PARKS CANADA

La Mauricie National Park

Protection Works Against Slope Erosion at km 3 of Promenade Road
Y/REF. : 45351610

TECHNICAL SPECIFICATION
Issue for tender

OUR FILE : 131-21559-07

DATE : July 1st, 2015

Prepared by : _____
Francis Désilets, Eng.

Verified by : _____
Jocelyn Drouin, Eng.

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 This document should be read in conjunction with plans issued for tender.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

.1 Work of this Contract include stabilization of the Saint-Maurice River banks at km 3.3 of Promenade Road in La Mauricie National Park.

.2 Bank stabilization work includes, but is not limited to:

- .1 Maintain traffic for the duration of work ;
- .2 Remove and dispose of the existing flexible guardrail ;
- .3 Remove topsoil in the project area ;
- .4 Excavate a trench into the river bed ;
- .5 Install geotextile and riprap ;
- .6 Set up topsoil ;
- .7 Install semi-rigid guardrail ;
- .8 All activities complementary to work.

1.3 CONTRACT METHOD

Work to be subject to a lump-sum contract. Some elements will be subject to separated unit price which allows for adjustment.

1.4 WORK BY OTHERS

.1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from Parks Canada Representative.

.2 Co-ordinate work with that of other Contractors. If any part of work under this Contract depends for its proper execution or result upon work of another Contractor, report promptly to Parks Canada Representative, in writing, any defects which may interfere with proper execution of Work.

1.5 WORK SEQUENCE

.1 Construct Work in stages to accommodate Owner's continued use of premises during construction.

.2 Co-ordinate Progress Schedule and co-ordinate with Owner Occupancy during construction.

.3 Construct Work in stages to provide for continuous public usage. Do not close off public usage of facilities until use of one stage of Work will provide alternate usage.

1.6 CONTRACTOR USE OF PREMISES

.1 Unrestricted use of site until Substantial Performance.

.2 Limit use of premises for Work, for access, to allow:

.1 Use of premises by the public.

.3 Co-ordinate use of premises under direction of Parks Canada Representative.

.4 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

.5 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.

.6 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Parks Canada Representative.

.7 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.7 DOCUMENTS REQUIRED

.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 Other documents as specified.

PART 2 PRODUCTS

2.1 NOT USED

PART 3 EXECUTION

3.1 NOT USED

END OF SECTION

PART 1 GENERAL

1.1 ADMINISTRATIVE

.1 Submit to Parks Canada Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with Work affected by submittal until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals prior to submission to Parks Canada Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.

.6 Notify Parks Canada Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify field measurements and affected adjacent Work are co-ordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Parks Canada Representative review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Parks Canada Representative review.

.10 Keep one reviewed copy of each submission on site.

1.2 SHOP DRAWINGS AND PRODUCT DATA

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Québec.

.3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.4 Allow 7 days for Parks Canada Representative review of each submission.

.5 Adjustments made on shop drawings by Parks Canada Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Parks Canada Representative prior to proceeding with Work.

.6 Make changes in shop drawings as Parks Canada Representative may require, consistent with Contract Documents. When resubmitting, notify Parks Canada Representative in writing of revisions other than those requested.

.7 Accompany submissions with transmittal letter, containing:

- .1 Date.
- .2 Project title and number.
- .3 Contractor's name and address.
- .4 Identification and quantity of each shop drawing, product data and sample.
- .5 Other pertinent data.

.8 Submissions include:

- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable:
  - .1 Fabrication.
  - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
  - .3 Setting or erection details.
  - .4 Capacities.
  - .5 Performance characteristics.
  - .6 Standards.
  - .7 Operating weight.
  - .8 Wiring diagrams.
  - .9 Single line and schematic diagrams.
  - .10 Relationship to adjacent work.

.9 After Parks Canada Representative review, distribute copies.

.10 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as Parks Canada Representative may reasonably request.

.11 Submit copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Parks Canada Representative where shop drawings will not be prepared due to standardized manufacture of product.

.12 Submit electronic copy of test reports for requirements requested in specification Sections and as requested by Parks Canada Representative.

.1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.

.2 Testing must have been within 3 years of date of contract award for project.

.13 Submit an electronic copy of certificates for requirements requested in specification Sections and as requested by Parks Canada Representative.

.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.

.2 Certificates must be dated after award of project contract complete with project name.

.14 Submit an electronic copy of manufacturer’s instructions for requirements requested in specification Sections and as requested by Parks Canada Representative.

.1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.

.15 Submit an electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Parks Canada Representative.

.16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.17 Submit an electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Parks Canada Representative.

.18 Delete information not applicable to project.

.19 Supplement standard information to provide details applicable to project.

.20 If upon review by Parks Canada Representative, no errors or omissions are discovered or if only minor corrections are made, the electronic copy will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.3 RELEVANT CERTIFICATES

.1 Immediately after award of Contract, submit Workers' Compensation Board status.

.2 Submit transcription of insurance immediately after award of Contract.

PART 2 PRODUCTS

2.1 NOT USED

PART 3 EXECUTION

3.1 NOT USED

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 « Ministère des Transports du Québec (MTQ) Signalisation routière, Tome V »

1.2 PROTECTION OF PUBLIC TRAFFIC

.1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.

.2 When working on travelled way:

.1 Place equipment in position to minimize interference and hazard to travelling public.

.2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.

.3 Do not leave equipment on travelled way overnight.

.3 Close lanes of road only after receipt of written approval from Parks Canada Representative.

.1 Before re-routing traffic erect suitable signs and devices to Tome V of Quebec Ministry of Transportation.

.4 Keep travelled way graded, free from pot holes and of sufficient width for required number of lanes of traffic.

.1 Provide 7 m wide minimum temporary roadway for traffic in two-way sections through Work and on detours.

.2 Provide 5 m wide minimum temporary roadway for traffic in one-way sections through Work and on detours.

1.3 INFORMATIONAL AND WARNING DEVICES

.1 Provide and maintain signs and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.

.2 Supply and erect signs, delineators, barricades and miscellaneous warning devices to “Guide de signaliation des travaux routiers” of Quebec Ministry of Transportation.

.3 Place signs and other devices in locations recommended in “Guide de signaliation des travaux routiers” of Quebec Ministry of Transportation.

.4 Meet with Parks Canada Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Parks Canada Representative.

.5 Continually maintain traffic control devices in use:

.1 Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.

.2 Remove or cover signs which do not apply to conditions existing from day to day.

1.4 CONTROL OF PUBLIC TRAFFIC

.1 Provide competent flag personnel, trained in accordance with, and properly equipped to "Guide de signaliation des travaux routiers" of Quebec Ministry of Transportation, for situations as follows:

.1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.

.2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.

.3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.

.4 Where temporary protection is required while other traffic control devices are being erected or taken down.

.5 For emergency protection when other traffic control devices are not readily available.

.6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

.7 At each end of restricted sections where pilot cars are required.

.8 Delays to public traffic due to contractor's operators: maximum of 5 minutes.

.2 Where roadway, carrying two-way traffic, is restricted to one lane, for 24 hours each day, provide portable traffic signal system.

.1 Adjust, as necessary, and regularly maintain system during period of restriction.

.2 Ensure signal system meets requirements of "Guide de signalisation des travaux routiers" of Quebec Ministry of Transportation.

1.5 OPERATIONAL REQUIREMENTS

.1 Keep at least one lane open for circulation throughout period of contract.

.2 Maintain existing conditions except when required for construction. With approval of Parks Canada Representative, existing conditions for cross traffic restricted as follows:

.1 On work site

.1 Speed limit reduced to 50 km/h crossing right-of-way.

.2 Delays to public traffic: maximum of 5 minutes.

PART 2 PRODUCTS

2.1 NOT USED

PART 3 EXECUTION

3.1 NOT USED

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 « Ouvrages Routiers », of Quebec Ministry of Transportation, last edition.

.2 « Code de la sécurité routière du Québec, Tome V – Signalisation routière », of Quebec Ministry of Transportation, last edition.

.3 « La Commission de la Santé et de la Sécurité au Travail du Québec », last edition.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Submit site-specific Health and Safety Plan: Within 5 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:

.1 Results of site specific safety hazard assessment.

.2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.

.3 Submit one (1) copy of Contractor's authorized representative's work site health and safety inspection reports to Parks Canada Representative.

