Public Services and Procurement Canada

Requisition No: _____

DRAWINGS & SPECIFICATIONS

For:
Deactivation of Former Alignments,
Km 612.70 to Km 966.90, Alaska Highway, BC

Project No.
R.106985.001

April 20, 2021

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APPENDICES

REFERENCE DOCUMENTATION

Standards and Best Practices for Instream Works, British Columbia Ministry of Land and Air Protection Ecosystem Standards and Planning Biodiversity Branch – March 2004.
Available online at:
http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf

Land Development Guidelines for the Protection of Aquatic Habitat, Fisheries and Oceans – September 1993.
Available online at:
http://www.dfo-mpo.gc.ca/Library/165353.pdf

Manual of Standard Traffic Signs & Pavement Markings, BC Ministry of Transportation and Highways – September 2000
Available online at:
http://www.th.gov.bc.ca/publications/eng_publications/electrical/most_pm.pdf

BC Ministry of Transportation and Infrastructure, Traffic Management Manual for Work on Roadways (2020 Office Edition)
Available online at:
https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/traffic-engineering-and-safety/traffic-engineering/traffic-management-and-traffic-control/2020-traffic-control-manual/2020-traffic-management-manual-for-work-on-roadways.pdf

2016 Standard Specifications for Highway Construction, BC Ministry of Transportation and Infrastructure – July 1, 2016 – Volume 1 and 2 and applicable Amendments available at time of tender closing.
Available online at:
http://www2.gov.bc.ca/gov/content/transportation/transportation-infrastructure/engineering-standards-guidelines/standard-specifications-for-highway-construction

Public Works and Government Services Canada – Acquisition Forms
Available online at:
http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html

Canadian Construction Association, COVID-19 – Standardized Protocols for All Canadian Construction Sites, Version 5, May 26, 2020
Available online at:
https://www.cca-acc.com/wp-content/uploads/2020/06/CCA-COVID-19-Standardized-Protocols-for-All-Canadian-Construction-Sites-05-26-20.pdf

WorkSafeBC Construction and COVID-19 Safety
Available online at:
https://www.worksafebc.com/en/about-us/covid-19-updates/covid-19-industry-information/construction/

LIST OF CONTRACT DRAWINGS

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5	Site 1: Km 612.70 to Km 614.20 – Slope Restoration and Thalweg Realignment – Details	C113	-
6	Site 1: Km 612.70 to Km 614.20 – Optional Work – Environmental Construction Staging Concept – Sequence 1 To 10	C114	-
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13	Site 3: Km 892.40 to Km 893.30 – Slope Excavation Details	C132	-
14	Site 4: Km 960.35 to Km 961.20 – General Arrangement	C141	-
15	Site 4: Km 960.35 to Km 961.20 – Culvert Removal and Cross Ditch Construction – Typical Section	C142	-
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PART 1 – GENERAL

1.1 Order of Precedence

.1 In the event of any discrepancy or conflict, order of precedence shall be in accordance with GC1.2.2 – Order of Precedence and as follows:

.1 The Division 1 Sections of these Specifications take precedence over the other sections of the Specifications.

.2 In the event that two or more plans show conflicting information, the information on the most recently dated plan shall govern.

.3 If conflict arises between an item in the main body of these Specifications (Division 1 – Division 32) and an item found in one of the Appendices (Reference Documents), the main body of the Specifications (Division 1 – Division 32) shall govern.

.4 Any technical and manufacturer's standard, Government Act, Regulation or Code of practice referred to in the Contract documents shall be the version current (including applicable Amendments) at the time of tender closing.

1.2 Work Covered by Contract Documents

.1 The project includes deactivation of five former Alaska Highway alignments. The sites are located between Km 612.70 and Km 966.90 on the Alaska Highway.

For reference, Dawson Creek is at Km 0, Fort St. John is at approximately Km 75, Fort Nelson is at approximately Km 455, and Watson Lake is at approximately Km 986 on the Alaska Highway.

.2 The work under this contract generally comprises of the following main construction tasks:

.1 Mobilization and demobilization for all sites, including preparation of contract submittals (using "CentralCollab") prior to and during the work (see 3.7 – Contract Submittals, Section 01 25 20 – Mobilization and Demobilization and Section 01 33 00 – Submittal Procedures).

.2 Supply and maintenance of all traffic control for the duration of the works.

.3 Development of construction access to facilitate construction. Restoration and seeding of the disturbed areas following construction.

.4 Scarification and seeding of former roadway surfaces and any temporary equipment accesses.

