12 An air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.

.13 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

.14 Waste Water Management Plan identifying methods and procedures for management or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.

.15 A contaminated soil management plan should be submitted to the Departmental Representative for approval prior to excavation work if they are present in the work area. Additional characterization may be required if the quality of the soil in place is not known precisely or in the event of accidental discovery of potentially contaminated soils.

.16 Materials imported on site and installed during construction must be from licensed borrow pits and quarries, clean and free from undesirable species or contaminants.

.17 The actions included in the environmental protection plan must be presented at a level of detail that is consistent with the environmental problems and with the construction and/or demolition work to be carried out.

PART 3 EXECUTION

3.1 SITE ACCESSES AND INSTALLATIONS LAYOUT

.1 The accesses to the different worksites will be limited and only authorised persons can enter.

.2 Access shall be free of all types of materials (eg, soil, debris, pickling compound) and shall be repaired as a result of the work.

3.2 CLEANING

.1 Progress cleaning

.1 Clean in accordance with Section 01 74 11 - Cleaning.

.2 All treated wood debris shall be temporarily stored in tight containers and covered with a tarpaulin to prevent contamination of soil or water. This debris will be managed in accordance with the Guidelines for Treated Wood Management (MDDELCC, 2011).

.2 Final cleaning

.1 Upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.2 Sort the surplus materials according to section 01 74 21 Construction/Demolition Waste Management and Disposal and the section 02 50 13 – Management of Toxic Waste.

3.3 PROTECTION OF THE FAUNA

.1 The Contractor must comply with the requirements of the Environment Quality Act (R.S.Q., c. Q-2), the Act respecting the Conservation and development of Wildlife (R.S.Q., c. C-61.1) and the Fisheries Act (R.S.C. (1985), c. F-14), and also comply with the requirements associated with each of the environmental authorizations affecting wildlife habitats and species requiring protection.

.2 Restriction Periods

.1 Tree removal activities should be carried out outside the breeding season of birds and bats, which generally run from April 10 to August 31 for the majority of species in the south of Quebec. Migratory avian species are protected, as are their nests. The carrying out of work during the breeding period involves the protection of nests and chicks until they have left the nest.

.2 If work is to be carried out during this period, an inventory should be made prior to planned activities that may have impacts on nests (eg tree removal). In the event of the discovery of nests, and depending on the listed species, which would or would not be protected under the Migratory Birds Convention Act, a protection zone may have to be established until the nestlings fly away. Options for moving nest could be considered after discussion with Environment and Climate Change Canada.

.3 Work carried out in the aquatic environment shall be carried out outside the period of reproduction of the ichthyofauna species, which extends from 1 April to 15 September. If this action cannot be followed, all aquatic work must be performed in a manner that minimizes environmental impacts (see section 1.13 - Fish Habitat Protection).

3.4 WORK ADJACENT TO WATERWAYS OR IN WATER

.1 All work in watercourses shall be isolated from open water or from current to maintain natural water flow and to prevent sediment from entering the watercourse.

.2 Work near water should be planned and constructed to prevent materials such as concrete, paint, primers, pickling abrasives, anti-rust removers, degreasers, cement grout or any other product Chemical to end up in the watercourse.

.3 Erosion and sediment control measures should be in place until disturbed soils are permanently stabilized, suspended sediments are deposited in the bottom of the settling basin, and l (Maximum increase of 25mg /L in relation to the average background noise for TSS).

.4 Minimize water work.

.5 No debris, debris or scrap shall be discharged into the stream. All debris accidentally introduced into the aquatic environment must be removed as soon as possible.

.6 Ensure that no harmful substances are immersed or released into the aquatic environment or disposed of at a point that could contaminate the aquatic environment as required by section 36 (3) of the Fisheries Act and Section 5.1 of the Migratory Birds Convention Act, 1994.

.7 Provide debris capture measures during demolition of footbridge or other structures (eg bollard, streetlight, bicycle path, etc.) to prevent debris in stream (eg use of hydraulic breaker).

.8 Pay attention to limiting the movement of particles in the water when removing the installations.

.9 No piles may be stored in the aquatic environment and on shorelines.

.10 No borrowed material shall be taken from the stream.

3.5 DRYING OF WORK AREAS

.1 Where work requires drying of work areas, the Contractor shall take the following measures into account

.2 Prior to the installation of temporary structures in the stream, a turbidity curtain shall be installed in the stream so as to completely surround the work area and prevent the dispersion of soil and fine particles in The watercourse throughout the excavation to the final backfill (including the removal of temporary facilities and the installation of the dry workspace).

.3 The turbidity curtain shall be maintained in place throughout the work in the water and removed at the end of the work, only following the removal of the temporary structures and the complete decanting of the suspended matter.

.4 The turbidity curtain must comply with the following requirements:

.1 The vertical height of the curtain must be adapted to the water depth and potential fluctuations in water level so that it completely reaches bottom of the stream.

.2 Is held by weights at the bottom of the water so as to follow the asperities.

.3 Is firmly anchored on the shore and covers all the surface of the work.

.4 Is clearly marked for safe navigation.

.5 Turbidity curtain must be cleaned when necessary during construction if the filtration membrane is clogged.

.5 Following the installation of the temporary structures, fish caught in the temporary structures will be captured and relocated manualy to the stream, upstream of the work area.

.6 Install wire mesh at outlets and outlets to prevent entrainment or impaction of fish. Training occurs when a fish is attracted to a water intake and cannot escape. Impaction occurs when a trapped fish is kept in contact with the inlet mesh and cannot be released.

.7 The Contractor shall gradually lower the water level within the temporary works enclosure to facilitate the capture of fish.

.8 The capture and relocation of fish must be undertaken by a qualified person.

.9 Particular attention should be given to the presence of the two species with special status in the stream, namely the American eel and the American shad. All precautions must be taken when placing temporary structures and during the rescue of fish that can be retained within them when the zone is being drained.

.10 Fish found inside temporary structures should be returned to the water care prior to drying out of work areas.

.11 The bed of the body of water must be restored to its original condition following work (granulometry, elevation, slope).

3.6 PROTECTION OF WATERCOURSES AND WATERBODIES

.1 Do not drag construction or demolition materials from one side of the stream to the other.

.2 Prior to commencement of work, the Departmental Representative will approve the location of areas reserved for activities that may affect the quality of the environment, such as storage, handling of oil and maintenance of equipment.

.3 Machinery and equipment used within 15 m of the stream shall be equipped with hydraulic systems using biodegradable vegetable oil.

.4 Where applicable, sediments and soils temporarily stored on shore shall be drained prior to disposal. The method of drying (dehydration) per temporary basin of filtration must be favored. It involves the use of a temporary basin mounted on metallic structures, adjustable to the desired volume, and equipped with a geo-membrane which acts as a filter for drying sediments/soils on canvases and being covered therein, Ensure that they do not migrate to other environments. A sediment barrier should be installed at the foot of temporary ponds or any other pile of sedimentary soils.

.5 Erosion and sediment control measures should be implemented as quickly as possible until disturbed soils are permanently stabilized.

.6 Soils will be stabilized where erosion risk exists to avoid intake and release of particulate matter. The necessary protective equipment (eg wood fiber mat, mulch, membrane, stone) will be provided prior to the work.

.7 Regular inspection and maintenance of soil and sediment control measures will be carried out during construction.

.8 If necessary, quickly cover exposed soils with peat, stone or membrane in case of rain

.9 Use machinery on land, above high water mark, or on ice (if safe) or a barge in such a way as to minimize disturbance to the shoreline and bed of the body of water.

.10 The sediment barriers (barrier with a geotextile or retention device) must be installed, without being limited to, the following areas: at the bottom of the pile, around a work area, parallel to a watercourse and or a waterbody as well as around the perimeter of a pile of non-consolidated material

3.7 CONCRETING

.1 Conduct concrete work in accordance with requirements of section 01 74 11 – Cleaning.

.2 Excess concrete and cement from cement mixers shall be poured into molds or any other type of sealed container that facilitates their reuse or disposal. Concrete residues must be managed with construction waste.

.3 Washing water from cement mixers shall be collected in a sealed basin so as to prevent any discharge into the environment. The cleaning area must be located 30 m from the water body within the property limits and must be authorized by the Departmental Representative. In the event of impracticability, the cleaning area must be impermeable and have the capacity to contain all wash water in case of spills or leaks. All these activities must be carried out under constant supervision of the Contractor.

.4 Wash water may not be discharged directly into a watercourse, body of water or on land. The wash water can be taken over by the concrete supplier and brought back to the concrete plant for disposal. Otherwise, these waters must be confined, sampled and treated (if necessary) in order to meet the surface water quality criteria of MDDELCC (Protection of Aquatic Life - Acute Effect) and Regulation number 2008- 47 of the Communauté métropolitaine de Montréal (CMM) before being discharged into the environment, a sewer system or an evacuation or drainage system. In the case of discharge to the storm system or watercourse, the TSS concentration should not exceed an increase of 25 mg/L compared to the average background noise.

.5 The cleaning area must be located 30 m from the stream within the property boundaries and must be authorized in advance by the Departmental Representative

3.8 EQUIPMENT, VEHICLES AND MACHINERY

.1 Job site traffic

.1 The movement of vehicles and machinery shall be restricted to previously defined work areas and marked accesses, which will use existing permanent surfaces or will be so arranged as to avoid the creation of ruts and the transport of sediment to the stream.

.2 Movements of vehicles and machinery will be reduced in adverse climatic conditions.

.3 Fording watercourses is prohibited.

.4 The Contractor shall not leave any equipment, vehicle or machinery within 10 m of the stream outside working hours or during extended worksite closures. The operation of any unused construction equipment and/or equipment shall be discontinued

.2 Machinery refuelling and maintenance

.1 Prior and regular inspection of the machinery and equipment used shall be carried out to ensure that it is in good condition, clean and free from leakage of oil or other contaminants. Depending on the equipment and its use, the inspection must be performed on a daily or weekly basis. Their exhaust and emission systems will also be inspected and repaired as required.

.2 Hydraulic systems using biodegradable vegetable oil will be used for machinery and equipment to be used within 15 m of the stream.

.3 Access roads will be cleaned throughout the project to remove dust and debris.

.4 Equipment used must, at all times, be in proper operating condition, clean and leak-free. Otherwise, it must be removed immediately from the job site

.5 Fueling, lubricating equipment, storing petroleum products and hazardous materials and all other repair and maintenance activities of machinery and equipment will be carried out on designated areas, which will be 15 m from the stream, within the property boundaries

.6 Place machinery on impervious carpets or fabrics prior to refueling or use containment to contain any spillage.

.7 Install a sludge recovery bed at site exit.

3.9 PROTECTION OF AIR QUALITY

.1 No particulate or dust emissions will be tolerated at the job site beyond the standards set out in the Clean Air Regulation (Q-2, r. 4.1), that is, dust visible more than 2 metres from the source

.2 Water will be preferred to another type of dust suppressant for controlling suspended particulate emissions, particularly for surfaces with a coating. In the case of the use of another dust suppressant, it shall comply with BNQ 2410-300 - Products used as dust suppressants for unpaved roads and similar surfaces.

.3 Dump trucks carrying granular materials, which may contain fine particles or any other material capable of containing fine particles, shall be supplied with watertight tarpaulins.

.4 The Contractor is required to:

.1 Avoid idling any vehicle, equipment or machinery when they are not being used;

.2 Immediately repair any equipment or machine that produces excessive exhaust emissions;

.3 Maintain equipment anti-pollution systems in proper running order.

.4 Comply with MMC air quality regulations including release criteria as set out in Regulation 90 (MMC Regulation 2001-10). The Contractor is responsible for obtaining the necessary permits and authorizations for the execution of its work

3.10 PROTECTION FROM NOISE AND VIBRATIONS

.1 The Contractor must control sound levels from the job site by applying the following measures:

.1 Machinery, equipment and any vehicles must be equipped with functioning mufflers at all times.

.2 The slamming of dump-truck back panels must be avoided at all times.

.3 Give preference to the use of equipment that generates low noise levels.

.2 The Contractor shall comply with the requirements of the Ville de Montréal of the South-West Borough), namely the NOISE REGULATIONS (RBCM v. B-3) and REGULATION NO RCA13 22003 - Regulations Amending Noise (RBCM, chapter B-3).

.3 Sound levels shall comply with the MDDELCC guidelines for noise levels from a construction site):

.1 between 7:00 am and 7:00 pm: 55 dBA $L_{Ar,\ 12h}$[1], or the initial noise level if it is higher

.2 between 7:00 pm and 7:00 am: 45 dBA $L_{Ar,\ 12h}$[1], or the initial noise level if higher.

3.11 PROTECTION OF QUALITY OF LIFE

.1 The authorities concerned and the inhabitants of the affected areas shall be informed of the characteristics and stages of the work and the contact details of the resources to be communicated in the event of a complaint.

.2 Unless otherwise stated and justified by the designer, the normal work schedule is Monday to Friday between 7:00 am and 7:00 pm. The population will be advised of the schedules, particularly during the work that may generate particular nuisances. The work schedule must be in accordance with municipal regulations.

.3 The positioning and layout of work sites, as well as the timetable for carrying out the work, will be planned taking into account the objective of reducing noise impacts and preserving the quality of life.

.4 Production of dust, smoke and any form of air or noise pollution will be minimized at all times in the different work areas

.5 The bypass of the cycling path, trails, picnic areas and other attractions along the Manor house road must be cleaned frequently to ensure a pleasant visit and enjoyment.

.6 Transport of excavated material to the final disposal site shall be carried out using the highway network and the upper road network as far as possible, in order to avoid traffic in the vicinity of sensitive areas (eg residential areas, cycle paths).

3.12 MANAGEMENT OF HYDROCARBONS AND HAZARDOUS MATERIALS

.1 Machinery which is mobilised less than 30 m from the stream must use biodegradable, vegetable hydraulic oil.

.2 Petroleum products and any other hazardous materials must be stored at least 30 m from the stream, within the property limits. In the event of impracticability, dedicated areas must be impermeable and have the capacity to contain all petroleum products or hazardous materials in the event of spills or leaks. These activities must be carried out under constant supervision of the Contractor.

.3 Petroleum products and hazardous materials must be stored in dedicated and confined areas. The storage of hazardous materials must comply with the provisions of the Hazardous Materials Regulations.

.4 Stationary machinery and equipment (such as generators and compressors) must be equipped with collection basins to catch any leaks or spills (volume equivalent to at least 125% of the volume of the fuel tank of the equipment or machinery). These basins to be kept operational at all times.

.5 The Contractor must supply the Departmental Representative with the technical specifications for the products it intends to use, at least 48 hours before it arrives at the job site.

.6 New hazardous materials must not be discarded. When work is concluded, the Contractor must take back its unused hazardous materials and leave the job site completely clean.

3.13 SPILL PREVENTION AND MANAGEMENT

[1] $L_{Ar,T}$: A-weighted evaluation sound level for a reference interval of duration T (ie 12 hours between 7 am and 7 pm or 1 hour between 7 pm and 7 am).

.1 Good practices must be followed to avoid spillage of oil into water from machinery or equipment.

.2 Petroleum products must be stored, handled and used with care on a stable, impermeable and inaccessible surface after hours of construction.

.3 No vehicle or equipment shall be left within 10 m of the stream outside working hours or during extended work site closures.

.4 Retention tanks (capacity of 125% tank volume or equipment) shall be used for all stationary equipment and machinery located near the stream. Inspect tanks during rainy periods to avoid overflowing.

.5 Where necessary, sample and process water from petroleum retention bins prior to discharge to a watercourse, sewer, or drainage system to Surface water quality criteria of the MDDELCC (protection of aquatic life - acute effect) and CMM regulation number 2008-47. The discharge must first be approved by the Departmental Representative.

.6 In case of an environmental incident, the Contractor must immediately notify the supervisor of the Departmental Representative and comply with the following:

.1 Control all leakages.

.2 Contain the spill. To restrict its spread and prevent it from reaching the sensitive areas.

.3 Recover contaminated equipment and convey it to a site authorized by MDDELCC. Proof of disposition shall be forwarded to the Departmental Representative.

.4 Characterize soils, fill materials, sediments or waters contaminated by an accidental spill and dispose of them in accordance with local regulations.

.5 Within 24 hrs of the incident prepare a detailed incident report including a description and location of the accident, the spills and the quantity, date and time of the event as well as the name and the person's phone number having found the accident.

.7 In the event of a spill of oil or hazardous materials into the environment, the event will be signaled to the Departmental Representative, Environment Canada's Environmental Emergency Department (1-866-283-2333), Urgence Environnement Québec (1 866 694-5454) and any other authority competent for environmental emergencies. Advise the Coast Guard for any marine source spills at 1-800-363-4735. Recovery and disposal of contaminants and contaminated components will be carried out in accordance with current regulations.

.8 The Contractor is responsible for paying all costs for decontamination and disposal of contaminated soil following a spill or leak of a contaminant directly or indirectly from its activities. The Contractor shall dispose of the contaminated material to a site duly authorized by the MDDELCC

.9 It is forbidden to mix contaminated soil with clean soil or soil less contaminated in order to have a less restrictive way of disposing of the contaminant The Contractor must permanently keep a sufficient number of emergency petroleum product recovery kits at the site. Kits to include sufficient absorbent material to allow for rapid and effective intervention, both on water and on land.

.10 These kits must be easily accessible at all times to allow for rapid response. Workers who could potentially need to use these kits must be given the appropriate training. The location of the kits must be given to the Departmental Representative. The development and implementation of contingency plans for accidental spills of contaminants will be included in the Environmental Protection Plan.

.11 Workers will have access to a fact sheet listing the names and telephone numbers of those responsible and describing the warning structures.

3.14 MANAGEMENT OF SOLID AND HAZARDOUS RESIDUAL MATERIALS

.1 Recycling and reuse of residues and unused materials should be promoted.

.2 Accumulation of solid waste on site must be avoided. The residual materials must be accumulated in appropriate containers and be evacuated frequently to a disposal site authorized by MDDELCC. Solid waste and dry materials should be managed in accordance with the terms of the regulation respecting the landfilling and incineration of residual materials.

.3 Hazardous residual materials shall be confined in sealed containers identified and transported to a temporary and secure storage area located on site and disposed of at a disposal site authorized by MDDELCC; All in accordance with the terms of the Hazardous Materials Regulations

.4 Waste oils shall be recovered, put in barrels, identified and disposed of with residual hazardous materials at a site authorized by MDDELCC

.5 Plan work near water to prevent materials such as paint, primers, pickling abrasives, rust removers, degreasers, cement grout, or other chemicals from entering the course of water.

.6 Adopt measures to prevent debris or other residual materials from being discharged into the water.

.7 Unconsolidated asphalt debris should be contained in a leak-proof container to avoid migration of contaminants to the environment.

3.15 MANAGEMENT OF TREATED OR CREOSOTED WOOD

.1 The Contractor is required to comply with the MDDELCC Timber Management Guidelines for the Management of Treated Wood Scrap from Demolition Activities, if applicable.

.2 Treated/creosoted wood materials must be temporarily stored in a sealed container before being disposed of at an authorized treatment site.

.3 The storage of treated / creosoted wood shall not exceed five (5) working days.

.4 Temporary storage of treated / creosoted wood shall be within 15 m of the stream within the property boundaries.

3.16 TEMPORARY SANITARY FACILITIES

.1 The Contractor must provide and maintain on the site temporary sanitary facilities necessary for the use of persons accessing the site, and he must remove these facilities at the completion of the work.

.2 Wastewater from the temporary sanitary facilities must be disposed of according to the regulations in force and at a site authorized by the MDDELCC. Proof of disposal must be provided to of the Departmental Representative.

3.17 MANAGEMENT OF CUT AND FILL

.1 Cut materials (sediment, stones, soil) should be segregated according to their nature in anticipation of their potential reuse on the site., their volume and extent of contamination (eg, generic criteria, recommendations) in accordance with applicable federal, provincial and municipal laws and regulations

.2 When excavated materials are to be managed outside of work areas, use direct loading to avoid storage.

.3 The area of reclaimed and exposed soil areas will be limited and stabilization will be achieved as soon as possible. Mulch, straw, membranes, metaling or any other device that can reduce soil erosion on exposure should be used.

.4 Excess cut material that will not be reused on the site shall be disposed of as prescribed in the regulations in force and according to their level of contamination. If applicable, written proof of admission (transport manifest or otherwise, stating the nature and quantity of materials) in a place authorized by the MDDELCC must be submitted to the Departmental Representative

.5 Fine materials piles should be covered to limit soil erosion by wind and surface runoff. Sediment barriers must be installed around the perimeter of all piles of fine materials..

.6 Piles of excavated material will be stored on tarpaulins and covered to isolate them from wind and precipitation and thus avoid dispersal until they are re-used or transported for off-site management.

.7 The control of the fine elements of the stored soil will be carried out by the installation of sediment barriers so as to surround the various working areas. Each of these storage areas will be managed differently, depending on the type of work to be carried out and the duration of the work.

.8 During the excavation, the Contractor shall immediately report to the Departmental Representative any ground contamination discovered (visual signs or smell) before continuing the work.

.9 In the event of excavation, visual or olfactory evidence does not match anticipated contamination level, temporarily store such soil on site at a designated site, perform required analyzes and dispose of these soils according to their level of contamination. The soils must be stored on a waterproof surface and covered to protect them from the weather

3.18 MANAGEMENT OF CONTAMINATED SOILS

.1 Soils to be reused in the backfill area shall comply with the Canadian Environmental Quality Guidelines (Soil Quality) and the Canada-Wide Standard for Petroleum Hydrocarbons in Soils (strand 1) of the Canadian Council of Ministers of Environment(CCME) for commercial use. Soils whose concentrations exceed the applicable criteria for commercial use must be disposed of at an authorized MDDELCC treatment site, depending on the level of contamination.

.2 The MDDELCC Soil Protection and Contaminated Land Reclamation Policy and the requirements of the Land Protection and Rehabilitation Regulations must be adhered to when storing and disposing of soils.

.3 Direct loading of non-reusable contaminated soils should be preferred to avoid storage. Soil drainage must be carried out before loading.

.4 Where direct loading is not possible, contaminated soils shall be temporarily stored on a waterproof surface and covered entirely with a waterproof fabric to prevent migration of contaminants to the environment. When practicable, the temporary storage site must be located 30 m from the stream, within the property boundaries. Otherwise, additional measures must be taken (domes or tight containers).

.5 Contaminated soils to be off-site shall be temporarily stored for a maximum of five (5) working days.

.6 Written proof of the transport of contaminated soil (a transport manifest specifying the nature of the materials and their quantity) and proof of receipt of the soil (soil receipt specifying the quantity of material disposed and the carrier) at a site Processing or disposition shall be delivered to the Departmental Representative.

.7 Any incidental discovery of potentially contaminated and uncharacterized materials shall be reported to the Departmental Representative without delay. Where appropriate, a characterization of these soils should be carried out prior to their re-use or disposal by the Contractor. All measures in this section should be followed.

3.19 DISPOSAL OF WASTE SNOW

.1 Refer to section 01 74 11 - Cleaning.

.2 Keep access paths free of ice and snow. Snow from clearing of work areas shall be disposed of by the Contractor in an area designated for this purpose and authorized by the MDDELCC, in agreement with the Departmental Representative.

.3 No waste snow may be placed in the stream, as required by the Historic streams Regulations.

PART 4 RESTAURATION

4.1 RESTORATION OF THE WORK AREA

.1 Site remediation should be completed as work progresses to completion after terminating the work, to minimize disturbance.

.2 All debris and unused material must be removed promptly.

.3 Soil greening should be undertaken as soon as possible following the completion of earthworks, with emphasis on the use of native species. The restoration elements must ensure that the environment is equivalent to or better than the pre-intervention situation.

.4 Disturbed areas should be restored as quickly as possible, preferably as required during construction.

.5 The stream bed must be restored to its initial state (granulometry, elevation, slope).

.6 Grass surfaces damaged by work are to be repaired with sod tiles.

END OF SECTION

PART 1 GENERAL

1.1 CODES, STANDARDS AND OTHER DOCUMENTS

.1 Work must comply with applicable standards requirements (most recent edition) of the Canadian Government Standards Board (CGSB/CGSB), the Canadian Standards Association (CAN/CSA), the ASTM (BNQ), the Underwriters' Laboratories of Canada (ULC), the Council of Forest Industries of British Columbia (COFI), the Quebec Official Publisher, the Quebec Institute of Standards (PSIC), the Ontario Provincial Standard Specifications (OPSS), the Master Painters Institute (MPI) and the Society for Protective Coatings (SSPC), the Hazardous Materials Information System (EPA), MDDELCC, Health Canada, the Pest Management Regulatory Agency (PMRA), the Department of Justice Canada (Jus), the American Association of Labor State Highway and Transportation Officials (AASHTO), The Asphalt Institute (AI), the Asphalt Institute (AI), Agriculture and Agri - Food Canada, the Canadian Council of Ministers of the Environment, the National Building Code of Canada (ASTM), the American Concrete Institute (ACI), the Quebec Ministry of Transportation General Specifications and Specifications (GCAC) and other codes indicated in the contract documents. The latest revised editions, up to the beginning of the bidding period, must be used. In case of discrepancy between the requirements of the various documents, the more rigorous will prevail.

.2 During construction, when there is conflict between different regulations, the most stringent standards will be observed.

.3 At all times, when the specification refers to standards, it is understood that this will be the latest revised edition independent of editions currently designated.

.4 Meet or exceed requirements of:

.1 Contract documents.

.2 Specified standards, codes and referenced documents.

1.2 LAWS, REGULATIONS AND ORDERS

.1 The Contractor shall respect the rights and privileges of others and comply with all laws, regulations and orders federal, provincial and municipal. He must also ensure that employees by law or by fact, including subcontractors also comply.

.2 Permits and applicable approvals should be obtained by the Contractor before the work begins.

1.3 NON SMOKING ENVIRONMENT

.1 Comply with smoking restrictions and municipal by-laws.

1.4 FEES, TAXES AND PERMITS

.1 The Contractor shall give all notices and obtain and pay all fees and building permits required for the excavation, construction, and other services as required or requested by the authorities having jurisdiction in the region.

.2 The Contractor will be liable for any damages and costs resulting from failure to obtain these licenses and permits.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 PURPOSE

.1 This section of construction specifications provides information about quality assurance program to be implemented by Contractor and its subcontractors and suppliers during work. This program is not intended to replace contractually required quality assurance program. It sets out minimum quality activities to be performed by Contractor and its subcontractors and suppliers at their facilities or on work site.

1.2 RESPONSIBILITIES

.1 Contractor is responsible for implementing all provisions of quality assurance program.

.2 Contractor is responsible for ensuring all its subcontractors and suppliers perform quality activities described in this section.

.3 Contractor and its subcontractors and suppliers must demonstrate their quality assurance program is implemented and their Work complies with drawings and technical specifications during fabrication and construction.

.4 Allow the Departmental Representative access to work. If part of work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.5 Give timely notice requesting inspection if work is designated for special tests, inspections or approvals by the Departmental Representative instructions, or law of place of work.

.6 If Contractor covers or a permit to be covered work that has been designated for special tests, inspections or approvals before such is made, uncover such work, have inspections or tests satisfactorily completed and make good such Work.

.7 The Departmental Representative will order part of work to be examined if work is suspected to be not in accordance with Contract Documents. If, after examination, the work is declared non-compliant with the requirements of the contract documents, the Contractor shall take the necessary measures to render the work conform to the specified requirements and bear the cost of inspection and repair.

1.3 INDEPENDENT INSPECTION/TESTING AGENCIES

.1 Independent inspection/testing agencies will be engaged by the Departmental Representative for purpose of inspecting and/or testing portions of work. Cost of such services will be borne by the Departmental Representative.

.2 Employment of inspection/testing agencies does not relax responsibility of Contractor and its subcontractors and suppliers to perform Work in accordance with contract documents.

.3 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. The Contractor and his subcontractors and suppliers will have to correct defect and irregularities as advised by the Departmental Representative at no cost to the Departmental Representative and pay costs for retesting and re-inspection.

1.4 ACCESS TO WORKSITE

.1 Allow inspection/testing agencies access to worksite and off site manufacturing and fabrication plants.

.2 Co-operate to provide reasonable facilities for such access.

1.5 PROCEDURE

.1 Notify appropriate agency and the Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.

.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.6 QUALITY RELATED DOCUMENTS

.1 Quality Manual

.1 Contractor must submit to the Departmental Representative its Quality Manual for review and approval.

.2 If Contractor has a quality assurance program registered with a recognized registrar, it must submit to the Departmental Representative a copy of its certificate and a copy of Table of Contents of its Quality Manual rather than entire Manual.

.2 Quality Plan

.1 Contractor must submit to the Departmental Representative for review and approval a Project-specific Quality Plan. See Article 1.9 for more information about content of Quality Plan.

.2 Contractor is responsible for ensuring all its subcontractors and suppliers implement and continue to enforce their own quality assurance program.

.3 Inspection and Testing Plan (ITP)

.1 Before beginning Work at factory or Work site, Contractor must submit to the Departmental Representative its ITP and those of its subcontractors and suppliers for review and approval. Contractor remains responsible for review and approval of ITPs of its subcontractors and suppliers.

.2 Contractor is responsible for implementing and continuing to enforce all quality activities described in its ITP.

.3 Contractor is responsible for ensuring all its subcontractors and suppliers implement and continue to enforce their respective ITPs.

.4 See Article 1.10 for more information about drafting an ITP.

.4 Welding Procedures

.1 Contractor must submit its Work-specific welding procedure specifications for review and approval. Procedures must first be approved by the Departmental Representative. Procedures must include all tests required in contractual specifications.

.5 Work Procedures

.1 Contractor must submit its Work-specific work procedures and those of its subcontractors for review and approval. Procedures must comply with contractual specifications.

1.7 QUALITY PROGRAMMING

.1 Contractor must provide details of quality programming it intends to implement for Project.

.2 Key personnel will not be replaced without prior notice from the Departmental Representative.

.3 Contractor must present organizational diagram of its subcontractors and suppliers assigned to Project.

.4 All organizational diagrams must be included in Contractor's Quality Plan (see Section 1.9).

1.8 MANUFACTURING

.1 General

.1 Contractor must maintain in operation at its facilities, for duration of Work, quality assurance program approved by the Departmental Representative in accordance with:

.1 Contractor's Quality Manual as described in Article 1.6.1; and/or

.2 Project-specific Quality Plan as described in Article 1.9; and/or

.3 Project-specific Inspection and Testing Plan (ITP) as described in Article 1.10; and/or

.4 Construction and manufacturing activities as described in Articles 1.8.1 to 1.8.9.

.2 Receipt of Materials

.1 Materials provided by the Departmental Representative

.1 If the Departmental Representative provides Contractor with materials or equipment to execute any Work, Contractor must verify their condition prior to taking possession.

.2 Receipt of Materials Purchased by Contractor

.1 Contractor must be able to demonstrate at any time compliance of all materials and equipment it has purchased or manufactured. These quality files must be complete and available at facilities of Contractor or its subcontractors or suppliers.

.2 Contractor must complete an acceptance inspection for each material received on site.

.3 Quality files of Contractor or its subcontractors or suppliers must provide proof of completion of acceptance inspections and review by Contractor of compliance documents, i.e., material analysis certificates and inspection reports.

.4 All materials provided by Contractor must be new. Origin and source of materials must be identified. Refurbished materials are not acceptable.

.3 Non-Compliant Materials

.1 Non-compliant materials must be correctly identified (labelled "hold" or "ne pas utiliser") and/or be set aside in a holding area.

.3 Document Control

.1 Contractor must implement and maintain a document control system that makes it possible to control following activities:

.1 Ensure only latest revision of specifications, plans and procedures are accessible at facilities of Contractor and its subcontractors and suppliers.

.2 Ensure that if copies of past revisions are kept, they are labelled "Outdated."

.3 Provide functional system to distribute documents, drawings, procedures, reports, etc.

.4 Ensure all quality files are catalogued and stored in a controlled environment.

.4 Identification and Traceability

.1 Identification

.1 Contractor is responsible for ensuring all materials and equipment used in Work are identified and traceable, and remain so until end of Work.

.2 Traceability

.1 It must be possible at any time to associate materials and equipment with documentation establishing their compliance and inspection status.

.5 Calibration of Measuring Equipment

.1 Contractor and its subcontractors and suppliers must continue to maintain a control and recall system for calibrated measuring and testing equipment.

.2 Contractor and its subcontractors and suppliers must keep their equipment calibration certificates at their facilities.

.3 Contractor and its subcontractors and suppliers must store their measuring and testing equipment in a secure and controlled environment.

.6 Inspections and Tests

.1 Contractor and its subcontractors and suppliers must keep an up-to-date list of all their personnel assigned to inspection and specialized procedures in each discipline in which they are involved, with qualifications of personnel.

.2 All control and testing activities must be performed in accordance with technical specifications and approved ITP.

.3 Contractor and its subcontractors and suppliers must implement a notification system so the Departmental Representative can attend tests provided for in technical specifications and ITP.

.7 Inspections completed

.1 Contractor must be able to demonstrate at any time during Work which inspections have been completed.

.2 Completed inspections must also be verifiable in Contractor’s quality files. Depending on discipline, Contractor must monitor inspection levels using annotated drawings or computerized lists or databases.

.3 It must be possible at any time to verify progress of inspection and testing activities, with references to reports produced.

.4 Regardless of type of monitoring system chosen by Contractor and its subcontractors and suppliers, it must be possible to demonstrate that 100% of Work, inspections, tests and reports has been completed.

.8 Final Inspection

.1 At end of different manufacturing and construction phases, Contractor must declare said phases complete and compliant, submit its quality files and ask the Departmental Representative to complete final inspection.

.2 The Departmental Representative must receive advance notice requesting performance of final inspection as defined in Contract.

.3 Upon receipt of request for final inspection, the Departmental Representative must complete final inspection of materials and equipment prior to issuing an inspection certificate.

.9 Quality Records

.1 Quality files of Contractor and its subcontractors and suppliers must include but are not limited to following documents:

.1 Inspection and testing plan (ITP) approved by the Departmental Representative;

.2 Checklists;

.3 Relevant inspection and testing reports;

.4 Inspection and testing procedures;

.5 Material analysis certificates;

.6 Certificates of compliance;

.7 Non-compliance closure reports;

.8 Declarations to authorities having jurisdiction;

.9 As-built plans;

.10 Welding procedure specifications;

.11 Welding procedure qualification records;

.12 List of welders, including their qualifications;

.13 Weld repair procedures;

.14 Approved deviations/variations if applicable.

1.9 QUALITY PLAN

.1 Quality Plan must explicitly describe organization, assigned personnel, quality assurance personnel, activities, responsibilities, resources, documents used and applicable quality procedures used to implement quality assurance program components in accordance with standards and regulations applicable to performance of Work.

.2 Quality Plan must include:

.1 Terms and definitions, including acronyms and abbreviations;

.2 Organizational diagrams of Contractor's Project team, quality assurance personnel with their qualifications, and subcontractors and suppliers;

.3 Scope of Contractor's Work and list of subcontractors and suppliers with their respective areas of activity;

.4 List of procedures and references to sections in Contractor's Quality Manual;

.5 Document control;

.6 Measuring equipment calibration;

.7 Quality control records;

.8 Non-compliant product control;

.9 Audit in reference to Quality Manual section;

.10 Applicable corrective measures;

.11 Identification of product traceability;

.12 Handling, storage, packing, protection and delivery of equipment;

.13 Specific exclusions not covered by Quality Plan.