.4 Submit copies of reports or directions issued by Federal and Provincial health and safety inspectors.

.5 Submit copies of incident and accident reports.

.6 Parks Canada Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within two (2) days after receipt of plan. Revise plan as appropriate and resubmit plan to Parks Canada Representative within two (2) days after receipt of comments from Parks Canada Representative.

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

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

.9 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.3 FILING OF NOTICE

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

.2 Contractor shall be responsible and assume the Principal Contractor role for each work zone location and not the entire complex. Contractor shall provide a written acknowledgement of this responsibility with 3 weeks of contract award. Contractor to submit written acknowledgement to CSST along with Ouverture de Chantier Notice.

.3 Work zone locations include:

.1 Saint-Maurice River banks.

1.4 SAFETY ASSESSMENT

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

1.5 MEETINGS

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

1.6 PROJECT/SITE CONDITIONS

.1 Work at site will involve contact with:

.1 Existing structures with some structural flaws.

.2 Wild animals and their feces (bears).

1.7 GENERAL REQUIREMENTS

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

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

1.8 RESPONSIBILITY

.1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

.2 Contractor will be responsible and assume the role Constructor as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.

.3 Contractor shall be the Principal Contractor as described in the Quebec Act Respecting Health and Safety code for the Construction for only their scope and areas of work as defined and described this project specification.

.4 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.9 COMPLIANCE REQUIREMENTS

.1 Comply with the Occupational Health and Safety Regulations under the Canada Labour Code.

.2 Comply with An Act Respecting Occupational Health and Safety, CQLR c S-2.1, and the Safety Code for the construction industry, CQLR c S-1.1, r 4.

1.10 UNFORSEEN HAZARDS

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

1.11 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Parks Canada Representative.

1.12 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Parks Canada Representative.

.2 Provide Parks Canada Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Parks Canada Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.13 WORK STOPPAGE

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

PART 2 PRODUCTS

2.1 NOT USED

PART 3 EXECUTION

3.1 NOT USED

END OF SECTION

PART 1 GENERAL

1.1 PRECEDENCE

.1 In the case of work done for the federal government, Division 1 sections have precedence over technical sections of other divisions of project specifications.

1.2 PRICE AND PAYMENT PROCEDURES

.1 The sediment trap for river works is bought at the all-in price.

.2 The various environmental protection measures are divided among each of the elements featured in the project.

1.3 WORK METHOD

.1 The Contractor must submit his work method and his sediment control plan (1) week before the start of work for approval by Parks Canada Representative.

1.4 RESTRICTIONS

.1 In order to protect the ecological integrity of the national park, some items have been removed from CCDG specifications and standards :

Embankments with concrete or asphalt recycled: Articles 4.2.2 and 11.6.1.5;

- landscaping: Chapter 18 (including the use of straw as a temporary stabilization means and the straw bales to replace silt fences) ;
- any use of straw or hay is prohibited within the National Park ;
- other products of water as a dust suppressant: Article 12.4 ;
- ford in the river: Article 10.4.3.4 ;
- temporary diversion of rivers.

1.5 DISPOSAL OF WASTE

.1 Do not bury any kind of materials on Parks Canada territory.

.2 Do not dispose of waste or any kind of materials into waterways.

Waste must be disposed of outside Parks Canada property while respecting federal and provincial regulations for the protection of the environment. Waste includes: demolition materials not kept by Parks Canada, hazardous materials (liquid and solid), and water containing suspended solids.

1.6 TREE, SHRUB, AND PLANT PROTECTION

.1 Protect trees, shrubs, and plants on site and adjacent properties where indicated. Deforestation is limited to authorized areas necessary for carrying out the work.

Precise identification of the deforestation area (conducted jointly with the Park authorities), by marking and tagging is mandatory. The markup plan deforestation areas shall be subject to the supervisor for approval before the start of felling.

Deforestation is run manually so that the base of the felled trees is as far as possible from watercourses. No trees or cutting residue shall fall into the river. If this is the case, the debris is removed manually by causing the least possible disturbance to the bed and river banks.

.2 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.

.3 Minimize stripping of topsoil and vegetation.

.4 Before start of work, Contractor must remove and pile up the plant cover for its subsequent use.

.5 Restrict tree removal to areas indicated or designated by Parks Canada Representative.

.6 Obtain the approval of Parks Canada Representative before pruning. Apply product approved by Parks Canada Representative on pruning wound.

.7 If plants have to be moved with a transplanting cup, they should be placed in a gunny bag with enough soil to contain all roots and ensure their appropriate protection. Keep soil wet at all time. Keep away from sun. Once work is completed, replant at the initial location, or where indicated by Parks Canada Representative.

1.7 WORK ADJACENT TO WATERWAYS

.1 Do not extract natural or human material from waterways bed, or from areas close to them.

.2 Do not dump waste material or debris in waterways, or anywhere near them.

.3 Take necessary measures as to minimize solid materials in water caused by the stirring of waterways bed or resulting from work near waterways. To do so, minimize inflow on site and treat outflow using temporary structures (cofferdams, sedimentation basin, filter berm, etc.)

.4 Determine type(s) of cofferdam(s) or temporary structure(s), as well as construction and demolition method, depending on soil and waterway characteristics as to prevent pollution. Design of temporary structures (cofferdams, embankments, etc.) must consider a 2-year flood which could reach 102.56 m, and an additional protection height of 300 m.

.5 Materials used for the cofferdams must be clean and free of fine particles. No cofferdams built with fine particles, even if contained in a geomembrane, shall be accepted. Granular materials used for the work must not come from the bed of a river, a lake, their bank.

.6 Drain infiltration water in a sedimentation basin or a vegetation area if the construction site is isolated by cofferdams and that pumping of infiltration water is required. Pump water outside the body of water.

.1 Design sedimentation basin in accordance with flow to receive and evacuate;

.2 In accordance with Article 10.4.3.2.3 of CCDG, the contractor shall install sediment basins during construction of pumping cofferdams, so as to avoid the intake of sediment in streams, backgrounds wet or in lakes. It is prohibited to install these devices in the shoreline of a river, lake or wetland ;

When a sedimentation tank is 50% full, it must be cleaned. In addition, a final cleaning should be performed at the temporary closure of a site as well as the permanent closure. Preventive cleaning should also be done at a weather alert announcing heavy rain ;

.3 Where sedimentation tank is 50% full, it must be cleaned. In addition, last cleaning should be performed at the temporary closure of a site as well as the permanent closure. Preventive cleaning should also be done at a weather alert announcing heavy rain ;

.4 The place used for the cofferdam should be left in an at least equivalent to that of the early work;

.5 The natural filter must be located on a remote forest litter and must be so that the water that returns to the stream does not create sediment plume.

.7 Equip pumps with device to prevent fishes from entering the pumping system.

.8 Do not operate construction equipment in waterways. Design and build temporary watercourses crossing work as to minimize erosion issues.

.9 Curtain turbidity (containment): Before the work of embankment water environment, the entrepreneur must settle in the river or in the lake, downstream from the work, a vertical floating barrier to confine the fine material. The curtain must be held at the bottom of the water so as to follow the roughness and the method of installation must be submitted to the supervisor for approval. Curtain height must be sufficient to allow adjustment to fluctuations in water level. The curtain must be anchored to withstand water speeds and must be marked for the safety of navigation.

.10 Do not skid logs or construction materials across waterways.

.11 Do not proceed to work in waterways recognized as fish habitat between May 31th and September 16th, inclusively, on Saint-Maurice River.

.12 Do not blast under water or within 500 m of indicated spawning beds.

.13 Do not block waterway recognized as fish habitat more than 10 consecutive days.

.14 The entrepreneur has a drainage plan and erosion control supervisor to ten (10) days before the start of work could lead to the intake of sediment in streams, lakes and wetlands.

1.8 ATMOSPHERIC POLLUTION CONTROL

.1 Maintain temporary erosion and pollution control features installed under this contract.

.2 Control emissions from equipment and plant to local, federal, provincial, and municipal authorities emission requirements.

.3 Unless expressly authorized by Parks Canada Representative, to let a vehicle idle is prohibited.

.4 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.