.5 Environmental monitoring and water management, including stream diversion and temporary check dams as shown on the contract drawings, should there be stream flows present or expected at the time of construction, or as directed by the Departmental Representative.

.6 Excavation, transport, stockpile/waste, and placement of excavated material for slope restoration, thalweg realignment, and removal of culvert and various other debris.

.7 Debris removal, including the transport and offsite disposal of existing culverts, bridge piles, training boards, cribbing and various other man-made debris (ex. metallic stakes, timber products, garbage, etc.). If the debris consists of creosote treated wood, the surrounding soil may require disposal.

.8 Construction of ditches with and without coco fibre geotextile and riprap channels.

.9 Blasting (if chosen by the Contractor), manufacturing, sorting, transport, supply, and placement of riprap.

.10 Restoration to pre-construction conditions and seeding of all disturbed areas except for areas of riprap placement or realigned thalweg.

.11 Surveys (construction layout, payment quantities, as-built survey, and others as required).

Optional Work, if required and approved by the Departmental Representative, including:

Site 1:

.12 Over excavation for the realigned thalweg.

.13 Placement of Native Riverbed Material in over-excavated area of the realigned thalweg.

.14 Excavation and construction of temporary diversion channel for the thalweg realignment

.15 Environmental monitoring and water management for thalweg realignment, including stream diversion and temporary check dams as shown on the contract drawings.

All Sites:

.16 Installation of waterbars (diagonal channel across road to divert surface water).

.17 Any additional work issued by Change Order.

1.3 Codes .1 Meet or exceed requirements of:

.1 Contract Documents;

.2 Specified standards, applicable legislation, codes, and referenced documents; and,

.3 Other codes of Local, Provincial, or Federal application (in the case of conflict or discrepancy, the more stringent requirements shall apply).

.2 Perform all work in accordance with the Environmental Management Plan (Appendix I), Caribou Protection Plan (Appendix J) and the contract requirements.

1.4 Contractor's Use of Site

.1 Restrict work to within the construction footprint shown on the Contract Drawings and as agreed to by the Departmental Representative.

.2 Any additional areas required by the Contractor outside the lands owned by the Departmental Representative and designated for use on this project, shall be the Contractor's responsibility to organize. Any costs associated with the use of these additional lands shall be the Contractor's responsibility.

.3 Assume full responsibility for protection and safekeeping of products under this contract.

1.5 Owner Supplied Materials (Outside Limits of Work)

.1 PSPC is providing access to the Wood Creek Rock Quarry (Km 651.0) and the Km 888 Rock Quarry for the extraction of riprap. Previously blasted riprap is stockpiled and available for use by the Contractor as riprap. The Contractor will be responsible for sorting through the stockpile of rock and selecting the appropriate rock size or manufacturing the appropriate rock size from the stockpiled rock (see Section 31 37 00 – Riprap for more details). Should the Contractor choose to manufacture the rock using blasting, the Contractor shall be responsible to obtain all necessary permits.

.2 Should the Contractor choose to use the selected material, the Contractor will be responsible to ensure the selected material achieves the gradation requirements and other product requirements as detailed for each product type within Section 31 37 00 – Riprap. If there is insufficient riprap material at the PSPC quarries, the Contractor can produce additional material or source material that is not from a PSPC quarry.

.3 If the available riprap material is insufficient in quantity or size, the Contactor can choose to manufacture the rock using blasting. A detailed blasting plan must be submitted by the Contractor and approved by the Departmental Representative prior to undertaking any blasting in PSPC's quarries. The Contractor shall be responsible for obtaining all necessary blasting permits and all costs associated with blasting.

.4 If the Contractor chooses to source material that is not from a PSPC quarry, the Contractor shall advise PSPC in a written submission and shall not use proposed source until accepted by the Departmental Representative.

1.6 Use of Owner Quarries

.1 The Contractor may choose to use PSPC's Wood Creek Rock Quarry (Km 651.0) or Km 888 Quarry for the purposes of extraction / manufacture of riprap materials. When using PSPC's quarries, the Contractor shall be aware of the following:

.1 Other Contractors may be working in the quarries completing similar or different types of work. Coordination with these other Contractors may be required.

.2 Laydown areas for equipment and stockpiles may be restricted due to other works ongoing or the existing size of the quarries.

.3 The Contractor is responsible to provide all equipment required to excavate, sort, manufacture (as necessary), load, and haul the material from PSPC's quarries.

.4 The security of equipment parked, and material manufactured and stockpiled in the quarries along with the safety of the Contractor's personnel remains the Contractor's responsibility.