.3 Quality Control Plan, Inspection and Testing Plan (ITP) and Monitoring Plan are synonymous and refer to same type of document.

1.10 INSPECTION AND TESTING PLAN (ITP)

.1 Inspection and Testing Plan (ITP), Quality Control Plan and Monitoring Plan are synonymous and refer to same type of document.

.2 Purpose of this section is to set out instructions applicable to Contractor for preparation and issuing of inspection and testing plans for manufacturing, construction/installation or verification prior to operation.

.3 This specification is for those responsible for Project quality control once applicable ITPs have been submitted as required in Contract.

.4 This specification includes a standardized form that parties responsible for quality control must use in event format or content of their own ITP does not comply with instructions.

.5 ITP review based on requirements of this document.

.6 Identification

.1 ITP code, including revision number and date.

.2 Identify client, project, region and equipment tag numbers.

.3 Identify contract, component, Work package, Work, discipline or system to which ITP applies.

.4 Identify person in charge of quality assurance and quality control activities in facilities of Contractor and its subcontractors and suppliers, and on Work site.

.5 Obtain signatures of persons in charge of verifying and approving ITP.

.6 Number each page of ITP (99 of 99).

.7 Work Items and Stages

.1 This is normally based on detailed Work schedule. An additional level or a specific level of detail may be required.

.8 Quality Control Points

.1 For each Work item or stage, identify required quality control points, and include brief description of activities involved.

.9 Responsibilities

.1 Identify positions of responsibility for quality control activities.

.10 Frequency

.1 Specify percentage, frequency or sampling applicable for quality control points.

.11 Specification References

.1 Quality control activities must be described using specific and accurate references to specified requirements, in other words drawings, technical specification sections and/or applicable codes and specifications, as case may be.

.12 Parameters and Characteristics

.1 List parameters and characteristics to take into consideration for quality control points.

.13 Criteria and Tolerances

.1 List criteria and tolerances to be used for acceptance of quality control points.

.14 Procedures Used

.1 List detailed procedures and instructions to control performance of Work or quality control activities.

.15 Control Equipment

.1 Describe equipment to be used to perform measuring, inspection or testing. Proof of calibration must be provided.

.16 Checklists

.1 Information specified in Articles 1.10.3 to 1.10.10 above must be incorporated into a list to be attached to ITP as incidental to it.

.17 Forms

.1 Specify forms to be used to record quality control results and attach them to ITP. Results recorded in these forms by Contractor include an inspection and testing report.

.2 When forms of Contractor and its subcontractors and suppliers and quality control procedures are insufficient or unsatisfactory, the Departmental Representative reserves right to incorporate all its own forms or quality control procedures necessary to complete quality control program of suppliers and ensure fulfillment of Contract quality control requirements.

.18 Quality Records

.1 In ITP, specify types of inspection and testing reports to be submitted to the Departmental Representative, by lot, by partial deliveries or by quality record lots. Attach table of contents and submittal schedule for quality record items to ITP.

.2 Contractor and its subcontractors and suppliers must maintain records of all documents required to provide objective proof, demonstrating and confirming that quality assurance requirements specified in Contract have been met.

.3 Contractor is responsible for ensuring documents remain secure for entire period of Contract. Contractor must submit quality files to the Departmental Representative within time limits and in quantities specified in Contract.

.4 Unless indicated otherwise, original test certificates are required. When it is not possible for Contractor to provide the Departmental Representative with originals for reasons acceptable to the Departmental Representative, copies of certificates and reports will be accepted only when individually certified as being copies of originals.

.5 There will be no modifications or transcriptions other than those authorized in this Article. Certified copies must be sufficiently clear to permit scanning and photocopying, otherwise they must be considered unacceptable. Transposition of data from original is not acceptable.

.6 All inspection and testing documents must bear:

.1 Number of Project;

.2 Number of applicable item, tag or part;

.3 Name of Project.

.19 Traceability

.1 General

.1 Definitions of full traceability and compliance with Contract are provided below.

.2 Full Traceability

.1 Full traceability is required for items for which an inspection certificate is required. For all other items, demonstrate compliance with Contract. For components for which full traceability is required, Contractor and its subcontractors and suppliers must maintain a traceability system that guarantees that materials used can be identified with certainty using certificates of origin from manufacturer. Measures to be adopted by Contractor and its subcontractors and suppliers to achieve objectives set are as follows:

.1 Materials must be checked upon receipt against certificate of origin from manufacturer for compliance with specified requirements.

.2 Material lots and specification and grade details must be identified (with permanent marking when possible) throughout manufacturing process.

.3 Material location files must be maintained.

.2 Prior to applying final surface treatment, complete record of location of materials must be compiled for inclusion in manufacturing data records:

.1 Construction files must contain records of location of materials and certificates of origin from manufacturer.

.2 Verification files must be maintained.

.3 Compliance with Contract

.1 For items that must comply with Contract, Contractor must maintain a traceability system that can be checked to confirm compliance with Contract.

.2 Materials must be checked upon receipt in accordance with Contract. For materials that are issued by lot (for example, welding consumables and cable), Contractor must keep lots of goods separated and traceable from storage through use.

.20 Quality Control Monitoring Points

.1 Prior to beginning Work, define categories of quality control monitoring points when reviewing ITP and approval process.

.2 Choice of monitoring points depends on level of monitoring chosen, based on requirements of quality monitoring specifications.

.21 Review

.1 ITP and its appendices must be reviewed and approved by the Departmental Representative and/or the Departmental Representative's quality control monitoring department prior to start of Work.

.2 Inspection and testing reports, as well as progress sheets if applicable, must be prepared and reviewed by the Departmental Representative's quality control monitoring department on an ongoing basis as Work in question progresses so that quality record lots can be assembled prior to interim acceptance.

.22 Typical ITP form

.1 A sample of a typical ITP form will be provided by the Departmental Representative at beginning of Work. Supplier may submit own format of ITP, but all items set out in this specification must be addressed.

PART 2 PRODUCT

.1 Not Used.

PART 3 EXECUTION

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 U.S. Environmental Protection Agency (EPA)/Office of Water

.1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.2 DOCUMENTS / SAMPLES TO BE SUBMITTED FOR APPROVAL / INFORMATION

.1 Submit required documents and samples in accordance with section 01 33 00- Submittal procedure.

1.3 INSTALLATION AND REMOVAL OF EQUIPMENT

.1 Provide necessary utilities for temporary utilities to enable work to be carried out as soon as possible.

.2 Dismantle and dispose of equipment when not required.

1.4 FIELD DRAINING

.1 Provide temporary pumping and drainage facilities to maintain excavations and land free of standing water.

1.5 WATER SUPPLY

.1 Provide continuous potable water supply for work.

.2 Make arrangements to connect the network to the utility company concerned and pay all installation, maintenance and disconnection costs.

.3 Assume the cost of this service at the current rate.

1.6 HEATING AND VENTILATION

.1 Provide temporary heating equipment required for the period of work, operate and maintain it and provide fuel.

.2 Heating appliances used inside the building shall be vented outwards or shall be operated without open flames. It is prohibited to use solid fuel burning stoves.

.3 Provide appropriate room control (heating and ventilation) in enclosed spaces for the following purposes:

.1 promote the progress of work;

.2 protect structures and products from moisture and cold;

.3 prevent condensation on surfaces;

.4 maintain adequate ambient temperatures and humidity levels for the storage, installation and hardening or curing of materials;

.5 meet requirements of occupational safety regulations.

.4 Where work is in progress, maintain temperature at least 10 degrees Celsius.

.5 Ventilation

.1 Prevent build-up of dust, vapors and gases inside heated shelters that remain occupied during winter construction.

.2 Provide local exhaust gas system to prevent accumulation in the environment of substances that may pose health hazards to occupants.

.3 Ensure that flue gases are disposed of safely and in a place where they will not present a health hazard to persons.

.4 Provide ventilation for storage areas of hazardous or volatile materials.

.5 Provide ventilation for temporary sanitary facilities.

.6 Operate ventilation and evacuation equipment for a period of time after completion of work to completely remove from the environment contaminants that may have been generated during the various construction activities.

.6 Ensure rigorous monitoring of the operation of heating and ventilation equipment at all times, ensuring that the following requirements are met.

.1 Comply with applicable codes and standards.

.2 Practice safe methods.

.3 Prevent waste.

.4 Exhaust flue gases from direct-fired appliances.

.7 Take full responsibility for damages caused to structures due to inappropriate heating or protection conditions maintained during construction.

1.7 POWER SUPPLY AND LIGHTING

.1 Provide service and pay for temporary power supply for lighting and operation of power tools during construction,

.2 Make arrangements to connect the network to the utility company concerned and pay all installation, maintenance and disconnection costs.

.3 Provide temporary lighting throughout the work and ensure maintenance of the system.

.4 Electrical and lighting systems installed under this contract may be used for construction purposes only with the approval of the Departmental Representative and provided this does not contravene the terms of the warranties. If necessary, repair any damage to the power and lighting systems.

.5 The Contractor shall ensure that the power supply to the other street lights is maintained at all times before and after the movement of the control panel of the G loop.

1.8 TELECOMMUNICATIONS

.1 The Contractor shall provide temporary telecommunications facilities, including telephones, data processing systems, facsimile machines, including lines, and necessary equipment, for its own use and for the use of the Representative of Ministry; he must ensure the connection of these facilities to the main networks and bear the costs of all these services.

1.9 FIRE PROTECTION

.1 Provide and maintain fire protection equipment required by relevant insurance companies, codes and regulations.

.2 Waste materials and construction wastes may not be burned on site.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used

PART 3 EXECUTION

3.1 TEMPORARY MEANS OF CONTROL OF EROSION AND SEDIMENTS

.1 Establish temporary means to control erosion and sediment deposition to prevent soil loss from storm water run-off or wind erosion and movement of soil to adjacent properties and footpaths. These means shall be in accordance with the requirements of the competent authorities and with the particulars of the site-specific erosion and sediment control plan and prepared in accordance with the most stringent requirements between those set out in document 832/R-92-005 published By the EPA and those established by the competent authorities

.2 Inspect, maintain and repair if necessary, until permanent vegetation is established.

.3 Remove and remediate to stabilize the surfaces disturbed during this work.

END OF SECTION

PART 1 GENERAL

1.1 LOCATION OF WORK SITE

.1 Construction site plans indicate:

- .1 Space available for land and sea works;
- .2 Site access, which can be summarized as follows:
- .3 authorized traffic lanes;
- .4 the spaces reserved for the site and material storage facilities and for the construction of prefabricated components where applicable;
- .5 bicycle route bypasses;
- .6 prohibited access;
- .7 authorized parking areas.

1.2 LIMITATION OF RESPONSIBILITY

.1 Contractor will be responsible for:

- .1 Field offices;
- .2 Offices for the Ministry and its representative;
- .3 Equipment storage facilities;
- .4 Outdoor storages for material and equipment;
- .5 Missing access roads;
- .6 Washrooms at work site;
- .7 Water to compact material and dust control;
- .8 Transportation of personnel;
- .9 Safety of own personnel and equipment;
- .10 All loading and unloading work;
- .11 Maintenance of access roads (cleaning in summer, grading of gravel roads, oiling and snow removal on Work site accesses);
- .12 Waste disposal;
- .13 Phone lines and Internet;
- .14 Customs clearance, if required;
- .15 Work site fencing;
- .16 Safe accesses for visitors to the National Historic Site;
- .17 Lighting for night work.

1.3 INSTALLATION AND REMOVAL OF EQUIPMENT

.1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.

.2 Identify areas which have to be gravelled to prevent tracking of mud.

.3 Indicate use of supplemental or other staging area.

.4 Clean, level and set up construction facility area.

.5 Provide construction facilities in order to execute work expeditiously.

.6 Remove from site all such work after use.

1.4 SCAFFOLDS

.1 Scaffolding: Complies with CAN / CSA-S269.2.

.2 Provide scaffolding, access ramps, ladders, hanging scaffolds, platforms, temporary staircases, etc. necessary for the execution of the work, and maintain it throughout the duration of the work.

1.5 OFFICES

.1 Provide a ventilated office, heated to a temperature of 22 degrees Celsius, equipped with lighting fixtures providing 750 liters of illumination and sufficient dimensions to accommodate site meetings and provide a table for the spreading of the drawings. The office should also be air-conditioned at 22 degrees Celsius. The location of the site office must be submitted for approval to the Departmental Representative.

.2 Provide a complete and identified first aid kit and store it in an easily accessible location for all site locations.

.3 Where necessary, subcontractors must set-up their own office. Indicate to them where they can set-up..

.4 Office of the Departmental Representative and Laboratory:

.1 Establish temporary office for Departmental Representative

.2 Minimum floor area shall be 40 m², minimum ceiling height 2.5 metres and window area of each room shall not be less than 6% of floor area.

.3 The office shall consist of six main rooms, consisting of four closed offices in addition to a conference room and a work room. Doors must be equipped with commercial locks and an anti-theft system must ensure the safety of the premises, the operation and control of which are the responsibility of the contractor. In addition, this office must be separate from that of the contractor.

.4 This office shall be adequately insulated and provided with heating and air conditioning systems capable of maintaining the temperature between 19°C and 24°C, a power supply 110 120V of at least 125 amps, a lighting system Electric 110 120V and 10 outlets. There must be (1) telephone line separate from that of the contractor, including the local telephone service.

.5 The office of the Departmental Representative may be a space leased from a building or construction site trailers. It must be installed five (5) days before the start of work. The office must be located within 0.5 km of the site. Prior to commencement of work, the site must be submitted for approval by Departmental Representative.

.6 The Supervisor's office must be powered through Hydro Quebec's electrical services or any other supplier in the area. The Departmental Representative's office must not be powered by a generator.

.7 In the event that the Contractor cannot connect to Bell Canada's network, he must plan to replace the telephone lines with cellular phones and connect the fax machine to a cellular line.

.8 Non-deductible insurance for breakage, loss and theft of all equipment is included in this policy.

.9 The office must have the following equipment:

.1 Two (2) work desks with two (2) office swivel chairs;

.2 One (1) plan tables 1.5 m in width by 2 m in length and one stool;

.3 One (1) meeting table 1.5 m in width by 4 m in length with Eight (8) chairs;

.4 One (1) drawings rack;

.5 four (4) boxes of 8½ "x 11" paper, (3) boxes of 8½ "x 14" paper, and (3) boxes of 11 "x 17" paper (One [1] box = 10 x 500 sheets, 75g / m2) as well as two (2) black ink cartridges for photocopiers;

.6 Two (2) legal document folders with two (2) drawers with lock;

.7 One (1) photocopier and scanner with automatic feeder for 8½ " x 11 ", 8½ " x 14 " and 11 " x 17 " formats;

.8 One (1) high-speed Internet subscription with courier service;

.9 One (1) hot and cold water dispenser, including drinking water supply;

.10 One (1) refrigerator, toaster (1), one (1) coffee maker and one (1) microwave of at least 1000 watts.

.10 All such equipment is for the exclusive use of the Departmental Representative. All equipment must be installed and operational at least five (5) days prior to commencement of work.

.11 Close to the office, there shall be one (1) lavatories for the use of the supervisor and his or her representatives, including washbasins, toilet paper, soap and hand towels for the duration of the contract

.12 Maintenance and cleaning of premises must be carried out on a daily basis and shall be at the expense of the contractor. Housework (vacuuming, emptying recycled paper bins in the large capacity bin, emptying bins of non-recyclable materials) must be done every day after normal business hours.

.13 Contractor to set up waste paper baskets in each enclosed office, conference room and office. A recovery service must pick up the paper to be recycled on a weekly basis. In addition, a large capacity recycling bin must be provided to retrieve the recycled paper from each basket each day.

.14 The Contractor shall place at the disposal of the Department and the Departmental Representative a minimum of 10 parking spaces. These spaces must be located within the limits of the site within a radius of one hundred (100) metres of the site, on a motor vehicle surface and must be reserved for the exclusive use of the Ministry. The Department's parking spaces must not be used as a storage area.

.15 The Contractor shall maintain the Supervisor's office until the Worker's acceptance of the Work is fully accepted by the Departmental Representative and until the joint measurement of the quantities is completed for final payment.

.16 In addition to the minimum area of 40 m^2 provided for site offices, the contractor shall provide a closed area for the storage of laboratory equipment equipped with commercial-type locks. This place must allow direct access from outside.

1.6 SERVICES

.1 The Contractor shall provide and pay for the installation of two telephone lines with separate numbers and a high speed internet service (a router with at least 2 ports per wire and WIFI service in the office of the Departmental Representative, until the installations of public services.

.2 Contractor must provide a sufficient number of chemical toilets.

.3 The office of the Departmental Representative must also be equipped with a fax having photocopying and scanning functions, for regular letter and legal sized sheets, and required supplies for its functioning.

1.7 CONSTRUCTION PARKING

.1 Parking is authorized only in certain areas of work, storage and worksite facilities zones shown on the drawings

.2 Provide and maintain adequate access to project site.

.3 Clean areas where site equipment has been used.

1.8 STORAGE AREA

.1 Storage is permitted in work site areas indicated on the drawings.

.2 Contractor provides adequate and covered spaces, if needed, for storage of materials.

.3 The Ministry is not responsible for theft of tools, equipment or materials. Contractor is responsible for keeping own tools, equipment and materials safe.

.4 The Contractor shall be responsible for the temporary storage within the site boundaries and the protection of existing equipment to be retained, protected and re-installed.

.5 Do not overload or allow any part of the structure to be overloaded in order not to compromise its integrity.

1.9 WORK SITE FENCING

.1 Work site fencing, described in section « 01 56 00 Temporary Barriers and Enclosures », must be provided around work areas and construction facilities.

1.10 WORK SITE SIGNAGE

.1 Work site signage is allowed only on work site trailers. Dimensions and placement of signage must be approved by the Departmental Representative before installation.

1.11 LIGHTING SYSTEM FOR NIGHT WORK

.1 Contractor must provide and install lighting systems for all night work.

1.12 CONSTRUCTION SIGNAGE

.1 Contractor must install and maintain adequate and safe signage to indicate Work-related detours, bypasses and hazards.

.2 This signage must be placed and maintained throughout duration of work in compliance with applicable safety codes and to satisfaction of the Departmental Representative. If, for some reason, signage is insufficient or poorly maintained in the Departmental Representative’s opinion, fees incurred to re-establish signage will be directly deducted from amounts payable to Contractor.

.3 Refer to the section « 01 55 26 – Traffic Control » for requirements concerning temporary signalisation

1.13 PROTECTION AND MAINTENANCE OF TRAFFIC

.1 Provide access and temporary relocated roads as necessary to maintain traffic.

.2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by the Departmental Representative.

.3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs.

.4 Protect travelling public from damage to person and property.

.5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

.6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor is responsible for repair of damage to roads caused by construction operations.

.7 Construct access and haul roads necessary.

.8 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.

.9 Dust control: adequate to ensure safe operation and environmental protection at all times.

.10 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.

.11 Provide snow removal during period of work.

.12 Upon completion of work, remove haul roads designated by the Departmental Representative.

.13 Refer to « 01 55 26 - Traffic Control » for traffic control requirements.

1.14 PROTECT OF PEDESTRIANS AND CYCLISTS

.1 Maintain and protect the pedestrian and cyclist traffic on the roads affected by the construction works, unless otherwise indicated by the Departmental Representative.

.2 Provide signalers and appropriate signaling when a bicycle lane is used by trucks, vehicles or vehicles of the Contractor and is not closed to users.

.3 Provide signalers and appropriate signaling to accesses and locations where there is potential for conflict between machinery and users: pedestrians, cyclists and motorists.

.4 Refer also to « 01 55 26 - Traffic Control ».

1.15 CLEAN-UP

.1 Remove construction debris, waste materials and packaging material from work site daily.

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

.3 Store materials resulting from demolition activities that are salvageable.

.4 Do not stack stored new or salvaged material in construction facilities.

.5 The contractor must remove snow from the paths and temporary roads if required.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All of the section of Division 01 – General Requirements

1.2 REFERENCES

.1 Work signs shall conform to the requirements included in the latest editions of the following referenced documents, unless otherwise indicated in this document:

.1 Uniform Traffic Control Devices for Canada (UTCD), January 1976 (distributed by the Transportation Association of Canada).

.2 Manual of Uniform Traffic Control Devices for Streets and Highways, US FHWA, Part IV, - 1988.

.3 Québec Highway Safety Code, latest edition;

.4 Safety Code for Construction Work, latest edition;

.5 Volume I - Road Design Standard - Road Construction Series of the Department of Transport, latest edition - Volume I below;

.6 Volume II - Road Construction Standards - Road Construction Series of the Department of Transport, latest edition - Volume II below;

.7 Volume III - Structures of the Normes - Ouvrages d'art collection of the Ministère des Transports, latest edition - Volume III below;

.8 Volume V - Road Signs, Volumes 1, 2 and 3, of the Normes - Ouvrages routiers collection of the Ministère des Transports, latest edition - Volume V below;

.9 Volume VII - Materials from the Department of Transport Standards - Road Construction Series, latest edition - Volume VII below;

.10 Volume VIII - Holding Devices of the Norms - Road Construction Series of the Ministère des Transports - Volume VIII below;

.11 Safety Action Plans for Road Works Sites (2014-2017 Edition).

.2 The Contractor shall take note that the schedule to be met for the upgrading of Volume V signaling devices is invalid for this contract. The Contractor must therefore comply with the signaling standards in force on the date of the opening of tenders.

1.3 SCOPE OF TEMPORARY SIGNALING WORK

.1 The works, without limitation, consist in providing and putting in place the temporary signage necessary for the maintenance of the circulation and the protection of the workers during the work of reconstruction of the gateway of the seigniorial alley to the historic site of the Papineau Manor and all related work specified in all contractual documents.

.2 The work covered by this document includes, but is not limited to:

.1 Providing, mobilizing, maintaining, maintaining, moving, replacing, putting into operation or deactivating and demobilizing temporary signage, according to this document;

.2 Providing all personnel and equipment necessary to maintain traffic including the signaling officer;

.3 Maintenance of signage, taxiways and multifunctional runway.

.4 Providing, mobilizing, maintaining, maintaining, moving, replacing and demobilizing self-supporting fences to limit the work areas and to control access by users, pedestrians and cyclists to the site;

.5 Supply, mobilization, maintenance, upkeep, moving, replacing and demobilizing concrete guards for construction;

.6 Manufacturing, installing, maintaining, maintaining, moving, replacing, commissioning (uncovering) or disabling (covering) and demobilizing special panels;

.7 Access to work areas, their maintenance and signalers to manage traffic (road users, cyclists and pedestrians) at the entrances and exits of different vehicles on the seigneurial path;

.8 Providing signalers as required;

.9 Temporary signaling, equipment and manpower required for the completion of all the above-mentioned work;

.10 The recording of existing vertical or ground signaling to be removed, covered or moved, stored for the duration of the work and relocated at the end of the work;

.11 Other work required for the complete implementation of the project in a safe environment for road users, pedestrians, cyclists, workers and neighbors, as well as the related work required to complete the project, of this present contract;

.3 The Departmental Representative may request that additional temporary signaling work be put in place to ensure the safety of workers and road users or to improve traffic flow.

1.4 PROTECTION AND MAINTENANCE OF PUBLIC TRAFFIC

.1 Comply with applicable laws, regulations and ordinances governing the movement and use of traffic lanes where work is required or materials and equipment are transported.

.2 No traffic or access roads shall be closed without written authorization from the Departmental Representative. Before diverting traffic, install appropriate signage in accordance with the Roadworks Signage Guide.

.3 Provide access roads and temporary diversion routes to maintain and protect traffic on the roads around the site at all times throughout the duration of the work.

.4 Provide measures for traffic protection and diversion, including departmental and signaling services, barricade installation, installation of lighting around and in front of equipment and work areas, installation and maintenance of warning signs, hazard signs and appropriate direction signs

.5 The Contractor's wheeled equipment used for the transport of equipment/materials entering or leaving the work site must inhibit traffic as little as possible.

.6 Take necessary measures to remove dust to ensure safe operation at all times.

.7 Provide snow removal throughout construction.

.8 Upon completion of work, dismantle the temporary access roads and site tracks designated by the Departmental Representative.

1.5 INFORMATION AND WARNING DEVICES

.1 Provide and install signage, delineators, barricades and other warning devices in accordance with the Roadworks Signage Guide.

.2 Place signals and other warning devices in locations recommended in the Roadworks Guidelines.

.3 Prior to commencement of work, consult with the Departmental Representative to prepare a list of signals and other devices required for the work. For detailed verification, send detailed signaling plans for each work sequence. If the situation on the site changes, revise the list and plans to the satisfaction of the Departmental Representative.

.4 Supply, install and maintain traffic signs, lights and other similar devices (eg, concrete site and impact attenuation barriers) to indicate the presence of a construction zone or any other temporary situation resulting from the execution of the works and requiring a reaction or reflex from the public.

.5 Maintain all signaling devices as follows.

.1 Check signs every day to ensure that they are legible, in good condition, in the right place and that they meet the requirements. Clean, repair or replace the signals, as necessary, to maintain clarity and reflectance.

.2 Remove or cover signals that do not apply to existing situations, which may vary from day to day.

.6 All signals and signs provided by the Contractor must be project specific and designed in accordance with applicable municipal and provincial laws and regulations.

.7 All the signals and signage panels supplied by the Contrcator must be written in the two official languages (French and English)

1.6 REGULATING PUBLIC TRAFFIC

.1 Provide on-site competent signaling services with training and equipment in accordance with the Roadworks Guidance Manual for the following situations.

.1 When public traffic (including cyclists and pedestrians) must bypass vehicles or equipment that block the roadway, in whole or in part.

.2 When temporary protective measures are required during installation or removal of signaling devices.

.3 Where emergency protection measures are required due to the impossibility of obtaining rapid signaling devices.

.4 In all cases where other signaling devices do not provide complete protection for workers, equipment and public traffic.

.5 When the public traffic must not be interrupted by work for more than 5 minutes.

.2 Provide a copy of certificate of completion of “Road Construction Flagman” Course.

PART 2 MAINTAININGTRAFFIC AND TEMPORARY SIGNALING

2.1 OBJECTIVES AND RESPONSIBILITIES

.1 The objectives of maintaining traffic are to ensure the safety of users and workers as well as to maintain the fluidity of traffic.

.2 The Contractor is be responsible for ensuring the flow of traffic in accordance with the requirements of this document for the duration of the work.

.3 Work is carried out on a schedule that takes account of traffic requirements. The Contractor must be able to intervene at all times, seven (7) days per week.

.4 The Contractor shall take the necessary measures with its teams and with its subcontractors to ensure that the material, equipment, installations, and movement of the vehicles at the site and the work do not impede traffic or the operation of public services.

.5 The Contractor may submit a proposed amendment to the Contract. In this case, the Contractor must clearly demonstrate the benefits of productivity and maintaining traffic.

2.2 TEMPORARY SIGNALING PLANS

.1 The Contractor shall provide temporary signaling plans in accordance to the current applicable standards. Plans shall include the traffic control plans representing each of the phases of work and the plans for the closure of lanes required for the execution of the works. They must also include detour plans, designs for the production of detour and special signs, plans required for the management of pedestrians and cyclists. The plans must be true to the actual terrain conditions (horizontal and vertical curves) and indicate the location of the accesses to the site.

.2 Temporary signaling plans shall be produced in 279 mm x 432 mm (11 "x 17") electronic PDF format. The deadline for the submission of plans to the Departmental Representative representing each of the phases (maintenance plans), plans for the closure of lanes or detour routes is ten (10) days before the signing of each phase of the work.

.3 The delivery of the plans within the prescribed time limits and their approval by the Departmental Representative is prior to the authorization of the start of the works. The Departmental Representative reserves the right to make any modification deemed necessary to these plans.

.4 The detours and those required for the management of pedestrians and cyclists must meet the requirements of this document.

2.3 SPECIAL REQUIREMENTS FOR MAINTINING TRAFFIC AND TEMPORARY SIGNALING

.1 Notwithstanding the duration of the closure, the choice of the signal board and the size of the boards must comply with the Long Term Work (LTW) criteria.

.2 The Contractor must enclose his entire work area. In addition, he must ensure that at all times a secure, paved link is maintained to divert pedestrians and cyclists. The Contractor must ensure the proposed detour paths to access the temporary bridge remains safe in all for the used.

.3 When elements of the signage are no longer relevant, the Contractor must pick them up or render them inoperative without delay, as follows:

.1 Visual markings not in operation shall be left outside the circulating lanes as far as possible on the shoulder, and placed behind a guardrail, where possible;

.2 Barriers T-B-2 shall be located outside the shoulders and behind a guardrail or be removed and picked up during openings.

.4 The Contractor shall install T-50-1 signs on all cross streets and approaches to work areas to indicate to users the presence of work areas in the vicinity.

2.4 SIGNALING OFFICER AND WORKSITE MANAGER

.1 Signal manager and site manager must have recent and solid experience in traffic management on construction sites. Their experience should be submitted to the Departmental Representative prior to the start of the work for approval. The Departmental Representative reserves the right to refuse any person whose experience is judged to be insufficient.

.2 The signaling officer shall be employed directly by the General Contractor and his choice must be approved by the Departmental Representative. He will be required to actively collaborate in the planning of closures and to attend all site meetings and all day planning meetings. He must have at least three (3) years of relevant experience in the field of signaling.

.3 The signaling officer shall be present at the site during all movement of signaling equipment and during phase changes. He may be replaced by another member of his staff for certain works, but he must notify the Departmental Representative and obtain his approval. Replacement personnel must be able to receive requests from the Departmental Representative and make appropriate decisions. A list of potential replacements must be submitted for approval at the start-up meeting.

.4 The signaling officer shall contact the Ministry of Works representative prior to the commencement of all signage work to obtain approval for commencement of work and shall notify the operator in real time of any change or development. In addition, the Departmental Representative must be able to reach the signaling officer at all times. To do this, the Contractor is obliged to provide its signaling manager with a cell phone that is operational at all times, including a message processing service.

.5 Without limit to, the principal tasks of the signaling officer are to:

.1 Attend site and planning meetings;

.2 Produce and transmit requests for lane closures within the time limits set out in this document;

.3 Verifying and transmitting signage plans, optional itineraries and special panel shop drawings prepared by its signaling subcontractor within the time period specified in this document;

.4 Be present at the site during any operation of closing and opening of tracks as well as during any movement of signaling devices or restraints;

.5 Verify and transmit the traffic management plan, for the circulation of small machinery on the seigniorial alley with pedestrians and cyclist and ensure its application;

.6 Advise the Departmental Representative in real-time of execution of works (lane openings and closures);

.7 Transmit to the Departmental Representative the AQTR training course competency cards of the workers or subcontractors present on the site;

.8 Transmit to the Departmental Representative any other certificate required by this document;

.9 Ensure communication with subcontractor in signage for traffic maintenance and temporary signaling;

.10 Conduct a daily visit in conjunction with the maintenance team where barriers are maintained to inspect the signs and make adjustments where necessary;

.11 Track signaling fixes with maintenance team;

.12 Submit, within the time prescribed in this document, the certificate of installation of impact attenuator, installation of signs signed by an engineer member of the OIQ and the certificate of inspection of sumps;

2.5 PERSONNEL ASSIGNED TO SIGNALING, SIGNALING TEAM AND FLAGMEN

.1 The Contractor shall forward to the Departmental Representative, at the start-up meeting, a list of all his signaling personnel and his flagmen crews. They must also provide a copy of their certificates of completion of the required training courses. The list of staff and the certificates of success are preliminary to the authorization of the beginning of the works.

2.6 SERVICE VEHICLES

.1 Each service vehicle and escort vehicle shall have the following characteristics:

.1 Be a pickup truck;

.2 Have a minimum gross mass of 2,700 kg;

.3 Be equipped with a full width bench seat capable of accommodating three (3) persons in accordance with the Regulation respecting road safety;

.4 Be equipped with a lightning and flashing arrow and a traffic light (rotating beacon) in accordance with articles 4.36 "Rotating beacon" and 4.37 "Signal arrows" in Volume V;

.5 Have a retroreflective yellow strip (Standard 14101 "Retroreflective Sheeting" of Volume VII) Type III with a minimum width of 75 mm at the rear and sides of the vehicle.

2.7 SIGNALING EQUIPMENT

.1 Visual markers

.1 Accepted visual references are T-RV-1 (in deviations only), T-RV-2, T-RV-7, T-RV-8, T-RV-9 and T-RV-10.

.2 Visual markings shall conform to the requirements of Volume V as to form, color and reflectivity of their retro-reflective film shall not be less than 50%. They must be in good condition, well positioned (on or off), in sufficient quantity and clean.

.2 Barriers T-B-2

.1 In addition to the requirements of Volume V, each end of the bicycle path, bicycle access ramps and lanes closed to traffic shall have one or more T-B-2 barriers.

.2 Barriers T B 2 shall comply with the requirements of Volume V, in good condition, properly positioned (on or off), in sufficient quantity (to ensure complete closure of the passage) and clean.

.3 Work signaling panels

.1 Signs for works are the signs required in the sheets of volume V modified according to the site conditions of this contract and those included in Appendix B "Signaling devices for works" in Chapter 4 " Works of Volume V.

.2 Minimum size of work sign shall correspond to the speed displayed on the P-70 panel with white background and T-V standards.

.3 Signage signs must be manufactured according to MTMDET manufacturing specifications available on the Transport Québec website at www.rsr.transports.gouv.qc.ca

.4 In addition to the requirements of Volume V, all work signs, including special signs and detour panels, shall meet the following requirements:

.1 All panels mobilized for more than 3 consecutive days must be permanently installed (planted on the ground, or attached to a rigid concrete guardrail) and located at the outer limits of the shoulder;

.2 When the ballast panels are placed in the shoulder, they shall be located as far as possible from the traffic tracks;

.3 Where signs are located near the sidewalks, they shall completely clear the sidewalk and shall also be installed at a height of 2.2 m from the ground;

.4 Where signs are located near a bicycle path, the signs shall clear the path completely and be installed at a height of 2.5 m from the path;

.5 The Contractor must position the signs so that they do not obstruct the bike path and are not obstructed by trees and shrubs. Where the position of a sign cannot meet these criteria, the Contractor must plan to trim trees and shrubs along the bike path, following the recommendations of the Departmental Representative.

.5 In addition to the requirements of Volume III, all posts planted must bend upon impact.

.6 Before proceeding with post implantation, the Contractor shall make all necessary checks to ensure that no utility or buried structures are damaged.

.7 Panels shall conform to Volume V requirements as to form, color and reflectivity of their retroreflective sheeting shall not be less than 50%. They must be in good condition, well positioned (on or off), in sufficient quantity and clean.

.4 Worksite Concrete Guardrail

.1 Concrete guards for construction site shall be in new condition, provided by the Contractor and shall be designed to mechanically interlock with each other during installation, in order to minimize displacement during installation when impacted by a vehicle.

.2 Concrete guards for construction site, standard unit, shall conform to the standard drawings DN-VIII-5-001A, DN-VIII-5-001B, DN-VIII-5-002 and DN-VIII-5-009. Volume VIII.

.3 They must meet the requirements of Table 5.6-1 "Buffer space to be provided at the back of the Guard" in Volume VIII.