.5 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.9 SOIL AND WATER POLLUTION CONTROL

.1 Contractor and subcontractors carrying work, which requires the use of motorized equipment, equipment for transfilling fuel or that uses hazardous products, must know and apply procedures in case of spill. Display on work premises the procedures so that all employees see them.

.2 Make sure that machinery, tools, and equipment to be used during work are safe, clean and in good working condition. Parks Canada Representative can deny access or expel machinery, tools and equipment from site if they do not meet requirements. Equipment in visible bad condition, and that show signs or risks of leakage will be sent back at the expenses of the Contractor or the equipment's owner (free of charge for the Client). Use biodegradable vegetable oil for equipment circulating or operating less than 30 m from a waterway.

.3 Place retention tanks near storage premises if the storage of hazardous material and hydrocarbon is required by the project for 150% of the volume of stored products.

.4 Do not proceed to the general maintenance, refuelling or cleaning of equipment and material when less than 60 m from the waterway.

.5 Have an emergency response kit on work premises to respond to environmental emergencies.

.6 Emergency response kit must include, but not limited to, a minimum of equipment and devices suitable to contain spill as to minimize risks of propagation of contamination caused by the spill of hydrocarbons, hazardous products, or other contaminants. The kit must be identified as EMERGENCY – ENVIRONMENT and include:

- .1 3 inches Ø absorbing socks, length of 12 feet;
- .2 3 inches Ø absorbing flotation, length of 4 feet;
- .3 Twenty-five absorbing layers;
- .4 Two 7-liter absorbing bags (sphagnum moss);
- .5 An epoxy stick;
- .6 Two DANGER signs;
- .7 Three disposable plastic bags;
- .8 Class 4.1 TDG self-adhesive labels (Transportation of Dangerous Goods);

.9 Permanent marker;

.10 Two pairs of rubber gloves;

.11 Two pairs of safety goggles;

.12 Duct tape;

.13 Some tools: cutting pliers and screwdriver;

.14 "Environmental Incident Report" forms by the garrison and provided by Parks Canada Representative.

.7 Intercept runoff coming from outside the construction site and keep it off site by forwarding it towards stabilized structures or areas.

.8 Drain runoff off site by canalizing it towards approved facilities which favor sedimentation before it reaches a body of water.

.9 Implement temporary physical protection measures to prevent soil erosion caused by rain and snow-melt.

.10 Design various devices depending on the drainage pattern, soil stability, and progress of work.

.11 Install sediment barriers (straw bales or geotextile barriers) to keep sediments inside work site perimeter and prevent sediments from reaching body of water.

.1 Geotextile barrier is composed of a geomembrane supported by wooden columns. Properly fix the geomembrane in the ground to ensure its efficiency.

.12 Do not install temporary structures in wetlands. Maintain soil and drainage conditions.

.13 Limit surfaces to be stripped to prevent risk of erosion. At the end of each work day, protect, using membrane covers or sediment barriers, all exposed surfaces which are vulnerable to erosion and that could produce sediments which would flow towards a body of water or a road ditch flowing into a hydrous environment.

1.10 PROCEDURES FOR SPILL OF HYDROCARBONS, HAZARDOUS GOOD, OR OTHER CONTAMINANT

.1 Contractor must abide by the following procedure for emergency response operations and cleaning of premises where spill occurred:

.1 Ensure public safety and promptly recover spill.

.2 Notify, depending on the work sector, the local fire department (9-1-1) if spill cannot be contained or promptly recovered, or if spill occur in water.

.3 Notify at once Parks Canada Representative and the Environmental Officer of spill (no matter the quantity). Write and submit to Parks Canada Representative the intervention report provided by Parks Canada Representative.

.4 Contractor will bear responsibility for any spill of product deemed harmful to Parks Canada’s territory or properties. If applicable, implement at once, and to the Contractor’s expenses, remedial measures prescribed by Parks Canada Representative or the Environmental Officer.

.5 Failing to take action properly or to Parks Canada's satisfaction given the scale and type of spill will result in payment by the Contractor of supplementary intervention costs requiring Parks Canada's personnel or equipment.

.6 Intervention Report: In case of intervention, fill in the statement of events form at once (Environmental Incident Report provided by Parks Canada Representative) and hand it to Parks Canada Representative.

.7 This document will be handed as early as the preliminary meeting before start of work. Design and submit, 10 days before the start of work may cause sediment transport in a body of water, a plan of measures against erosion and sediment transport which indicates means implemented, including work supervision and writing of reports, to verify compliance of these measures with federal, provincial, and municipal laws and regulations.

1.11 TEMPORARY STORAGE OF HAZARDOUS MATERIALS

.1 Gather in small piles, separated by a horizontal length of 1 m, hazardous materials. Separate incompatible products by a horizontal length of 3 m. Place piles at least 30 m from trees/shrubs line and at least 6 m from areas covered by grass.

.2 Respect safety distances: 30 m from waterways, 15 m from tents, and 3 m from combustible material and roads. Plan access for emergency responders.

.3 Portable tanks must comply with road standards. Ground tank truck during fuel transfer. Link the refuelled vehicle or reservoir to the tank truck using a grounding cable while making sure contact is done on bare metal.

.4 Storage areas are equipped with a liquid retention or capture system (Polyspill pallets, basin, impermeable coatings, saddles, trenches, and drains blocked or connected to a collection system). Rainwater is regularly drained, or the storage area is protected to prevent accumulation of rainwater.

.5 Store flammable or combustible liquid containers in an upright position.

.6 Promptly dispose, outside of Parks Canada territory, containers that are in bad conditions, in accordance with the most restrictive environmental standards. Identify containers in accordance with WHMIS.

.7 Indicate risks of hazardous material that is stored temporarily with TDG signs (Transportation of Dangerous Goods).

1.12 ACTION PLAN FOR ENVIRONMENTAL PROTECTION

.1 With reference to items 6.6.3 and 10.4.3.5 of EGDC (check according EGDC in force), it asked the contractor to submit to the supervisor (for by the Park authorities) an action plan to protect the environment in general and, more specifically, to prevent sediment in the river or in nearby lakes caused by materials that can be eroded and transported to site.

.2 This action plan should be presented in a sketch with the reduced size of building plans (or equivalent document) showing the location and nature of erosion control methods proposed. The Contractor must in its action plan how it intends to apply the requirements of this specification to prevent damage to the environment. The action plan contains particular :

.1 Environmental responsibility identification (the site communication chart);

.2 Information Meeting to transmit the environmental requirements of the project workers. This meeting is the responsibility of the contractor and, if necessary, a representative of the Park will be on hand to answer questions ;

.3 Construction Progress Schedule ;

.4 Identification of sites requiring physical boundaries (tape, fencing, etc.) and shorelines of rivers and lakes where the canopy must be retained. The final demarcation of the scope of work will be performed with the heads of the Park ;

.5 Identifying gaps that must be diverted to vegetation zones ;

.6 Use and combination of erosion control methods prescribed in this quotation for the work, storage areas and waste areas;

.7 Areas forecast to stabilize immediately and cover with geotextile membranes or erosion control blankets ;

.8 Setting up and dismantling of structures water environment ;

.9 Temporary works plans ;

.10 Weather monitoring;

.11 Development Plan scrap areas or other sites used outside the road right (volume of sprayed materials, access roads, land used, quality of the underlying soil, waterways location and lakes, tree protection, landscaping, etc.);

.12 Method of intervention in case of accidental spills of petroleum products;

.13 Management of contaminated materials;

.14 Noise management;

.15 Planning for the suspension of work in the winter ;

.16 A device to prevent the fish end up in the pumping system.

1.13 NOTIFICATION

.1 Parks Canada Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.

.2 Contractor: after receipt of such notice, inform Parks Canada Representative of proposed corrective action and take such action for approval by Parks Canada Representative.

.1 Take action only after receipt of written approval by Parks Canada Representative.

.3 Parks Canada Representative will issue stop order of work until satisfactory corrective action has been taken.

.4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

PART 2 PRODUCTS

2.1 NOT USED

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 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

.3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.4 Waste Management: separate waste materials for recycling.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 Canadian Construction Documents Committee (CCDC)

.1 CCDC 2-94, Stipulated Price Contract.

1.2 PROJECT CLEANLINESS

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Parks Canada Representative. Do not burn waste materials on site.

.3 Clear snow and ice from access to site, bank/pile snow in designated areas only.