.5 If PSPC's quarries are equipped with a vehicle gate, the Departmental Representative will provide the Contractor with a gate key upon commencement of the onsite work. The Contractor shall be responsible for locking the vehicle gate anytime the Contractor's personnel have vacated the quarry (regardless of duration). The Contractor shall return the gate key to PSPC upon completion of the work.

.6 The Contractor shall be responsible for maintaining access roads into the quarries and for haul roads required to access the aggregate sources for the duration of the project. At a minimum, maintaining and developing access may include grading and snow removal. At the conclusion of the works all access roads and haul roads shall be left in an equal to or better condition than when work started. If other Contractors are also working in the quarries, the Departmental Representative will provide direction for maintenance responsibilities.

PART 2 – PRODUCTS

2.1 Products .1 Not used.

PART 3 – EXECUTION

3.1 Site Inspection .1 Submission of tender is deemed to be confirmation that the Contractor has inspected the site and is conversant with all conditions affecting execution and completion of the work.

3.2 Work Completion .1 Preparation of required submittals to commence immediately upon receipt of notice to proceed and to be completed prior to commencement of work (unless specified otherwise).

.2 Onsite project work may not start until the application for Change Approval under the provincial Water Sustainability Act, and all other environmental permits applied for by the Departmental Representative have been approved by the applicable regulatory authorities and the necessary documentation has been received by the Departmental Representative. Should the environmental permits not be approved by the applicable regulatory authorities within the timelines desired by the Departmental Representative, the Departmental Representative may at their sole discretion undertake changes to the work as per GC6.1 – Changes in the Work and or termination of the Contract as per GC7.3 – Termination of Contract.

.3 Achieve Substantial Performance by October 24, 2021.

.4 Achieve Completion by October 31, 2021.

.5 The instream construction on this project shall be completed within the dates indicated in the Environmental Management Plan (Appendix I) – within the window of least risk for fish (July 15 to August 15) or when water is at its lowest levels.

.6 Works may need to be temporally shut down during high stream flow, heavy rain events, or other adverse weather conditions. The works may be stopped by the following processes:

.1 The Contractor, with approval from the Departmental Representative, shall suspend works should water levels or poor weather conditions adversely affect the Contractors ability to achieve the contract specifications for quality of work.

.2 The Contractor’s Environmental Monitor, with approval from the Departmental Representative, may suspend work should they feel it is not possible to achieve the environmental requirements due to the high water flows or adverse weather conditions.

.3 The Departmental Representative, in conjunction with British Columbia Ministry of Environment and Climate Change Strategy (MoE), may suspend instream works should they feel that it is not possible to achieve the environmental requirements or the contract specifications for quality of work due to the high water flows or adverse weather conditions.

.7 Regardless of who suspends the work, the Contractor will be responsible for maintaining the site and protecting the works throughout the suspension period to ensure the site is in an acceptable condition safe to the public.

.8 The Contractor shall account for the possibility of not being able to complete work due to high water flows or adverse weather conditions in the construction schedule and in the unit prices. No payment for temporary work stoppages due to high water flows or adverse weather conditions will be made.

.9 The Contractor shall account for possible impacts of COVID-19 in the construction schedule and the unit prices. The Contractor shall keep informed with the latest Federal and Provincial recommendations and protocols regarding COVID-19 at all times during construction and shall modify their construction approach accordingly to ensure adherence to these recommendations and protocols.

.10 If Federal and/or Provincial recommendations require that the project work be stopped, the Contractor shall consult with the Departmental Representative and the Departmental Representative will advise as to the course of action the contractor shall take. Any monetary impact to the Contractor from the work being stopped due to Federal and/or Provincial recommendations will be addressed in accordance with the contract general conditions.

3.3 Special Precautions

.1 The Contractor's attention is drawn to the possibility of impacting utilities, etc., within the limits of work. The Contractor shall confirm the locations of all such utilities. All costs for utility locates shall be incidental to the work. Should utilities be located in areas within conflict with the construction, the Contractor shall notify the Departmental Representative and await instructions from the Departmental Representative before proceeding with work in the vicinity of such encountered services and utilities.

.2 Existing structures, signs, utilities, asphalt, Bituminous Surface Treatment (BST), culverts, cut & fill slopes, ditches, bridges, and all other structures, services, piping or equipment

within the limits of work shall be properly protected from any injury or damage, direct or indirect. Any damage that is caused as a result of the operations of the Contractor shall be repaired and made good at the Contractor's expense to the satisfaction of the Departmental Representative.