.4 Installation of guardrails shall be carried out in accordance with Annex C "Installation of restraining devices for work sites" in Chapter 4 of Volume V.

.5 Mini-beacon visual markings (T-RV-11), provided by Contractor, are installed on the top of the guardrail at every two (2) sections.

2.8 ACCESS TO WORK AREAS

.1 Entry and exit operations shall be safe and carried out in such a way as to ensure full protection for workers, road users, cyclists and pedestrians.

.2 The Contractor and its subcontractors must provide for the use of signalers at all times to manage any vehicle entering or leaving a work area adjacent to the bicycle path or traffic lanes open to users. The Contractor must also provide this service to the teams of the Departmental Representative. In addition, the Contractor must provide for the presence of a signaller in order to escort at all times the vehicles or machinery that circulate around the bike path. Consequently, the flagment must be the first to arrive (on foot) to the area in order to manage the acces of the other workers (even if a shuttle service is offered by the Contractor The costs of signalers are included in the "Maintaining Traffic and Temporary Signaling" section of the tender form.

.3 The Contractor and its subcontractors shall also provide for the use of signalers to monitor users of the bicycle path on approaches to a vertical curve or a horizontal curve, as the lack of visibility affect the reaction time of users in the vicinity of an obstacle. As mentioned in the previous paragraph, the costs of signalers are included in the "Maintaining Traffic and Temporary Signaling" section of the tender form.

.4 Procedures for access to work areas and cohabitation with the users shall be provided to the Departmental Representative prior to commencement of work.

.5 It is the responsibility of the Contractor to obtain the authorizations from the various public owners in order to exploit the work areas illustrated in the contract documents. Work areas must be kept closed with site fencing at all times when they are used.

.6 All vehicles accessing the work area shall use dedicated accesses to the site a must be identified and shall be equipped with a rotating beacon.

.7 All accesses must be kept closed with site fencing when not in use. During periods of work, the accesses can be kept open if a signaller is present to control the accessibility of the site. However, the Contractor must under no circumstances carry out work or store equipment or equipment in the area of access to the site. The costs of this signaller are also included in the "Maintaining Traffic and Temporary Signaling" section of the tender form.

.8 All work areas, storage areas and construction access passages must be fenced in order to secure the site properly.

.9 For all accesses, the Contractor must put in place the elements so as not to break the border and reinstate all the elements damaged by its access and work.

2.9 STORAGE OF EQUIPMENT AND MACHINERY

.1 At all times, even outside working hours (evenings, weekends and holidays), the Contractor must park machinery and equipment and store materials in a safe manner for road users and bike path users and outside of it, according to the abacus of page 3 of Chapter 2 "Securing the roadside" of Volume VIII. Storage sites are subject to the approval of the owners. Machinery must be stored on the designated parking lot.

2.10 MAINTENANCE OF SIGNALING DEVICES

.1 When the signaling devices are in place, whether on or off, the Contractor shall provide the labor, equipment and material necessary to perform regular cleaning of the devices and materials of the Contractor. Signage (visual cues, signaling arrows, TB-2 barriers, fencing, concrete site barriers, impact attenuators, job signage and special signs) to maintain their reflectivity.

.2 In addition to the regular maintenance as defined above, a maintenance team must also conduct a full inspection tour of the site per day and make all necessary corrections to temporary signage. These inspections must be done between 9:00 and 15:00. Before starting each inspection, the maintenance team must report to the PCA Representative. In addition, a daily report for each inspection must be provided to the PCA Representative at the end of each visit. A copy of the visit report to be completed by the inspection team will be provided to the contractor at the kick-off meeting.

2.11 MAINTENANCE OF TRAFFIC LANES AND CYCLING PATHS

.1 The Contractor is responsible for the maintenance of user lanes, including cycle lanes, footpaths and the temporary bridge for the period of the work. More specifically, the contractor is responsible for:

.1 Repacking holes twenty-five (25) millimeters deep or more on roads and shoulders as soon as the site is in his charge and throughout the duration of the work;

.2 Cleaning and maintaining free of any debris or liquid or solid material, whether sand, earth, gravel, etc., from the site or not, and by the traffic, by the Contractor or by the weather;

.3 Taking all measures to prevent the deposition of these materials on the roadway and to intervene immediately to remove them, if necessary;

.4 Maintaining work areas and traffic lanes so that there is no dust rising;

.5 Ensuring proper drainage of pavements;

.6 Remove snow and de-ice portions of the affected multi-purpose runway located in the right-of-way of this work;

.7 Performing other work necessary to well maintain traffic.

2.12 EMERGENCY RESPONSE

.1 The Contractor shall intervene at the site within one hour following a call from the Departmental Representative or at the request of the Departmental Representative for a situation affecting the safety of the users (ex .: Temporary signaling equipment moved in traffic lanes), at any time, seven (7) days a week. It may also involve the maintenance of traffic lanes outside working hours at the site such as repairing a hole in the asphalt.

2.13 EXISTING SIGNALING

.1 By taking possession of the site, the Contractor shall be responsible for the existing road signs on the site.

.2 The Contractor shall maintain, keep up, conceal, remove, store, move or adjust any signage on the site or its surroundings for the duration of the Contract, the content of which is inappropriate. Upon completion of the work, all permanent signs existing prior to the commencement of the contract, removed, stored, moved, masked or modified shall be resettled as required by Volume V or restored to their original condition.

.3 Prior to authorization of commencement of work and jointly with the Departmental Representative, the Contractor shall undertake a site tour to make a detailed record of the existing signage to be hidden, removed or moved

.4 For each of these signs, this record shall include at least one photograph of the sign as well as a sketch of its location (position, clearance and height). A copy of this statement must be provided to the Departmental Representative prior to authorization to commence work.

.5 The Contractor shall also complete the complete marking of the existing pavement to be erased in order to be able to repaint the pavement adequately at the end of the work. A copy of this statement must be submitted to the Departmental Representative prior to authorization of the start of work.

.6 The Contractor shall notify the City of Montreal at least forty-eight (48) hours prior to any de-installation of signs belonging to the municipalities.

2.14 INSTALLATION AND MAINTENANCE

.1 Additional signs may be installed on floor-mounted supports, planted on the ground, impact-resistant supports, or installed on concrete or low wall runners. The stability of the panels on the support on the ground is ensured by weights in sufficient number to keep the panel in place.

.2 One (1) week prior to commencement of work, the Contractor shall construct and install four (4) T-210 modified work panels to indicate closure of the bicycle path. The exact location of the signs shall be specified by the Departmental Representative.

.3 Forty-eight (48) hours following the request of the Departmental Representative, the Contractor shall manufacture and install additional signage at the designated locations. The same period applies to the Contractor for the replacement, in whole or in part, of a panel due to breakage or vandalism and for the dismantling and removal of these panels.

.4 For each type of installation, the Contractor must provide a plan signed and sealed by a member of the Ordre des ingénieurs du Québec showing the details of the panel (GuidSIGN), installation details (including hardware required)) And the location of its installation.

.5 For maintenance, the Contractor shall have four (4) hours to re-install a displaced panel (fallen or crooked panel) and one (1) hour for cleaning to ensure visibility.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All the sections of Division 01 – General Requirements

1.2 REFERENCES

.1 Canadian General Standards Board (CGSB)

- .1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- .2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.

.2 Canadian Standards Association (CSA International)

- .1 CAN / CSA-086-F14, Rules for the Design of Wood Framing
- .2 CAN / CSA O86S1 F05 Supplement Number 1 to CAN / CSA-086-01
- .3 CSA O121-F08 (C2013), Douglas Fir Plywood.
- .4 CSA O151-F09 (C2014), Canadian Softwood Plywood.
- .5 CSA O153-F13, Poplar plywood.
- .6 CSA O437-93 (C2011), Particle Board and Particle Board Standards.
- .7 CSA S269.1-16, Temporary Works and Forms.
- .8 CAN / CSA S269.2-M87, Scaffolding.
- .9 CAN / CSA-S269.3-FM92 (C2013), Formwork, National Standard of Canada.
- .10 CAN / CSA-W117.2-F12 - Welding, Cutting and Related Procedures
- .11 CSA Z462-F15, Safety in the Workplace
- .12 CAN / CSA-Z259.10-F12 (C2016) - Safety harnesses
- .13 CAN / CSA Z275.2-F15 Safety Rules for Diving Workers

.3 Public Works and Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R2002D, Title: General Conditions ‘C’, in effect as of May 14, 2004.

- .1 Province of Québec
- .2 Loi sur la santé et la sécurité du travail, L.R.Q., c. S-2.1
- .3 Code de sécurité pour les travaux de construction, L.R.Q., c. S-2.1, r.6

1.3 ACCESS TO SITE

.1 Provide and maintain access lanes, sidewalk crossings and ramps as may be required for access to the work site.

1.4 CORRIDORS AND TEMPORARY FOOTBRIDE ACCESSES

.1 Provide access to required corridors, ramps or temporary access footbridges as required to safely access to the site.

.2 For all other accesses, requiring corridors, footbridges or other, refer to the section "01 55 26 - the circulation ".

1.5 PUBLIC TRAFFIC FLOW

.1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform work and protect public.

.2 Provide a copy of the attestation to completion of the course “Signaling on road work sites” of the flagmen.

1.6 EMERGENCY ROUTES

.1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.7 FENCE AND GUARDRAILS

.1 Provide rigid and secure guardrails and barriers and install around deep excavations, open stairwells and along the edge of the stream after the removal of the existing railing.

.2 Provide and install these elements according to the indications of the Departmental Representative.

1.8 DUST SHIELDS

.1 Provide dust shields or insulated partitions to close areas where dust-generating activities are carried out to protect workers, the public and the finished surfaces or areas of the structure.

.2 Keep these shields and move them as necessary until these activities are completed.

.3 In case of breakage or vandalism, repair or replace dust shields.

1.9 TEMPORARY ACCES EQUIPEMENT

.1 Comply with laws, regulations, intergovernmental agreements or decrees of the authorities that may at any time affect work, labour, equipment and materials at any time

.2 Assume liability and bear the cost of any claim or obligation arising out of the violation of these laws, regulations or decrees by itself or its subcontractors or their respective employees.

.3 Describe, on drawings of interim works, the method recommended for the rehabilitation of a permanent structure.

.4 Shop drawings, design calculations and work plans must have been prepared, signed and sealed by a qualified engineer, member of the Ordre des ingénieurs du Québec. The work plan should include structural calculations; the assumptions underlying the calculations; the sequence of assembly and disassembly of the various elements as well as any other consequent element.

1.10 PROTECTION FOR NEIGHBOURING PRIVATE AND PUBLIC PROPERTY

.1 Protect surrounding private and public property from damage during performance of work.

.2 Be responsible for any damage incurred.

1.11 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCT

2.1 WORKSITE FENCES

.1 Erect temporary fencing around the worksite, consisting of a new 2.4 m high fence attached with wire to T-profiled columns at 2.4 m centers. Provide a lockable access barrier for trucks, minimum. Place fences around trees and plants to be left in place to protect them from damage that may be caused to them by the equipment used or by certain construction practices. Fences must be securely fastened with concrete blocks and stiffeners to prevent their falling over.

.2 Close access after machinery passes. In case of high transport volume, provide signalers to manage opening and ensure access security.

PART 3 EXECUTION

3.1 INSTALLATION AND REMOVAL

.1 Provide temporary controls in order to execute work expeditiously.

.2 Remove from site all such work after use.

END OF SECTION

PART 1 GENERAL

1.1 QUALITY

.1 Products, materials, equipment and articles incorporated in work must be new, not damaged or defective, and of best quality for purpose intended. If requested, provide evidence as to type, source and quality of products provided.

.2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.

.3 Defective products, whenever identified prior to completion of work, will be rejected, regardless of previous inspections. Inspection does not waive responsibility, but is precaution against oversight or error. Contractor must ensure removal and replacement of defective products at his expense and be responsible for delays and expenses caused by rejection.

.4 Should disputes arise as to quality or feasibility of products, decision rests strictly with the Departmental Representative based upon requirements of Contract Documents.

.5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item.

1.2 AVAILABILITY

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify the Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of work.

.2 In event of failure to notify the Departmental Representative at commencement of work and should it subsequently appear that work may be delayed for such reason, the Departmental Representative reserves right to substitute with a more readily available equivalent product, at no increase in Contract Price or Contract Time.

1.3 STORAGE, HANDLING AND PROTECTION

.1 Handle and store products in manner to prevent damage, alterations, deterioration and soiling and in accordance with manufacturer’s instructions when applicable.

.2 Store packaged or bundled products in original and undamaged condition with manufacturer’s seal and labels intact. Do not remove from packaging or bundling until required in work.

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Store cementitious products clear of earth or concrete floors, and away from walls.

.5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

.6 Store lumber and sheet materials on flat, solid supports and keep clear of ground. Slope to shed moisture.

.7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.8 Remove and replace damaged products at own expense and to satisfaction of the Departmental Representative.

.9 Touch up damaged factory finished surfaces to satisfaction of the Departmental Representative. Use touch-up materials to match original. Do not paint over name plates.

1.4 TRANSPORTATION

.1 Pay costs of transportation of products required in performance of work.

.2 Unload, handle and store such products.

1.5 MANUFACTURER'S INSTRUCTIONS

.1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify the Departmental Representative in writing of conflicts between specifications and manufacturer's instructions, so that the Departmental Representative will establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes the Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.6 QUALITY OF WORK

.1 Ensure quality of work is of highest standard, executed by experienced and skilled workers in respective duties for which they are employed. Immediately notify the Departmental Representative if required work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. The Departmental Representative reserves right to require dismissal from site of workers deemed incompetent or careless.

.3 Decisions as to standard or fitness of quality of work in cases of dispute rest solely with the Departmental Representative, whose decision is final.

1.7 CO-ORDINATION

.1 Ensure co-operation of workers in laying out work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.8 CONCEALMENT

.1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

1.9 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of work identified as defective or unacceptable. Co-ordinate adjacent affected work as required.

.2 Perform remedial work by specialists familiar with materials affected. Neither perform in a manner to damage nor put at risk any portion of work.

1.10 LOCATION OF FIXTURES

.1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Inform the Departmental Representative of conflicting installation. Install as directed.

1.11 FASTENINGS

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.1 Prevent electrolytic action between dissimilar metals and materials.

.2 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.

.3 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.4 Keep exposed fastenings to a minimum; space evenly and install neatly.

.5 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.12 FASTENINGS – EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.13 PROTECTION OF WORK IN PROGRESS

.1 Prevent overloading of parts of building.

.2 The Contractor shall take all necessary safety precautions when handling, moving machinery and heavy loads, and during demolition work near fallen coping walls or abutment at risk of instability.

1.14 EXISTING UTILITIES

.1 When breaking into or connecting to existing services or utilities, execute work at times directed by local governing authorities, with minimum of disturbance to work and pedestrian and vehicular traffic.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 QUALIFICATIONS OF SURVEYOR

.1 Qualified registered land surveyor, licensed to practice in in the area of the worksite, acceptable to Departmental Representative

1.2 SURVEY REFERENCE POINTS

.1 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.

.2 Make no changes or relocations without prior written notice to Departmental Representative.

.3 Report to Departmental Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

.4 Require surveyor to replace control points in accordance with original survey control.

1.3 SURVEY REQUIREMENTS

.1 Establish two (2) permanent bench marks on site, referenced to established bench marks by survey control points. Record locations, with horizontal and vertical data in Project Record Documents.

.2 Establish lines and levels, locate and lay out, by surveying instruments.

.3 Stake for excavation, demolition, concrete formwork, grading, fill and topsoil placement and landscaping features.

.4 Carry out a detailed survey of the sections of the footbridge to be replaced and the equipment (railings, bollards, ladders, stairs, public utilities, etc.). Determine the exact profile of the existing elements and validate their actual dimensions. Submit detailed shop drawings showing the existing profiles as well as the final profiles proposed for each type of elements.

.5 Stake slopes and berms.

.6 Establish pipe invert elevations.

.7 The Contractor shall assume full responsibility for the staking of the work and shall ensure that the work is fully executed according to the location, lines and levels indicated.

.8 Provide material for staking and location.

.9 Provide required equipment, such as rules and templates, to facilitate the work of the Departmental Representative in the inspection of the work.

1.4 EXISTING NETWORKS

.1 Before commencing work, establish location and extent of service lines in area of Work and notify Departmental Representative of findings.

.2 Remove abandoned service lines within 2 m of structures. Cap or otherwise seal lines at cut-off points as directed by Departmental Representative.

1.5 LOCATION OF EQUIPMENT AND FIXTURES

.1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.3 Inform Departmental Representative of impending installation and obtain approval for actual location.

.4 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

1.6 RECORDS

.1 Maintain a complete, accurate log of control and survey work as it progresses.

.2 On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.

.3 Record locations of maintained, re-routed and abandoned service lines.

1.7 DOCUMENTS/SAMPLES TO SUBMIT FOR INFORMATION/APPROVAL

.1 Submit name and address of Surveyor to Departmental Representative.

.2 Submit certificate signed by surveyor certifying and noting those elevations and locations of completed Work that conform and do not conform to Contract Documents.

1.8 SUBSURFACE CONDITIONS

.1 Promptly notify Departmental Representative in writing if subsurface conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon.

.2 After prompt investigation, should Departmental Representative determine that conditions do differ materially; instructions will be issued for changes in Work as provided in Changes and Change Orders.

1.9 INSPECTION OF THE WORKSITE AREA

.1 Prior to submitting the bid, the Contractor shall, if deemed necessary, visit the site to familiarize himself with the existing terms and conditions and to consider such other details as may affect the cost, duration and methods of execution of the work. The ignorance of local conditions will not at any time constitute a valid reason for claiming an additional amount of money.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All sections of Division 01 – General Requirements

1.2 DOCUMENTS/SAMPLES TO SUBMIT FOR APPROVAL/INFORMATION

.1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.

.2 Submit written request in advance of cutting or alteration which affects:

.1 Structural integrity of elements of project.

.2 The integrity of the elements exposed to the weather;

.3 The aesthetic qualities of the apparent elements

.3 Include in request:

.1 Identification of project.

.2 Location and description of affected Work.

.3 Statement on necessity for cutting or alteration.

.4 Description of proposed Work, and products to be used.

.5 Alternatives to cutting and patching.

.6 Effect on Work of Owner or separate contractor.

.7 Written permission of affected separate contractor.

.8 Date and time work will be executed.

1.3 MATERIALS/EQUIPMENT

.1 Materials and equipment required for original installation.

.2 Change in materials/equipment: Submit request for substitution in accordance with Section 01 33 00 – Submittal Procedures.

1.4 PREPARATION

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 Inspect site to examine existing conditions and identify unstable elements that may pose a hazard to worker safety

.3 After uncovering, inspect conditions affecting performance of work.

.4 The work covered by these documents shall take into account the historical character and archaeological potential. One archaeological site has been identified on the plans and the Contractor must foresee archaeological excavations in this area from the beginning of the project in order to minimize the potential delays attributable to this work. For further details, refer to "01 14 00 - Restrictions on Work".

.5 Beginning excavation or partial demolition means acceptance of existing conditions.

.6 Supply and install supports to ensure structural integrity of surroundings. Provide devices and methods to protect other portions of project from damage.

.7 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.5 EXECUTION OF WORK

.1 Execute partial demolition, as well as excavation and filling, to complete Work.

.2 Fit several parts together, to integrate with other work.

.3 Execute work by methods that avoid damage to other work, and which will provide proper surfaces to receive patching and finishing.

.4 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.

.5 Restore work with new products in accordance with requirements of Contract Documents.

.6 Refinish surfaces to match adjacent finishes. Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Sort waste for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All of the section of division 1 – General Requirements and division 2 Existing Conditions

1.2 REFERENCES

.1 Environment Quality Act (CQLR, c Q-2)

.2 Regulation Respecting Hazardous Materials (Q-2, r 32)

.3 Regulation Respecting the Landfilling and Incineration of Residual Materials (Q-2, r 19)

.4 Règlement sur les canaux historiques (DORS193-220)

1.3 PROJECT CLEANLINESS

.1 Maintain work in tidy condition, free from accumulation of waste products and debris, including that caused by the Departmental Representative or other Contractors.

.2 Remove debris and waste products from worksite regularly to keep it free from garbage, hazardous waste (HW), waste products, material, substances or equipment not needed for carrying out work and dispose of them in compliance with the regulations in effect. Proof of disposal in a place authorized by the Department of Sustainable Development, the Environment and the Fight Against Climate Change (MDDELCC) shall be provided to the Departmental Representative.

.3 Do not burn waste materials on site.

.4 Throwing any material, waste, HW, debris or residue into the waterway is strictly prohibited. Should it occur, the material shall be recovered immediately.

.5 Clear snow and ice from access roads. Contractor shall dispose of snow removed from work areas in a designated site authorized by MDDELCC, in agreement with the Departmental Representative.

.6 Keep public roads around the worksite free from material, waste, HW, debris, residue, or scrap from the worksite, and clean the public roads immediately should any such material be found thereon.

.7 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.8 Provide on-site containers for collection of waste materials and debris.

.9 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

.10 Dispose of waste materials and debris off site.

.11 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.

.12 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.13 Provide adequate ventilation during use of volatile or noxious substances.

.14 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.15 Water Used for Washing Concrete Mixers

.1 Excess concrete and cement from concrete mixers shall be poured into molds or some other type of leak-proof container. Concrete residue shall be managed with construction waste.

.2 Water used for washing concrete mixers shall be collected in a leak-proof pond so as to prevent any run-off into the environment. The cleaning area shall be located over 30 m from the waterway and authorised by the Departmental Representative.

.3 Water used for washing shall not be released directly into a watercourse or body of water or on the ground. Water used for washing may be collected by the concrete supplier and returned to the concrete plant for disposal. Otherwise, this water shall be confined, sampled and treated (if necessary) in order to meet MDDELCC's surface water quality criteria (protection of aquatic life – acute effects) for suspended material, pH and C_{10}-C_{50}, before release into the environment, a sewer network or a drainage system. The criteria for outfall of SS is 25 mg/L or less.

.16 On access by the crossing under Highway 138, the Contractor is responsible for the clearing of the crossing and shall ensure that the path is free of debris and ready for use by the CP at all times.

1.4 FINAL CLEANING

.1 When work is substantially performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining work.

.2 Remove waste products and debris other than that caused by others, and leave work clean and suitable for occupancy.

.3 Prior to final review remove surplus products, tools, construction machinery and equipment.

.4 Remove waste products from the site and dispose of them in compliance with the regulations in effect. Do not burn waste materials on site. Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris. Proof of disposal in a place authorized by MDDELCC shall be provided to the Departmental Representative.

.5 Clean and polish glass, mirrors, hardware, abutment, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

.6 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, footbridge.

.7 Clean lighting reflectors, lenses, and other lighting surfaces.

.8 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

.9 Sweep and wash exterior walks, steps and surfaces; sweep or rake clean other surfaces of grounds.

.10 Remove dirt and other disfiguration from exterior surfaces.

.11 Sweep and wash clean hard surfaces.

.12 Clean roofs, downspouts, and drainage systems.

.13 Remove snow and ice from access to building.

.14 Contractor shall recover all hazardous waste (HW) produced during the work. All HW shall be sorted and managed in compliance with the regulations in effect, more particularly the Regulation Respecting Hazardous Materials (Q-2, r. 32).

.15 Contractor shall dispose of the HW in a site duly authorized by the MDDELCC. Proof of disposal shall be provided to the Departmental Representative.

.16 Contractor shall recover all residual material produced during the work (waste, recyclables, construction debris, etc.). All residual material shall be sorted and managed in compliance with the regulations in effect.

.17 Contractor shall dispose of the residual material in a site duly authorized by MDDELCC. Proof of disposal shall be provided to the Departmental Representative.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal, and Section 02 50 13 – Management of Toxic Waste.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All sections of Division 1 - General Requirements and Division 2 – Existing Conditions

1.2 WASTE MANAGEMENT GOALS

.1 Prior to start of work conduct meeting with the Departmental Representative to review and discuss waste management goal and Contractor's proposed Waste Reduction Work Plan for Construction, Renovation and/or Demolition (CRD) waste to be project generated.

.2 The waste management goal is to divert as much as possible of total Project Waste from landfill sites. Prior to project completion provide the Departmental Representative with documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced.

.3 Minimize amount of non-hazardous solid waste generated by project and accomplish maximum source reduction, reuse and recycling of solid waste produced by CRD activities.

.4 Protect environment and prevent environmental pollution damage.

1.3 DEFINITIONS

.1 Approved/Authorized recycling facility: waste recycler approved by applicable provincial authority or other users of material for recycling approved by the Departmental Representative.

.2 Class III: non-hazardous waste – construction renovation and demolition waste.

.3 Construction, Renovation and/or Demolition (CRD) Waste: Class III solid, non-hazardous waste generated during construction, demolition, and/or renovation activities

.4 Inert Fill: inert waste – exclusively asphalt and concrete.

.5 Waste Source Separation Program (WSSP): implementation and co-ordination of ongoing activities to ensure designated waste materials will be sorted into pre-defined categories and sent for recycling and reuse, maximizing diversion and potential to reduce disposal costs.

.6 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.

.7 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.

.8 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

.9 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:

.1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.

.2 Returning reusable items including pallets or unused products to vendors.

.10 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.

.11 Separate Condition: refers to waste sorted into individual types.

.12 Source Separation: act of keeping different types of waste materials separate beginning from the point they became waste.

.13 Waste Audit (WA): detailed inventory of estimated quantities of waste materials that will be generated during construction, demolition, deconstruction and/or renovation. Involves quantifying by volume/weight amounts of materials and wastes that will be reused, recycled or landfilled.

.14 Waste Diversion Report: detailed report of final results, quantifying cumulative weights and percentages of waste materials reused, recycled and landfilled over course of project. Measures success against Waste Reduction workplan (WRW) goals and identifies lessons learned.

.15 Waste Management Co-ordinator (WMC): Contractor Representative responsible for supervising waste management activities as well as co-ordinating required submittal and reporting requirements.

.16 Waste Reduction workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials generated by project. Specifies diversion goals, implementation and reporting procedures, anticipated results and responsibilities. Waste Reduction workplan information acquired from Waste Audit.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Prepare and submit at intervals agreed to by the Departmental Representative the following:

.1 Receipts, scale tickets, waybills and/or receipts for disposal of waste materials generated during the work (hazardous waste, waste, recyclable materials, construction debris, etc.) indicating the quantities and types of materials reused/repurposed, recycled or disposed of.

.2 Submit prior to final payment the following:

.1 Provide the receipts, scale tickets, waybills and receipts for disposal of waste materials generated during the work (hazardous waste, waste, recyclable materials, construction debris, etc.) that confirm the quantities and types of materials reused/repurposed, recycled and disposed of, as well as their destination.

1.5 USE OF SITE AND FACILITIES

.1 Execute work with minimal interference and disturbance to normal use of premises.

.2 Maintain security measures established by facility. Provide temporary security measures approved by the Departmental Representative.

1.6 WASTE PROCESSING SITES

.1 Contractor is responsible to research and locate waste diversion resources and service providers. Salvaged materials are to be transported off site to approved and/or authorized recycling facilities or to users of material for recycling.

1.7 STORAGE, HANDLING AND PROTECTION

.1 Store, materials to be reused, recycled and salvaged in locations as directed by the Departmental Representative.

.2 Unless specified otherwise, materials for removal become Contractor’s property.

.3 Protect, stockpile, store and catalogue salvaged items.

.4 All HW must be separated and managed in accordance with regulations in effect, specifically, the Regulation Respecting Hazardous Materials (Q-2, r. 32).

.5 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.

.6 Protect structural components not removed and salvaged materials from movement or damage.

.7 Support affected structures. If safety of structures is endangered, cease operations and immediately notify the Departmental Representative.

.8 Protect surface drainage, mechanical and electrical from damage and blockage.

.9 Provide on-site facilities and containers for collection and storage of reusable and recyclable materials.

.10 Separate and store materials produced during project in designated areas.

.11 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated processing facilities.

.1 On-site source separation is recommended.

.2 Remove co-mingled materials to off-site processing facility for separation.

.3 Obtain waybills, receipts and/or scale tickets for separated materials removed from site and provide to the Departmental Representative.

.4 Materials reused on-site are considered to be diverted from landfill and as such are to be included in all reporting.

1.8 DISPOSAL OF WASTES

.1 Do not bury rubbish or waste materials.

.2 Do not dispose of materials, waste, hazardous waste, debris or residue into waterways, storm, or sanitary sewers.

.3 Keep records of construction waste including:

.1 Number and size of bins.

.2 Waste type of each bin.

.3 Total tonnage generated.

.4 Tonnage reused or recycled.

.5 Reused or recycled waste destination.

.4 Remove materials on-site as work progresses.

.5 Contractor is responsible for collecting all HW generated during the work. All HW must be separated and managed in accordance with regulations in effect, specifically, the Regulation Respecting Hazardous Materials (Q-2, r. 32).

.6 Contractor shall dispose of its HW at a disposal site approved by the MDDELCC. Proof of disposal shall be provided to the Departmental Representative.

.7 Contractor shall collect all waste materials generated during the work (waste, recyclable materials, construction waste, etc.). All waste materials shall be separated and managed in accordance with the regulations in effect.

.8 Contractor must dispose of its waste materials at a disposal site approved by the MDDELCC. Proof of disposal shall be provided to the Departmental Representative.

1.9 SCHEDULING

.1 Co-ordinate work with other activities at site to ensure timely and orderly progress of work.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 APPLICATION

.1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

3.2 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 – Cleaning and Section 02 50 13 – Management of Toxic Waste.

.1 Leave work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning and Section 02 50 13 – Management of Toxic Waste.

.3 Waste Management: separate waste materials for reuse and recycling or disposal.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

.2 Source separate materials to be reused/recycled into specified sort areas.

3.3 WASTE DIVERSION

.1 Separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by the Departmental Representative and consistent with applicable fire regulations.

.1 Mark containers or stockpile areas.

.2 Provide instruction on disposal practices.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All sections of Division 01 – General Requirements

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Acceptance of work Procedures:

.1 Certificate of Practical Completion – from Departmental Representative's Inspection:

.1 The Departmental Representative and Contractor are to inspect work and identify defects and deficiencies.

.2 Contractor to correct Work as directed.

.2 Completion Tasks: submit written certificates in French that tasks have been performed as follows:

.1 Work: completed and inspected for compliance with Contract Documents.

.2 Defects: corrected and deficiencies completed.

.3 Equipment and systems: tested, and fully operational.

.4 Operation of systems: demonstrated to the Departmental Representative.

.5 Work: complete and ready for final inspection.

.3 Final Inspection:

.1 When completion tasks are done, request final inspection of Work by the Departmental Representative and Contractor.

.2 If work is incomplete according to the Departmental Representative, complete outstanding items and request re-inspection.

.4 Declaration of Substantial Completion: Where the Departmental Representative considers that deficiencies and defects have been remedied and the contractual requirements appear to be substantially met, submit a request for the production of a Certificate of Substantial Completion of Work.

.5 Beginning of the warranty period and the exercise period of the right of retention: The date of acceptance by the Departmental Representative of the declaration of substantial completion of work submitted shall be the date of commencement of the exercise of the right of retention and the period of guarantee, unless otherwise prescribed by the regulations relating to the right of retention in force at the place of work.

.6 Final Payment

.1 When the Departmental Representative considers that deficiencies and defects have been corrected and the contractual requirements are fully met, submit a final payment request.

.2 If the work is deemed incomplete by the Departmental Representative, complete the items that have not been completed and submit a new inspection request.

.3 Witheld payment: Upon issuance of the Certificate of Substantial Completion of Work, submit a request for payment of the withheld funds in accordance with the terms of the contractual agreement.

1.3 FINAL CLEANING

.1 Remove surplus materials, excess materials, rubbish, tools and equipment.

.2 Waste Management: in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENT

.1 All the section of the Division 01 – General Requirements

1.2 REFERENCES

.1 Canadian Environmental Protection Act (CEPA)

.1 SOR / 2008-197, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.

1.3 ADMINISTRATIVE TERMS

.1 Pre-warranty Meeting :

.1 Convene meeting one (1) week prior to contract completion with contractor's representative aind Departmental Representative, in accordance with section 01 31 19 – Project Meetings to verify project requirements.

.2 Departmental Representative to establish communication procedures for.

.1 Notifying construction warranty defects.

.2 Determine priorities for type of defects.

.3 Determine reasonable response time.

.3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.

.4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Upon demand, provide the documents confirming the type, the supply source and the quality of the supplied products.

.3 Provide "as-built" plans showing areas of actual operation, modifications to documents issued for construction, approved final profiles and equipment installed after replacement or repair (eg bollards, railings, garbage cans , Benches, lampposts, stairs, ladders, etc.)

1.5 PRÉSENTATION

.1 Organize data as instructional manual.

.2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.

.3 When multiple binders are used correlate data into related consistent groupings.

.1 Identify contents of each binder on spine.

.4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

.5 Arrange content by process flow or systems, under Section numbers and sequence of Table of Contents.

.6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

.7 Text: manufacturer's printed data, or typewritten data.

.8 Drawings: provide with reinforced punched binder tab.

.1 Bind in with text; fold larger drawings to size of text pages.

.9 Provide 1:1 scaled CAD files in dxf, dwg format on CD.

1.6 CONTENTS – PROJECT RECORD DOCUMENTS

.1 Table of Contents for Each Volume:

.1 provide title of project;

.2 Date of submission; names.

.3 Names, addresses and telephone numbers of the Departmental Representative and Contractor with names of responsible parties.

.4 Schedule of products and systems, indexed to content of volume.

.2 For each product or system:

.1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: mark each sheet to identify specific products and data applicable to installation; delete inapplicable information.

.4 Drawings: supplement product data.

1.7 AS BUILT DOCUMENTS AND SAMPLES

.1 Maintain at site for Departmental Representative on record copy of :

.1 Contract Drawings;

.2 Specifications;

.3 Addenda;

.4 Change Orders and other modifications to Contract;

.5 Reviewed shop drawings, product data, and samples;

.6 Field test records;

.7 Inspection certificates;

.8 Manufacturer’s certificates.

.2 Store record documents and samples in field office apart from documents used for construction.

.1 Provide files, racks, and secure storage.

.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.

.1 Label each document "PROJECT RECORD" in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition.

.1 Do not use record documents for construction purposes.

.5 Keep record documents and samples available for inspection by Departmental Reprensentative.

1.8 INFORMATION ON PROJECT RECORD DOCUMENT

.1 Record information on set of opaque drawings and in copy of specifications.

.2 Record information concurrently with construction progress.

.1 Do not conceal Work until required information is recorded.

.3 Contract Drawings and shop drawings: mark each item to record actual construction, including.

.1 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

.2 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.

.3 Field changes of dimension and detail.

.4 Changes made by change orders.

.5 Details not on original Contract Documents.

.6 References to related shop drawings and modifications.

.4 Specifications: mark each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.

.2 Changes made by Addenda and change orders.

.5 Other documents: keep records of on-site tests prescribed in each of the technical sections of the estimate.

.6 Provide digital photos, if requested, for site records.

1.9 FINAL SURVEY CERTIFICATE

.1 Submit certificate of survey in accordance with section 01 71 00 – Examination and Preparation Requirements confirming compliance or non-compliance with contractual site requirements and grade levels of completed works.