.4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.5 Provide on-site containers for collection of waste materials and debris.

.6 Dispose of waste materials and debris at designated dumping areas.

.7 Provide adequate ventilation of the worked areas for the duration of the work.

1.3 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, and leave Work clean and suitable for occupancy.

.3 Prior to final review remove surplus products, tools, construction machinery and equipment.

.4 Remove waste materials from site at regularly scheduled times or dispose of as directed by Parks Canada Representative. Do not burn waste materials on site.

.5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.6 Broom clean and wash road.

.7 Remove snow and ice from access to site.

.8 Restore premises used to their original state. Provide earth and grassing work.

PART 2 PRODUCTS

2.1 NOT USED

PART 3 EXECUTION

3.1 NOT USED

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 Quebec Ministry of Transportation

.1 « Cahier des charges et devis généraux du Ministère des Transports du Québec », last edition.

.2 « Cahier des Normes, Ouvrages Routiers », last edition

1.2 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 aggregate materials and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Samples:

.1 Allow continual sampling by Parks Canada Representative.

.2 Provide Parks Canada Representative Parks Canada Representative with access to source and processed material for sampling.

.3 Install sampling facilities at discharge end of production conveyor, to allow Parks Canada Representative to obtain representative samples of items being produced. Stop conveyor belt when requested by Parks Canada Representative to permit full cross section sampling.

.4 Provide front end loader or other suitable equipment including trained operator for stockpile sampling as necessary. Move samples to storage place as directed by Parks Canada Representative.

.5 Supply new or clean sample bags or containers according appropriate to aggregate materials.

.6 Pay cost of sampling and testing of aggregates which fail to meet specified requirements.

.7 Erosion and Sedimentation Control: submit copy of erosion and sedimentation control plan in accordance with authorities having jurisdiction.

1.3 DELIVERY, STORAGE AND HANDLING

.1 Transportation and Handling: handle and transport aggregates to avoid segregation, contamination and degradation.

.2 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 Parks Canada Representative of proposed source of aggregates and provide access for sampling 4 weeks minimum before starting production.

.2 If materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate alternative source.

.3 Advise Parks Canada Representative 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 EXAMINATION

.1 Verification of Conditions: verify that conditions are acceptable for topsoil stripping.

.1 Visually inspect substrate in presence of Parks Canada Representative.

.2 Inform Parks Canada Representative of unacceptable conditions immediately upon discovery.

.3 Proceed with topsoil stripping. only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Parks Canada Representative.

3.2 PREPARATION

.1 Topsoil stripping:

.1 Do not handle topsoil while in wet or frozen condition or in any manner in which soil structure is adversely affected.

.2 Begin topsoil stripping of areas as directed by Parks Canada Representative after area has been cleared of brush and removed from site.

.3 Strip topsoil to depths as directed by Parks Canada Representative. Avoid mixing topsoil with subsoil.

.4 Stockpile in locations as directed by Parks Canada Representative. Stockpile height not to exceed 3 m.

.5 Dispose of topsoil as directed by Parks Canada Representative.

.2 Aggregate source preparation:

.1 Prior to excavating materials for aggregate production, clear and grub area to be worked, and strip unsuitable surface materials. Dispose of cleared, grubbed and unsuitable materials as approved by authority having jurisdiction.

.2 Where clearing is required, leave screen of trees between cleared area and roadways as directed.

.3 Clear, grub and strip area ahead of quarrying or excavating operation sufficient to prevent contamination of aggregate by deleterious materials.

.4 When excavation is completed dress sides of excavation to nominal 1.5:1 slope, and provide drains or ditches as required to prevent surface standing water.

.5 Trim off and dress slopes of waste material piles and leave site in neat condition.

.6 Provide silt fence or other means to prevent contamination of existing watercourse or natural wetland features.

.3 Processing:

.1 Process aggregate uniformly using methods that prevent contamination, segregation and degradation.

.2 Blend aggregates, as required, including reclaimed materials that meet physical requirements of specification is permitted in order to satisfy gradation requirements for material and, percentage of crushed particles, or particle shapes specified.

.1 Use methods and equipment approved in writing by Parks Canada Representative.

.3 When operating in stratified deposits use excavation equipment and methods that produce uniform, homogeneous aggregate gradation.

.4 Where necessary, screen, crush, wash, classify and process aggregates with suitable equipment to meet requirements.

.1 Use only equipment approved in writing by Parks Canada Representative.

.4 Stockpiling:

.1 Stockpile aggregates on site in locations as indicated unless directed otherwise by Parks Canada Representative. Do not stockpile on completed pavement surfaces.

.2 Stockpile aggregates in sufficient quantities to meet project schedules.

.3 Stockpiling sites to be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.

.4 Except where stockpiled on acceptably stabilized areas, provide compacted sand base not less than 300 mm in depth to prevent contamination of aggregate. Stockpile aggregates on ground but do not incorporate bottom 300 mm of pile into Work.

.5 Separate different aggregates by strong, full depth bulkheads, or stockpile far enough apart to prevent intermixing.

.6 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by Parks Canada Representative within 48 hours of rejection.

.7 Stockpile materials in uniform layers of thickness as follows:
.1 Maximum 1.5 m for coarse aggregate and base course materials.
.2 Maximum 1.5 m for fine aggregate and sub-base materials.
.3 Maximum 1.5 m for other materials.

.8 Uniformly spot-dump aggregates delivered to stockpile in trucks and build up stockpile as specified.

.9 Do not cone piles or spill material over edges of piles.

.10 Do not use conveying stackers.

.11 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.3 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.

.4 Leave any unused aggregates in neat compact stockpiles as directed by Parks Canada Representative.

.5 For temporary or permanent abandonment of aggregate source, restore source to condition meeting requirements of authority having jurisdiction.

.6 Restrict public access to temporary or permanently abandoned stockpiles by means acceptable to Parks Canada Representative.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 31 14 13 - Soil stripping and stockpiling.

1.2 MEASUREMENT PROCEDURES

.1 Cutting of isolated trees and removal of stumps removal are paid for in Section 3.2 - Clearing and Grubbing in the bid form.

.2 Fixed price payment will be made for:

.1 Clearing.

.2 Close cut clearing.

.3 Clearing isolated trees.

.4 Grubbing.

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 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.

.3 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.

.4 Underbrush clearing consists of removal from tree areas of undergrowth, deadwood, and trees smaller than 50 mm trunk diameter and disposing of all fallen timber and surface debris.

1.4 STORAGE AND PROTECTION

.1 Prevent damage to fencing, trees, landscaping, natural features, bench marks, existing pavement, water courses, root systems of trees which are to remain.

.1 Repair damaged items to approval of Parks Canada Representative.

.2 Replace trees designated to remain, if damaged, as directed by Parks Canada Representative.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse.

.2 Consider felled timber from which saw logs, pulpwood, posts, poles, ties, or fuel wood can be produced as saleable timber.

.1 Trim limbs and tops, and saw into saleable lengths.

.2 Stockpile adjacent to site.

PART 2 PRODUCTS

2.1 DISPOSAL SITE

.1 Provide address of site where the clearing and grubbing waste is disposed of. Site shall comply with the MDDELCC's (Ministère du Développement durable, Environnement et Lutte contre les changements climatiques) *politique de protection des sols et de réhabilitation des terrains contaminés.*

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, in accordance with 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 PREPARATION

.1 Inspect site and verify with Parks Canada Representative, items designated to remain.

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 CLEARING

.1 Clearing includes felling, trimming, cutting of trees into sections and satisfactory disposal of trees and other vegetation designated for removal, including downed timber, snags, brush, rubbish occurring within cleared areas.

.2 Clear as indicated by Parks Canada 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 1000 mm above ground surface.

.3 Cut off unsound branches on trees designated to remain as directed by Parks Canada Representative.

3.5 CLOSE CUT CLEARING

.1 Close cut clearing to ground level to within 100 mm of ground surface.

.2 Cut off unsound branches on trees designated to remain as directed by Parks Canada Representative.

3.6 ISOLATED TREES

.1 Cut off isolated trees as indicated by Parks Canada 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 Cut limbs and branches to be trimmed close to bole of tree or main branches.

3.7 UNDERBRUSH CLEARING

.1 Clear underbrush from areas at ground level.

3.8 GRUBBING

.1 Grub out stumps and roots to not less than 300 mm below ground surface.