3.4 Survey

.1 The Contractor shall be responsible for all layout surveys to complete the work per the design lines and grades, survey of construction for measurement for payment (see Section 01 29 00 – Payment Procedures), and as-built surveys (see Section 01 78 00 – Closeout Submittals). All surveys shall achieve the following:

.1 Be completed/collected to an accuracy of +/-0.02 m horizontal and +/-0.02 m vertical or better and shall be referenced / tie into the PSPC's monument / coordinate system as shown on the Contract Drawings, or as agreed upon with the Departmental Representative.

.2 Use industry standards, methods, equipment, and the survey requirements of Section 01 29 00 – Payment Procedures, and other approaches (if necessary) as preapproved by the Departmental Representative.

.2 All layout surveys, quantity surveys, and as-built surveys shall be considered incidental to the work and will not be measured for payment.

.3 The Contractor shall utilize a qualified surveyor acceptable to the Departmental Representative to perform all the required surveying on the project. The Contractor shall submit the name and address of the surveyor to the Departmental Representative upon request.

.4 Prior to starting affected work, complete a check of the survey control monument coordinates and elevations for any discrepancies relative to the design and existing conditions. Provide results to the Departmental Representative for review and acceptance as soon as they are discovered. Should a discrepancy be found, await written approval from the Departmental Representative prior to proceeding. If deemed necessary by the Departmental Representative, design adjustments may be made by the Departmental Representative to suit the findings of the survey checks undertaken.

.5 Establish working control points based on survey control monuments provided (others monuments not listed shall not be used). Report to the Departmental Representative when a working control point is lost or destroyed because of

necessary work. Replace working control points from the project survey control monuments.

.6 Establish / layout the proposed alignment(s) and grades using survey stakes based on working control points, existing conditions/infrastructure (when referenced on drawings), and survey control monuments provided.

.7 The Departmental Representative may elect to verify surveys. Verification of the survey by the Departmental Representative does not abdicate the Contractor's responsibility for the correctness and accuracy of the survey.

.8 Maintain a complete, accurate log of control and survey work as it progresses. On request of the Departmental Representative, submit documentation to verify the accuracy of the field engineering work.

.9 The Contractor shall regularly monitor the condition of the Work Site and of property on and adjoining the Work Site throughout the construction period, and shall immediately notify the Owner if any deterioration in condition is detected. Such monitoring shall cover all pertinent features and property including, but not limited to, buildings, structures, roads, walls, fences, slopes, sewers, culverts and landscaped areas.

.10 The Departmental Representative may, but shall not be obligated to, survey and record the condition of the Work Site and of property on or adjoining the Work Site prior to the commencement of construction by the Contractor. If a survey is undertaken and if requested by the Contractor, the Departmental Representative will provide a copy of the survey records to the Contractor for reference.

.11 Whenever supplied with survey records, the Contractor shall satisfy itself as to the accuracy and completeness of the survey records provided by the Departmental Representative for any area before commencing construction in that area. Commencement of construction in any area shall be interpreted to signify that the Contractor has accepted such survey records as being a true record of the existing conditions prior to construction.

.12 The provision of the records of a survey of existing conditions by the Departmental Representative shall in no way limit or restrict the Contractors responsibility to exercise proper care to prevent damage to all property within or adjacent to the Work Site, whether all such property is covered by the survey or not.

3.5 Contract Drawings

.1 Upon award of the project, PSPC will, at the request of the successful Contractor, provide the successful Contractor with up to four – 594 mm x 420 mm (23.4" x 16.5") and six – 279.4 mm x 431.8 mm (11" x 17") "Issued for Construction" or "Issued for Tender" hard copy contract drawing sets. Preparation and plotting of the hard copy drawing sets may take up to 14 days to prepare (excluding shipping).

.2 Upon award of the project, PSPC will provide the successful Contractor with a digital PDF version of the "Issued for Construction" or "Issued for Tender" Contract Drawings. Preparation of the PDF drawing file may take up to 14 days to prepare.

3.6 Electronic Contract Drawings

.1 If requested by the Contractor, the Departmental Representative will provide the Contractor with available Contract Drawings in electronic format for the Contractor to reference throughout the work.

.2 The format and software of the electronic Contract Drawings shall be at the Departmental Representative's discretion.

.3 The Departmental Representative accepts no responsibility for the accuracy or completeness of the electronic Contract Drawings. Should the Contractor choose to reference the electronic Contract Drawings, the Contractor shall satisfy itself as to the accuracy and completeness of the electronic contract drawings before commencing construction. Should a discrepancy between the electronic Contract Drawings and the hard copy Contract Drawings be discovered (at any time during the work), the hard copy Contract Drawings shall govern. The Contractor will be responsible for all costs associated with any corrections to ensure the work is in conformance with the hard copy Contract Drawings. The Departmental Representative shall not be responsible for updating or correcting any discrepancies between the electronic Contract Drawings and the hard copy Contract Drawings identified by the Contractor.