1.10 EQUIPMENT AND SYSTEMS

.1 For each item of equipment and each system include description of unit or system, and component parts.

.1 Give function, normal operation characteristics and limiting conditions.

.2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.

.1 Include regulation, control, stopping, shut-down, and emergency instructions.

.2 Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.

.12 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.13 Include test and balancing reports as specified in Section 01 45 00- Quality Control

.14 Additional requirements: as specified in individual specification sections.

1.11 MATERIALS AND FINISHES

.1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.

.1 Provide information for re-ordering custom manufactured products.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and weather-exposed products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Additional requirements: as specified in individual specifications sections.

1.12 MAINTENANCE MATERIALS

.1 Spare Parts:

.1 Provide spare parts, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to location as directed and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to Departmental Representative.

.2 Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

.2 Extra Stock Materials:

.1 Provide maintenance and extra materials, in quantities specified in individual specification sections.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to site; place and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to Departmental Representative.

.2 Include approved listings in Maintenance Manual.

.5 Obtain receipt for delivered products and submit prior to final payment.

1.13 TRANSPORTATION, STORAGE AND HANDLING

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.

.2 Store in original and undamaged condition with manufacturer's seal and labels intact.

.3 Store components subject to damage from weather in weatherproof enclosures.

.4 Store paints and freezable materials in a heated and ventilated room.

.5 Remove and replace damaged products at own expense and for review by Departmental Representative.

.6 Evacuate damaged or deteriorated items or products, replace with new ones at no additional charge, and submit to Departmental Representative for review.

1.14 WARRANTIES AND BONDS

.1 Develop warranty management plan to contain information relevant to warranties.

.2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Departmental Representative approval.

.3 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.

.4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.

.5 Submit, warranty information made available during construction phase, to Departmental Representative for approval prior to each monthly pay estimate.

.6 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:

.1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.

.2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

.3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of applicable item of work.

.4 Verify that documents are in proper form, contain full information, and are notarized.

.5 Co-execute submittals when required.

.6 Retain warranties and bonds until time specified for submittal.

.7 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.

.8 Conduct joint warranty inspection, measured from time of acceptance, by Departmental Representative.

.9 Include information contained in warranty management plan as follows.

.1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.

.2 Provide list for each warranted equipment, item, feature of construction or system indicating:

.1 Name of item.

.2 Model and serial numbers.

.3 Location where installed.

.4 Name and phone numbers of manufacturers or suppliers.

.5 Names, addresses and telephone numbers of sources of spare parts.

.6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.

.7 Cross-reference to warranty certificates as applicable.

.8 Starting point and duration of warranty period.

.9 Summary of maintenance procedures required to continue warranty in force.

.10 Cross-Reference to specific pertinent Operation and Maintenance manuals.

.11 Organization, names and phone numbers of persons to call for warranty service.

.12 Typical response time and repair time expected for various warranted equipment.

.3 Contractor's plans for attendance at 4 and 9 month post-construction warranty inspections.

.4 Procedure and status of tagging of equipment covered by extended warranties.

.5 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

.10 Respond in timely manner to oral or written notification of required construction warranty repair work.

.11 Written verification to follow oral instructions.

.12 Failure to respond will be cause for the Departmental Representative to proceed with action against Contractor.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 All sections of Division 1 - General Requirements and Division 2 – Existing Conditions

.2 Section 31 23 33.01 – Excavating, Trenching and Backfilling

1.2 REFERENCES

.1 Ministry of Sustainable Development, Environment and Parks.

.1 Legislation and Regulations of the Department.

.2 Laws and Regulations of the Federal Government of Canada.

.1 Canadian Environmental Protection Act, 1988.

.2 Canadian Environmental Assessment Act (CEAA), 1995.

.3 Transportation of Dangerous Goods Act (TDGA), 1992.

.4 Motor Vehicle Safety Act (MVSA), 1995

.3 Canadian Standards Association (CSA).

.1 CSA International: CSA S350-FM1980(R2003), Code of Practice for Safety in Demolition of Structures.

.4 Canadian Safety Code on Construction Sites.

.5 Safety Code for Construction Work in Quebec.

.6 Also comply with the requirements of the National Building Code of Canada, Part 8, Site Safety Measures and Provincial Regulations.

.7 ICRI - Guide No. 03732 (E) - Technical Guide on Preparations for Concrete Surfaces.

.8 MDDEP - Procedures for the discharge of wastewater into a watercourse

1.3 DEFINITIONS

.1 Hazardous Substances, Goods, Goods and Products that may include, but are not limited to, poisons, corrosive agents, flammable materials, ammunition, explosives, radioactive substances and any other materials that, Can have adverse effects on human health or well-being, or on the environment.

.2 Waste Management Coordinator (WMC): Representative of the Contractor responsible for overseeing waste management activities and coordinating requirements for reports, documents and samples to be submitted.

.3 Waste Audit (DA): Detailed survey of the products and materials of which a building is built. The waste audit encompasses the evaluation, in volume and mass, of the quantities of materials and waste generated by the deconstruction. The quantities of recovered/reused, recycled and landfilled materials must be reported separately.

.4 Waste Reduction Plan (WRP): Written report defining, based on data presented in the Waste Audit (DA), all measures to be taken to ensure reduction, reuse / reuse and recycling Products and

.5 Deconstruction: When this term is used, this means that the demolition must be carried out with care not to damage the parts of adjacent structures to be kept intact.

.6 Approximate Dimensions: When dimensions contain "±", they are dimensions that may vary at the site during the execution of the work. The Contractor is responsible for checking all dimensions on site before undertaking the work.

.7 Co-operation Co-ordination: Where one of these words is included in the drawings or specifications, this means and implies that the Contractor has full responsibility for coordinating and ensuring the cooperation of all including all other stakeholders, without exception, involved in the work in order to deliver a complete work conforming to the contractual documents.

.8 Openings/Piercing: When one of these words is included in drawings or specifications, this means and implies that the Contractor must consult all the drawings, including those of each of the disciplines, in order to coordinate the dimensions and the exact locations of each opening or hole in a wall, floor, roof or any other element. This also means that the Contractor has an obligation to consult with the Departmental Representative to ensure that each opening or drilling is carried out in accordance with good practice.

.9 Recovered/Recycled Materials: When one of these words is included in drawings or specifications, this means and implies that the Contractor must dismantle the item for reuse. The item must be temporarily stored, cleaned and reinstalled as directed.

.10 Recycled Materials: When one of these words is included in drawings or specifications, this means and implies that the Contractor will be able to recycle certain materials following the deconstruction and decommissioning of these materials. The Contractor has the sole responsibility to include in its bid all costs associated with the steps required for the recycling and disposal of all materials.

.11 To retain or to protected: When one of these words is included in drawings or specifications, this means and implies that the Contractor must provide all materials, Installation of the protective structures required to keep intact or protect from damage any parts of the existing works that are to be retained.

.12 Do, Place, Supply, Install, New, etc.: When one of these words is included in the drawings or specifications, this means and implies that the Contractor has included in its tender all costs related to manufacturing up to the installation of the element at the site including all the guarantees he must provide.

1.4 EXISTING CONDITIONS

.1 Existing conditions shall be understood as the condition of the structures to be demolished on the day of acceptance of the tender.

.2 Demolition drawings on structural plans refer mainly to existing elements of concrete, masonry or steel whose demolition is necessary for the complete completion of the work or works, in accordance with the other indications of the contractual documents. These drawings should be read in conjunction with those of other disciplines.

.3 For dimensions of items to be demolished or deconstructed, if not shown on the structural plans, refer to the plans of the other disciplines. When not shown on plans, refer to existing drawings which can be supplied upon request, if available However, the Contractor must take into account in his bid that for some of the structures to be demolished there is no existing plan available and additional records may be required at the request of the Departmental Representative.

.4 Exact information and dimensions of existing structures.

.1 Exact dimensions of existing elements may vary slightly depending on site conditions. If there is a major difference discovered during the work, follow the instructions of the Departmental Representative.

.2 Some drawing sheets have been reproduced from the final or "as-built" plans available. It is not guaranteed that it represents exactly the existing conditions and the Contractor must take into account the lack of information in the establishment of his tender. Despite the lack of information, the Contractor has the full responsibility to provide the Owner with complete works.

.3 The information reproduced on the drawings cannot be used as a basis for any claim or request for unjustified compensation from the Contractor or his subcontractors with regard to the deconstruction work of the identified works.

.5 Contractor to inspect all dimensions and dimensions on site. Prior to the building of the elements, check the size and condition of the existing structure and notify the Departmental Representative of any dimensional difference or potential problem connecting to these, for directions.

.6 Before beginning work, the Contractor shall, together with the Departmental Representative, make a video survey of existing structures that could be affected or damaged during the performance of work by its temporary facilities, its equipment, its materials, its workers and those of its subcontractors, etc.

.7 Plan and coordinate with other disciplines all planned work based on existing conditions

.8 The Contractor acknowledges that he is aware of the geographical location and the existing conditions, constraints of access, delivery, handling, transport and temporary or permanent storage of materials and equipment in the vicinity of the site, sidewalks and in the neighboring streets of the work site. He also acknowledges that he is fully aware of the municipal regulatory requirements in this area and agrees to comply therewith in every respect.

.9 Demolishing sound materials (masonry, concrete, rock or other) to meet the minimum requirements of the plans shall be provided for in the Contractor's bid prices.

.10 Under this project, some work may require the implementation of confined space procedures.

.11 The Contractor must take into account the existing structures as well as the proximity of the water courses in his choice of demolition methods. For example, the recourse to hydro-demolition involves many protection measures and may be too damaging for the existing concrete to remain.

1.5 INSPECTION OF THE AREA

.1 The Contractor shall:

.1 Inspect the site and anticipate any conditions that may affect the course of the work. Submission of a bid will be evidence that the bidder has inspected the site and has made an informed bid;

.2 Determine the nature and extent of hazards inherent in and incidental to the removal of materials;

.3 Take all necessary protective measures to prevent damage to third parties.

.2 Exact location, dimensions and elevations of existing infrastructure and elements shown on the plans are approximate and must be verified on site prior to commencement of work. Even if the existing structures can be shown on the plans, whether they be power or telephone poles, pipes, underground conduits, electric or telephone cables or other structures in place, air or underground, public or private, Their location is only approximate and must be specified by the Contractor to meet the requirements of its work. Existing works are not necessarily shown on the plans.

.3 Prior to the commencement of the work, the Contractor shall, along with the Departmental Representative, make a video survey of existing works that are likely to be affected or damaged in the course of the work by its temporary facilities, Its equipment, its materials, its workers and those of its subcontractors, etc. All damaged works shall be repaired at the expense of the Contractor and to the satisfaction of the Departmental Representative, without causing delays in the delivery of the works.

1.6 DEMOLITION/DECONSTRUCTION DRAWINGS

.1 Submit recommended methods, drawings, diagrams or details indicating the order of the demolition or deconstruction, shoring and underpinning work as well as for approval, to the Departmental Representative and the equipment used to do so.

.2 The drawings must bear the seal and signature of an active member of the OIQ, competent and recognized in the field. The Contractor shall assume the costs of the services of the Contractor's Engineer.

.3 Submit shop drawings as prescribed in "01 33 00 - Submittal Documents and Samples".

.4 The Contractor shall provide the complete set of shop drawings and technical data sheets required for approval.

.5 In the event that discipline-related elements are included in another discipline but omitted in the discipline concerned, the Contractor must still plan and include these elements in his submission.

1.7 TEMPORARY PROTECTION MEASURES

.1 The Contractor is fully responsible for protecting all existing services not affected by the works but located within the limits of the interventions. He is responsible for any damage that may occur to them as a result of his operations; He must go to the site during the submission period to assess all risks.

.2 Contractor is responsible for protection against damage to surrounding structures.

.3 The Contractor shall take strict measures to ensure that no material, product, debris or other object causes damage to the environment or to any other person, and shall keep the Departmental Representative up-to-date of all proceedings, claims, losses or damage inherent in and resulting from his error.

.4 The Contractor is responsible for the safety of the worksite at all times, including outside working hours.

.5 Take necessary measures to prevent the displacement or subsidence of existing structures and infrastructure and the parts of buildings to be retained and to prevent damage to them. Supply and install bracing and shoring parts. If necessary, repair damaged structures during demolition or deconstruction work as directed by the Departmental Representative.

.6 Properly support structures or targeted works and, if demolition or deconstruction work appears to be a hazard to the rest of the structure or existing infrastructures to be protected and maintained, take appropriate precautionary measures, Stop the work and notify the Departmental Representative.

.7 Ensure that deconstructions do not obstruct the surface water drainage system and any other electrical or mechanical systems or infrastructure that must remain in service.

.8 Ensure that demolition or deconstruction does not result in excessive levels of air, sound or noise pollution. Comply with the requirements of the specification and general conditions, particularly with regard to nuisances such as noise, dust, harmful vapours, working hours, protection of the public, etc.

.9 It is prohibited to burn waste and materials on site.

.10 Do not discharge waste or volatile materials, such as mineral spirits, oils, petroleum-based lubricants or toxic cleaning solutions into storm or sanitary sewers. Ensure that appropriate methods for the disposal of this type of waste are maintained throughout the duration of the work.

.11 Do not discharge water containing suspended solids into watercourses, storm sewers, sanitary sewers or adjacent land by pumping or otherwise.

.12 Ensure drainage and containment of runoff containing suspended solids or other harmful substances in accordance with local authority requirements.

.13 Provide all necessary work to contain contaminated runoff. Particularly, erect temporary watertight structures that provide protection and containment for run-off water containing suspended particulates that may be discharged into watercourses where appropriate.

.14 Two weeks prior to commencement of work, the Contractor shall provide a methodology describing in detail all means to be used and the recommended equipment and procedures for holding, filtering, pumping and channeling runoff to appropriate outside services to avoid spill problems in watercourses.

.15 Protect vegetation (trees, plants, shrubs and foliage) on the property and adjacent properties, as indicated.

.16 Do not allow foreign substances or materials to contaminate air inside the work site near fresh air intakes of buildings and outside the building site by erecting temporary protection enclosures for the execution of demolition or deconstruction work.

.17 Cover dry materials and waste by wet felling to prevent dust and debris from being arising. Apply a dust suppressant on all temporary access routes.

.18 The concrete components to be demolished are generally in a solid state. The Contractor shall take into account in determining his price that it will demolish concrete, masonry or other sound materials to carry out his work.

.19 Upon completion of work, remove all temporary protective structures that have been required.

.20 Perform demolition or deconstruction work in accordance with the requirements of CSA Standard S350 M1980 and all other provincial regulations, including the construction code S-2.1 r.6, latest edition.

.21 Perform work in accordance with section 01 35 43 – Environmental Protection.

.22 Before cutting and removing materials, protect existing pipelines and ensure that materials from demolition or deconstruction do not obstruct them.

1.8 DOCUMENTS/SAMPLES TO BE SUBMITTED

.1 Submit shop drawings as prescribed in "01 33 00 - Submittal Documents and Samples".

.2 Submit demolition procedures

.1 Submit to the Departmental Representative, for approval and review, drawings or details showing the order of demolition, shoring, bracing and underlayment work, and the elements used to do this. In such a case, drawings shall bear the seal and signature of a qualified engineer qualified and licensed to practice in Canada in the Province of Quebec

.2 Submit demolition procedures which shall meet the requirements for environmental protection to the Departmental Representative. These procedures should also indicate how and where the materials will be placed.

.3 The Contractor shall ensure compliance with all requirements for the transmission of documents, samples and required reports to the satisfaction of the Departmental Representative.

.4 Before undertaking the work, submit a detailed waste reduction plan indicating the expected percentages of reused, recycled and landfilled materials, the plan for demolition or selective deconstruction, the nature and quantities of the materials to be recovered, The number and location of salvage bins, the anticipated collection frequency, and the name and address of the waste management centers.

.5 Provide, at the request of the Departmental Representative, copies of certified receipts issued by landfills and licensed reuse and recycling centers for all materials disposed of outside the site. Obtain written authorization from the Departmental Representative prior to forwarding materials to the waste management centers listed in the waste reduction plan.

1.9 REGULATORY REQUIREMENTS

.1 Ensure work is completed in accordance with CEPA, CEAA, TDGA, LSVA and all applicable provincial and municipal regulations.

.2 All applicable regulatory requirements shall be strictly adhered to and no compensation shall be granted to the Contractor to comply with them.

1.10 WORK SCHEDULE AND NOISY WORK

.1 The Contractor shall provide in its execution schedule and scheduling that certain noisy disruptive work shall be carried out on a sometimes discontinuous schedule in accordance with the other requirements of the contract documents and in close coordination with the Departmental Representative.

.2 In addition to the general terms and conditions of the specification, the Contractor shall also comply with all applicable municipal by-laws concerning hours of work, noise levels, etc.

1.11 MATERIALS, EQUIPMENT AND MACHINERY

.1 Heavy equipment and machinery must be operated to meet or exceed the requirements of all applicable emissions standards.

.2 Switch off machines when they are not in use unless extreme temperature conditions require uninterrupted operation.

.3 The Contractor shall prevent harmful substances, vapours or foreign matter from contaminating the air in the vicinity of fresh air intakes of buildings and outside the building site by erecting protective enclosures around temporary work during the deconstruction work. In particular, the Contractor must comply with the other requirements of the contract documents with respect to potentially harmful vapours from its machinery

.4 All material, equipment and machinery required for demolition or deconstruction shall be located at a safe distance from existing sections of structures to be protected or maintained.

.5 Refer also to "01 52 00 - Construction Facilities" for traffic management and construction machinery requirements.

1.12 EVACUATION OF DEBRIS

.1 All debris from demolition or deconstruction shall be evacuated as work progresses. The Contractor shall have no special area for the temporary storage of debris.

.2 At all times all access roads or traffic shall be available to users, and debris handling shall be carried out in such a way as not to impede traffic and safely outside the hours of high traffic.

.3 Provide signaling services with transmitter-receiver radios where access or traffic routes are to be partially and temporarily obstructed.

PART 2 PRODUCTS

2.1 RECYCLED, RECOVERED OR RE-USED MATERIALS

.1 Refer to "31 23 33.01 - Excavation, Trenching and Backfilling" for recycling, recovery or reuse requirements for dry materials from the structure as well as "01 74 19 - Construction/Demolition Waste Management and Disposal" for recycling requirements for metals from the structure.

.2 Refer to demolition requirements and drawings for materials and materials to be recovered for recovery/reuse.

.3 Remove items to be recovered/re-used, store them in accordance with Departmental Representative's instructions and return them to the owner, as prescribed in the relevant section of the estimate.

PART 3 EXECUTION

3.1 GENERAL

.1 The Contractor shall provide in its bid and in its schedule of execution and scheduling that the work must be done in such a way as not to harm users Manoir Papineau national historic site and the seigneuriale alley.

.2 The Contractor shall be solely responsible for the demolition or deconstruction methods and methods. However, it must provide the Departmental Representative with demolition or deconstruction plans that it intends to use, as well as plans for the temporary supports of the affected services, if any. These methods and means must have been prepared by an engineer, a member in good standing of the Ordre des Ingénieurs du Québec and bear his seal.

.3 If, in the opinion of the Departmental Representative or the representatives of the security agencies, including CNESST, the demolition or deconstruction methods recommended by the Contractor are likely to cause damage or inconvenience to persons, property or the environment, they may require that the methods be modified or adapted solely to the cost of the Contractor.

.4 The intervention of the Departmental Representative does not relieve the Contractor of his responsibilities; conversely, his non-intervention does not constitute an endorsement of those means or methods.

.5 The demolition or deconstruction methods used by the Contractor must be controllable.

.6 The Contractor must fully control all stages and be able to predict the effect of his actions on the element being demolished or deconstructed and on the remaining parts. In particular, the Contractor shall avoid overloading debris in the parts of the structure to prevent damage.

.7 .Provide bracing, scaffolding, ladders, chutes, or temporary platforms, when required over utilities, streets, buildings, etc., and the means of protection required for the work.

.8 Construct and maintain such works in accordance with laws, codes, regulations, good practices and directives of the Departmental Representative.

.9 If the demolition or deconstruction of a part of the structure entails the obligation to place temporary supports or temporary braces in an adjacent part to be demolished thereafter, the Contractor shall, Install such shoring or braces at his own expense.

.10 In selecting the order of demolition or deconstruction of the various elements of the structure, the Contractor shall ensure that the sequence he has selected is such that the removal of the element does not endanger the stability of a large part still standing so as to avoid a cascading break in the whole structure.

.11 When required by the plan or as the Departmental Representative deems necessary and where required for the safety of workers and the structural integrity of the structure, sealing existing structures by means of jacks and/or temporary supports braced around the parts to be demolished before carrying out the demolition or deconstruction work. The Contractor shall provide the shop drawings of the temporary supports to be approved by the Contractor for approval.

.12 Do not cross the saw cuts in the corners or on the face or back of the section to be cut. Complete the cutting in the interior corners by drilling juxtaposed holes of small diameter along the entire depth of the section.

.13 Break or cut into small pieces the parts to be demolished for ease of handling and transport.

.14 Carry all demolition or deconstruction products off premises as the work progresses, in accordance with the requirements of the Departmental Representative.

3.2 EXAMINATION

.1 Some demolition or deconstruction work may require prior interventions such as temporary protection work, temporary service disruptions, movement of existing equipment, etc. All the preparatory and preliminary work necessary for the proper execution of the work must be carried out in coordination with all the stakeholders (establishment of the temporary bridge, path of deviation, etc.).

.2 Inspect Work site with the Departmental Representative and verify location and extent of items that must be removed, disposed of or salvaged, and those that must stay in place.

.3 Locate and protect public and private services and maintain in good condition those that remain in service on site.

.4 Notify public utility companies and the Departmental Representative and obtain their approval before commencing demolition work.

.5 Disconnect, cap or re-route, as needed, existing service lines on site that hinder execution of Work, in accordance with requirements of authorities having jurisdiction. Locate these service lines and those already abandoned on site, and indicate their location (horizontal and vertical plane) on final drawings. Properly support, underpin and maintain in place service lines and conduits encountered.

.1 Immediately notify the Departmental Representative as well as concerned public utility company of any damage caused to a service line to be maintained.

.2 Immediately notify the Departmental Representative of discovery of any unidentified public utility line and wait for his written instructions about measures to be taken.

3.3 GENERAL PREPARATIONS

.1 Protection of in-place conditions

.1 Take necessary measures to prevent movement, settlement or damage to adjacent structures and utility lines. Provide bracing and shoring required.

.2 Keep noise, dust and inconvenience to occupants to minimum.

.3 Protect mechanical and electrical devices, systems and installations as well as public and private utility lines.

.4 Provide dust screens, covers, railings, supports and other protection as required.

3.4 SECURITY

.1 Execute Work in accordance with health and safety requirements.

.2 Blasting is not permitted for demolition or deconstruction.

.3 Perform dismantling work in accordance with the requirements of CSA S350 M1980 and all other municipal and provincial by-laws, including the construction code S-2.1 r.6, latest edition.

3.5 REMOVAL OF HAZARDOUS WASTE

.1 Remove material deemed to be contaminated or hazardous by the Departmental Representative or environmental protection authorities and clear it from the site by taking all necessary safety measures to minimize hazards during its removal and evacuation.

.2 Before proceeding with demolition or deconstruction, evacuate contaminated or hazardous materials from the site as instructed by the Departmental Representative.

.3 Refer also to section 02 81 00 – Hazardous Materials

3.6 DUST CONTROL METHODS

.1 The Contractor is required to provide a recognized and proven method of controlling dust emission during demolition or deconstruction. The proposed methodology must be tested and approved by the Departmental Representative prior to the commencement of work that may cause dust. For example, the Contractor may propose continuous "misting" to the emission zones.

.2 Method(s) proposed for removing dust during demolition or deconstruction work shall be seasonal.

.3 The Contractor shall, among other things, test certain methods for removing dust in order to ensure that the method is effective in accordance with the particular conditions of the site and the sequence of work and seasons. For example, the Contractor will be required to test mist or mist spray guns, oil-hydraulic systems with high-pressure spray nozzles or perforated flexible pipes, etc. The spray guns must have a sufficient spray range and must be sufficient in number to permit the removal of dust particles so that the emissions comply with the tolerances provided for in the relevant laws and regulations.

.4 The Contractor shall provide in his bid that the reduction of dust at the source by using water necessarily involves dirt in neighboring streets and shall comply with the requirements of the contractual documents for cleaning of traffic lanes.

.5 The Contractor shall provide in his bid that the reduction of dust at the source by using water necessarily involves managing the ice build-up on the site during the winter period. The management of frozen water as well as the de-icing of taxiways, both inside and outside the building site, when this is generated by the methods of the Contractor, will be his and shall comply with the requirements of the contract documents for the cleaning of traffic lanes.

.6 Cleaning of equipment used (nozzles, guns, turbines, filters, etc.) for dust reduction at the source is the sole responsibility of the Contractor.

.7 Water used for dust removal is the sole responsibility of the Contractor and must come from a network of potable water pipelines to avoid the presence of legionella that may contaminate the air ambient. Provide U.V. filters where applicable.

.8 Fine particle-contaminated water generated by the cleaning or removal of dust must be controlled by the Contractor to prevent runoff to the creek, the restrictions of section "01 35 43 - Protection of the 'environment' must be respected throughout the period of the works.

3.7 DEMOLITION, RECOVERING AND ELIMINATION

.1 Carry out the demolition work necessary to allow for the works indicated.

.2 At the end of each workday, ensure that the work is safe and stable.

.3 Carry out deconstruction work to minimize dust and keep material wetted as directed by Departmental Representative.

.4 It is prohibited to dispose of prescribed materials other than by an ecological method. Sort materials and equipment, and group them into separate piles according to reuse or disposition.

.5 Unless otherwise specified, Contractor is responsible for demolition materials and is solely responsible for removing materials and equipment removed to an approved disposal site.

.6 Refer to demolition requirements and drawings for material and materials to be reused for reuse / reuse.

.7 Remove items to be re-used / re-used, store them in accordance with Departmental Representative's instructions and return them to the owner, as prescribed in the relevant section of the Specifications.

3.8 STOCKPILING

.1 Label stockpiles, indicating material type and quantity

.2 Designate appropriate security resources/measures to prevent vandalism, damage and theft

.3 Locate stockpiled materials convenient for use in new construction. Eliminate double handling wherever possible

.4 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures

3.9 REMOVAL/ELIMINATION OF MATERIALS FROM SITE

.1 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.

.2 Carry materials for environmentally sound disposal using approved trucking companies identified in the waste reduction plan and in accordance with applicable regulations.

.1 A written authorization from the Departmental Representative must be obtained for the use of trucking companies other than those specified in the waste reduction plan.

.3 Dispose of materials and materials not intended for environmentally sound disposal in accordance with applicable regulations.

.1 Use approved landfills specified in waste reduction plan.

.2 A written authorization from the Departmental Representative must be obtained in order to transport products and materials to landfills other than those indicated in the waste reduction plan.

3.10 REPORTS

.1 On receipt of information, provide the following information to the satisfaction of the Departmental Representative:

.1 Description of materials.

.2 Amount of material discharged.

.3 Breakdown of quantities of reused, recycled and landfilled materials.

.4 Final destination of evacuated materials.

3.11 CLEANING

.1 Progress Cleaning: leave Work area clean at end of each day.

.2 Final Cleaning: remove surplus materials, rubbish, tools and equipment to satisfaction of the Departmental Representative.

.3 Refer to plans for items to be salvaged for reuse.

.4 Waste Management: separate waste materials for possible reuse or recycling.

.5 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 All sections of Division 1 - General Requirements and Division 2 – Existing Conditions

.2 Section 31 23 33.01 – Excavating, Trenching and Backfilling

1.2 REFERENCE STANDARDS

.1 Canadian Environmental Protection Act (CEPA), 1999

.1 Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149).

.2 Environment Quality Act (ch. Q-2, a.31, 46, 70.19, 115.27, 115.34 et 124.1)

.1 Regulation respecting hazardous materials (ch. Q-2, r. 32).

.3 Department of Justice Canada (Jus)

.1 Transportation of Dangerous Goods Act (TDG Act), 1992, (c. 34).

.2 Transportation of Dangerous Goods Regulations (T-19.01-SOR/2001-286).

.4 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.5 National Research Council of Canada

.1 National Fire Protection Code of Canada (NFPC), 2015

1.3 DEFINITIONS

.1 Dangerous Goods: product, substance, or organism specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.

.2 Hazardous Material: product, substance, or organism used for its original purpose; and is either dangerous goods or material that will cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.

.3 Hazardous Waste: hazardous material no longer used for its original purpose and that is intended for recycling, treatment or disposal.

1.4 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer’s instructions, printed product literature and data sheets for hazardous materials. Include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 29 06 – Health and Safety Requirements to Agency Representative for each hazardous material required prior to bringing hazardous material on site.

.3 Submit hazardous materials management plan to the Departmental Representative that identifies hazardous materials, usage, location, personal protective equipment requirements, and disposal arrangements.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle in accordance with manufacturer's written instructions and Section 01 61 00 – Common Product Requirements.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Transport hazardous materials and wastes in accordance with Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.

.4 Storage and Handling Requirements:

.1 Coordinate storage of hazardous materials with to the Departmental Representative and abide by local requirements for labelling and storage of materials and wastes.

.2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.

.3 Store and handle flammable and combustible materials in accordance with National Fire Code of Canada requirements.

.4 Keep up to 45 litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use, provided that the following conditions are met.

.1 Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.

.2 Storage of quantities of flammable and combustible liquids exceeding 45 litres requires the approval of to the Departmental Representative.

.5 Transfer flammable and combustible liquids away from open flames or heat-producing devices.

.6 Solvents or cleaning agents must be non-flammable or have flash point above 38 degrees C.

.7 Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area.

.8 Keep quantities to minimum. Smoking is prohibited in areas where hazardous materials are stored, used, or handled.

.9 Storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:

.1 Store hazardous materials and wastes in closed and sealed containers.

.2 Label containers of hazardous materials and wastes in accordance with WHMIS.

.3 Store hazardous materials and wastes in containers compatible with that material or waste.

.4 Segregate incompatible materials and wastes.

.5 Ensure that different hazardous materials or hazardous wastes are stored in separate containers.

.6 Store hazardous materials and wastes in secure storage area with controlled access.

.7 Maintain clear egress from storage area.

.8 Store hazardous materials and wastes in location that will prevent them from spilling into environment.

.9 Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.

.10 Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.

.11 When hazardous waste is generated on site:

.1 Coordinate transportation and disposal with to the Departmental Representative.

.2 Comply with applicable federal, provincial and municipal laws and regulations for generators of hazardous waste.

.3 Use licensed carrier authorized by provincial authorities to accept subject material.

.4 Before shipping material obtain written notice from intended hazardous waste treatment or disposal facility it will accept material and it is licensed to accept this material.

.5 Label containers with legible, visible safety marks as prescribed by federal and provincial regulations.

.6 Ensure that only trained personnel handle, offer for transport, or transport dangerous goods.

.7 Provide photocopy of shipping documents and waste manifests to the Departmental Representative.

.8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide photocopy of completed manifest to the Departmental Representative.

.9 Report discharge, emission, or escape of hazardous materials immediately to the Departmental Representative and appropriate provincial authority. Take reasonable measures to control release.

.12 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.

.13 Report spills or accidents immediately to the Departmental Representative. Submit a written spill report to the Departmental Representative within 24 hours of incident.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Bring on site only quantities of hazardous material required to perform Work.

.2 Maintain MSDS in proximity to where materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

PART 3 EXECUTION

3.1 CLEANING

.1 Progress cleaning: clean in accordance with Section 01 74 11 – Cleaning.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: Upon completion, remove surplus materials, rubbish, tools and equipment from site as per Section 01 74 00 - Cleaning.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 All sections of Divisions 01 - General Requirements and 02 - Existing Conditions

1.2 REFERENCES

.1 American Association for State Highway and Transportation Officials (AASHTO)

.1 AASHTO Standard Specifications for Highway Bridges-17th Edition.

.2 Ministère des Transports, Mobilité Durable et Électrification des Transports du Québec

.1 MTMDET – Cahier des charges et devis généraux (CCDG 2018)

.3 ASTM International

.1 ASTM A 36/A36M-01, Specification for Structural Steel.

.2 ASTM A48/A48M-03(2008), Standard Specification for Gray Iron Castings.

.3 ASTM A53/A53M-12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.

.4 ASTM A269-15a, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for Generalities Service.

.5 ASTM A307-14, Standard Specification for Carbon Steel Bolts and Studs and Threaded Rod, 60,000 PSI Tensile Strength.

.6 ASTM F3125/F3125M-15a, Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions.

.7 ASTM A123/A123M-15, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

.8 ASTM A325M-09, Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength [Metric].

.9 ASTM A490M-09, Standard Specification for High-Strength Steel Bolts, Classes 10.9 and 10.9.3, for Structural Steel Joints.

.4 CSA International

.1 CSA G40.20/G40.21-F13, Exigences générales relatives à l'acier de construction laminé et soudé/Aciers de construction.

.2 CAN/CSA G164-FM92 (C2003), Galvanisation à chaud des objets de forme irrégulière.

.3 CAN/CSA S6-F14, Code canadien sur le calcul des ponts routiers.

.4 CSA S16-F14, Design of Steel Structures (Règles de calcul aux états limites des charpentes en acier).

.5 CSA S269.1-1975 (R2003), Falsework for Construction Purposes.

.6 CSA W47.1 Certification des compagnies de soudage par fusion de l’acier.

.7 CSA W48-F14, Métaux d'apport et matériaux associés pour le soudage à l'arc.

.8 CSA W59-F13, Construction soudée en acier (soudage à l'arc).

.5 Santé Canada - Système d'information sur les matières dangereuses utilisées au travail (SIMDUT)

.1 Fiches signalétiques (FS)

.6 The Master Painters Institute (MPI)

.1 Architectural Painting Specification Manual - édition courante.

.2 MPI-INT 5.1-98, Structural Steel and Metal Fabrications.

.3 MPI-EXT 5.1-98, Structural Steel and Metal Fabrications.

.7 The Society for Protective Coatings (SSPC)

.1 SSPC SP-6/NACE No. 3-00, Commercial Blast Cleaning.

.8 ANSI/AWS D3.6, Specification for Underwater Welding.

.9 Programme Choix environnemental

.1 PCE/CCd-047a-98, Peintures, enduits.

.2 PCE/CCD-048- 98, Enduits en suspension aqueuse recyclée.

1.3 DESCRIPTION

.1 The work referred to in this section includes the expertise, manpower, materials, equipment and services required to provide, manufacture, transport and erect structural steel in accordance with plans, specifications and contractual documents.

.2 Work includes all structural steel shown on structural drawings.

.3 The Contractor shall qualify in accordance with the provisions of CAN / CSA-W47.1: "Certification of Companies for Fusion Welding of Steel Structures". The Contractor and all staff assigned to perform the welding work will be accredited in Division 1 or 2 with the Canadian Welding Bureau.

.4 All structural steel components are hot-dip galvanized, except main beams and backing plates that are made of 350A grade steel.

1.4 ADMINISTRATIVE PROCEDURES

.1 Pre-Installation Meetings

.1 One (1) week prior to start of structural steel installation and assembly, hold meeting with Departmental Representative in accordance with Section 01 31 19-Project Meetings, which will address following.