.2 Grub out visible rock fragments and boulders, greater than 300 mm in greatest dimension, but less than 0.25 m^3.

3.9 REMOVAL AND DISPOSAL

.1 Clearing, grubbing, and underbush clearing work include loading, transportation, and disposal of debris from off-site work to a site complying with the guidelines of the MDDELCC's *politique de protection des sols et de réhabilitation des terrains contaminés*.

3.10 FINISHED SURFACE

.1 Leave ground surface in condition suitable for immediate grading operations stripping of topsoil to approval of Parks Canada Representative.

3.11 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, tools and equipment.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 Quebec Ministry of Transportation

.1 « Cahier des charges et devis généraux du Ministère des transports du Québec », last edition.

.2 « Cahiers des normes, Ouvrages Routiers, Tome II – Construction routière », last edition.

PART 2 PRODUCTS

2.1 NOT USED

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 to requirements of authorities having jurisdiction.

.2 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 STRIPPING OF TOPSOIL

.1 Ensure that procedures are conducted in accordance with applicable Provincial requirements.

.2 Remove topsoil before construction procedures commence to avoid compaction of topsoil.

.3 Handle topsoil only when it is dry and warm.

.4 Remove brush from targeted area by non-chemical means and dispose of through alternative disposal.

.5 Strip topsoil by scraper to depths as indicated Parks Canada Representative.

.1 Avoid mixing topsoil with subsoil.

.6 Stockpile topsoil using mechanical hoe at Mekinac Rest Area, located at km 4.5.

.1 Stockpile height not to exceed 2 m.

.7 Protect stockpiles from contamination and compaction.

3.3 PREPARATION OF GRADE

.1 Verify that grades are correct and notify Parks Canada Representative if discrepancies occur do not begin work until instructed by Parks Canada Representative.

.1 Grade area only when soil is dry to lessen soil compaction.

.2 Grade soil with scrapers establishing natural contours and eliminating uneven areas and low spots, ensuring positive drainage.

3.4 PLACING OF EXISTING TOPSOIL

.1 Place topsoil only after Parks Canada Representative has accepted subgrade.

.2 Spread topsoil during dry conditions by mechanical hoe in uniform layers not exceeding 250 mm, over unfrozen subgrade free of standing water.

.3 Establish traffic patterns for equipment to prevent driving on topsoil after it has been spread to avoid compaction.

.4 Cultivate soil following spreading procedures.

3.5 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, tools and equipment.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 31 11 00.

1.2 MEASUREMENT PROCEDURES

.1 Stripping: measure in cubic metres calculated from cross sections or as indicated by Parks Canada Representative.

.1 Cross sections are defined according to the plans issued for tender once the clearing and grubbing work is completed.

.2 Stripping unit price to include cost of placing material on slopes upon completion of excavation and embankment.

.2 Common Excavation: measure in cubic meters calculated from cross sections or as indicated by Parks Canada Representative in areas of excavation.

.1 Cross sections are defined according to the plans issued for tender once clearing, grubbing and stripping work is completed and immediately prior to excavation of material to be incorporated into work.

.3 Borrow material: measure in cubic metres calculated from cross sections in excavation areas presented on plan or as indicated by Parks Canada Representative.

.1 Cross sections are defined according to the plans issued for tender after clearing, grubbing and stripping work is completed and immediately prior to excavation of material to be incorporated into work.

.4 No separate payment for:

.1 Excavating unnecessarily beyond lines established by Parks Canada Representative, with exception of unavoidable slide material. Do not measure slide material, when such slides are attributable to negligence.

.2 Ripping and/or drilling and blasting of material.

.3 Scarifying or benching existing slopes or existing road surfaces.

.4 Removing and disposing of roots, stumps and other materials excavated during waste operation.

.5 Removing unsuitable material from embankment attributable to negligence.

.6 Shattering rock to 300 mm below subgrade elevation.

.7 Scaling and removing loose rock from rock face.

.8 Watering, drying and compacting.

.9 Finishing.

1.3 REFERENCES

.1 Definitions:

.1 Rock Excavation: excavation of:

.1 Material from solid masses of igneous, sedimentary or metamorphic rock which, prior to removal, was integral with parent mass. Material that cannot be ripped with reasonable effort with a Caterpillar D9 crawler bulldozer or equivalent to be considered integral with parent mass.

.2 Boulder or rock fragments measuring in volume 1 cubic metre or more.

.2 Common Excavation: excavation of materials that are not Rock Excavation or Stripping.

.3 Unclassified Excavation: excavation of whatever character other than stripping encountered in the Work.

.4 Stripping: excavation of organic material covering original ground.

.5 Embankment: material derived from usable excavation and placed above original ground or stripped surface up to top of subgrade.

.6 Waste Material: material unsuitable for embankment, embankment foundation or material surplus to requirements.

.7 Borrow Material: material obtained from areas outside right-of-way and required for construction of embankments or for other portions of work.

.8 Topsoil: material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.

.2 Reference Standards:

.1 Quebec Ministry of Transportation

.1 « Cahier des charges et devis généraux du Ministère des transports du Québec », last edition.

.2 « Cahier des normes, Ouvrages Routiers, Tome II – Construction routière », last edition.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

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

1.5 QUALITY ASSURANCE

.1 Regulatory Requirements:

.1 Adhere to regulations of authority having jurisdiction when blasting is required.

.2 Adhere to Provincial and National Environmental requirements when toxic materials are involved.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Embankment materials require approval by Parks Canada Representative.

.2 Material used for embankment not to contain more than 3% organic matter by mass, frozen lumps, weeds, sod, roots, logs, stumps or other unsuitable material.

.3 Borrow material:

.1 Obtain from sources such as quarry, or borrow pit as approved by Parks Canada Representative.

.1 Earth Embankment materials to consist of acceptable earth material and processed rock material free from objectionable quantities of organic matter, frozen soil, stumps, trees, moss, and other unsuitable materials.

.2 Rock Embankment material to consist of fragmented rock produced by drilling and blasting operations, and boulders which cannot be placed in layers as specified for Earth Embankments.

.1 Rock Embankment to conform to gradation as follows:

Sieve Designation	Percent Passing by Weight
150 mm	100
100 mm	85 - 100
75 mm	10 - 50
No. 200	* 0 - 3

.2 * Gradation is determined by that portion passing 75 mm screen.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Verification of Conditions: verify that condition of substrate is acceptable for roadway embankment Work:

.1 Visually inspect substrate in presence of Parks Canada Representative.

.2 Inform Parks Canada 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 Parks Canada Representative.

3.2 COMPACTION EQUIPMENT

.1 Compaction equipment: vibratory rollers or vibrating plate compactors capable of obtaining required density in materials on project.

.1 Demonstrate compaction equipment effectiveness on specified material and lift thickness by documented performance of test-strip before start of Work.

.2 Replace or supplement equipment that does not achieve specified densities.

.2 Operate compaction equipment continuously in each embankment when placing material.

3.3 WATER DISTRIBUTORS

.1 Apply water with equipment capable of uniform distribution.

3.4 STRIPPING OF TOPSOIL

.1 Place top soil and finish grading in accordance with Section 32 91 19.13 - Topsoil Placement and Grading.

3.5 EXCAVATING

.1 General:

.1 Notify Parks Canada Representative when waste materials are encountered and remove to depth and extent directed.

.2 Sub-excavate 500 mm below subgrade in cut sections unless otherwise directed by Parks Canada Representative.

.1 Compact top 150 mm below sub-excavate to minimum 95% maximum dry density, to AASHTO T99.

.2 Replace with approved embankment material and compact to specified embankment density.

.3 Treat ground slopes, where subgrade is on transition from excavation to embankment, at grade points as indicated on plan.

.2 Drainage:

.1 Maintain profiles, crowns and cross slopes to provide good surface drainage.

.2 Provide ditches as work progresses to provide drainage.

.3 Construct interceptor ditches as indicated or as directed before excavating or placing embankment in adjacent area.

.3 Borrow Excavation:

.1 Completely use in embankments, suitable materials removed from right-of-way excavations before taking material from borrow areas.

.2 Slope edges of borrow areas to minimum 2:1 and provide drainage as directed.

.3 Trim and leave borrow pits in condition to permit accurate measurement of material removed.