.1 The requirements of the work.

.2 Installation conditions and condition of the support.

.3 Coordination of work with those performed by other trades.

.4 The instructions written in the specifications and the requirements for installation and assembly of the metal structure and the terms of the guarantee offered by the latter.

.5 Structural steel shop drawings and methods of lifting and assembly must be approved prior to this meeting.

.2 Prior to commencement of work, make necessary arrangements with Departmental Representative to review existing conditions near the location of the planned assembly work.

.3 In the event of a change in the dates and / or times of meeting established at the time of contract award, the Departmental Representative will notify interested parties in writing 24 hours prior to the scheduled time of the meeting.

1.5 SUBMITTALS / SUBMITTALS FOR APPROVAL / INFORMATION

.1 Submit shop drawings and required documents / samples in accordance with section "01 33 00 - Submittal Procedures".

.2 The Contractor shall prepare and transmit to the PCA Representative within two weeks of reception of the documents issued for construction, a schedule of deliveries of shop drawings and the production sequence. The schedule should reflect in detail the requirements of the contract schedule and be updated on a regular basis. Communicate schedule revisions to the Departemental Representative.

.3 Shop drawings must clearly indicate all details of fabrication and assembly, including cuts, notches, joints, holes, anchors and welds.

.4 Prepare shop drawings while taking into account all related works. Perform the required coordination to avoid conflict.

.5 Use symbols defined in CSA W59 to represent welds.

.6 The Specialty Contractor shall undertake shaping and fabrication of the fabricated metals only when the shop drawings have been approved by the Departmental Representative.

.7 Data Sheets

.1 Submit data sheets, manufacturer's instructions and documentation for proposed sections, plates, pipes, tubes and bolts. The data sheets must indicate the characteristics of the products, the performance criteria, the dimensions, the limits and the finish.

.8 Shop Drawings

.1 Submitted shop drawings must bear the seal and signature of a licensed engineer qualified to practice in Canada, in the province of Quebec.

.2 Shop drawings must indicate or show materials, core thickness, finishes, joints, anchorage method and number of anchors, supports, elements, reinforcement, details and accessories.

.9 Work method

.1 Submit signed and sealed work methods with corresponding calculation notes for deconstruction work on the existing structure and for assembly and lifting of the new steel structure.

.2 These methods must describe the stages of completion of the work, the procedures for monitoring the work required and the equipment used.

.3 The signatory engineer of the working methods must be present during the work and must issue certificates confirming the stability of the structure during deconstruction, lifting and assembly of the structure.

.4 The submitted work methods must specify the verifications and the time of issuance of the certificates of conformity in accordance with the requirements of the CCDG 2018 and the applicable standards.

1.6 TRANSPORTATION, STORAGE AND HANDLING

.1 Provide transportation, storage and handling of items in accordance with Section 01 61 00- General Product Requirements.

.2 Supply and install shims for transportation, lifting and storage of items.

.1 During shaping, transport and assembly, the necessary precautions must be taken to ensure that the structural elements are not damaged.

.2 Do not cut the banks of the elements.

.3 Do not subject elements to undue stress.

.3 Mark mass on items weighing more than 3 tons.

.4 Protect unpainted steel skate elements, prior to assembly, with waterproof tarpaulin.

.5 Ensure that none of the steel elements come into contact with the ground.

.6 At least seven (7) days prior to shipment of items, provide Departmental Representative with delivery schedule.

1.7 QUALITY ASSURANCE

.1 Pre-construction tests

.1 Provide adequate facilities and work with Departmental Representative to perform inspection and required tests.

PART 2 PRODUCT

2.1 MATERIALS

.1 Structural steel: to CSA G40.20 / G40.21, grade and type 300W and 350A

.2 Structural steels must be from a Canadian or US steel mill that holds a certificate of registration in accordance with ISO 9001 Quality Management Systems. The Contractor shall provide the Parks Canada Representative, at least two (2) weeks prior to the delivery of all structural steels to the site or manufacturing plant, the name of the steel mill.

.3 All steel elements must be new and free from deformation, rust and defects such as cracks, notches or sharp edges.

.4 High strength nuts, washers and bolts: to ASTM F3125 grade A325M. A490M compliant bolts may be used, subject to the approval of the Departmental Representative.

.5 Fabrication and welding shall be performed by companies approved by the Canadian Welding Bureau in accordance with CSA-W47.1, Division 1.

.6 Hot-dip galvanized anchor bolts, nuts and washers: to CSA G40.20 / G40.21, galvanized steel grade 300W.

.7 Supporting elements: CAN / CSA S6, neoprene, grade 50 or 60 conforming to CSA G40.20 / G40.21, grade 350A steel.

.8 Welding electrodes: to CSA W48.

.9 Shear connectors: in accordance with 5.5.6 and Appendix H of CSA W59.

.10 Hot dip galvanizing: to CAN / CSA-G164, and galvanizing at least 600 g / m2

.11 Shrink Compensation Grout: A mixture prepared in advance consisting of non-metallic aggregates, Portland cement, plasticizers and water reducers.

.12 Stainless steel backing plates shall be type 304.

.13 The deck structure must respect. In particular, the requirements of chapter 12 "Structure under cyclic load: calculation and manufacture" of CSA-W59-13. Guardrails must meet the requirements of CSA-W59-13, Chapter 11, Structure Under Static Load: Calculation and Fabrication. (to confirm)

2.2 QUALITY CONTROL AT SOURCE

.1 Qualification of the steel producer: certification according to CSA G40.20 / G40.21.

.2 Fabrication and welding of the deck structure shall be performed by companies approved by the Canadian Welding Bureau in accordance with CSA-W47.1-09, Division 2.

.3 In the case where the steel structure of the deck is manufactured in a factory more than 350 km from the work site, the Contractor must provide, at his expense, a chartered aircraft for the travel of Parks Canada representatives.

.4 Provide adequate facilities and work with the Departmental Representative to perform the required inspection and tests.

PART 3 EXECUTION

3.1 REVIEW

.1 Verification of conditions: prior to the installation of structural steel components, ensure that the condition of surfaces / supports previously implemented under other sections or contracts is acceptable and work in accordance with the written instructions of the maker.

.1 Notify Departmental Representative immediately of any unacceptable conditions identified.

.2 Begin installation work only after correcting unacceptable conditions and receiving written approval from Departmental Representative.

.2 Manufacturer's Instructions: Comply with manufacturer's written recommendations, including any available technical bulletins, instructions for handling, storage and use of products, and data sheet instructions.

3.2 PREPARATION

.1 Clean steel surfaces of dirt and unwanted deposits to the satisfaction of the Departmental Representative.

.2 Verify location of infrastructure components, level of attachment points of support members and location of anchor bolts prior to erection of structural steel; if applicable, report any discrepancies to the Departmental Representative. The Contractor must submit a certificate of installation for support devices and anchorages before the installation of the framework.

.3 Work near shores or embankments must be carried out in accordance with the written instructions of the Departmental Representative.

3.3 INSTALLATION

.1 Construct temporary shoring works in accordance with CSA S269.1.

.2 Fabricate and install structural steel components in accordance with CAN / CSA S6, Canadian Highway Bridge Design Code.

.3 Produce structural steel products in accordance with the requirements of CAN / CSA-S16.

.4 Welding: unless otherwise specified, perform welding in accordance with CSA W59.

.1 Perform welding in shop unless Departmental Representative may perform elsewhere.

.2 Perform welds only where indicated.

.5 Welding companies to be certified under section 2.1 of CSA W47.1 for fusion welding of steel structures, and / or CSA W55.3 for resistance welding of framing elements.

.6 Finishing: the elements must conform to the prescribed alignments and free of twists, bends, open joints as well as sharp angles and sharp edges.

.7 Workshop mounting

.1 Support each master beam at its fulcrums; then measure the flexion of the beam at the points that were used to measure its camber, and record this value in a register.

.2 Measure the bending of the beam core in the drawing.

.3 Submit to the APC Representative a diagram showing the flexion of each beam before delivery.

.4 It is not necessary to assemble in the workshop the beams of single-span structures whose joints were not made on site.

.8 Site joints between steel members to be approved by Departmental Representative.

.9 Mark structural steel components in accordance with CSA G40.20 / G40.21.

.1 It is forbidden to identify them with a punch mark.

.2 Perform marking of unpainted steel building elements so that marks are not visible after the assembly is completed.

.10 Assembly Marks: mark joints and support pieces for assembly in the workshop.

3.4 QUALITY CONTROL ON SITE

.1 On-site inspections by the manufacturer

.1 Schedule site visits at the following steps.

.1 Once the products are delivered and stored on site, and the preparatory work and other preliminary work are completed, but before the start of installation work of the structure covered by this section.

.2 Twice during the progress of works, that is to say once they have completed 25% and then at 60%.

.3 Once the work is completed and the cleaning done.

3.5 CLEANING

.1 Cleaning during work: carry out cleaning according to section 01 74 00- Cleaning.

.1 Leave the premises clean at the end of each working day.

.2 Final Cleaning: Upon completion, remove surplus materials, rubbish, tools and equipment from site as per Section 01 74 00- Cleaning.

END OF SECTION

PART 1 **GENERALS**

1.1 RELATED SECTIONS

.1 All sections of Divisions 01 - General Requirements, 02 - Existing Conditions 04 - Wood and 05-Metals.

1.2 REFERENCES

.1 ASTM International

.1 ASTM A653/A653M-[11] , Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 Groupe CSA (CSA)

.1 CSA B111-[74(R2003)] , Wire Nails, Spikes and Staples.

.2 CAN/CSA-série O80-[F08] , Préservation du bois.

.3 CSA O86 Consolidation-[09] , Engineering Design in Wood.

.4 CAN/CSA-Z809-[F08] , Aménagement forestier durable.

.3 Ministère des Transports, Mobilité Durable et Électrification des Transports du Québec

.1 MTMDET – Cahier des charges et devis généraux (CCDG 2018)

.4 Forest Stewardship Council (FSC)

.1 FSC-STD-01-001-[2004] , FSC Principle and Criteria for Forest Stewardship.

.5 Green Seal Environmental Standards (GS)

.1 GS-36-[11] , Commercial Adhesives.

.6 Commission nationale de classification des sciages (NLGA)

.1 Règles de classification pour le bois d'oeuvre canadien [2008] .

.7 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards

.1 SCAQMD Rule 1113-[A2011] , Architectural Coatings.

.2 SCAQMD Rule 1168-[A2005] , Adhesives and Sealants Applications.

.8 Sustainable Forestry Initiative (SFI)

.1 Norme SFI-[2010-2014] .

1.3 SUBMITTALS / SUBMITTALS FOR APPROVAL / INFORMATION

.1 Submit required documents / samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Shop drawings must clearly indicate all details of fabrication and assembly, including cuts, notches, joints, holes, anchors and welds.

.3 Prepare shop drawings while taking into account all related works. Perform the required coordination to avoid conflict.

.4 Data Sheets

.1 Submit the required data sheets and the instructions and documentation of the manufacturer regarding wood casing. The data sheets must indicate the characteristics of the products, the performance criteria, the dimensions, the limits and the finish.

.5 Shop Drawings

.1 The submitted shop drawings must bear the seal and signature of a qualified engineer recognized or licensed to practice in Canada, in the province of Quebec.

.6 Samples

.1 Submit for review and acceptance samples of each proposed material / product.

.2 The samples will be given to the Contractor, who must incorporate them into the work.

.7 Certificates: submit documents signed by the manufacturer, certifying that the products, materials and equipment comply with the requirements regarding physical characteristics and performance criteria.

1.4 QUALITY ASSURANCE

.1 Lumber must bear the seal of a classification organization recognized by the Board of Accreditation of the Canadian Lumber Standards Commission (CLSAB).

.2 Certificates: submit documents signed by the manufacturer, certifying that the products, materials and equipment comply with the requirements regarding physical characteristics and performance criteria.

.3 Protection of workers

.1 Workers must wear appropriate protective equipment to handle, drill, saw, cut or sand treated wood with a preservative and to apply preservative.

.2 It is forbidden to eat, drink and smoke during the application of preservatives.

.3 Spills of preservatives should be cleaned up immediately with absorbent materials, which should be disposed of properly in a landfill.

1.5 WASTE MANAGEMENT

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Construction / Demolition Waste Management and Disposal.

.2 Place in designated containers substances that meet the definition of toxic or hazardous waste.

.3 Ensure empty containers are sealed and stored in a secure place.

.4 Do not incinerate wood that has been treated with a preservative.

.5 Wood treated with a preservative must be separated from materials that will be recycled or reused.

.6 Evacuate treated wood pieces, end sections, waste and sawdust to an approved landfill.

1.6 TRANSPORTATION, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00- General Product Requirements and manufacturer's written instructions.

.2 Delivery and Acceptance: Deliver materials to the worksite in their original packaging, which must be labeled with the name and address of the manufacturer.

.3 Transport and store materials on site so as not to damage or damage other trades. Protect materials against marks and scratches.

.4 Handle elements to avoid permanent deformation.

PART 2 **PRODUCTS**

2.1 MATERIALS

.1 Steel

.1 All mechanical bolts, lag bolts, toe bolts and nails will be of medium structural steel, meeting ASTM-A307 standards.

.2 All steel parts to be galvanized to ASTM A123 / 123M, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Production.

.1 Galvanize the various parts respecting the following rates:

.1 Bolts and nuts: 460 g / m^2;

.2 Profiles, plates and bars: 705 g / m^2

.3 The nets will meet the specifications of ANS / B1-1, Class 2A.

.4 Washers shall be gray cast iron or steel. Clamps: Galvanized metal, type recommended by decking manufacturer.

.5 Mechanical bolts, lag bolts and lost-tip bolts shall be forged heads.

.6 Lag bolts shall be threaded and hexagonal.

.7 All hardware used to assemble wood parts must be galvanized.

.8 Observe and follow the indications on the plans.

.2 Wood

.1 All wood used in the construction of the casing is treated with CCA under pressure in accordance with CAN / CSA-080-M. Net retention and penetration will be those specified in these standards for marine applications, a retention of 24 kg / m^3.

.2 All wood types will meet the requirements of the National Lumber Grades Association (NLGA) "Classification Rules for Canadian Lumber Grades".

.3 All wood used must have, on each piece, the seal of A.M.B.S.Q. The Contractor will provide the Departmental Representative with the A.M.B.S.Q. Quality Certificate. No decay will be tolerated.

.4 Coastal Douglas Fir and Pacific Coast Hemlock will meet the requirements of the British Columbia Lumber Manufacturer's Association "Standard Specifications for Construction Grade".

.5 Spruce, jack pine, larch and eastern hemlock will meet the requirements of the latest edition of the Eastern Spruce Grading Committee's Standard Grading Regulations approved and published by the Canadian Timber Association. Quebec Lumber Manufacturers' Association and the Maritim Lumber Bureau,

with the exception of balsam fir, which will be refused despite being mentioned in By-law No. 1

.6 Square wood and timber (narrow face: greater than or equal to 127 mm): the timber used in the construction will be Coast Douglas-fir or Pacific Coast Hemlock, Hemlock East, jack pine, red pine or tamarack. All the wood used will be mentioned species and quality No. 2 structure and better according to paragraph 130.C of the NLGA standard for beams and 131.C for poles and square timber. On the other hand, no weathered wood (soft rot) will be accepted.

.7 Planks and wood of dimensions (thickness greater than or equal to 51 mm and smaller than 127 mm, width greater than or equal to 127 mm): all the wood used will be the combination of SPF or hemlock wood species. East, red pine or tamarack. They will be of grade 2 structure and better than paragraph 124.C of the NLGA standard.

.8 The wood will be trimmed at both ends before processing according to NLGA 748-B.

.9 In no case will spruce and balsam fir be accepted where treated lumber is specified.

.10 Any pressure treated material requiring cutting to be adjusted shall be coated, while it is dry, with three (3) layers of preservative as required in CAN / CSA-080-M. All holes in the pieces of wood will be treated this way.

.3 Ballast

.1 Stone 300 to 400 mm in diameter.

.2 The stone must be extracted from a hard and durable stone quarry. The use of shale or slate as well as round stones will not be accepted in any part of the work. The stones used will be free of weaknesses such as stratification, bedding, cracks, argillite beds, etc.

.3 The stone shall have a minimum density of 2650 kg per cubic meter, demonstrate an absorption rate of less than 0.5% (according to ASTM-C127) and offer less than 1.5% loss to durability tests with magnesium sulphate after 5 cycles (according to ASTM-C88).

.4 The ballast stone shall be evenly distributed between the minimum and maximum values.

.5 It is the sole responsibility of the Contractor to ensure the availability of exploitable sources of supply and the quantities and sizes of stones that can be drawn from them.

PART 3 EXECUTION

3.1 GUIDE TO GOOD PRACTICES WHEN USING TREATED WOOD IN AQUATIC ENVIRONMENT

.1 Completion of the construction work shall be in accordance with the following document: Best Management Practices for the use of water and other sensitive environments.

.2 The Contractor shall make every effort to respect good practices. Among others:

.1 The wood must be protected with canvases during transport and until its use.

.2 Wood should be handled carefully to avoid damaging it and bare sections of non-impregnated wood. Treat damaged sections with approved product.

.3 Store material away from watercourse prior to use. Insure equipment is stored on well-drained land and does not rest directly on debris or vegetation.

.4 The construction of the casings must be made at a sufficient distance from a watercourse or other sensitive environment to avoid any contamination that may be caused by debris or sawdust.

.5 The debris and sawdust must be recovered and disposed according to the regulations in force for this kind of material. If these materials are temporarily stored on the site, they will have to be between canvases or in a sealed container.

.6 If the wood used is treated with an oil-based preservative, temporarily place a boom and absorbent material to hold the film.

3.2 WOOD ENTRIES

.1 Construct wood casings of 197 mm x 203 mm as shown on the plan.

.2 These casings will be built on the site of the work so that its facing pieces, sills, bolsters, etc. be laid horizontally. They will be built according to the plan and will have the dimensions indicated.

.3 These casings will be fully filled up to the underside of the furs with ballast stone.

.4 Preparing the foundation:

.1 Prior to the establishment of the casing, the Contractor shall make a complete survey of the area where the casing will be placed. The Contractor must put in place a geotextile membrane after that he will have to make a 300 mm seat in MG-56 in order to respect the required levels and to obtain a horizontal and uniform base.

.5 Geotextile:

.1 The geotextile on the back surface of the caisson must be loosely installed so as to match the outline of the wood pieces constituting the surface to be covered. All measures must be taken to prevent tearing of the geotextile. In the case where the geotextile is not continuous, the plies must be overlapped together with a minimum overlap of 500 mm.

.2 Follow the specifications of section "31 32 19.01 - Geotextiles"

.6 Bottom parts:

.1 The bottom pieces include the lower rows of the cashing. They will have 203 mm rendering and will be placed longitudinally or transversely, as required.

.2 The transverse bottom pieces will be of one length.

.3 They will be subject to each piece of wood they cross, as shown on the plan.

.4 The bottom pieces will be attached to each vertical post and crossed with a 20 mm diameter mechanical bolt of appropriate length. The bottom pieces will be placed horizontally.

.7 Longrins and bolsters:

.1 Longrins and bolsters will consist of 203 mm rendering pieces. The bolsters will be placed one length horizontally, while the stringers will have the length as shown on the plan.

.2 These parts will be subject to each crossing with a bolster or facing piece by means of a lost tip bolt of 20 mm diameter and appropriate length. They will also

be subject to each crossing with a vertical post by means of a mechanical bolt 20 mm in diameter and of appropriate length.

.8 Vertical posts

.1 Vertical posts shall consist of 203 mm pieces of wood rendered as shown on the plan. They will be a single length from the bottom of the lower pieces to the top of the wooden furs.

.2 The posts shall be secured at each intersection with bottom piece, bolster, sill, siding, cap, with mechanical bolts of 20 mm diameter and appropriate length.

.9 Furrings

.1 Wood joists of 203 mm rendering will be installed on the casing.

.2 The furrings will be placed as indicated in the various figures of the plan.

They will be attached to each bolster with a lost-tip bolt 20 mm in diameter and of appropriate length.

3.3 WOOD CHASSIS

.1 A wooden wiper will be constructed as shown on the plan.

.2 The wheel guard shall be secured to blocks, floor and siding with mechanical bolts 20 mm in diameter and appropriate length.

.3 The top of the wheel guard shall be leveled and at the required elevation and its top flanges shall have a 20 mm bevel.

3.4 WOOD FLOOR

.1 A wooden floor of 96 x 203 mm will be installed at the location shown on the plan.

.2 Each part will be secured to ties by means of galvanized pulls and washers 203 mm at each intersection with a cross member.

3.5 QUALITY CONTROL ON SITE

.1 Testing

.1 The moisture content of the delivered materials will be verified by a test laboratory designated by the Departmental Representative.

.2 The Departmental Representative will bear the cost of testing in accordance with section "01 29 83- Payment - Testing Laboratory Services".

.3 The moisture content of the delivered materials will be verified by means of a humidity indicator with adjustments based on gasoline and temperature.

3.6 CLEANING

.1 Cleaning during work: carry out cleaning according to section "01 74 11- Cleaning".

.1 Leave the premises clean at the end of each working day.

.2 Final Cleaning: remove surplus materials, rubbish, tools and equipment from site as per section "01 74 11- Cleaning".

3.7 PROTECTION

.1 Protect installed equipment and components from damage during construction.

.2 Repair damage to adjacent materials and equipment by installing wooden decking.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 All sections of Divisions 01 - General Requirements, 02 - Existing Conditions and 06 - Wood.

1.2 REFERENCE

.1 CSA International

.1 CSA B111-2003, Wire Nails, Spikes and Staples.

.2 CAN/CSA-série O80-F08, Wood preservation.

.3 CSA O86 Consolidation-09, Engineering Design in Wood.

.4 CAN/CSA-Z809-F08, Sustainable forest management.

.2 Forest Stewardship Council (FSC)

.1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.

.3 South Coast Air Quality Management District (SCAQMD), California State

.1 SCAQMD Rule 1113-A2011, Architectural Coatings.

.4 Sustainable Forestry Initiative (SFI)

.1 Norm SFI-2010-2014.

.5 Ministère des Transports, Mobilité Durable et Électrification des Transports du Québec

.1 MTMDET – Cahier des charges et devis généraux (CCDG 2018)

1.3 SUBMITTALS / SUBMITTALS FOR APPROVAL / INFORMATION

.1 Submit required documents and samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Data Sheets

.1 Submit manufacturer's data sheets, manufacturer's instructions and documentation for historic roundwood. The data sheets must indicate the characteristics of the products, the performance criteria, the dimensions, the limits and the finish.

.3 Shop Drawings

.1 Submitted shop drawings must bear the seal and signature of a competent engineer, qualified or licensed to practice in Canada, in the province of Quebec.

.2 Submit construction shop drawings showing logs, cuts and, in detail, added parts, layout and materials.

.4 Samples

.1 Submit for the approval of the PCA Representative, prior to the commencement of work, samples of surfaces on which marks have been reproduced.

.5 Documents / Samples to be submitted for quality control at the source

.1 Provide, at the request of the PCA Representative, invoices, purchase slips and vendor certificates.

.2 When requested by the PCA Representative, provide supplier's certificates indicating when the logs were cut and how they dried in the open air.

.3 Notify PCA Representative prior to ordering or purchasing materials.

.4 Materials to be reviewed and approved by PCA Representative prior to purchase by the Contractor.

.5 Provide PCA Representative with free access to materials for review prior to commencement of work.

.6 Wood Certification: Submit the CAN / CSA-Z809, FSC or SFI Certified Wood Seller Chain of Custody Certificate Number.

1.4 QUALITY ASSURANCE

.1 Sustainable Development Certification

.1 Certified Wood: Submit a list of wood products used that meet the requirements of CAN / CSA-Z809, FSC or SFI.

.2 Qualification

.1 The contractor responsible for the work prescribed in this section must have at their service qualified workers, and must have at least 5 years of experience in this field.

.2 Only workers accepted by the PCA Representative will be authorized to perform the work covered by this section.

.3 Before the start of the work, provide the skills documents: the certificates of competence.

.3 Samples of the work

.1 Construct samples of required structure in accordance with Section 01 45 00 - Quality Control.

.2 Submit a sample of the work as specified by the PCA Representative and Specifications.

.3 In consultation with PCA Representative, review tool marks and determine the best way to reproduce them.

.4 Once accepted, the sample of the work will be the minimum standard for this work.

1.5 TRANSPORTATION, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - General Product Requirements.

.2 Delivery and Acceptance: Deliver materials to site in their original packaging, which must be labeled with the name and address of the manufacturer.

.3 Storage and Handling

.1 Store materials and equipment so that they do not rest on the ground in a dry, clean and well-ventilated area as recommended by the manufacturer.

.2 Store wood to protect it from marks and scratches.

.3 Replace damaged materials and equipment with new materials and equipment.

.4 Balls

.1 Handle with jaws or cables. Do not use chains.

.2 Avoid dragging logs or damaging their surface.

.5 Protect wooden components from damage during handling.

.4 Wood delivered for drying in the open air on site

.1 Stack wood above ground by inserting chopsticks between rows. Provide adequate ventilation for air drying. Stack the wood away from direct sunlight.

.2 Store wood in a dry, well-ventilated area.

.3 Insert chopsticks between rows of stacked wood above ground.

.4 Protect wood from rain, direct sunlight and snow.

.5 Packaging Waste Management: recover packaging waste for reuse as directed by the Construction Waste Management Plan and in accordance with Section 01 74 21 - Waste Management and Disposal.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

.1 Logs

.1 Species: eastern white pine

.2 Dimensions: Logs shall be smooth, of uniform size and conicity as small as possible and shall have the same shape and appearance as the logs they replace.

.3 Certified products CAN / CSA-Z809, FSC or SFI.

.4 Moisture content: Log moisture content must not exceed 15%

.5 The bark must be carefully removed from the machine to prevent damage to the logs.

.2 Sawn Timber

.1 Essence: pine.

.2 Certified products CAN / CSA-Z809, FSC or SFI.

.3 Various bindings

.1 Tips: to CSA B111, flat head, round shank and diamond point, 250 to 300 mm, galvanized.

.4 Wood Preservatives: to CAN / CSA-O80 Series.

.5 Paints and coatings: VOC content not exceeding 350 g / L in accordance with SCAQMD regulation 1113.

PART 3 EXECUTION

3.1 TEST

.1 Verification of conditions: ensure condition of surfaces / supports previously implemented under other sections or contracts is acceptable.

.1 Visually inspect surfaces / supports in the presence of PCA Representative.

.2 Notify PCA Representative immediately of any unacceptable conditions found.

.3 Begin installation work only after correcting unacceptable conditions and receiving written approval from PCA Representative.

.2 Examine the composition of the pieces of wood and report to the CPA Representative the discovery of any condition that is not indicated on the drawings and that may affect the performance of the work.

.3 Verify that the guardrail is leveled and horizontal. Establish a reference plan for repositioning.

3.2 SPECIAL TECHNIQUES

.1 Make selected faces of logs to give them the desired thickness and appearance.

.2 Remove bark on all logs.

.3 Place logs of desired size and length.

.4 Before commencing construction, coat logs, sill beads with wood preservative in accordance with Section 06 05 73 - Wood Treatment.

3.3 CONSTRUCTION

.1 Accurately adjust corners forming parts and other assemblies.

.2 Obtain the exact dimensions of the PCA Representative before making items intended to receive works of other sections or to be attached to them.

.3 If necessary, the dimensions of the prefabricated elements will be established according to the dimensions of the structure.

.4 Fasten waterproof material to top of foundation so it is not visible.

.5 Place logs and sander balls in place as indicated on the contract drawings.

.6 Assembly

.1 Make assemblies according to the plans.

.7 Apply wood preservative in accordance with Section 06 05 73 - Wood treatment on all new exposed surfaces and contiguous surfaces of joints, before assembly and ends of the wood.

.8 Apply Ultraviolet Light Protector.

.9 Protect the works at the end of each working day.

.1 Cover with impervious tarpaulins.

.1 Securely fasten tarpaulins.

3.4 CLEANING

.1 Work in progress: carry out cleaning in accordance with Section 01 74 11 - Cleaning.

.1 Leave the premises clean at the end of each working day.

.2 Final Cleaning: remove surplus materials, rubbish, tools and equipment from site, in accordance with Section 01 74 11 - Cleaning.

3.5 PROTECTION

.1 Protect wooden elements, finished surfaces and adjacent materials from damage during work.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 All sections of Divisions 01 - General Requirements, 02 - Existing Conditions and 06 - Wood.

1.2 REFERENCE

.1 ASTM International

.1 ASTM A123-15 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

.2 ASTM A153/A153M-[09] Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

.3 ASTM A480/A480M-15 Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet and Strip

.4 ASTM A653/A653M-15 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

.5 ASTM F2329/F2329M-15 Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners

.2 American Wood-Preservers' Association (AWPA)

.1 AWPA M2-15, Standard for Inspection of Treated Wood Products.

.2 AWPA M4-15, Standard for the Care of Preservative-Treated Wood Products.

.3 Groupe CSA

.1 CSA O80 Série -2015, Préservation du bois.

.2 CSA O322-15, Procédure de certification des matériaux en bois traité sous pression destinés aux fondations.

1.3 SUBMITTALS / SUBMITTALS FOR APPROVAL / INFORMATION

.1 Submit required documents and samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Each piece of treated wood lumber must bear the certification mark in accordance with CSA O322.

.1 Submit required certificates in accordance with Section [01 33 00- Submittal Procedures].

.2 In the case of wood components treated by pressure impregnation of preservatives, submit the following information, which must be certified by the authorized signatory of the treatment plant.

.1 Relevant data specified in AWPA M2, as well as changes in CSA O80 series standards, under Additional Requirements to AWPA M2.

.2 Moisture level, after drying treated elements with a water-based preservative.

.3 The types of paints, stains and clear varnishes that can be applied to treated elements.

.3 Recommended materials and corrosion protection for metal connectors and fasteners

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction / Demolition Waste Management and Disposal.

.2 Wood treated with preservative must be separated from materials and equipment that will be recycled or reused.

.3 Dispose of tip, waste and treated sawdust to a landfill accepting materials of this nature and notify the Departmental Representative.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Water Soluble CCA Chemical Preservatives to CSA O80 Series.

PART 3 EXECUTION

3.1 CONSTRUCTION

.1 Use connectors and fasteners that have corrosion protection specified in all construction work with treated wood products.

.2 Provide waterproofing membrane as indicated.

3.2 CUTTING

.1 Lumber greater than 64 mm in thickness must undergo incisional treatment, in accordance with Clause 9.8 CSA O80.

3.3 PACKAGING

.1 Except for materials that will be treated with a water-soluble preservative, and prior to treatment, heat dried or unseasoned wood to remove moisture and improve permeability and absorption properties.

3.4 PROCESSING ON SITE

.1 Execute work in accordance with AWPA M4 and changes as specified in CSA O80 series, under Additional Requirements to AWPA M2. Use a water soluble preservative based on CCA to obtain a retention rate of 24 kg / m3.

.2 Perform preservation treatments in accordance with the recommendations of the Best Management Practices for the Use of Treated Wood in Aquatic Environments (BMP).

.3 After treatment with a water-soluble preservative, dry wood materials until an acceptable moisture level is reached.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

.1 All sections of Divisions 01 - General Requirements, 02 - Existing Conditions and 05 - Metals.

1.2 REFERENCES

.1 ASTM International

.1 ASTM A653/A653M-[11] , Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 Groupe CSA (CSA)

.1 CSA B111-[74(R2003)] , Wire Nails, Spikes and Staples.

.2 CAN/CSA-série O80-[F08] , Préservation du bois.

.3 CSA O86 Consolidation-[09] , Engineering Design in Wood.

.4 CAN/CSA-Z809-[F08] , Aménagement forestier durable.

.3 Ministère des Transports, Mobilité Durable et Électrification des Transports du Québec

.1 MTMDET – Cahier des charges et devis généraux (CCDG 2018)

.4 Forest Stewardship Council (FSC)

.1 FSC-STD-01-001-[2004] , FSC Principle and Criteria for Forest Stewardship.

.5 Green Seal Environmental Standards (GS)

.1 GS-36-[11] , Commercial Adhesives.

.6 Santé Canada - Système d'information sur les matières dangereuses utilisées au travail (SIMDUT)

.1 Fiches signalétiques (FS).

.7 Commission nationale de classification des sciages (NLGA)

.1 Règles de classification pour le bois d'oeuvre canadien [2008] .

.8 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards

.1 SCAQMD Rule 1113-[A2011] , Architectural Coatings.

.2 SCAQMD Rule 1168-[A2005] , Adhesives and Sealants Applications.

.9 Sustainable Forestry Initiative (SFI)

.1 Norme SFI-[2010-2014] .

1.3 SUBMITTALS / SUBMITTALS FOR APPROVAL / INFORMATION

.1 Submit required documents / samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Shop drawings must clearly indicate all details of fabrication and assembly, including cuts, notches, joints, holes, anchors and welds.

.3 Prepare shop drawings while taking into account all related works. Perform the required coordination to avoid conflict.

.4 Data Sheets

.1 Submit technical data sheets and manufacturer's instructions and documentation for wood decking. The data sheets must indicate the characteristics of the products, the performance criteria, the dimensions, the limits and the finish.

.5 Shop Drawings

.1 The submitted shop drawings must bear the seal and signature of a qualified engineer recognized or licensed to practice in Canada, in the province of Quebec.

.6 Samples

.1 Submit for review and acceptance samples of each proposed material / product.

.2 The samples will be given to the Contractor, who must incorporate them into the work.

.7 Certificates: submit documents signed by the manufacturer, certifying that the products, materials and equipment comply with the requirements regarding physical characteristics and performance criteria.

1.4 QUALITY ASSURANCE

.1 Lumber must bear the seal of a classification organization recognized by the Board of Accreditation of the Canadian Lumber Standards Commission (CLSAB).

.2 Certificates: submit documents signed by the manufacturer, certifying that the products, materials and equipment comply with the requirements regarding physical characteristics and performance criteria.

1.5 TRANSPORTATION, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00- General Product Requirements and manufacturer's written instructions.

.2 Delivery and Acceptance: Deliver materials and materials to the worksite in their original packaging, which must be labeled with the name and address of the manufacturer.

.3 Transport and store materials on site so as not to damage other trades. Protect materials against marks and scratches.

.4 Handle elements to avoid permanent deformation.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Decking boards: according to the NLGA Canadian Lumber Grading Rules; exclusively of quality 1 and V-shaped on one side, kiln dried, with a maximum moisture content of 15%.

.1 Certified products CAN / CSA-Z809 or FSC or SFI.

.2 Length of planks: varying between 1.8 m and 4.5 m or more, but exceeding 3 m in a proportion of at least 90%. For decking with a span of less than 3 m, use single planks of the same length as the intended span.

.3 Nails: to CSA B111, galvanized, dimensions in accordance with ASTM 653 / 653M and CSA O86. The 200 mm twisted nails required for lateral nailing must also be provided.

.4 Keys: galvanized metal, type recommended by decking manufacturer.

.5 Preservative: an odorless chemical product, in accordance with the applicable CSA Standard of the O80 series, colorless. Pieces of treated wood after cutting.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Verification of conditions: prior to the installation of wooden decks, ensure that the condition of surfaces / supports previously implemented under other sections or contracts is acceptable and allows the work to be carried out in accordance with written instructions from the manufacturer.

.1 Visually inspect surfaces / supports in the presence of Departmental Representative.

.2 Notify Departmental Representative immediately of any unacceptable conditions found.

.3 Start the installation work only after correcting the unacceptable conditions Representative of the APC.

3.2 QUALITY CONTROL ON SITE

.1 Testing

.1 The moisture content of the delivered materials will be verified by a test laboratory designated by the Departmental Representative.

.2 The Departmental Representative will assume the cost of testing in accordance with Section 01 29 83 - Payment - Testing Laboratory Services.

.3 The moisture content of the delivered materials will be verified by means of a humidity indicator with adjustments based on gasoline and temperature.

3.3 CLEANING

.1 Cleaning during work: carry out cleaning according to section "01 74 11- Cleaning".

.1 Leave the premises clean at the end of each working day.

.2 Final Cleaning: remove surplus materials, rubbish, tools and equipment from site as per section "01 74 11- Cleaning".

3.4 PROTECTION

.1 Protect installed equipment and components from damage during construction.

.2 Repair damage to adjacent materials and equipment by installing wooden decking.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All sections of Divisions 01 - General Requirements and 02 - Existing Conditions

.2 Section31 23 33.01 – Excavating, Trenching and Backfilling.

.3 Section 32 11 16.01 – Granular Sub-base and Non Frost-Susceptible Backfill

.4 Section 32 11 23 – Aggregate Base Lower Foundation and Upper Foundation

1.2 REFERENCES

.1 ASTM International

.1 ASTM D4791-10, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.

1.3 DOCUMENTS/SAMPLES TO SUBMIT FOR APPROVAL/INFORMATION

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for aggregate materials.

.3 Samples:

.1 Submit one (1) sample per type of aggregate.

.2 Allow continual sampling by the Departmental Representative during production.

.3 Provide the Departmental Representative with access to source and processed material for sampling.

.4 Install sampling facilities at discharge end of production conveyor, to allow the Departmental Representative to obtain representative samples of items being produced. Stop conveyor belt when requested by the Departmental Representative to permit full cross section sampling.

.5 Provide front end loader or other suitable equipment including trained operator for stockpile sampling as necessary. Move samples to storage place as directed by the Departmental Representative.

.6 Supply new or clean sample bags or containers according appropriate to aggregate materials.

.7 Pay cost of sampling and testing of aggregates which fail to meet specified requirements.

.8 Provide water, electric power and propane to the Departmental Representative laboratory trailer at production site.

1.4 TRANSPORTATION, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.

.2 Transportation and Handling: handle and transport aggregates to avoid segregation, contamination and degradation.

.3 Storage: store washed materials or materials excavated from underwater 24 hours minimum to allow free water to drain and for materials to attain uniform water content.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, free from adherent coatings and injurious amounts of disintegrated pieces or other deleterious substances.

.2 Flat and elongated particles of coarse aggregate: to ASTM D4791.

.1 Greatest dimension to exceed 5 times least dimension.

.3 Fine aggregates satisfying requirements of applicable section to be one, or blend of following:

.1 Screenings produced in crushing of quarried rock, boulders, gravel or slag.

.2 Reclaimed asphalt pavement.

.3 Reclaimed concrete material.

.4 Coarse aggregates satisfying requirements of applicable section to be one of or blend of following:

.1 Crushed rock.

.2 Gravel and crushed gravel composed of naturally formed particles of stone.

.3 Light weight aggregate, including slag and expanded shale.

.4 Reclaimed asphalt pavement.

.5 Reclaimed concrete material.

2.2 SOURCE QUALITY CONTROL

.1 Inform the Departmental Representative of the source of the materials for the aggregates and allow him access to that source for sampling purposes at least four (4) weeks prior to production.

.2 If materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate alternative source.

.3 Advise the Departmental Representative four (4) weeks minimum in advance of proposed change of material source.

.4 Acceptance of material at source does not preclude future rejection if it fails to conform to requirements specified, lacks uniformity, or if its field performance is found to be unsatisfactory.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All of the sections of division 01 – General Requirements and 02 – Existing Conditions

.2 Section 31 14 13 – Soil Stripping and Stockpiling

.3 Section 31 23 33.01 – Excavating, Trenching and Backfilling

.4 Section 32 01 90.33 – Tree and Shrub Preservation

.5 Section 32 93 43.01 –Tree Pruning

1.2 REFERENCE STANDARDS

.1 U.S. Environmental Protection Agency (EPA)/Office of Water

.1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.3 DEFINITIONS

.1 Clearing consists of cutting off trees and brush vegetative growth to not more than specified height above ground and disposing of felled trees, previously uprooted trees and stumps, and surface debris.

.2 Close-cut clearing consists of cutting off standing trees, brush, scrub, roots, stumps and embedded logs, removing at, or close to, existing grade and disposing of fallen timber and surface debris.

.3 Clearing isolated trees consists of cutting off to not more than specified height above ground of designated trees, and disposing of felled trees and debris.

.4 Underbrush clearing consists of removal from treed areas of undergrowth, deadwood, and trees smaller than 50 mm trunk diameter and disposing of fallen timber and surface debris.

.5 Grubbing consists of excavation and disposal of stumps and roots boulders and rock fragments of specified size to not less than specified depth below existing ground surface.

.6 EAB refers to Emerald Ash Borer a non-native, invasive beetle that is highly destructive to ash trees where it occurs.

.1 Woodchips in the context of EAB consist of untreated, raw bark and wood fragments broken or shredded from logs or branches. Woodchips are to be less than 2.5 cm in at least any two dimensions.

.2 Firewood in the context of EAB consists of non-manufactured, solid wood material, with or without bark, cut into sizes less than 1.2 metres long and less than 25 cm in diameter which may be handled manually.

.3 Logs in the context of EAB consist of untreated, raw wood greater than 1.2 metres in length and greater than 25 cm diameter.

.4 Enclosed vehicle in the context of EAB consist of any vehicle transporting regulated wood material that is equipped to prelude the loss of materials or the escape of EAB while in transit.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.

.2 Samples:

.1 Submit 3 samples of each material listed below for approval prior to delivery of materials to project site.

.2 Tree wound paint: one litre can with manufacturer's label.

.3 Herbicide: one litre can with manufacturer's label.

.3 Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.4 Provide manufacturer's installation instructions.

1.5 QUALITY ASSURANCE

.1 Do construction occupational health and safety in accordance with Section 01 35 29.06- Health and Safety Requirements.

.2 Safety Requirements: worker protection.

.1 Workers must wear long sleeved clothing, gloves, dust masks, eye protection, respirators and protective clothing when applying herbicide materials.

.2 Wokers must wear long sleeved clothing, gloves, dust masks, protective clothing, eye protection and respirators when clearing and grubbing.

.3 Workers must not eat, drink or smoke while applying herbicide material.

.4 Clean up spills of preservative materials immediately with absorbent material and safely discard to landfill.

1.6 STORAGE AND PROTECTION

.1 Prevent damage to natural features, root systems of trees, site appurtenances, [trees, fencing, water courses, bench marks landscaping and shrubs which are to remain.

.1 Repair damaged items to approval of Departmental Representative.

.2 Replace trees designated to remain, if damaged, as directed by Departmental Representative.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for recycling in accordance with Section 01 74 21- Construction/Demolition Waste Management and Disposal.

.2 Ash wood mixed with the wood of other species is to all be managed and disposed of as ash wood.

PART 2 PRODUCT

2.1 MATERIALS

.1 Bituminous based paint of standard manufacture specially formulated for tree wounds.

.2 Herbicide: effective for killing annual and perennial weeds, and bamboo grass, by being absorbed through roots and foliage.

.3 Soil Material for Fill:

.1 Excavated soil material: free of debris, roots, wood, scrap material, vegetable matter, refuse, soft unsound particles, deleterious, or objectionable materials.

.2 Remove and store soil material for reuse.

PART 3 EXECUTION

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according. sediment and erosion control plan, specific to site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent] [sediment and erosion control drawings].

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 PREPARATION

.1 Inspect site and verify with Departmental Representative, items designated to remain.

.2 Locate and protect utility lines: preserve in operating condition active utilities traversing site.

.1 Notify Departmental Representative immediately of damage to or when unknown existing utility lines are encountered.

.2 When utility lines which are to be removed are encountered within area of operations, notify Departmental Representative in ample time to minimize interruption of service.

.3 Notify utility authorities before starting grubbing.

.4 Keep roads and walks free of dirt and debris.

3.3 APPLICATION

.1 Manufacturer's instructions: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

3.4 TREE CLEARING

.1 Visit the site of work as not all forested areas and existing trees are necessarily shown on plans.

.2 Delineate and approve by the Departmental Representative areas of tree clearing and felling of mature-sized trees.

.3 Completely remove the trees of all sizes, whether isolated or not, shrubs, branches, brush and dead wood.

.4 Do not burn tree products on site

3.5 CLEARING

.1 Clearing includes cutting, felling and trimming of trees into sections and satisfactory disposal of trees and other vegetation designated for removal, including snags, brush, rubbish and downed timber occurring within cleared areas.

.2 Clear as indicated by Departmental Representative, by cutting at height of not more than 300 mm above ground. In areas to be subsequently grubbed, height of stumps left from clearing operations to be not more than 500 mm above ground surface.

.3 Cut off branches overhanging area cleared as directed by Departmental Representative.

.4 Cut off unsound branches on trees designated to remain as directed by Departmental Representative

.5 Apply herbicide in accordance with manufacturer's label to top surface of stumps designated not to be removed.

3.6 CLOSE CUT CLEARING

.1 Close cut clearing to within 100 mm of ground surface.

.2 Perform close cut clearing by hand so that existing muskeg is not damaged.

.3 Cut off branches overhanging area cleared as directed by Departmental Representative.

.4 Cut off unsound branches on trees designated to remain as directed by Departmental Representative.

3.7 ISOLATED TREES

.1 Cut off isolated trees as directed by Departmental Representative at height of not more than 300 mm above ground surface.

.2 Grub out isolated tree stumps.

.3 Prune individual trees as indicated.

.4 Trim trees designated to be left standing within cleared areas of dead branches 4 cm or more in diameter; and trim branches to heights as indicated.

.5 Cut limbs and branches to be trimmed close to bole of tree or main branches.

.6 Paint cuts more than 3 cm in diameter with approved tree wound paint.

3.8 UNDERBRUSH CLEARING

.1 Clear underbrush from areas as indicated.

3.9 GRUBBING

.1 Grub out stumps and roots to not less than 200 mm below ground surface.

.2 Grub out visible rock fragments and boulders, greater than 300 mm in greatest dimension, but less than 0.25 m3.

.3 Fill depressions made by grubbing with suitable material and to make new surface conform with existing adjacent surface of ground.

3.10 REMOVAL AND DISPOSAL

.1 Remove grubbed materials off site.

.2 Monitor all cut ash wood and firewood until it is properly disposed of as determined by Departmental Representative.

3.11 FINISHED SURFACE

.1 Leave ground surface in condition suitable for immediate grading operations to approval of Departmental Representative.

3.12 CLEANING

.1 Proceed in accordance with Section 01 74 11- Cleaning.

.2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, flagging tape, tools and equipment.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All sections of Divisions 01 - General Requirements and 02 - Existing Conditions

.2 Section 31 14 13 - Soil Stripping and Stockpiling

.3 Section 31 32 19.01 - Geotextiles

.4 All sections of Division 32 – Exterior Improvements

1.2 REFERENCES

.1 Always reference the most recent edition of the reference standards.

.2 American Society for Testing and Materials International (ASTM)

.1 ASTM C117-03, Standard Test Method for Material Finer than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.

.2 ASTM C136-06, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

.3 ASTM D422-63 2002, Standard Test Method for Particle-Size Analysis of Soils.

.4 ASTM D698-12e2, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3) (600 kN-m/m^3).

.5 ASTM D1557-12e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3) (2,700 kN-m/m^3).

.6 ASTM D4318 – 10e1, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

.3 Canadian General Standards Bureau (CGSB)

.1 CAN/CGSB-8.1, Sieves, Testing, Woven Wire, Inch Series

.2 CAN/CGSB-8.2, Sieves, Testing, Woven Wire, Metric

.4 U.S. Environmental Protection Departmental (EPA)/Office of Water

.1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

.5 MDDEP - Procedures for discharging wastewater into a watercourse

.6 Ministry of Transport, Sustainable Mobility and Transportation Electrification (MTMDET).

.1 Specifications and General Specifications (CCDG) - Road infrastructures - Construction and repair Road infrastructures - Construction and repair, 2017 edition.

.2 Standards, Volume VII: Materials (most recent version)

1.3 DEFINITIONS

.1 Excavation classes: two classes of excavation will be recognized; common excavation and rock excavation.

.1 Rock: no rock excavation is planned.. However, blocks of more than 1 cubic metre could be encountered during excavation behind the existing wall to be repaired.

.2 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.

.2 Unclassified excavation: excavation of deposits of whatever character encountered in Work.

.3 Top soils.

.1 Any material suitable for plant growth and suitable for use as top soil, which can be used for landscaping or seeding.

.2 Any material that is reasonably free of subsurface material, clay clumps, brush, weeds and other debris, and free from rocks, stumps, roots and other harmful materials of 25 mm

.4 Waste material: excavated material unsuitable for use in Work or surplus to requirements.

.5 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.

.6 Recycled backfill material: material considered neutral, from various sources and modified to respond to the needs of the fill area.

.7 Unsuitable materials:

.1 Weak, chemically unstable, and compressible materials.

.2 Frost susceptible materials:

.1 Fine grained soils with plasticity index less than 10 when tested to ASTM D4318, and gradation within limits specified when tested to ASTM D422 and ASTM C136 : Sieve sizes to CAN/CGSB-8.2.

.2 Table:

Sieve Designation	% Passing
2.00 mm	100
0.10 mm	45 - 100
0.02 mm	10 - 80
0.005 mm	0 - 45

.3 Coarse grained soils containing more than 20 % by mass passing 0.075 mm sieve.

.8 Unshrinkable fill: very weak mixture of cement, concrete aggregates and water that resists settlement when placed in utility trenches, and capable of being readily excavated.

.9 The density of the backfill material installed shall be measured in relation to the maximum dry density determined in the modified Proctor test in accordance with the provisions of ASTM D1557-78

1.4 MANAGEMENT OF CONTAMINATED MATERIALS

.1 Refer to section « 01 35 13.43 – Special Procedures for Contaminated Sites » for the managment of contaminated materials

1.5 RECYCLED, RECOVERED OR REUSED MATERIALS

.1 In the context of this project, given the large volume of concrete to be deconstructed and for the sake of sustainable development, the Contractor will be able to consider in his options, if he so requests, re-using certain materials for backfilling of excavations. For example, residues from concrete grinding could be reused for backfilling under certain conditions, but not limited to.

.2 Such materials may be re-used if and only if the backfill material is accompanied by a certificate of conformity under the most current edition of BNQ 2560-600 - Standard for Identification and Use of recycled materials containing bituminous mix and cement concrete residues

.3 In addition, materials may be reused if and only if they comply with all applicable laws and regulations in force, including the Environmental Quality Act.

.4 All materials which the Contractor wishes to reuse or which are potentially recyclable must be previously characterized according to the requirements of BNQ 2560-600 - Recycled Materials Identification and Use Containing residues of bituminous mixtures and cement concrete

.5 All certificates of conformity of such materials shall be submitted to the Departmental Representative for pre-approval.

1.6 LINES AND LEVELS OF BENCHMARK, IMPLANTATION

.1 Place all required benchmarks at the work site in order to accurately delineate the excavations to be completed and the embankments to be constructed in plan and elevation.

.2 The Contractor shall establish, at his own expense, the profiles and alignments necessary to carry out the work from the benchmarks shown on the plans or as indicated by the Departmental Representative.

.3 The Contractor is responsible for the installation of the works. If there is insufficient information on the plans to locate the works, ask the Departmental Representative for the benchmarks to be used.

.4 Concrete structures shall be laid out at all times and throughout the period of implantation of new underground and aboveground infrastructures, the Contractor's surveyor must be present at the site Operations using simple and verifiable methods on site and in such a way that the Departmental Representative can validate the work, and accuracy of dimensions, levels and other markers using a tape measure.

.5 Provide required equipment, such as rules and templates, to facilitate the work of the Departmental Representative in the inspection of the work.

1.7 PROTECTION OF EXISTING WORKS

.1 Underground utilities and networks:

.1 Details of the dimensions, location and depth of the specified utilities and utilities are given for information only and are not necessarily accurate or complete.

.2 Before commencing excavation and trenching work, notify the Departmental Representative and the authorities of the utility companies concerned and determine the location and condition of the underground works and networks. Clearly identify locations to avoid interruption of service during job completion.

.3 Confirm location of underground systems by thoroughly performing test excavations. In the event of a breakage caused by the work, repair it promptly and as directed by the Departmental Representative.

.4 Maintain and protect water, sewer, gas, electricity, telephone and other networks or structures from damage. Assume the cost of this work.

.5 Obtain appropriate instructions from the Departmental Representative prior to moving or removing a utility line or work identified in the excavation area.

.6 Take note of the location of the underground pipes conserved, diverted or abandoned.

.2 Existing Buildings and Works on the Surface

.1 In the presence of the Departmental Representative, verify the condition of buildings, trees and other plants, lawns, fences, utility poles, cables, railway tracks, roadways, and boundary markers susceptible of being damaged during the work.

.2 During construction, protect from damage all existing buildings and structures that may be damaged. If necessary, carry out repairs to the satisfaction of the Departmental Representative.

.3 If excavation work is required to cut roots or branches, perform this work as prescribed by the Departmental Representative.

.4 If it appears that the work may constitute a hazard to existing buildings or adjacent works and services, stop them and notify the Departmental Representative. Properly support the works and resume work only after obtaining the authorization of the Departmental Representative.

.5 If the Departmental Representative deems it necessary, install reinforcement and shoring parts and carry out the necessary work to prevent any displacement or subsidence of the works. Failure to comply with this order without notice shall be carried out by the Departmental Representative at the expense of the Contractor.

.6 Take responsibility for damages caused by weather, negligence, lack of coordination or precaution.

.3 Refer to and comply with all other requirements of the notes to the plans.

1.8 SUBMITTAL PROCEDURES

.1 Quality Control

.1 Submit documents and samples as required according to section 01 33 00 – Submittal procedures.

.2 Submit condition survey of existing conditions if requested by the Departmental Representative.

.3 Submit for review by the Departmental Representative proposed dewatering methods.

.4 Submit to the Departmental Representative written notice at least 7 days prior to excavation work, to ensure cross sections are taken.

.5 Submit to the Departmental Representative written notice when bottom of excavation is reached.

.6 Submit to the Departmental Representative results, testing, report and inspection.

.2 Preconstruction Submittals:

.1 Submit construction equipment list for major equipment to be used in this section prior to start of Work.

.2 Submit files concerning the location of underground utility networks, which include location drawings of existing utilities on the grounds.

.3 Samples

.1 Submit required samples as needed.

.2 At least 4 weeks prior to commencement of work, the General Contractor shall notify the Departmental Representative and the laboratory of the source of supply to which the Contractor intends to acquire the backfill materials and allow him access For sampling purposes.

1.9 QUALITY ASSURANCE

.1 Retain the services of a professional engineer registered or licensed in Canada, in the province of Quebec to undertake the design and inspection shoring works, bracing and recovery in work used during the performance of work

1.10 WASTE MANAGEMENT AND DISPOSAL

.1 Sort waste for reuse/recyling, if applicable, all as specified in "01 35 13.43 - Special Procedures - Contaminated Sites".

.2 Divert excess aggregate materials or excavation materials from landfill to local quarry or recycling facility for reuse as directed by the Departmental Representative , if applicable

1.11 EXISTING CONDITIONS

.1 Examine soil report.

.2 Buried services:

.1 Before commencing Work, verify and establish location of buried services on and adjacent to site, and notify the Departmental Representative.

.2 Confirm locations of buried utilities by careful test excavations.

.3 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered.

.4 Arrange with the Departmental Representative for relocation of buried services that interfere with execution of Work.

.5 Remove obsolete buried services within 2 m of foundations, and cap cut-offs.

.6 Record location of maintained, re-routed and abandoned underground lines.

.7 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.

.3 Existing buildings and surface features

.1 Conduct, with the Departmental Representative, condition survey of existing buildings the works , books, trees and other plants, lawns, fencing, service poles, wires, rail tracks, pavement, survey bench marks and monuments which may be affected by Work.

.2 Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair as directed by the Departmental Representative.

1.12 GEOTECHNICAL STUDY

.1 As part of this project, a geotechnical study was specifically carried out for the work concerned, it is attached.

.2 A geotechnical study is in appendix to this specification. The Contractor is entirely responsible for the interpretation of the results and their application in determining the appropriate work methods.

.3 The Contractor shall, where appropriate, engage or call upon his own experts to interpret all such soil studies and to assess the difficulties to be apprehended and the methods of construction to be implemented.

.4 The Contractor is responsible for carrying out additional surveys of the terrain if he feels they are necessary for verifying the exact nature of the soil in place.

1.13 ACCESS ROAD AND PUBLIC ROAD MAINTENANCE

.1 Keep public thoroughfares clean and relatively free of dirt deposits caused by the transportation of materials. Trucks will be loaded with care to prevent spills from vibration caused by transport or wind. Temporary access routes to the site will be kept clean and accessible throughout the construction period.

.2 Provide for the cleaning of neighboring public roads to the satisfaction of the Departmental Representative when necessary to ensure that dirt deposits caused by the transportation of materials do not become too numerous

.3 The Contractor shall first provide signage plans for approval and shall provide all signage required for the completion of the work in a safe manner throughout the duration of the work.

.4 At all times and throughout the duration of the work, keep all the peripheral access roads accessible to traffic.

.5 Refer also to "01 55 26 - Traffic Control" for traffic management requirements

PART 2 PRODUCTS

2.1 MATERIALS

.1 Fill CG-14:.

.1 Sand approved by Departmental representative from excavation or other sources and free from roots, stones more than 75 mm in diameter, construction debris, clinker, ash, grass slabs, waste or other harmful substances.

.2 Granulometry according to the following table:

Sieve opening size (mm)	% passage (according to MTQ-2010)
	CG 14
112 mm	n/a
31,5 mm	n/a
20 mm	100
14 mm	n/a
5 mm	35 - 100
1,25 mm	n/a.
0,315 mm	n/a.
0,160 mm	n/a.
0,080 mm	0 – 10,0

Note : not applicable means there are no requirements for the sieve concerned

.2 Fill MG 20 :

.1 Granular foundation materials shall comply with the requirements of 31 05 16 "Aggregates".

.2 Crushed stone or gravel consisting of hard, resistant, angular particles free from clay, hydraulic, organic or frozen materials and any other deleterious substances.

.3 The physical and mechanical properties of aggregates of the lower and upper granular foundation shall meet the following requirements:

.1 Table of Requirements

Trials

BNQ Standards	Sub-fondation
Maximum petrographic number	200
Durability MGS04 - maximum	20
Los Angeles – maximum percentage	50
Micro-Deval – maximum percentage	33
Fragmentation – minimum percentage	100
Organic matter – maximum percentage	0.8

.2 Los Angeles: "Aggregates, determination of abrasion resistance using the Los Angeles device", the maximum is 32 instead of 50 in the case of crushed limestone.

.3 Fragmentation: the percentage indicated is the percentage by mass of fragmented particles having at least one face fractured by crushing and retained on the 5 mm sieve.

.4 Organic matter; The test standard LC31-228.

.5 Materials shall not contain more than 3.5% particle size finer than 0.02 mm.

.6 In the tests carried out in accordance with ASTM C136-82 and ASTM C117-80, the particle size of the compacted materials shall remain within the following limits and the particle size curve plotted on a semi-logarithmic diagram shall be continuous and unbroken

Sieve	% passage
31,5 mm	100
20 mm	90-100
14 mm	68-93
5 mm	35-60
1,25 mm	14-38
0,315 mm	9-17
0, 080 mm	2-7

.3 Fill MG-56 :

.1 Granular foundation materials must comply with the requirements of section "31 05 16 - Aggregates".

.2 Crushed stone or gravel composed of hard, strong, angular and clay-free particles, hydraulic, organic or frozen materials and other deleterious substances.

.3 The physical and mechanical properties of the aggregates of the upper and lower granular base must meet the following requirements:

.1 Table of Requirements

Trials

BNQ Standards	Sub-fondation
Maximum petrographic number	200
Durability MGS04 - maximum	20
Los Angeles – maximum percentage	50
Micro-Deval – maximum percentage	33
Fragmentation – minimum percentage	100
Organic matter – maximum percentage	0.8

.2 Los Angeles: "Aggregates, Abrasion Resistance Using the Los Angeles Apparatus", the maximum is 32 instead of 50 in the case of a limestone crushed stone.

.3 Fragmentation: the percentage indicated is the percentage by mass of fragmented particles having at least one fractured face by crushing and retained on the sieve of 5 mm.

.4 Organic matter; the test standard LC31-228.

.5 Materials must not contain more than 3.5% particles smaller than 0.02

.6 When tested in accordance with ASTM C136-82 and ASTM C117-80, the particle size of the compaction material shall be within the following limits and the grain size curve plotted on a semi-logarithmic diagram shall be continuous and unbroken.

Sieve	% passage
80 mm	100
56mm	82 - 100
31.5 mm	55-85
20 mm	n/a
14 mm	n/a
5 mm	25-50
1.25 mm	11-30
0,315 mm	4-18
0, 080 mm	2-7

.4 Fill MG-112 :

.1 Borrow material MG-112 shall meet the following requirements and requirements: Stone, gravel or sand crushed, quarry-run or sifted;

.2 The particle size of the material after compaction shall remain within the following limits and the granulometric curve drawn on a semi-logarithmic diagram shall be continuous and not broken:

Sieve	% passage
112 mm	100
20 mm	50-100
5,0 mm	12-70
0,080 mm	0-10

.4 The physical and mechanical properties of aggregates of the granular sub-base shall meet the following requirements:

.1 Table of requirements

Trials

BNQ Standards	Sub-fondation
Maximum petrographic number :	200
Durability MGSO4 – maximum percentage :	20
Los Angeles – maximum percentage :	50
Micro-Deval – maximum percentage :	35
Fragmentation – minimum percentage :	60
Organic material – maximum percentage :	0.8
Value to blue – maximum percentage	0.2

.2 Los Angeles: "Aggregates, determination of abrasion resistance using the Los Angeles appliance", the maximum is 32 instead of 50 in the case of crushed limestone.

.3 Fragmentation: the percentage indicated is the percentage by mass of fragmented particles having at least one face fractured by crushing and retained on the 5 mm sieve.

.4 Organic matter; The test standard LC31-228.

.5 Fill classe B Material approved by Departmental Representative from excavation or other sources, and free from roots, rocks larger than 75 mm in diameter, construction debris, ashes, cinders, sods, topsoil, of organic matter, refuse or other deleterious materials.

.6 Non-shrinkage fill or dimensionally stabilized backfill material:

.1 maximum compressive strength of 0.4 MPa at 28 days;

.2 maximum Portland cement content of 25 kg / m3, consisting of 40% fly ash as replacement material: according to CAN / CSA-A3000 Type GU;

.3 minimum resistance of 0.07 MPa to 24 hours;

.4 concrete aggregates: according to CAN / CSA-A23.1 / A23.2-04;

.5 Portland cement: GU type;

.6 slump: 160 to 200 mm.

.7 Borrow quarry pit run.

.8 20 mm crushed stone : Crushed stone from quarries of caliber 20mm .

.9 All aggregates in accordance with "31 05 16 – Aggregate Materials".

.10 Stone embankment

.1 Materials required for stone fill are indicated on the plans and must comply with the CGCD and the standards listed therein.

.2 The types of materials required for excavation, excavation and backfilling indicated on the plans must meet the requirements of MTMDET Tome VII.

.3 Rockfill with stones of 100-200 caliber must respect the following granulometry:

.1 Stone percentage greater than 200 mm must be less than 10%.

.2 No stone shall be greater than 250 mm.

.3 Stone percentage less than 150 mm must be less than 50%.

.4 Stone percentage less than 100 mm must be less than 10%.

.5 The intrinsic characteristics of the stones must meet the requirements of category 5 in the table below.

.4 Rockfill with 300-400 stones must respect the following granulometry:

.1 Stone percentage greater than 400 mm shall be less than 10%.

.2 No stone shall be greater than 500 mm.

.3 Stone percentage less than 350 mm must be less than 50%.

.4 Stone percentage less than 300 mm must be less than 10%.

.5 The intrinsic characteristics of the stones must meet the requirements of Category 5 in the table below.

.5 Rockfill with stones of 300-500 caliber must respect the following granulometry:

.1 Stone percentage greater than 500 mm must be less than 10%.

.2 No stone shall be greater than 600 mm.

.3 The percentage of stone less than 400 mm must be less than 50%.

.4 Stone percentage less than 300 mm must be less than 10%.

.5 The intrinsic characteristics of stones must meet the requirements of Category 5 in the table below.

Caractéristique intrinsèque	Méthode d'essai	Catégories de gros granulats					
		1	2	3	4	5	6
Micro-Deval (MD), en %	LC 21-070	≤ 15	≤ 20	≤ 25	≤ 30	≤ 35	≤ 40
Los Angeles (LA), en %	LC 21-400	≤ 35	≤ 45	≤ 50	≤ 50	≤ 50	≤ 50
Micro-Deval et Los Angeles (MD + LA), en %	LC 21-070 et LC 21-400	≤ 40	≤ 55	≤ 70	≤ 75	≤ 80	≤ 85

PART 3 EXECUTION

3.1 MEANS OF SEDIMENT EROSION CONTROL

.1 Establish temporary means to control erosion and sediment deposition to prevent soil loss from storm water runoff or wind erosion and to drive soil to watercourses. These means shall comply with the requirements of applicable codes, standards and regulations.

.2 Inspect and maintain maintenance and repair if necessary, until permanent vegetation is established.

.3 Remove control and timely remediation and stabilize surfaces disturbed during construction.

3.2 PREPARATION WORK

.1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.

.2 Obtain all necessary permits for operations, including but not limited to the disposal of waste by burning or other method.

3.3 PREPARATION/PROTECTION

.1 Protect existing features.

.2 Keep excavations clean, free of standing water, and loose soil.

.3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to the Departmental Representative's satisfaction.

.4 Protect natural and man-made features required to remain undisturbed.

.5 Protect buried services that are required to remain undisturbed.

3.4 STOCKPILING

.1 Stockpile fill materials in areas designated by the Departmental Representative.

.2 Stockpile granular materials in manner to prevent segregation.

.3 Protect fill materials from contamination.

.4 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.

3.5 COFFERDAMS, SHORING, STRUTS AND UNDERPINNING WORK

.1 Where required, support, brace excavations, place sheet piles, construct temporary retaining walls, and inject concrete to prevent slippage in accordance with the Occupational Health and Safety Act and provincial and municipal regulations in force. Remove shoring when no longer required.

.2 To divert a watercourse, obtain the necessary permit from the competent authorities in this matter.

.3 Although certain indications concerning the location of certain temporary support structures are to be found in the drawings, the Contractor shall not consider these particulars to be limiting, and the latter shall provide all necessary support (Soils, structures and others) according to his working methods, for the completion of the work.

.4 The Contractor shall bear the costs of constructing and maintaining the slopes of the excavations as required to ensure their stability

.5 Assume responsibility for any accidents caused by poorly executed shoring, bracing and underpinning work.

.6 Retain the services of a qualified professional engineer recognized in the Province of Quebec for the design and inspection of sheet piles and other temporary, contractible and underpinning works required for The work. The Contractor shall provide the Supervisor with written confirmation of the conformity of the shoring and bracing structures constructed.

.7 At least 2 weeks prior to commencement of work, submit design and related technical data for audit.

.8 Design documents and associated technical data submitted must bear the seal and signature of a qualified professional engineer recognized in the Province of Quebec.

.9 The Design Engineer shall provide evidence that he holds a professional liability insurance policy unless he is employed by the Contractor. In such a case, the Contractor must provide proof that the work of his engineer is covered by his insurance policy.

.10 Protect walls of excavations by appropriate methods and in accordance with the requirements on the Health and Safety Act of the Province of Quebec pursuant to the requirements of the contract documents.

.11 Obtain the appropriate license from the competent authorities if it is necessary to temporarily divert a watercourse.

.12 Construct temporary works in depth, in height and in locations authorized by the authorized authorities.

.13 Perform the following during backfilling:

.6 Except as otherwise directed by the Departmental Representative, removing temporary sheet piling and shoring excavation works.

.7 Do not remove the braces before the fill level is reached the level of the latter.

.14 Do the following, once the infrastructure construction is complete:

.1 Remove cofferdams and the shoring and bracing structures.

.2 Remove the surplus materials from the site and perform the work required to restore the original system of waterways.

3.6 DEWATERING OF EXCAVATIONS AND HEAVE PREVENTION

.1 Keep excavations free of water while Work is in progress behind the wall.

.2 Where appropriate, clear snow from work site and transport snow from site.

.3 Submit to the Departmental Representative for his review, the details of the proposed dewatering methods of excavations and heave prevention, such as setting up dikes, establishments of well points and leveling of sheet piling.

.4 Retain the services of a qualified professional engineer recognized in the Province of Quebec for the design of the system for the lowering of the water table and the drainage of excavations.

.5 Design documents and related technical data submitted must bear the seal and signature of a qualified professional engineer recognized in the Province of Quebec.

.6 The Contractor shall be responsible for the costs of designing and constructing the excavation system and the lowering of the water table.

.7 If there is a risk of floating or lifting, avoid excavating to below ground water where applicable. To avoid pieces or the bottom of excavations from lifting, lower the water table, cut the upper end of the sheet piles or use other appropriate means.

.8 Protect open excavations against flooding and damage due to surface run-off

.9 The Contractor shall consider that potential groundwater infiltration may occur during excavation work, especially during the shipping season.

.10 Dispose of water in accordance with Section 01 35 43 - Environmental Procedures collection runoff areas and in manner not detrimental to public and private property, or portion of Work completed or under construction.

.1 Provide and maintain temporary drainage ditches and other diversions outside of excavation limits.

.11 Regardless of the type of drainage (gravity or pumped), the collected water cannot be discharged to municipal, provincial and/or existing watercourses or wetlands without installation and adequate treatment for the reduction of contaminants below the levels permitted by municipal and provincial regulations. In the event of a rejection to the city's and or the Quebec Ministry of Transport's networks, the Contractor must obtain an official permit from the Competent Authority in this matter and provide a copy to the Departmental Representative.

.12 Provide flocculation tanks, settling basins, or other treatment facilities to remove suspended solids or other materials before discharging to storm sewers, watercourses or drainage areas.

3.7 EXCAVATION

.1 It is understood that no special compensation will be paid to the Contractor for the use of equipment necessary to break and excavate the rock, , where appropriate and even if the nature of the work so requires. Also, no special compensation will be paid to the Contractor for excavation in moving sand, hardpan, silt layers or thin strata of pebbles agglomerated with clay, In broken or loose shale, in cemented gravel or in any other material that may be encountered, such as for the extraction of large pebbles, frozen earth, etc.

.2 It is understood that no special compensation will be paid to the Contractor for snow removal work when required.