3.6 EMBANKMENTS

.1 Scarify or bench existing slopes in side hill or sloping sections to ensure proper bond between new materials and existing surfaces.

.1 Method used to be to be pre-approved in writing by Parks Canada Representative.

.2 Break up or scarify existing road surface prior to placing embankment material.

.3 Do not place material which is frozen nor place material on frozen surfaces except in areas authorized by Parks Canada Representative.

.4 Maintain crowned surface during construction to ensure ready run-off of surface water.

.5 Drain low areas before placing materials.

.1 Place and compact to full width in layers not exceeding 200 mm loose thickness. Parks Canada Representative may authorize thicker lifts if specified compaction can be achieved and if material contains more than 25% by volume stone and rock fragments larger than 100 mm.

.6 Deductions from excavation will be made for overbuild of embankments.

3.7 COMPACTION

.1 Break material down to sizes suitable for compaction and mix for uniform moisture to full depth of layer.

.2 Deposit, spread, and level, embankment material in layers 200 mm maximum thickness before compaction.

.1 Compact each layer of embankment until compaction equipment achieves no further significant consolidation.

.2 Ensure required compaction for each layer before placing any material for next layer.

.3 Use specialized compaction equipment supplemented by routing, hauling, and leveling equipment over each layer of fill.

.4 Compact each layer to minimum 95% maximum dry density: ASTM D698 (AASHTO T99) except top 150 mm of subgrade.

.1 Compact top 150 mm to 100% maximum dry density.

.5 Add water or dry as required to bring moisture content of materials to level required to achieve specified compaction.

3.8 FINISHING

.1 Shape entire roadbed to within 50 mm of design elevations.

.2 Finish slopes, ditch bottoms and borrow pits true to lines, grades and drawings where applicable. Scale slope by removing loose fragments, for cut slopes in bedrock steeper than 1:1.

.3 Remove rocks over 150 mm in dimension from slopes and ditch bottoms.

.4 Hand finish slopes that cannot be finished satisfactorily by machine.

.5 Round top of backslope 1.5 m both sides of top of slope.

.6 Run tractor tracks over slopes exceeding 3 m in height to leave tracks parallel to centreline of highway.

.7 Trim between constructed slopes and edge of clearing to provide drainage and free of humps, sags and ruts.

3.9 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

3.10 PROTECTION

.1 Maintain finished surfaces in condition conforming to this section until acceptance by Parks Canada Representative.

.2 Provide silt fences and erosion protection as required to mitigate and prevent impacts to adjacent properties.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 31 24 13.

1.2 MEASUREMENT AND PAYMENT

.1 Type 5 geotextile is measured and paid inclusively with riprap in Section 31 37 00.

1.3 REFERENCES

.1 Quebec Ministry of Transportation

.1 “Cahier des charges et devis généraux du Ministère des transports du Québec”, last edition.

.2 “Cahier des norms, Ouvrages Routiers, Tome IV – Matériaux”, last edition.

1.4 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 geotextiles and include product characteristics, performance criteria, physical size, finish and limitations.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Storage and Handling Requirements:

.1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect geotextiles from direct sunlight and UV rays.

.3 Replace defective or damaged materials with new.

PART 2 PRODUCTS

2.1 MATERIAL

.1 Geotextile: woven synthetic fibre fabric, supplied in rolls.

.1 Composed of: minimum 85% by mass of polypropylene with inhibitors added to base plastic to resist deterioration by ultra-violet and heat exposure for 60 days.

.2 Factory seams: sewn in accordance with manufacturer's recommendations.

.3 Thread for sewn seams: equal or better resistance to chemical and biological degradation than geotextile.

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 geotextile material installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Parks Canada Representative.

.2 Inform Parks Canada 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 Parks Canada Representative.

3.2 INSTALLATION

.1 Place geotextile material by unrolling onto graded surface in orientation, manner and locations indicated and retain in position with hook.

.2 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.

.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 Join successive strips of geotextile by sewing.

.6 Pin successive strips of geotextile as indicated.

.7 Protect installed geotextile material from displacement, damage or deterioration before, during and after placement of material layers.

.8 After installation, cover with overlying layer within 4 hours of placement.

.9 Replace damaged or deteriorated geotextile to approval of Parks Canada Representative.

3.3 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

3.4 PROTECTION

.1 Vehicular traffic not permitted directly on geotextile.

END OF SECTION

1.1 RELATED REQUIREMENTS

.1 Section 31 32 19.01.

1.2 MEASUREMENT PROCEDURES

.1 The 30-50 mm caliber river gravel is measured and paid per square meter (sqm). Unit price includes loading, transport, pouring of 30-50 mm caliber river gravel to fill the gaps in the 300-500 mm caliber stones riprap, supply of materials and equipment, implementation, and all incidental expenses for the realization of work shown on plans.

.2 The 300-500 caliber stones riprap (50%> 400 mm) is measured and paid per tonne (t). Unit price includes type 5 geotextile supply and placement, loading, transport, supply of materials and equipment, implementation, and all incidental expenses for the realization of work shown on plans.

1.3 REFERENCES

.1 Quebec Ministry of Transportation

.1 « Cahier des charges et devis généraux du Ministère des transports du Québec », last edition.

.2 « Cahier des normes, Ouvrages Routiers, Tome II – Construction routière », last edition.

PART 2 PRODUCTS

2.1 30-50 MM CALIBER RIVER GRAVEL

.1 30-50 mm caliber river gravel must be composed of polished stones.

2.2 PROTECTION APRON MADE OF 200-300 MM CALIBER STONES

.1 Stone protection apron (200-300) Type III must comply with Section 15.2.5.6.1 of CCDG.

2.3 300-500 MM CALIBER STONES

.1 The 300-500 mm caliber stones riprap (50%> 400 mm) must comply with details on plans and must rest on a type 5 geotextile which complies with standard 13101 of the Ministry. The riprap material must comply with standard 14501 of the Ministry. The stone density must be greater than 2,600 kg/m^3.

.2 No encroachment of machinery in the waterway is allowed.

.3 No stone spill on the earth bank is authorized.

2.4 GEOTEXTILE FILTER

.1 Geotextile: in accordance with Section 31 32 19.01 - Geotextiles.

PART 3 EXECUTION

3.1 GENERAL PLACING

.1 Perform final grading where riprap must be built until surface is flat and uniform. Fill low spots with appropriate material and compact to obtain a solid bed.

.2 Place the geotextile on the prepared surface in accordance with instructions and with Section 31 32 19.01 - Geotextiles. Be careful not to puncture the geotextile. Circulation of vehicles on the surface thus covered is prohibited.

.3 Make riprap of specified thickness and in accordance with details provided.

.4 Place stones in manner approved by Parks Canada Representative as to reach very solid surface and stable mass. Place larger stones at the bottom of earth banks.

.5 Manual Installation

.1 Use larger stones as base course and as headers for the following courses.

.2 Stagger vertical joints and fill the gaps with shivers or pebbles.

.3 Give the finished work a flat, neat appearance free of large holes.

3.2 300-500 MM CALIBER STONES

.1 A week before start of work, the Contractor shall submit for approval the working method and equipment required for the 300-500 mm caliber stone riprap installation work (50%> 400 mm).

.2 Excavations for the establishment of riprap should never exceed 5 meters in the same work area.

.3 Where riprap is to be placed on slopes, excavate trench at toe of slope to dimensions as indicated.

.4 Fine grade area to be riprapped to uniform, even surface. Fill depressions with suitable material and compact to provide firm bed.

.5 Place geotextile on prepared surface in accordance with Section 31 32 19.01-Geotextiles and as indicated. Avoid puncturing geotextile. Vehicular traffic over geotextile not permitted.

.6 Place riprap to thickness and details as indicated.

.7 Place stones in manner approved by Parks Canada Representative to secure surface and create a stable mass. Place larger stones at bottom of slopes.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 31 05 16.

1.2 MEASUREMENT AND PAYMENT

.1 Only material included in structure and accepted in writing by Parks Canada Representative will be considered.

1.3 REFERENCES

.1 Quebec Ministry of Transportation

.1 « Cahier des charges et devis généraux du Ministère des transports du Québec », last edition.

.2 « Cahier des normes, Ouvrages Routiers, Tome II – Construction routière », last edition.