.3 Advise the Departmental Representative at least 7 days in advance of excavation operations for initial cross sections to be taken.

.4 Excavate to lines, grades, elevations and dimensions as indicated.

.5 Remove any other obstructions on site during the excavation work

.6 Excavation must not interfere with bearing capacity of adjacent foundations.

.7 During the excavation of pipes and various conduits, it is forbidden to dig more than 30 m of trench before installing the elements to bury and unprotected length of un-backfilled trench must not exceed 15 m at the end of a work day unless the Departmental Representative authorizes in writing.

.8 Fill material and stockpiled material must be deposited at a sufficient distance from the trench, according to the Departmental Representative’s indications.

.9 Cut and deposited material shall be deposited at a sufficient distance from the top of the existing wall in relation to the sections not previously excavated, as specified by the Departmental Representative.

.10 Do not disturb earth under the branches of trees or shrubs that must remain in place.

.1 If excavations are to be made between the roots, dig by hand and cut the roots with a sharp ax or saw

.11 Restrict vehicle operations directly adjacent to open trenches

.12 Dispose of improper or surplus cut off site at designated location by Departmental Representative. In the case of dry materials (paving, concrete, pipes, stumps, trees, shrubs, etc.), follow the descriptions in the Solid Waste Regulations (Q-2, r.14) and other municipal or local by-laws which may apply.

.13 Avoid obstructions to runoff or natural waterways. Ensure that rainwater, snowmelt, groundwater, sewage and water from any other source are inspected and evacuated at the site to enable the work to be carried out.

.14 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.

.15 Notify the Departmental Representative when bottom of excavation is reached.

.16 Obtain the Departmental Representative's approval of completed excavation.

.17 Remove unsuitable material from trench bottom including those that extend below required elevations to extent and depth as directed the Departmental Representative.

.18 Profile excavations by hand, strengthen the walls and remove all non-adherent materials and debris found there.

.19 If the materials of the excavation base were bothered, compact them to a density at least equal to that of the undisturbed soil.

.20 Excavate and transport off-site disused utility networks buried in the ground, as well as debris from old foundations, decommissioned cofferdams, concrete blocks, railway track rails, reservoirs, etc. existing in the soil.

.21 Take precautions to remove dust generated.

.22 Where applicable install geotextiles according to manufacturer's requirements.

.23 Comply with the Departmental Representative specific requirements for archaeological monitoring. In the case where archaeological surveillance is not required for the works and an archaeological vestige (vestige of construction or development, object and fragment of object) is discovered accidentally during the excavations, The contractor shall suspend work in the immediate area of the discovery and notify the Departmental Representative, who will then take the necessary steps to protect and conserve the said archaeological remains. Meanwhile, work must continue in another area.

3.8 FILL MATERIAL AND COMPACTION

.1 Use fill material of the type indicated or prescribed in the drawings. The densities obtained by compacting are percentages of maximum densities calculated according to ASTM D1557.

3.9 BEDDING AND SURROUNDING OF UNDERGROUND SERVICES

.1 Place and compact granular material for bedding and surround of underground services.

.2 Bedding material and services surrounding materials must not be frozen.

3.10 ENVIRONMENTAL PROTECTION MEASURES

.1 Refer to and comply in all respects with the section « 01 35 13.43 – Procédures spéciales – Sites contaminés » and "01 35 43 - Environmental protection".

.2 The purpose of protection measures is to control and contain sediments within the site, protect slopes and deposits in heaps from erosion, promote natural water infiltration and Control runoff during and after construction.

.3 Protective measures against aerial and hydraulic erosion

.1 Site surfaces shall be covered with a stable material such as grass, gravel, or geotextile membrane.

.2 Keep bulk material, such as sand, earth, gravel or other materials, to a minimum. Materials placed in heaps greater than 2.0 m in height must be protected against erosion by means of canvas or membranes.

.3 In dry weather, water the ground to create a dust suppressant.

.4 Protective measures against sediment discharge into the drainage system or the environment

.1 Provide sloping surfaces to the interior of the site to prevent runoff from washing material outside of the site.

.2 Install geotextile membrane under catch basin grids affected by site operations.

.3 Provide 20-56 mm clear stone running surfaces to help clean vehicle wheels and construction machinery.

.4 Establish sediment barriers to protect surrounding areas.

.5 Waste water from site must be pre-filtered.

.6 If necessary, clean the surrounding streets with a mechanical brush.

.5 Maintenance Activities

.1 Periodically inspect and clean after each period of rain or snow.

.2 Maintain entrances in good condition to prevent sediment traces or deposits on public roads. On the running surfaces, add or replace the 20-56 mm net stone according to the site conditions.

.3 Clean sediment fallen or left on public roads.

3.11 BACKFILLING

.1 Where applicable, all materials must be from sites authorized under the Quarrying and Sand Pits Regulations.

.2 Do not proceed with backfilling operations until completion of following:

.1 Departmental Representative has inspected and approved installations.

.2 Departmental Representative has inspected and approved of construction below finish grade.

.3 Inspection, testing, approval, and recording location of underground utilities.

.4 Removal of concrete formwork.

.5 Removal of shoring and bracing; voids are filled with satisfactory soil material.

.6 backfilling of voids with acceptable soil

.3 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.

.4 Do not use backfill material which is frozen or contains ice, snow or debris unless authorized by the Departmental Representative.

.5 Proceed to filling with quarry run material avoiding impose undue pushed to the piles Proceed by spreading relatively uniform layers not exceeding one and a half times the maximum size of the biggest elements, to avoid any violent impact that could damage the works

.6 Apply the fill material in uniform layers not exceeding 150 mm compacted thickness up to specified levels. Compact each layer as indicated on the drawings.

.7 Following mass excavation, backfill under pavement structures must be done using granular materials, all as indicated on the plans, to be placed in layers of 150 to 300 mm maximum. Materials shall be compacted to a minimum dry density of 90% of the maximum value of the modified Proctor, unless otherwise indicated, under pavement structures. The Contractor must refer to the plans for the specifications of the required structures and infrastructures.

3.12 RESTORATION

.1 Upon completion of work, remove waste materials and debris as described in Section 01 74 21 - Construction / Demolition Waste Management and Disposal, smooth slopes and correct defects as directed by the Departmental Representative .

.2 Replace topsoil as instructed by Departmental Representative.

.3 Return pavement and deck surfaces affected by work to condition and levels prior to start of work, taking care to respect original thickness of work.

.4 Clean and rehabilitate areas affected by work as instructed by Departmental Representative.

.5 Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

3.13 ON-SITE QUALITY CONTROL

.1 Where tests or inspections by the testing laboratory indicate that the works or materials are not in conformity with the requirements of the contract, the Contractor shall be responsible for any additional testing that may be requested by the Departmental Representative, to verify the acceptability of the corrections made. The same applies to the tests required to check the materials in place after correction.

END OF SECTION

PART 1 GÉNÉRALITÉS

1.1 RELATED REQUIREMENTS

.1 All sections of Division 01 - General Requirements

.2 Section 31 23 33.01 – Excavating, Trenching and Backfilling

.1 All sections of Division 32 - Exterior Improvements

1.2 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-4.2 Methods for Textile Testing.

.1 Issue 11.1 – M13, Bursting Resistance - Membrane Membrane Test

.2 Issue 12.2- M13, Tear Resistance - Trapezoidal Method

.2 CAN/CGSB-148.1, Methods of Testing Geotextiles and Complete Geomembranes.

.1 No.2-M85, Methods of Testing Geosynthetics - Mass per Unit Area.

.2 No.3-M85, Methods of Testing Geosynthetics - Thickness of Geotextiles.

.3 Numéro 4 M94, géotextiles – Perméabilité à l'eau dans un sens normal sans charge de compression.

.4 No.6.1-93, Methods of Testing Geotextiles and Geomembranes - Bursting Strength of Geotextiles Under No Compressive Load.

.5 No.7.3-92, Methods of Testing Geotextiles and Geomembranes - Grab Tensile Test for Geotextiles.

.6 No. 10-94, Methods of Testing Geosynthetics - Geotextiles - Filtration Opening Size.

.2 American Society for Testing and Materials International, (ASTM)

.1 ASTM D4355 / D4355M – 14, Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture and Heat in a Xenon Arc Type Apparatus

.2 ASTM D4491-16, Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

.3 ASTM D4595-11, Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.

.4 ASTM D4716/D4716M-14, Standard Test Method for Determining the (In-Plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head.

.5 ASTM D4751-16, Standard Test Method for Determining Apparent Opening Size of a Geotextile.

.6 ASTM D4833 / D4833M - 07(2013) e1, Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products

.7 ASTM D5199 – 12, Standard Test Method for Measuring the Nominal Thickness of Geosynthetics

.8 ASTM D5261 – 10, Standard Test Method for Measuring Mass per Unit Area of Geotextiles

.9 ASTM D6241 – 14, Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe

1.3 DOCUMENTS/SAMPLES TO SUBMIT FOR APPROVAL/INFORMATION

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Geotextiles must conform to recommended standards.

.3 The Contractor must provide, for the Departmental Representative's approval, the shop drawings for each type of geotextile membrane used in this project.

.4 Datasheets

.1 Submit required data sheets and geotextile manufacturer's instructions and documentation. The data sheets must indicate product characteristics, performance criteria, dimensions, limits and finish.

1.4 DELIVERY, STORAGE AND HANDLING

.1 During delivery and storage, protect geotextiles from direct sunlight, ultraviolet rays, excessive heat, mud, dust, debris and rodents.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site bins for recycling, in accordance with Waste Management Plan.

.4 Fold up metal banding, flatten and place in designated bins.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

.1 Geotextiles: non-woven needle-punched synthetic fibre, supplied in rolls.

.2 Refer to drawings for the type of membrane to supply at the particular areas.

.1 Geotextile membrane Type 1

.2 Geotextile membrane Type 1

.3 Geotextile membrane Type 1

Property	Standard	Unit	7609	Type 1	Type 2
Physical					
Product type	N/A	N/A	Separation	Separation	Protection
Thickness	ASTM D5199	mm	-	-	3.5
Weight	ASTM D5261	g/m^2	-	-	407
Mechanical					
Tensile strength	CAN 148.1 no.7.3	N	550	1 200	1 470
Elongation at break	Can 148.1 No.7.3	%	45 – 105	45 – 105	50 – 105
Trapezoid tear	CAN 4.2 No. 12.2	N	250	530	600
Mullen burst	CAN 4.2 No. 11.1	kPa	1 585	3 280	3 500
CBR puncture	ASTM D6241	N	1 570	3 450	4 000
Puncture	ASTM D4833	N	-	-	850
UV resistance	ASTM D4355	% / 500h	50	50	50
Hydraulic					
Permeability	CAN 148.1 no.4	cm/s	0.230	0.180	0.190
Permittivity	CAN 148.1 No.10	s^{-1}	1.34	0.51	0.41
FOS	CAN 148.1 No.10	µm	180	130	40-110
Dimensions					
Width	N/A	m	3.50 / 4.57 / 5.25	3.50 / 4.57 / 5.25	3.50 / 4.57 / 5.25
Length	N/A	m	150	100	100

PART 3 EXECUTION

3.1 EXAMINATION

.1 Verification of conditions: Before proceeding with the installation of geotextiles, ensure that the condition of surfaces / supports previously implemented under other sections or contracts is acceptable and permits work to be carried out in accordance with written instructions by the manufacturer.

.2 Visually inspect surfaces/supports in the presence of the Departmental Representative.

.3 Immediately notify Departmental Representative of any unacceptable conditions identified.

.4 Begin installation work only after correcting unacceptable conditions and received written approval from Departmental Representative

3.2 INSTALLATION

.1 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.

.2 Never place geotextiles under water.

.3 Place geotextile material on sloping surfaces in one continuous length from toe of slope to upper extent of geotextile.

.4 Overlap each successive strip of geotextile 600 mm over previously laid strip.

.5 Protect installed geotextile material from displacement, damage or deterioration before, during and after placement of material layers.

.6 After installation, cover with overlying layer within four (4) hours of placement.

.7 Replace damaged or deteriorated geotextile to approval of the Departmental Representative.

3.3 CLEANING

.1 Remove construction waste from site and dispose of in accordance with regulatory requirements.

3.4 PROTECTION

.1 Vehicular traffic not permitted directly on geotextile.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All sections of Divisions 01 - General Requirements and 02 - Existing Conditions

.2 Section 31 11 00 –Clearing and Grubbing

.3 Section 31 23 33.01 –Excavation, Trenching and Backfilling

.4 Section 32 91 19.13 –Topsoil Placement and Grading

.5 Section 32 92 23 – Sodding

1.2 REFERENCE STANDARDS

.1 ASTM International

.1 ASTM A1064/A1064M-16b, Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.

.2 CSA Group

.1 CSA G30.18-C2014, Carbon Steel Bars for Concrete Reinforcement.

.3 Health Canada - Pest Management Regulatory Agency (PMRA)

.1 National Standard for Pesticide Education, Training and Certification in Canada (1995).

.4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.5 Department of Justice Canada (Jus)

.1 Canadian Environmental Protection Act (CEPA), 1999, c. 33.

.2 Fertilizers Act (R.S. 1985, c. F-10).

.3 Fertilizers Regulations (C.R.C., c. 666).

.4 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.

1.3 DEFINITIONS

.1 Mycorrhiza: association between fungus and roots of plants. This symbiosis, enhances plant establishment in newly landscaped and imported soils.

.2 Tree, hedge, shrub: These terms include as much aerial parts (trunk, crown, branches, leaves) as the underground portion, roots and soil (soil, sand, stone, rock) as well as the physical properties (texture, porosity, density, topography) and chemical properties (composition, acidity, etc.) that characterize this soil.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide in accordance with Section 01 33 00- Submittal Procedures.

.2 Product Data:

.1 Provide manufacturer's instructions, printed product literature and data sheets for tree and shrub preservation materials and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Provide monthly written reports on maintenance during warranty period, to Departmental Representative identifying:

.1 Maintenance work carried out.

.2 Development and condition of plant material.

.3 Preventative or corrective measures required which are outside Contractor's responsibility.

.3 Submit two (2) copies of WHMIS MSDS in accordance with Section 01 35 43- Environmental Procedures.

1.5 TRANSPORTATION, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions and section 01 61 00- Common Product Requirements.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

.1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

1.6 MAINTENANCE DURING WARRANTY PERIOD

.1 From time of acceptance by Departmental Representative to end of warranty period, perform following maintenance operations.

.1 Water to maintain soil moisture conditions for optimum growth and health of plant material without causing erosion.

.2 Apply pesticides in accordance with National Standard for Pesticide Education, Training and Certification in Canada, Federal, Provincial and Municipal regulations as and when required to control insects, fungus and disease. Obtain product approval from Departmental Representative prior to application.

.3 Apply fertilizer in early spring at manufacturer's suggested rate.

.4 Remove dead, broken or hazardous branches from plant material. Dispose of debris through ecological disposal.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Fill:

.1 Type (A): clean, natural river sand and gravel material, free from silt, clay, loam, friable or soluble materials and organic matter.

.2 Type (B): excavated soil, free from roots, rocks larger than 75 mm, building debris, and toxic ingredients (salt, oil, etc). Excavated material shall be approved by Departmental Representative before use as fill.

.2 Coarse washed stones: 35-75mm diameter clean round hard stone.

.3 Drain tile: 150mm diameter corrugated plastic perforated tubing complete with snap couplings

.4 Unamended Peat moss:

.1 Derived from partially decomposed species of Sphagnum Mosses.

.2 Elastic and homogeneous.

.3 Free of wood and deleterious material which could prohibit growth.

.4 Shredded minimum particle size: 5mm.

.5 Fertilizer:

.1 To Canada Fertilizer Act and Fertilizers Regulations.

.2 Complete, commercial, slow release with 35% of nitrogen content in water-insoluble form.

.6 Anti-desiccant: commercial, wax-like emulsion.

.7 Filter Cloth:

.1 Type 1: 100 % non-woven needle punched polyester, 2.75 mm thick, 240 g/m2mass.

.2 Type 2: biodegradable burlap.

.8 Wood posts: 38x 89x 2400mm length, untreated wood.

.9 Welded wire fabric (WWF): 102 mm x 102 mm, size MW 13.3 X MW 13.3.

.10 Board Cladding: to consist of 50 x 100 mm lumber secured around the perimeter of tree trunks with plastic strapping or other means which will not damage the tree.

.11 Tree Barriers: steel T-rail posts 40 x 40 x 5 x 2440 mm, at 1800 mm o.c., with wood slat snow fencing attached to posts with 9 gauge wire, 13 per post.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for tree and shrub preservation installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Departmental Representative.

.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 IDENTIFICATION AND PROTECTION

.1 Tree protection to be installed prior to the start of any on site work.

.2 Identify plants and limits of root systems to be preserved as approved by Departmental Representative.

.3 Protect plant and root systems from damage, compaction and contamination resulting from construction as approved by Departmental Representative.

.4 Ensure no root pruning is done inside drip line. If pruning inside drip line is required consult an arborist or Canadian Certified Horticultural Technician (CCHT) as approved by Departmental Representative.

3.3 TRUNK PROTECTION

.1 Install board cladding vertically around the perimeter of designated deciduous trees within the active work zone.

3.4 PROTECTION OF EXISTING TREE ROOT SYSTEMS CLOSE TO WORKS AND TRAFFIC LANES

.1 The movement of machinery around existing trees to be protected is to be avoided. Movement of the machinery causes soil compaction and permanent damage to the root system. This type of stress is also fatal in most cases.

.1 The Contractor shall provide a fenced-in protection area around the trees at the edges of the works or traffic areas in order to eliminate any possible damage.

.2 The protection zone shall be equivalent to the footprint of the tree foliage.

.3 Protective fencing shall be erected with a metal fence or "snow fence" fence. Plastic fencing is not allowed.

.2 The impact of traffic areas spanning the root system shall be minimized by physical protection consisting of:

.1 Short duration: ≤ 1 month with fragmented ramal wood (BRF) over a minimum thickness of 150mm.

.3 Long life :> 1 month with a geotextile and a minimum of 150mm of crushed aggregates.

3.5 ROOT CURTAIN SYSTEM

.1 Identify limits for required construction excavation as approved by Departmental Representative.

.2 Prior to construction excavation, dig trench minimum 500mm wide x 1500mm deep, along perimeter of excavation limits.

.3 Prune exposed roots cleanly at side of trench nearest plants to be preserved. Pruned ends to point

.4 Install wooden posts and welded wire fabric against construction edge of trench.

.5 Securely attach Type 2 filter fabric on plant side of wire mesh.

.6 Prepare homogeneous mixture of fertilizer, parent material and organic matter.

.1 Add organic matter to mixture to achieve 7-9% organic matter content by weight.

.2 Incorporate with mixture grade 2:12:8 ratio fertilizer (dry) at rate of 1.5kg/m^3.

.7 Backfill with homogeneous mixture between curtain wall and plants to be preserved in layers not exceeding 150mm in depth. Compact each layer to 85% Standard Proctor Density.

.8 Protect root curtain from damage during construction operations.

.9 Water plants and root curtain sufficiently during construction to maintain optimum soil moisture condition until backfill operations are complete.

.10 Remove root curtain before backfill operations. Ensure root curtain is cut down to 300mm below finished grade and remove cut material.

3.6 AIR LAYERING SYSTEM

.1 Using manual methods, carefully remove turf, plants, leaves and organic matter in area of root system, dispose of plant matter through compost site and slightly loosen topsoil surface. Avoid damage to root system.

.2 Lay horizontal system of perforated drain pipe on surface of existing grade.

.1 Slope drain tile minimum 3% for drainage away from trunk of tree.

.2 Connect system with general site drainage system or drain to low point on site.

.3 Install recycled content plastic vent pipes vertically over joints in horizontal pipe system or where indicated. Top of vent pipe to be 20mm above finished grade of fill. Keep top of vent pipe covered during construction.

.4 Cover joints with Type 1filter fabric and place coarse washed stone around joints and vertical pipes to secure their position.

.5 Construct drywell around trunk of tree.

.1 Ensure open ends of horizontal pipe system and vertical vent pipes are left exposed for air circulation to root system.

.2 Protect openings from blockage during construction.

.3 Install protective caps on exposed horizontal openings.

.6 Place 200mm depth of coarse washed stone on surface of original ground and horizontal pipe system to limits.

.7 Place Type 1 filter fabric over surface of granular layer.

.8 Place Type A fill over filter fabric to required depth without disturbing or damaging drain pipe system. Avoid damage to filter fabric.

.9 Complete topsoil and sodding over area of sub-surface system within 1 week of placing fill.

.10 Remove temporary protective covering from vent pipe openings. Install protective caps flush with finished grade.

3.7 TRENCHING AND TUNNELING FOR UNDERGROUND SERVICES

.1 Centre line location and limits of trench/tunnel excavation to be approved by Departmental Representative prior to excavation. Tunnel excavation to extend 2000 mm from edge of trunk on either side.

.2 Excavate manually within zone of root system. Do not sever roots greater than 40 mm diameter except at greater than 500 mm below existing grade. Protect roots, and cut roots cleanly with sharp disinfected tools.

.3 Excavate tunnel under centre of tree trunk using methods and equipment approved by Departmental Representative.

.4 Minimum acceptable depth to top of tunnel: 1000 mm.

.5 Backfill for tunnel and trench to 85% Standard Proctor Density. Avoid damage to trunk and roots of tree.

.6 Complete tunnelling and backfilling at tree within two (2) weeks of beginning Work.

3.8 LOWERING GRADE AROUND EXISTING TREE

.1 Begin Work in accordance with schedule approved by Departmental Representative.

.2 Cut slope not less than 500 mm from tree trunk to new grade level.

.3 Excavate to depths as indicated. Protect root zone designated to remain from damage.

.4 When severing roots at excavation level, cut roots with clean, sharp tools.

.5 Cultivate excavated surface manually to 15 mm depth.

.6 Prepare homogeneous soil mixture consisting by volume of:

.1 60% excavated soil cleaned of roots, plant matter, stones, debris.

.2 25% coarse, clean sterile sand.

.3 15% organic matter.

.4 Grade 2:12:8 fertilizer at rate of 1.5 kg/m³.

.7 Place soil mixture over area of excavation to finished grade level. Compact to 85% Standard Proctor Density.

.8 Water entire root zone to optimum soil moisture level.

.9 Install surface cover of sodding in accordance with Section 32 92 19.13- Mechanical Seeding.

3.9 PRUNING

.1 Prune crown to compensate for root loss while maintaining general form and character of plant. Dispose of debris through mulching.

3.10 ANTI-DESICCANT

.1 Apply anti-desiccant to foliage where applicable and as directed by Departmental Representative.

3.11 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.

.3 Waste Management: separate waste materials for recycling or reuse in accordance with Section 01 74 21- Construction/Demolition Waste Management and Disposal.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENT

.1 All sections of Divisions 01 - General Requirements and 02 - Existing Conditions

.2 Section 31 05 16 –Aggregate Materials

.3 Section 31 23 33.01 –Excavation, Trenching and Backfilling

.4 All sections of Division 32 – Exterior Improvements

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C117-13, Standard Test Methods for Material Finer Than 0.075 (No 200) mm Sieve in Mineral Aggregates by Washing.

.2 ASTM C131-14, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.3 ASTM C136-14, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

.4 ASTM D422-63(2007)e2, Standard Test Method for Particle-Size Analysis of Soils.

.5 ASTM D698-12e2, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft^3) (600kN-m/m^3).

.6 ASTM D1557-16, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft^3) (2,700kN-m/m^3).

.7 ASTM D1883-16, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.

.8 ASTM D4318-10e1, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.

.2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

1.3 TRANSPORTATION, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment according to section 01 61 00 –Common Product Requirements.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Granular foundation materials shall comply with the following requirements.

.1 Crushed stone or gravel consisting of hard, resistant, angular particles free of clumps, hydraulic, organic or frozen materials, and any other deleterious substances

.2 The physical and mechanical properties of aggregates of the lower and upper granular foundation shall meet the following requirements:

.1 Table of requirements

.2 Testing

BNQ Standards	Sub-base
Petrographic number -maximum	200
Durability $MgSO_4$–maximum percentage	25
Los Angeles – maximum percentage	50
Micro-Deval – maximum percentage	36
Fragmentation – maximum percentage	60
Organic materials – maximum percentage	0,8

.3 Los Angeles: "Aggregates determination of the abrasion resistance using the apparatus Los Angeles", the maximum is 32 instead of 50 in the case of crushed rocks limestone".

.4 Fragmentation: the percentage shown is the percentage by weight of the comminuted particles having at least one face fractured by crushing and retained on the sieve of 5 mm.

.5 Organic matter: LC-31-228 test standard.

.3 Materials shall not contain more than 3.5% of particles finer than 0.02 mm.

.4 Liquidity limit: in accordance with ASTM D4318-84, maximum 25.

.5 Plasticity index: according to ASTM D4318-84, maximum 6.

2.2 GRANULAR FOUNDATION

.1 In the tests carried out in accordance with ASTM C136 and ASTM C117, the particle size of the compacted materials shall remain within the following limits and the particle size curve drawn on a semi-logarithmic diagram shall be continuous and not broken.

Sieve	% passing	
	MG56	MG20
80 mm	100	100
56 mm	82-100	100
31,5 mm	50-80	100
20 mm	s.o.	90-100
14 mm	s.o.	68-93
5 mm	25-50	35-60
1,25 mm	s.o.	14-38
0,315 mm	4-18	9-17
0,080 mm	2-7	2-7

PART 3 EXECUTION

3.1 EXECUTING THE WORK

.1 Install foundation base layer materials once sub-base layer is inspected and approved by Departmental Representative.

.1 Implementation

.1 Make the granular base layer at the specified depth and level.

.2 Ensure no frozen material is placed.

.3 Place material only on clean unfrozen surface, free from snow or ice.

.4 Install granular materials using methods that prevent segregation and degradation.

.5 Spread material to full width in uniform layers not exceeding 150 mm compacted thickness. The Departmental Representative may authorize thicker lifts if specified compaction can be achieved.

.6 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.

.7 Remove and replace portion of layer in which material has become segregated during spreading.

.2 Compaction Equipment

.1 Compaction equipment shall be capable of rendering the materials to the density required for the present work.

.3 Compaction

.1 Compact to density of not less than 98% maximum modified Proctor.

.2 Profile and alternately roll the materials in place to obtain a uniform, even and evenly compacted base layer

.3 Apply water as necessary during compaction to obtain specified density. If the soil is too humid, dry it by scarifying with appropriate equipment until the water content returns to normal.

.4 In areas facing existing dikes, dynamic compaction may only be carried out after receipt of written authorization from the Departmental Representative.

3.2 TOLERANCES

.1 The allowable variance for the finished foundation layer is 10 mm more or less than the prescribed cross-sectional area and profile; This gap, whether more or less, cannot be uniform over the entire surface of the foundation layer.

3.3 PROTECTION

.1 Maintain finished foundation in accordance with requirements of this section until completion of work receipt by Departmental Representative.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All sections of Divisions 01 - General Requirements and 02 - Existing Conditions

.2 Section 31 05 16 –Aggregate Materials

.3 Section 31 23 33.01 –Excavation, trenching and Backfilling

.4 Section 32 11 16.01 – Granular Sub-Base

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C117-13, Standard Test Methods for Material Finer Than 0.075 (No 200) mm Sieve in Mineral Aggregates by Washing

.2 ASTM C131-14, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine

.3 ASTM C136-14, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

.4 ASTM D422-63(2007)e2, Standard Test Method for Particle-Size Analysis of Soils

.5 ASTM D698-12e2, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3) (600 kN-m/m^3)

.6 ASTM D1557-12e2, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3) (2,700 kN-m/m^3)

.7 ASTM D1883-16, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils

.8 ASTM D4318-10e1, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils

.2 Canadian General Standards Board (CGSB)

.1 CAN / CGSB 8.1 88, Wire mesh screen, nonmetric

.2 CAN / CGSB 8.2 M88, Metal wire mesh screen, metric

1.3 TRANSPORT, ENTREPOSAGE ET MANUTENTION

.1 Transport, store and handle the materials and equipment according to section 01 61 00 – Common Product Requirements

PART 2 PRODUCTS

2.1 MATERIALS

.1 Stone, gravel or sifted crushed or quarry-run sands conforming to the requirements of section 31 05 16 - Aggregates.

.2 Granular sub-base materials shall comply with the following requirements:

.1 The particle size after compaction of the materials used shall remain within the following limits and the grain size curve drawn on a semi-logarithmic diagram shall be continuous and not broken:

Sieve	% passing
112 mm	100
20mm	50-100
5,0 mm	12 - 100
0,080 mm	0 – 10

.2 Liquidity limits: maximum 25, in accordance with ASTM D4318.

.3 Plasticity index: maximum 6, according to ASTM D4318

.4 Materials shall not contain more than 3% finer particles than the 20 µm sieve according to ASTM D422

.5 Physical and mechanical properties shall meet the following requirements:

.1 Table of Requirements

.2 Tests

BNQ Standards	Sub-fondation MG 112
Maximum petrographic number	200
Durability $MgSO_4$ – maximum percentage	25
Los Angeles –maximum percentage	50
Micro-Deval – maximum percentage	36
Fragmentation – minimum percentage	60
Organic matter – maximum percentage	0,8

.3 Los Angeles: “Granulates –Determination of the abrasion resistance using the Los Angeles device,” maximum 32 instead of 50 in case of limestone crushed stone.

.4 Degradation: percentage indicated is percent by mass of fragmented particles having at least one face fractured by crushing and retained on 5 mm sieve.

.5 Organic matter: to testing standard LC31-228.

PART 3 EXECUTION

3.1 PLACING OF MATERIALS

.1 Place granular base after sub-base is inspected and approved by the Departmental Representative.

.2 Place embankment materials along the backfill structure once approved by the Departmental Representative.

.3 Ensure no frozen material is used.

.4 Place material only on clean unfrozen surface, free from snow and ice.

.5 Place material using methods which do not lead to segregation or degradation.

.6 Spread materials across width of work to be achieved, in uniform layers up to 300 mm thick after compaction. The Representative of the Ministry may permit the placing of thicker layers if specified compaction can be achieved.

.7 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.

.8 Remove and replace portion of layer in which material has become segregated during spreading.

3.2 COMPACTION

.1 Compaction equipment must be capable of obtaining materials having the density required for the present work.

.2 Compaction equipment shall be equipped with a device which records in hours the actual duration of compaction work and not the number of hours of operation of the engine.

.3 Compact up to at least 90% of maximum corrected dry bulk density.

.4 Compact up to at least 95% of maximum dry bulk density corrected for last 150 mm.

.5 Roll out and compact alternately to obtain a uniform, even and evenly compacted sub-base layer.

.6 Add, during compaction, the water required to achieve the prescribed density. If the soil is too wet, air it by scarifying it with the appropriate equipment until the water content returns to normal.

.7 Where compacting equipment, also known as rolling stock, cannot be used, compact the materials to the prescribed density using mechanical compaction plates approved by the Departmental Representative.

.8 In areas facing existing dykes, dynamic compaction may be carried out only after written authorization has been received from the Departmental Representative.

3.3 COMPACTING TEST

.1 Canceled

3.4 TOLÉRANCES

.1 Permitted deviation from the finished base layer is 20 mm greater or less than the prescribed level; This difference, whether more or less, cannot be uniformly high or low.

3.5 PROTECTION

.1 Maintain the finished base in a condition consistent with the requirements of this section until the next layer is completed or the work is received by the Departmental Representative.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All sections of Divisions 01 - General Requirements

.2 Section 31 23 33.01 – Excavating, Trenching and Backfilling.

.3 Section 31 12 19.01 - Geotextiles

.4 Section 32 92 23 – Sodding

1.2 REFERENCE STANDARDS

.1 Agriculture and Agri-Food Canada

.1 The Canadian System of Soil Classification, Third Edition, 1998.

.2 Canadian Council of Ministers of the Environment

.1 PN1340-2005, Guidelines for Compost Quality

1.3 DEFINITIONS

.1 Compost

.1 Mixture of soil and decomposing organic matter used as fertilizer, mulch, or soil conditioner.

.2 Compost is processed organic matter containing 40% or more organic matter as determined by Walkley-Black or Loss On Ignition (LOI) test.

.3 Product must be sufficiently decomposed (i.e. stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below (25) (50)), and contain no toxic or growth inhibiting contaminates.

.4 Composed bio-solids to: CCME Guidelines for Compost Quality, Category (A).

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.

.2 Documents to be submitted for quality control purposes

.1 Soil testing: Submit test reports certifying that the products, materials and equipment meet the physical characteristics and performance criteria in accordance with PART 2 QUALITY CONTROL SOURCE.

.2 Certificates: submit documents signed by the manufacturer, certifying that products, materials and equipment meet the requirements for physical characteristics and performance criteria.

1.5 QUALITY CONTROL

.1 The Departmental Representative may request the sampling and analysis of soil samples or mixtures of soil at source or on site.

.2 Notify Departmental Representative of proposed sources of topsoil at least fifteen (15) days prior to commencement of work to permit testing. Only one source of supply is accepted.

.3 Contractor shall be responsible for soil testing and shall determine the requirements for the use of soil improvers in order to promote the growth of grass. He must provide, at his own expense, an analysis from an independent and recognized soil laboratory accompanied by agronomic recommendations, if required. All required at least fifteen (15) days prior to commencement of work.

.4 Approval of topsoil and certificate of compliance prior to spraying. All works of soil and anything necessary to meet the requirements of the topsoil are at the expense of the Contractor.

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse in accordance with Section 01 74 21- Construction/Demolition Waste Management and Disposal.

.2 Divert unused soil amendments from landfill to official hazardous material collections site approved by Departmental Representative.

.3 Do not dispose of unused soil amendments into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard

PART 2 PRODUCTS

2.1 TOPSOIL

.1 Topsoil for planting beds seeded areas: mixture of particulates, micro organisms and organic matter which provides suitable medium for supporting intended plant growth.

.1 Soil texture based on The Canadian System of Soil Classification, to consist of 20 to 70% sand, minimum 7% clay, and contain 4 to 10% organic matter by weight and a pH between 6 and 7 (Walkley Black method)

.2 Contain no toxic elements or growth inhibiting materials.

.3 Finished surface free from:

.1 Debris and stones over 50 mm diameter.

.2 Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.

.4 Consistence: friable when moist.

.5 The mixture must be sieved, free from contaminants (pesticides, hydrocarbons, etc.), pebbles or rods exceeding 50 mm in diameter, woody debris and living plant material such as quack grass, thistle etc.

.6 All mix will come from outside the work site and must be screened beforehand from a recognized site. No black soilwill be accepted.

.7 Chemical Elements:

.1 phosphorus ass. : 50-150 kg / ha;

.2 potassium. : 250-350 kg / ha;

.3 calcium : 6,000-9,000 kg / ha;

.4 magnesium: 250-350 kg / ha.

.8 Standard field soil analysis.

.9 Add to soil at least 4 kg/70 m²of 3-4-3 composted fertilizer and incorporate into soil with rake.

.10 For flowerbeds/planting areas and lawns, apply the soil improver and mix thoroughly. Respect the proportions specified by the manufacturer.

2.2 SOIL AMENDMENTS

.1 Fertilizer:

.1 Fertility: major soil nutrients present in following amounts:

.2 Nitrogen (N): 20 to 40micrograms of available N per gram of topsoil.