.2 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.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

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

1.5 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 31 05 16 - Aggregate Materials.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Granular base material MG-20 must be in accordance with Section 31 05 16 - Aggregate Materials and following requirements:

.1 Base material are defined and placed in accordance with requirements of CCDG Section 12.3.

.2 Granulate material used must comply with requirements of MTQ standard 2102.

.3 Contractor must provide material compliance audit in accordance with CCDG Section 12.3.2.2.

.4 Compliance: all granulate material that does not comply with previous requirements will be turned down. Material must be replaced by material which complies with requirements.

.1 Granulate material grading range:

Granulate Material	Sieve (mm)									Sieve (µm)			
	112	80	56	31,5	20	14	10	5	1,25	630	315	160	80
(% passing)													
GM-20	-	-	-	100	90-100	68-93	-	35-60	19-38	-	9-17	-	2-7

.2 Liquid limit: to ASTM D4318, maximum 25.

.3 Plasticity index: to ASTM D4318, maximum 6.

.4 Los Angeles degranulation: to ASTM C131. Maximum % loss by weight 45.

.5 Crushed particles: at least 60% of particles by mass within each of following sieve designation ranges to have at least 1 (one) freshly fractured face. Materials to be divided into ranges using methods of ASTM C136.

Passing	Retained on	
50 mm	to	25 mm
25 mm	to	19.0 mm
19.0 mm	to	4.75 mm

.6 Soaked CBR: to ASTM D1883, minimum 80, when compacted to 100% of ASTM D1557.

PART 3 EXECUTION

3.1 PREPARATION

.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 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 PLACEMENT AND INSTALLATION

.1 Place granular base after sub-base surface is inspected and approved in writing by Parks Canada Representative.

.2 Placing:

.1 Place base material in accordance with CCDG Section 12.3.

.2 Construct granular base to depth and grade in areas indicated.

.3 Ensure no frozen material is placed.

.4 Place material only on clean unfrozen surface, free from snow and ice.

.5 Begin spreading base material on crown line or on high side of one-way slope.

.6 Place material using methods which do not lead to segregation or degradation of aggregate.

.7 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.

.8 Place material to full width in uniform layers not exceeding 150 mm compacted thickness.

.1 Parks Canada Representative may authorize thicker lifts (layers) if specified compaction can be achieved.

.9 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.

.10 Remove and replace that portion of layer in which material becomes segregated during spreading.

.3 Compaction Equipment:

.1 Ensure compaction equipment is capable of obtaining required material densities.

.2 Efficiency of equipment not specified to be proved at least as efficient as specified equipment at no extra cost and written approval must be received from Parks Canada Representative before use.

.4 Compacting:

.1 Compact to density not less than 95% corrected maximum dry density, in accordance with ASTM D698 and ASTM D1557.

.2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.

.3 Apply water as necessary during compacting to obtain specified density.

.4 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

3.3 SITE TOLERANCES

.1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.

3.4 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

3.5 PROTECTION

.1 Maintain finished base in condition conforming to this Section until succeeding material is applied or until acceptance by Parks Canada Representative.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 31 11 00.

1.2 MEASUREMENT PROCEDURES

.1 Preparation of sub-grade for placing of topsoil is included in topsoil installation.

.2 Topsoil stripping will not be measured.

.3 Measure placing and spreading topsoil in square metres as determined from actual surface area covered and depth of topsoil specified.

.1 Specified depth of topsoil: measured and approved by Parks Canada Representative after settlement and consolidation as specified.

1.3 REFERENCES

.1 « Bureau de normalisation du Québec (BNQ) », last edition.

.1 NQ 0605-100 : Aménagement paysager à l'aide de végétaux.

.2 Quebec Ministry of Transportation

.1 « Cahier des charges et devis généraux du Ministère des transports du Québec », last edition.

.2 « Cahier des normes, Ouvrages Routiers, Tome II – Construction routière », last edition.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

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

PART 2 PRODUCTS

2.1 TOPSOIL

.1 Topsoil for 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 2 to 10 % organic matter by weight.

.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.

2.2 SOURCE QUALITY CONTROL

.1 Topsoil to be from recovery of excavated or stored topsoil, when possible.

.2 Advise Parks Canada Representative of sources of topsoil and manufactured topsoil to be utilized with sufficient lead time for testing.

.3 Contractor is responsible for amendments to supply topsoil as specified.

.4 Soil testing by recognized testing facility for PH, P and K, and organic matter.

.5 Testing of topsoil will be carried out by testing laboratory designated by Parks Canada Representative.

.6 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 adjacent properties and walkways, 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 topsoil stripping of areas as indicated by Parks Canada Representative after area has been cleared of brush, weeds, grasses and removed from site.

.2 Strip topsoil to depths as indicated as directed by Parks Canada Representative.

.1 Avoid mixing topsoil with subsoil where textural quality will be moved outside acceptable range of intended application.

.3 Stockpile in locations as as indicated by Parks Canada Representative.

.1 Stockpile height not to exceed 2 m.

.4 Disposal of unused topsoil is to be in an environmentally responsible manner but not used as landfill.

.5 Protect stockpiles from contamination and compaction.

3.3 PREPARATION OF EXISTING GRADE

.1 Verify that grades are correct.

.1 If discrepancies occur, notify Parks Canada Representative and do not commence work until instructed by Parks Canada Representative.

.2 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.

.3 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.

.4 Cultivate entire area which is to receive topsoil to minimum depth of 100 mm.

.1 Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

3.4 PLACING AND SPREADING OF TOPSOIL/PLANTING SOIL

.1 Place topsoil as indicated on plan, after Parks Canada Representative has accepted subgrade.

.2 Fill gaps in riprap with topsoil in area indicated on plans.

.3 Spread topsoil in uniform layers not exceeding 300 mm, after putting in place the erosion control blanket as indicated on plans.

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 Consolidate topsoil to required bulk density using equipment approved by Parks Canada Representative.

.1 Leave surfaces smooth, uniform and firm against deep footprinting.

3.6 ACCEPTANCE

.1 Parks Canada 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 off site where directed by Parks Canada Representative.

3.8 CLEANING

.1 Proceed in accordance with Section 01 74 11 - Cleaning.

.2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 31 11 00.

.2 Topsoil Placement and Grading (Section 32 91 19.13)

1.2 MEASUREMENT AND PAYMENT

.1 Erosion control mat is measured and paid per square meter (m^2).

1.3 REFERENCES

.1 « Bureau de normalisation du Québec (BNQ) », last edition.

.1 NQ 0605-100: « Aménagement paysager à l'aide de végétaux ».

.2 Quebec Ministry of Transportation

.1 « Cahier des charges et devis généraux du Ministère des transports du Québec », last edition.

.2 « Cahiers des normes, Ouvrages Routiers, Tome II – Construction routière », last edition.

1.4 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 mulch, tackifier, fertilizer, liquid soil amendments and micronutrients.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Erosion control mat is defined, placed and maintained in accordance with Section 19.3.6.7. of CCDG and with standardized drawing DN-IV-9-001.

.2 Erosion control mat shall not be seeded.

PART 3 EXECUTION

3.1 EXAMINATION

.1 Visually inspect substrate in presence of Parks Canada Representative.

.2 Inform Parks Canada 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 Parks Canada Representative.

3.2 PREPARATION OF SURFACES

.1 Do not perform work under adverse field conditions such as wind speeds over 10 km/h, frozen ground or ground covered with snow, ice or standing water.

.2 Fine grade areas free of humps and hollows.

.1 Ensure areas are free of deleterious and refuse materials.

.3 Cultivated areas identified as requiring cultivation to depth of 25 mm.

.4 Obtain Parks Canada Representative's approval of grade and topsoil depth before starting work.

.5 Fold and fix firmly the erosion control mat on the entire surface. Erosion control mat must be installed as indicated on plan and as follows:

.1 Display mat vertically and anchor it on the entire topsoil surface using 200 mm wire-staples in accordance with layout and number indicated on drawings.

.2 Fold mat strips at the top of the slope and fix them using wire-staples.

.3 Overlap between mat strips must be of 200 mm. Anchor these strips to one another using wire-staples to ensure their stability and prevent catching in the wind. Increase amount of wire-staples on overlap depending on layout and number indicated on drawings.

.4 Upstream mat must cover the immediate downstream mat, not the other way around.

3.3 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 from 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.

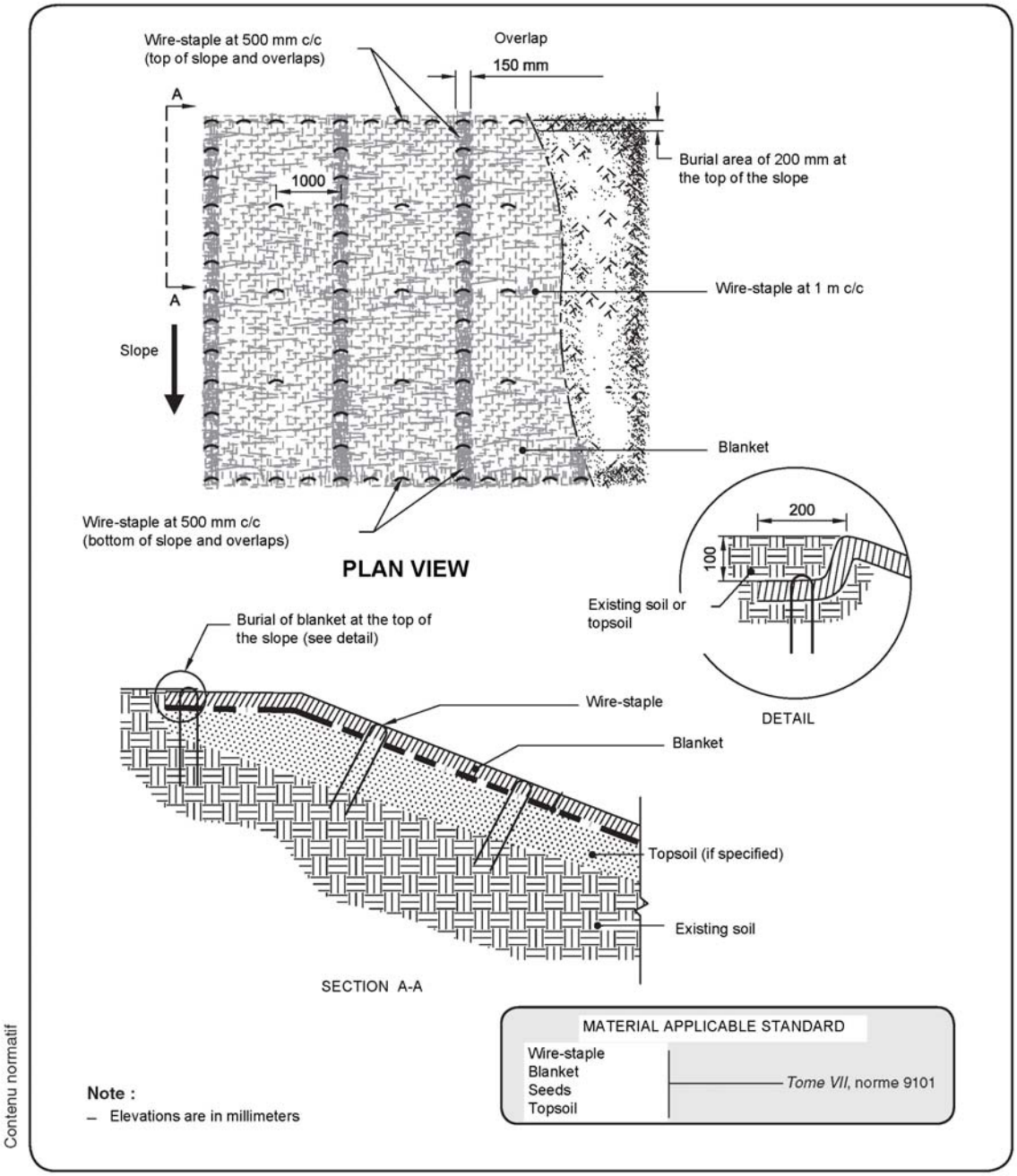
.1 Clean and reinstate areas affected by Work.

3.4 PROTECTION

.1 Protect erosion control mat areas from trespass until plants are established.

.2 Remove protection devices as directed by Parks Canada Representative, until work approbation.

WOOD-FIBER OR STRAW MAT



Contenu normatif

END OF SECTION

PART 1 GENERAL

1.1 MEASUREMENT AND PAYMENT

.1 Removal and disposal of existing flexible guardrails is paid per meter, measured in accordance with Section 18.9.2 of CCDG.

.2 W-beam guardrail steel section on wooden posts are paid per meter, in accordance with Section 18.5.4.1. of CCDG.

.3 Lateral impact attenuator (type 1) are bought to the unit price, in accordance with Section 18.7.4. of CCDG.

.4 Lateral impact attenuator (type 2) are bought to the unit price, in accordance with Section 18.7.4. of CCDG.

1.2 REFERENCES

.1 Quebec Ministry of Transportation

.1 « Cahier des charges et devis généraux du Ministère des transports du Québec », last edition.

.2 « Cahiers des normes, Ouvrages Routiers, Tome VIII – Dispositifs de retenue », last edition.

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 guardrail, wood, and coatings, and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Shop Drawings:

.1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements with manufacturer's written instructions.

.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 off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Replace defective or damaged materials with new.

PART 2 PRODUCTS

2.1 MATERIALS

.1 Steel guardrail on wooden posts

.1 Where indicated by the Supervisor, provide and install steel guardrail on wooden posts with “W” steel section on wooden posts at 1.9 m c/c, in accordance with requirements of Section 18.5.12. of CCDG and with standardized drawing DN-VIII-3-GSR 001 of the Quebec Ministry of Transportation standards Tome III.

.2 Lateral impact attenuator (type 1)

.1 Where indicated on drawings, provide and install lateral impact attenuator (type 1) end pieces (pieces with lateral deviation of 1,200 mm) of a design certified by Quebec Ministry of Transportation for speeds greater than 50 km/h. Contractor must use one single model for the entire project. End pieces must be installed and provided in accordance with the Manufacturer’s recommendations. Type 1 end piece must comply with Section 18.7 of CCDG.

.3 Lateral impact attenuator (type 2)

.1 Where indicated on drawings, provide and install lateral impact attenuator (type 2) end pieces of a design certified by Quebec Ministry of Transportation for speeds greater than 50 km/h. Contractor must use one single model for the entire project. End pieces must be installed and provided in accordance with the Manufacturer’s recommendations. Type 2 end piece must comply with Section 18.7 of CCDG.

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 guardrail installation in accordance with manufacturer's written instructions.

.1 Visually inspect substrate in presence of Parks Canada Representative.

.2 Inform Parks Canada 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 Parks Canada Representative.

3.2 ERECTION

.1 Set posts by instrument for alignment, and locations as indicated and as directed by Parks Canada Representative.

.2 Excavate post holes to depths as indicated and to diameter of 360 mm plus or minus 20 mm.

.1 Compact bottom to provide firm foundation.

.2 Set post plumb and square in hole.

.3 Backfill around posts using excavated material and compact in uniform layers not exceeding 150 mm compacted thickness.

.4 Leave or make depression approximately 150 mm deep around posts until painting is completed, then fill and compact to ground elevation.

.5 Cut off tops of posts as indicated, with tops parallel to grade of pavement edge.

.6 Worker protection: ensure workers wear gloves, long sleeved clothing, eye protection, protective clothing when handling, drilling, sawing, cutting or sanding preservative treated wood and applying preservative materials.

.7 Construct anchorages to details as indicated.

.1 Place and compact backfill for anchors as directed by Parks Canada Representative.

.8 Install steel guardrail in accordance with instructions on detailed drawings. Lap joints in direction of traffic.

.1 Tighten nuts to 100 N.m torque.

.1 Maximum protrusion of bolt 12 mm beyond nut.

3.3 TOUCH UP

.1 Galvanized steel-touch up:

.1 Clean damaged surfaces with wire brush removing loose and cracked coatings.

.1 Apply 2 coats of organic zinc-rich paint to damaged areas.

.2 Pre-treat damaged surfaces in accordance with manufacturer's written recommendations for zinc-rich paint.

.3 Painted steel:

.1 Apply 1 coat of primer and 2 coats of finish paint to exposed surface.

3.4 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.

3.5 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by guardrail installation.

END OF SECTION