.3 Phosphorus (P): 40 to 50micrograms of phosphate per gram of topsoil.

.4 Potassium (K): 75 to 110micrograms of potassium per gram of topsoil.

.5 Calcium, magnesium, sulphur and micro-nutrients present in balanced ratios to support germination and/or establishment of intended vegetation.

.6 Ph value: 6.5 to 8.0.

.2 Peatmoss:

.1 Derived from partially decomposed species of Sphagnum Mosses.

.2 Elastic and homogeneous, brown in colour.

.3 Free of wood and deleterious material which could prohibit growth.

.4 Shredded particle minimum size: 5mm.

.3 Sand: washed coarse silica sand, medium to course textured.

.4 Organic matter: compost Category A, in accordance with CCME PN1340, unprocessed organic matter, such as rotted manure, hay, straw, bark residue or sawdust, meeting the organic matter, stability and contaminant requirements.

.5 Use composts meeting Category B requirements for land fill reclamation and large scale industrial applications.

.6 Limestone:

.1 Ground agricultural limestone.

.2 Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve.

.7 Fertilizer: industry accepted standard medium containing nitrogen, phosphorous, potassium and other micro-nutrients suitable to specific plant species or application or defined by soil test.

2.3 SOURCE QUALITY CONTROL

.1 Advise Departmental Representative of sources of topsoil to be utilized with sufficient lead time for testing.

.2 Contractor is responsible for amendments to supply topsoil as specified.

.3 Soil testing by recognized testing facility for PH, P and K, and organic matter.

.4 Testing of topsoil will be carried out by testing laboratory approuved by Departmental Representative.

.1 Soil sampling, testing and analysis to be in accordance with Provincial standards.

PART 3 EXECUTION

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to watercourse, according to requirements of authorities having jurisdiction.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 STRIPPING OF TOPSOIL

.1 Begin to remove topsoil in indicated areas once brush has been removed and clear out from site;

.2 Store for reuse, pickled topsoil meeting the requirements of clause 2.1 in a heap form in a designated location and approved by the Departmental Representative;

.3 Avoid mixing topsoil with soil from the subsoil if this may make the topsoil texture inconsistent with acceptable parameters;

.4 Protect heaps of pickled topsoil from contamination and compaction;

.5 Dispose of unused or non-compliant topsoil in an environmentally friendly manner but not in a landfill, as directed by the Departmental Representative.

3.3 PREPARATION OF EXISTING GRADE

.1 Verify that grades are correct.

.1 If discrepancies occur, notify the Agency Representative and do not commence work until instructed by Agency Representative.

.2 Ensure proper depth of excavation and, for this purpose, the contractor must take into account that the thickness of topsoil, after compaction, must be 150 mm.

.3 Excavate and scarify to a depth of at least 150 mm all granular foundation surfaces of temporary bicycle path to be dismantled and other places where topsoil must be in place after dismantling the pavement.

.4 Level the soil by eliminating hollows and asperities and giving it a slope that promotes a good flow of water. The flow of surface water is in the direction of existing slopes unless otherwise indicated.

.2 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials.

.1 Remove soil contaminated with calcium chloride, toxic materials and petroleum products.

.2 Remove debris which protrudes more than 75 mm above surface.

.3 Dispose of removed material off site.

.3 Cultivate entire area which is to receive topsoil to minimum depth of 150 mm.

.1 Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

.4 If, due to climate or traffic, beads, depressions, crevices or furrows are created, the contractor shall restore the surfaces.

3.4 PLACING AND SPREADING OF TOPSOIL/PLANTING SOIL

.1 Place topsoil after the Departmental Representative has accepted subgrade.

.2 Spread topsoil in uniform layers not exceeding 150 mm. after settlement. Consider the thickness of the sod in order to obtain the right elevations

.3 Topsoil should be recovered for replacement.

.4 Spread the topsoil and planting soil according to the following minimum layer thicknesses after settlement:

- .1 150 mm for grassed areas;
- .2 450 mm for shrubs;
- .3 900 mm for the trees.

.5 Level of topsoil to 15 mm from final soil level to apply sod tiles to correct elevation.

.6 Manually spread topsoil/planting soil around trees, shrubs and obstacles.

.7 Any form of seeding is prohibited.

.8 Plant soil must be packed but not densified.

.9 The soil compaction is compacted using a hand roller weighing not more than 150 kg. Never correct the beads or depressions with the roller. Take into account a settlement of about 25% by volume when placing the topsoil.

3.5 FINISH GRADING

.1 Grade to eliminate rough spots and low areas and ensure positive drainage.

- .1 Prepare loose friable bed by means of cultivation and subsequent raking.
- .2 All this finishing work is done manually with the rake.

.2 Consolidate topsoil to leave surfaces smooth, uniform and firm against deep footprinting.

.3 Install sod as soon as possible after finishing

3.6 ACCEPTANCE

.1 The Departmental Representative will inspect and test topsoil in place and determine acceptance of material, depth of topsoil and finish grading.

3.7 SURPLUS MATERIAL

.1 Dispose of materials except topsoil not required where directed by the Departmental Representative.

3.8 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 All sections of Divisions 01 - General Requirements

.2 Section 31 23 33.01 -. Excavation, Trenching and Backfilling.

.3 Section 32 91 19.13 - Topsoil Placement and Grading

1.2 ADMINISTRATIVE REQUIREMENTS

.1 Scheduling:

.1 Schedule sod laying to coincide with preparation of soil surface.

.2 Schedule sod installation when frost is not present in ground.

.3 Pre-installation meetings: conduct pre-installation meeting to verify project requirements, installation instructions and warranty requirements in accordance with Section 01 31 19 – Project Meetings.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 – Submittal Procedures.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for sod, geotextile and fertilizer. Product documentation must include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 29 06 – Health and Safety Requirements.

.3 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements of seed mix, seed purity, and sod quality.

.4 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties of seed mix, seed purity, and sod quality.

.5 Provide results of eco-toxilogical and environmental characterisation analyses of the topsoil in order to certify that the topsoil respects the CCME for use in Residentail/Parc applications

1.4 COMPETENCIES

.1 Subcontractor in landscaping: must be a member in good standing of the horticultural trade association.

.2 Plantation Supervisor: Landscaping technician certified in plantation of plants.

.3 Landscaping Supervisor: Landscaping technician certified in turf maintenance.

1.5 TRANSPORTATION, STORAGE AND HANDLING

.1 Establish delivery schedule to minimize on-site storage without causing delays in completion of work.

.2 Sod tiles shall be delivered within 24 hours of collection and shall be extended within 36 hours from the same time.

.3 Small, asymmetric or broken sod tiles are prohibited.

.4 In wet weather, allow sod tiles to dry sufficiently so that they do not break when they are collected and handled.

.5 In dry weather, protect sod tiles so that they do not dry completely and water them sufficiently to maintain vitality and prevent the soil from becoming loose during handling. Dry sod tiles will be refused.

.6 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.7 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.8 Storage and Handling Requirements:

.1 Store materials in accordance with supplier's recommendations.

.2 Replace defective or damaged materials with new.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Number one turf grass nursery sod: sod that has been specially sown and cultivated in nursery fields as turf grass crop.

.1 Turf grass nursery sod types:

.1 Conventional grass, Kentucky bluegrass, fescue number one: grown solely from seed mixtures of Kentucky bluegrass cultivars and red-flowing fescues or tracery red fescues, and containing at least 40% cultivars Kentucky bluegrass and 30% turfgrass or tracery, in width of 450 mm.

.2 Number One Named Cultivars: Nursery Sod grown from certified seed.

.2 Turf Grass Nursery Sod quality:

.1 Not more than 1 broadleaf weed and up to 1% native grasses per 40 square metres.

.2 Density of sod sufficient so that no soil is visible from height of 1500 mm when mown to height of 50 mm.

.3 Mowing height limit: 35 to 65 mm.

.4 Soil portion of sod: 6 to 15 mm in thickness.

.2 .Commercial grade cultivated turf:

.1 Grass shall be mowed at the specified height within 36 hours of collection; The mowing residue must be removed.

.2 Grass containing not more than five (5) broadleaf weeds (broadleaved weeds) and up to 20% native grasses per 40 square meters area.

.3 Products favoring the establishment of the lawn:

.1 Biodegradable woven geotextile, 20mm square mesh

.2 Bevelled Wood Stakes 19 x 19 x 300mm.

.4 Good quality water allowing germination and growth of plants. Salt water and peatland water are prohibited.

.5 Fertilizer:

.1 To Canada Fertilizers Act and Fertilizers Regulations.

.2 Complete, synthetic, slow release with 65% of nitrogen content in water-insoluble form.

2.2 SOURCE QUALITY CONTROL

.1 Obtain written approval from the Departmental Representative of sod at source.

.2 When proposed source of sod is approved, use no other source without written authorization from the Departmental Representative.

PART 3 EXECUTION

3.1 INSTALLERS

.1 Use member installers in good standing of the Horticultural Trades Association

3.2 EXAMINATION

.1 Verification of conditions: verify that conditions of substrate previously installed under other sections or contracts are acceptable for sod installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in the presence of the Departmental Representative.

.2 Inform the Departmental Representative of unacceptable conditions immediately upon discovery.

.3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from the Departmental Representative.

3.3 PREPARATION

.1 Ensure that the ground pattern is adequate and that the grass surfaces shown on the plans and as directed by the Departmental Representative are prepared in accordance with Section 32 91 19.13 - Topsoil Layout and leveling finish. Inform the Departmental Representative of any deviation from the drawings and wait for his instructions prior to starting works.

.2 Do not perform work under adverse field conditions such as frozen soil, excessively wet soil or soil covered with snow, ice, or standing water.

.3 Fine grade surface free of humps and hollows to smooth, even grade, elevations indicated to tolerance of plus or minus 15 mm, surface draining naturally.

.4 Remove and dispose of weeds, debris, stones 50 mm in diameter and larger, soil contaminated by oil, gasoline and other deleterious materials, off site.

.5 Adjust soil pH between 6 and 7. If necessary, loosen soil 50 mm deep and incorporate lime

3.4 SOD PLACEMENT

.1 Spread fertilizer evenly over surfaces to be sodded shown on plans and as indicated by Departmental Representative prior to laying turf.

.2 Ensure sod placement is done under supervision of certified Landscape Planting Supervisor.

.3 Lay sod within 24 hours of being lifted if air temperature exceeds 20 degrees C, If not a maximum of 36 hours. In hot weather, moisten the soil before placing the tiles.

.4 Lay sod sections in rows, joints staggered. Butt sections closely without overlapping or leaving gaps between sections. Cut out irregular or thin sections with sharp implements.

.5 Roll sod as directed by the Departmental Representative. Provide close contact between sod and soil by light rolling. Use of heavy roller to correct irregularities in grade is not permitted.

.6 Water thoroughly throughout laying.

.7 Install sod on same day as receiving it.

.8 After laying, water thoroughly until soaked. (± 5 liters/m²).

.9 Water regularly after installation in accordance with local bylaws.

3.5 INSTALLATION OF SOD TILES ON SLOPES AND PICKETTING

.1 Place geotextile biodegradable in location and secure according to manufacturer's instructions.

.2 Begin laying sod tiles at the bottom of slopes by placing them perpendicular to slopes.

.3 Planting stakes in sod tiles on steep slopes with a gradient greater than 1/3 and in tils less than 1 m from sewer inlets and Less than 1 m of canals and evacuation ditches. Arrange the stakes as follows:

.1 200 mm of center distance, 100 mm from the top edge of the first plates covering the profile of the slope;

.2 at least three (3) to six (6) stakes per square meter;

.3 at least six (6) to nine (9) stakes per square meter, in the case of surfaces adjacent to storm drainage works;

.4 plant the stakes so that they extend 20 mm above the ground surface.

3.6 FERTILIZATION PROGRAM

.1 Apply fertilizer during lawn establishment and warranty periods as detailed below.

.1 beginning of May: 2.4 kg / 100 m² of type 21-3-9 fertilizer;

.2 mid-June: 2.4 kg / 100 m² of type 21-3-9 fertilizer;

.3 end of August: 3.0 kg / 100 m² of fertilizer type 10-25-10.

3.7 CLEANING

.1 Progress cleaning: clean in accordance with Section 01 74 11 – Cleaning.

.1 Leave Work area clean at end of each day.

.2 Keep pavement and area adjacent to site clean and free of mud, dirt, and debris at all times.

.2 Final cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.

.1 Clean and reinstate areas affected by Work.

3.8 PROTECTION BARRIERS

.1 Protect newly sodded areas from deterioration with snow fence on rigid frame as directed by the Departmental Representative.

.2 Remove protection two (2) weeks after installation following inspection as directed by the Departmental Representative.

3.9 MAINTENANCE DURING ESTABLISHMENT PERIOD

.1 Perform following operations from time of installation until acceptance.

.1 Immediately irrigate tiles after laying until the first 25 mm of soil under the tile is completely moist.

.2 Keep the soil moist at all times during the first week following the installation of the tiles

.3 Water sodded areas in sufficient quantities and at frequency required to maintain optimum soil moisture condition to depth of 75 to 100 mm.

.4 Cut grass to 50 mm when or before it reaches a height of 75 mm.

.5 Maintain sodded areas weed free 95%.

.6 Fertilize sodded areas in accordance with supplier's recommendations. Spread half of required amount of fertilizer in one direction and remainder at right angles, and water in well.

.7 Temporary barriers or signage to be maintained where required to protect newly established sod.

3.10 ACCEPTANCE

.1 Turf Grass Nursery Sod areas will be accepted by the Departmental Representative provided that:

.1 Sodded areas are properly established.

.2 Sod is free of bare and dead spots.

.3 No surface soil is visible from height of 1500 mm when grass has been cut to height of 50 mm.

.4 Sodded areas have been cut minimum 2 times prior to acceptance.

.2 Areas sodded in fall will be accepted in following spring one month after start of growing season provided acceptance conditions are fulfilled.

.3 When environmental conditions allow, all sodded areas showing shrinkage cracks shall be top-dressed and seeded with a seed mix matching the original.

3.11 MAINTENANCE DURING WARRANTY PERIOD

.1 Perform following operations from time of acceptance until end of warranty period. The period of warranty and maintenance is 1 year starting from the final acceptance of the works.

.1 Water sodded Turf Grass Nursery Sod areas at weekly intervals to obtain optimum soil moisture conditions to depth of 100 mm.

.2 Repair and re-sod dead or bare spots to satisfaction of the Departmental Representative.

.3 Cut grass and remove clippings that will smother grass as directed by the Departmental Representative to height as follows:

.1 Turf Grass Nursery Sod: cut to 50 mm during normal growing conditions.

.2 Cut grass at 2 week intervals or as directed by the Departmental Representative, but at intervals so that approximately one third of growth is removed in single cut.

.3 Eliminate weeds by mechanical means to extent acceptable to the Departmental Representative.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section «01 33 00 - Documents / Samples to be submitted»

.2 Section "01 35 29.06 - Health and Safety"

.3 Section «01 35 43 - Protection of the environment»

.4 Section "01 61 00 - General Product Requirements"

.5 Section «01 74 11 - Cleaning»

.6 Section "01 74 21 - Construction / Demolition Waste Management and Disposal"

.7 Section "32 91 19.13 - Topsoil

1.2 REFERENCES

.1 Definitions

.1 Mycorrhiza: symbiotic association of a fungus with the roots of a plant. This symbiotic association promotes the establishment of plants in recently imported and developed soils.

.2 References

.1 Agriculture et Agroalimentaire Canada (AAC)

.1 Zones de rusticité pour les plantes au Canada.

.2 Association canadienne des pépiniéristes et des paysagistes - ACPP

.1 Canadian Standards for Nursery Stock.

.3 Santé Canada/Système d'information sur les matières dangereuses utilisées au travail (SIMDUT)

.1 Fiches signalétiques (FS).

.4 U.S. Environmental Protection Agency (EPA) / Office of Water

.1 EPA 832/R-92-005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

.5 Bureau de normalisation du Québec

.1 NQ 0605-030, Aménagement paysager – Engazonnement et ensemencement.

.2 NQ 0605-100, Aménagement paysager à l'aide de végétaux.

1.3 ADMINISTRATIVE PROCEDURES

.1 Submit schedule of work to Departmental Representative for review, seven (7) days prior to delivery of the plants.

.2 The schedule of work must indicate the following information.

.1 Type and number of plants.

.2 Delivery dates.

.3 Dates of arrival at the site.

.4 Planting dates.

1.4 SUBMITTALS / SUBMITTALS FOR APPROVAL / INFORMATION

.1 Submit required documents and samples in accordance with Section "01 33 00 - Submittal Procedures".

.2 Data Sheets

.1 Submit manufacturer's data sheets, instructions and documentation for trees, shrubs, plant cover crops, fertilizers, mycorrhizae, anti-desiccants, anchors and mulch. The data sheets must indicate the characteristics of the products, the performance criteria, the dimensions, the limits and the finish.

.2 Submit two (2) copies of Material Safety Data Sheets required by WHMIS, in accordance with sections "01 35 29.06 - Health and Safety" and "01 35 43 - Environmental Protection".

1.5 QUALITY ASSURANCE

.1 Skills

.1 Landscaping Contractor: must be a member in good standing of the Horticultural Trades Association.

.2 Plantation Supervisor: Certified Landscaping Technician in vegetal Planting.

.3 Landscape Maintenance Supervisor: Landscaping Technician certified in Landscaping Maintenance.

.4 The extraction of existing trees to be relocated must be done with care with "transplanter" or "extractor" type equipment approved by the Departmental Representative, so that the clumps remain intact and approximately 2,29 m in diameter by 1.52 m of depth. The device must be operated by a company specialized in transplantation.

1.6 TRANSPORTATION, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - General Product Requirements.

.2 Delivery and Acceptance: Deliver materials to site in their original packaging, which must be labeled with the name and address of the manufacturer.

.1 On delivery, protect plants against frost, excessive heat, wind and sun.

.2 Protect plants from damage during transport.

.1 When the distance to be traveled is less than 30 km and the truck is traveling less than 80 km / h, place tarpaulins around the plants or above the truck body.

.2 When the distance to be traveled is greater than 30 km or the truck is traveling more than 80 km / h, use a closed truck, if possible.

.3 When it is not possible, due to the size and weight of the plants, use a closed truck, protect the foliage and the clods with anti-desiccants and tarpaulins.

.3 Storage and Handling

.1 Protect and immediately store plants that will not be installed within one (1) hour, in accordance with the written recommendations of the supplier and upon arrival at the site, placing them at the location approved for this purpose by the Contractor. CPA Representative.

.2 Protect stored plants from frost, wind and sun, using the following measures.

.1 In the case of bare-rooted plants, maintain moisture around the roots by gauging the plants or burying their roots in sand or topsoil and watering the entire depth of the rhizosphere.

.2 For containerized plants, maintain adequate moisture level in containers. Put in gauge the plants delivered in fiber containers.

.3 In the case of plants put in tontine and surrounded by a basket of wire, place them so as to protect the branches against any damage, and maintain an adequate level of moisture in the rhizosphere.

.3 Store and manage hazardous materials in accordance with manufacturer's written instructions.

.4 Packaging Waste Management: recover packaging waste for reuse as directed by Construction Waste Management Plan, in accordance with Section 01 74 21 - Waste Management and Disposal. construction ".

1.7 GARANTEE

.1 For plants larger than 75 mm in diameter, the warranty period is 12 months.

.2 The Contractor hereby warrants that plants with a diameter greater than 75 mm will remain free from defects in accordance with the General Conditions of GC 12.3 for one (1) complete growing season, the following: work is subject to a single audit, provided adequate maintenance has been ensured.

.3 The Departmental Representative will inspect the plants at the end of the warranty period.

.4 Departmental Representative reserves the right to extend the Contractor's responsibility for another year if, at the end of the initial warranty period, foliage and development do not appear sufficient to ensure future survival plant.

.5 The Contractor's warranty includes the materials, labor, equipment and tools required to replace all plants that do not meet the growth conditions required in this section.

.6 All planting materials and methods used for plant replacement must meet all specifications of this quotation.

.7 Contractor does not have to offer warranty on existing transplanted trees. However, he must demonstrate throughout the project that he is doing everything possible to ensure the success of the work at the time of transplantation and tree maintenance.

PART 2 PRODUCTS

2.1 PLANT

.1 All plants will be grown in the nursery and possess the characteristics of the species. The dimensions and species will be as shown in the planting list.

.2 The Departmental Representative must approve seedlings in nursery or delivered to the site prior to planting. If the contractor overrides this directive, the plants may be refused after planting.

.3 No substitute is accepted without the authorization of the CPA Representative.

.4 All plants and planting material must be of first quality and meet the BNQ standard, NQ 0605-300.

.5 Root preparation type, dimensions, category and quality: must comply with the Canadian Standards for Nursery Stock.

.6 Source of Plant Supply: Plants grown in a nursery in Plant Hardiness Zone 3 and 4, according to plant hardiness zones in Canada.

.7 Plants: free of diseases, insects, defects or bruises, having a healthy structure and a strong fasciculated root system.

.8 Trees (new): unless otherwise indicated, trees with straight trunk and branch provided and characteristic of the species.

.9 Trees (existing): trees 150 mm to 300 mm in diameter, within the limits of the project, identified on the plans and on site by the Departmental Representative.

2.2 PLANTING GROUND

.1 Planting Potting in accordance with Section "32 91 19.13 - Topsoil Laying and Finishing Leveling".

2.3 WATER

.1 Water free of impurities that could affect plant growth.

2.4 STAKES

.1 T-sections, 40 mm x 40 mm x 5 mm x 244 mm, galvanized and painted green.

2.5 SADDLES

.1 For trees 70 mm and less DHS (diameter at the height of the stump), rubberized saddle, flexible and adjustable 90 mm diameter type "Pro-Tie", or the equivalent approved by the Representative of the APC.

.2 Saddles Fastener: 5 mm round head screw for square screwdriver and galvanized steel bolts.

2.6 TENSIONERS

.1 Galvanized steel screw tensioner, 9.5 mm diameter and 270 mm extended length.

2.7 HAUBAN WIRE

.1 Steel wire cable, 1.5 mm in diameter.

2.8 CABLE CLAMP

.1 U-bolts: 13 mm in diameter, galvanized, with curved retaining bar and hex nuts.

.2 To crimp.

2.9 ANCHOR PICKETS

.1 In wood

.1 Type 1 : 38 mm x 38 mm x 460 mm.

.2 Type 2 : 38 mm x 67 mm x 600 mm.

.2 Push in

.1 Type 1: 13 mm diameter x 75 mm length, made of aluminum.

.2 Type 2: 18 mm in diameter x 120 mm in length, made of aluminum.

.3 Screw in

.1 Type 1: steel discs 100 mm in diameter.

2.10 HAUBANING COLLARS

.1 Tubes: nylon reinforced plastic, 13 mm diameter.

2.11 TRUNK PROTECTION

.1 Wire mesh consisting of electrically welded galvanized wire, 1.4 mm in diameter, with 25 mm x 25 mm mesh and fasteners.

.2 Spiral bands in perforated plastic.

.3 Clean burlap, with a mass per unit area of at least 2.5 kg / m^2 and a width of at least 150 mm, with tie rope.

.4 Tar-impregnated crepe paper with tie rope.

2.12 MULCH

.1 Mulch composed of bark fragments: conifer bark fragment varying in diameter to a 50 mm maximum (fine cedar mulch).

2.13 FERTILIZER

.1 Fertilizers compliant with the Fertilizers Act and the Fertilizers Regulations of Canada.

.2 Commercial chemical fertilizer determined according to soil test results and manufacturer's recommendations based on time and season. The forms must be registered for planting and maintenance and validated by the Departmental Representative.

.3 Ground bones, 100% natural, 2-11-0 formulation.

.4 Mycorrhiza pro-greening:

.1 Ensure new roots are in contact with mycorrhizae.

.2 Use mycorrhizae according to manufacturer's written recommendations.

2.14 ANTI-DESSOCKING AGENT

.1 Waxy emulsion.

2.15 TAPE FOR FANIONS

.1 Pink fluorescent ribbon.

2.16 QUALITY CONTROL AT SOURCE

.1 Before planting, submit plants to Departmental Representative for review.

.2 Imported plants must be accompanied by the necessary permits and import licenses. Comply with federal, provincial or territorial regulations.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Verification of conditions: before proceeding with the plant installation, ensure that the condition of the surfaces / supports previously implemented under other sections or contracts is acceptable and allows the work to be carried out in accordance with the instructions written by the manufacturer.

.1 Visually inspect surfaces / supports in the presence of Departmental Representative.

.2 Notify Departmental Representative immediately of any unacceptable conditions found.

.3 Begin installation work only after correcting unacceptable conditions and receiving written approval from Departmental Representative.

3.2 PREPARATORY WORK

.1 Begin work only after receiving written approval from Departmental Representative for plants.

.2 Cut damaged roots and branches.

.3 Apply anti-desiccant to conifers and foliage of deciduous trees in accordance with manufacturer's instructions.

.4 Identify and protect utility lines.

.5 Notify utility companies and receive written acknowledgments from them before beginning excavation of pits to receive trees and shrubs.

.6 Temporary means of erosion and sediment control

.1 Establish temporary erosion and sediment control measures to prevent soil loss and to prevent sediment from runoff or dust from being deposited on adjacent properties and walkways or particles driven by wind, in accordance with the requirements of the competent authorities.

.2 Inspect, maintain and repair control equipment as required until permanent vegetation is established.

.3 Remove the means of control, then restore and stabilize the surfaces stirred during these works.

3.3 EXCAVATION AND PREPARATION OF PLANTATION AREAS

.1 Establish bedding of planting areas in accordance with Section "31 22 13 - Summary Leveling Work".

.2 Prepare planting areas in accordance with Section "32 91 19.13 - Topsoil and Finishing Leveling".

.3 Planting Holes

.1 Prior to excavation, mark the ground and submit the route to the Departmental Representative for review.

.2 Dig to the specified depth and width.

.3 Unless otherwise indicated in the drawings, the pit diameter must be two (2) times larger than the diameter of the root ball or large enough to allow complete spreading of the roots plus a minimum of 500 mm between the root ball and the walls.

.4 Remove rocks, roots, debris and toxic materials from excavated soil for individually planted trees and shrubs. Evacuate excess materials.

.5 Scarify the walls of the planting holes.

.6 Before planting trees and shrubs, remove water that has infiltrated into holes. Notify the Departmental Representative if it is groundwater.

.7 An excavation must never remain open and earth piles can not remain on site after the cessation of work.

3.4 PLANTING TREES

.1 Protect trunk, crown and root ball during transportation and handling. Use a forked machine with three (3) points of support or a suitable clamp, which ensures that the shaft remains upright during handling. The equipment used by the Contractor must be approved by the Departmental Representative prior to planting.

.2 Release the top of the root ball to establish the level of the collar. Determine the actual height of the mound according to the collar. Place the plants straight in the pits; arrange them so that they produce the best effect and harmonize with the surrounding works.

.3 Lay the mound to ensure that the level of the collar corresponds to the finished level of the adjacent soil.

.4 For tontine clods, loosen the canvas and cut off the upper part, 1/3 of the height of the root ball, taking care not to undo this one. It is forbidden to remove the canvas or rope under the root ball. In the case of plants grown in containers, remove the pot without undoing the root ball.

.5 Never leave in the pits any wrapping material that is not biodegradable.

.6 Add and compact the potting soil in layers of 150 mm, to eliminate any air pockets. It is forbidden to use frozen or water saturated soil. After spreading 2/3 of the potting soil, fill the pit with water. When the water has completely penetrated the soil, backfill the pit to the level of the collar and the finished soil.

.7 For isolated plants, model with the substrate a water retention cup, which should be 100 to 150 mm high, to be located at the limits of the planting pit and whose inside radius of the bowl should correspond to the outer radius of the mound. This bowl is covered with 8 cm thick mulch, except on the last 15 cm in diameter around the trunk of the tree.

.8 Water the plants amply.

.9 After soil compaction, backfill to final level.

3.5 TRANSPLANTATION OF TREES

.1 Tree identification:

.1 The Contractor must identify on site with the Departmental Representative each tree that is to be transplanted.

.2 The Contractor must notify the Departmental Representative of any visible or foreseeable constraints that could interfere with the transplant work.

.2 Barriers to transplantation:

.1 The Contractor may, under the supervision of the Departmental Representative and, when deemed necessary, cut down a tree, shrub, remove a surface stone, a post or chain link fence that may be detrimental to the Contractor.

.3 Location of transplantation:

.1 The Contractor shall determine on site with the Departmental Representative the location of tree transplantation.

.4 Branch pruning:

.1 In the event that branches are located in the operating area of the machinery and may be damaged by the work, the Departmental Representative shall indicate on the spot the interfering branches to be cleared.

.2 This protective pruning must be carried out before the machinery is maneuvered and must be carried out according to the thinning method defined in the procedures listed in the BNQ 0605-200.

.5 Transplantation:

.1 The Contractor must submit to the Departmental Representative, for approval, a method of intervention to ensure the successful completion of the transplant work.

.2 In the case of an immediate transplant, the contractor must:

.1 Excavate the pit with a tree harvester;

.2 Extract the plants carefully, with equipment such as "transplant or extractor" so that the clumps remain intact;

.3 Transplant tree directly to intended location.

.3 If the tree can not be transplanted for reasons of underground obstacles (stone, wood, concrete, or other), the Departmental Representative must endorse the decision to abandon the tree transplantation and transfer the machinery to another tree to transplant.

.4 Cutting roots:

.1 The Contractor shall have the specialized personnel and, in accordance with the instructions of the Departmental Representative, perform a clean or surgical cut of all tree roots that have been updated and broken by excavation or removal of existing structures.

3.6 FERTILIZATION

.1 Trees, mix with the soil of the plantation pit:

.1 200 grams of fertilizer of formula 2-11-0 (ground bone) / tree;

.2 500 ml of mycorrhizae / tree.

3.7 TRUNK PROTECTION

.1 Install trunk protection material before placing stakes.

3.8 STAKING

.1 Install stakes as indicated.

.2 Install one (1) sole stakes for deciduous trees less than 3 m tall and evergreen trees less than 2 m tall.

.1 Place the stake on the side of the prevailing wind, at a distance of at least 150 mm from the trunk.

.2 Drive the stake to a depth of at least 150 mm into undisturbed soil below the roots.

.1 Make sure stake is solid, vertical, and not slotted.

.3 Install a 150 mm long tube as a guying collar at a height of 1500 mm above ground level.

.4 Insert Type 1 guy wire into the tube; fold the tube around the shaft to form a collar.

.1 Twist wire to secure, tie wire firmly to stake, then cut remaining wire.

.3 Install three (3) stay wires attached to anchor stakes around deciduous trees larger than 3 m and around evergreen trees over 2 m in height.

.1 Use type 2 stay wire with wire clamps for shafts less than 75 mm in diameter, and type 3 stay wire with wire clamps for shafts larger than 75 mm in diameter.

.2 Use type 1 anchors for trees less than 75 mm in diameter, and type 2 for trees greater than 75 mm in diameter.

.3 Install guying collars over branches to prevent slipping, approximately 2/3 of the overall height for evergreen trees, and half height in the case of trees with deciduous leaves. Collars must not be mounted more than 2.5 m above the ground.

.4 Guying collars shall be of sufficient circumference to encircle the trunk and allow a clearance of 50 mm between the collar and the trunk. Insert a stay wire into the collar encircling the trunk of the tree, and secure it to the main wire using a wire clamp or twisting it; cut the wire near the twist. Arrange the stays also around the trunk, at intervals of about 120 degrees.

.5 Place stakes at equal intervals around the shaft so that the strand wire is at 45 degrees to the ground. Install them at the angle that will give the wire maximum strength.

.6 Attach stay wires to anchor posts and secure with wire clamps.

.7 Install tensioners and tension shrouds, leaving the clearance required to allow slight movement of the shaft.

.8 Saw the top of the wooden anchor posts 100 mm above grade, or at the height determined by the Departmental Representative.

.9 Apply fluorescent tape as pennants on stay lines, as indicated.

.4 After installing the stakes, remove the broken branches with clean and well-honed tools.

3.9 MULCH

.1 Before spreading mulch, add soil, if necessary, to compensate for soil compaction.

.2 Spread mulch as indicated.

3.10 MAINTENANCE DURING THE ESTABLISHMENT PERIOD

.1 Perform the following maintenance work from the plantation to the date of receipt of the work by the Departmental Representative.

.1 Water the soil to maintain a level of moisture to ensure establishment, growth and plant health, without causing erosion.

.2 Thoroughly water evergreen trees late in the fall before freezing to saturate the soil around the roots.

.3 Remove weeds once a month.

.4 Replace mulch that has been disturbed and add as needed.

.5 In areas not covered with mulch, work the soil as needed to keep the top layer friable.

.6 If insect, fungus and disease control is required, use appropriate control methods in accordance with federal, provincial and municipal regulations. Before applying them, submit the products to the Departmental Representative for review.

.7 Cut dead or broken branches.

.8 Maintain trunk protection and stay wires in good condition; adjust them as needed.

.9 Remove and replace dead or diseased plants in the manner prescribed for early planting.

3.11 MAINTENANCE DURING THE WARRANTY PERIOD

.1 Perform the following maintenance work from the time of receipt of the work by the Departmental Representative until the end of the warranty period.

.1 Water the soil to maintain a proper moisture level to ensure optimal plant growth and health without causing erosion.

.2 Reshape damaged garden cuvettes.

.3 Remove weeds once a month.

.4 Replace mulch that has been disturbed and add as needed.

.5 In areas not covered with mulch, work the soil once a month to keep the top layer friable.

.6 If insect, fungus and disease control is required, use appropriate control methods in accordance with federal, provincial and municipal regulations. Before applying them, submit the products to the Departmental Representative.

.7 Spread fertilizer early in spring based on soil test results.

.8 Cut dead, broken or dangerous branches.

.9 Maintain tree trunks and tree stakes in good condition; adjust them as needed.

.10 At the end of the warranty period, remove trunk guards and tree stakes and level the troughs.

.11 Remove and replace dead or diseased plants in the manner prescribed for early planting.

.12 Submit monthly to the CPA Representative a written report containing the following information.

.1 Maintenance work performed.

.2 The development and condition of plants.

.3 The necessary preventive or corrective measures that are not the responsibility of the Contractor.

3.12 CLEANING

.1 Work in progress: carry out cleaning in accordance with Section 01 74 11 - Cleaning.

.1 Leave the premises clean at the end of each working day.

.2 Final Cleaning: remove surplus materials, rubbish, tools and equipment from site, in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: Sort waste for recycling in accordance with Section 01 74 21 - Construction Waste Management and Disposal.

.1 Remove bins and recycling bins from site and dispose of materials at appropriate facilities.

.2 Send unused burlap, wire and plastic plant containers to a plastic recycling facility authorized by the Departmental Representative.

.3 Transfer unused fertilizer to an approved hazardous material collection site authorized by the Departmental Representative.

.4 Dispose of unused anti-desiccant product to an approved hazardous materials collection site authorized by the Departmental Representative.

.5 Send unused wood and mulch to a recycling facility authorized by the Departmental Representative.

3.13 ACTIVITIES RELATED TO THE COMPLETION OF WORK

.1 Submit maintenance reports for trees, shrubs and other vegetation.

END OF SECTION