3.7 Contract Submittals

.1 Complete and submit for the Departmental Representative's review, all required contract submittals as detailed in the relevant sections of the contract specifications. Work affected by the submittals shall not proceed until the submittal is accepted by the Departmental Representative. Allow for submittal review periods as required for each submittal and as detailed in Section 01 33 00 – Submittal Procedures. Required submittals include, but are not limited to the following:

.1 Project Schedule (see Section 01 32 16).

.2 Traffic Management Plan (see Section 01 35 00).

.3 Project Specific Health and Safety Plan (see Section 01 35 33), including:

.1 Appendix 1 - Preliminary Hazard Assessment Form.

.2 Appendix 2 - Confirmation of Prime Contractor's Main Responsibilities Under the WorkSafeBC Occupational Health and Safety Regulations and Worker's Compensation Act form.

.3 Appendix 3 – Contractor's COVID-19 Safe Work Plan

.4 Environmental Protection Plan (see Section 01 35 43).

.5 Pre-Construction Survey (see Section 01 29 00).

.6 As-built Surveys and As-built Drawing mark-ups (see Section 01 78 00).

.7 Fish Salvage Permit (see Section 01 35 43 Environmental Protection)

3.8 Supervisory Personnel

.1 Within five days of contract award notification, the Contractor shall submit to the Departmental Representative confirmation of the names of the supervisory personnel and other key staff designated for assignment on the Contract. At a minimum, the following personnel shall be included on the list:

.1 Project Superintendent.

.2 Health and Safety Coordinator.

.3 Environmental Monitor(s).

.2 The above personnel shall perform the following duties:

.1 Project Superintendent: shall be employed full time and shall be present on the Work Site each and every work day that Work is being performed, from the commencement of work to Substantial Performance and Completion of the Work.

.2 Health and Safety Coordinator: shall possess safety experience in general construction. Duties shall encompass all matters of safety activities from commencement of work until Substantial

Performance and Completion of the Work (see Section 01 35 33 – Health and Safety for further requirements).

.3 Environmental Monitors: shall be a P.Biol, RPBio or Qualified Environmental Professional (QEP) (see Section 01 35 43 – Environmental Protection for further requirements).

3.9 Work by Others

.1 The Contractor is advised that concurrent with this project there may be other Contractors working in nearby adjacent projects. Should other Contractors be working in nearby adjacent projects, the Contractors shall coordinate his operations with the other Contractors, including traffic management.

END OF SECTION

Section Includes

PART 1:

1.1 Use of Work Site.

1.2 Work Conducted in and Adjacent to Waterways.

1.3 Utilities.

1.4 Protection of Persons and Property.

1.5 Use of Public Areas.

1.6 Construction Signage.

1.7 Access Development.

1.8 Construction Start-up.

1.9 Construction Staging.

1.10 Restoration.

PART 1 – GENERAL

1.1 Use of Work Site

.1 The Work Site will be specified by the Departmental Representative and shall only be used for the purposes of the Work. The Work Site will be made available to the Contractor for its exclusive use for the duration of the Work, unless otherwise provided in the Contract Documents.

.2 The Contractor's construction camp will not be permitted within PSPC's right of way or other lands owned or leased by PSPC as identified in Section 01 59 10.

.3 While the Work Site is under the Contractor's control, the Contractor shall be entirely responsible for the security of the Work Site and of the Work.

.4 The Contractor shall keep the Work Site clean and free from accumulation of waste materials and rubbish regardless of the source. Snow/ice shall be removed by the Contractor as necessary for the performance and inspection of the Work.

.5 The Contractor shall provide sanitary facilities for the work force in accordance with governing regulations and the Environmental Procedures for this project. The Contractor shall post notices and take such precautions as required by local health authorities and keep the Work Site and premises in sanitary condition.

.6 Any damage to the Work Site caused by the Contractor shall be repaired by the Contractor at the Contractor's expense.

.7 The Contractor may work 24 hours per day, seven days per week with the following restrictions.

.1 Work in excess of 12 hrs per day shall require pre-approval from the Departmental Representative. At a minimum, pre-approval shall require a plan from the Contractor to ensure all necessary QC work per the contract requirements is completed during all times of work. The Departmental Representative may withdraw approval for the extended work hours at any time should the Contractor fail to achieve all necessary QC requirements, or any other contractual requirement, as a result of the extended work hours.

.2 Request for approval to work in excess of 12 hrs per day must be submitted in writing to the Departmental Representative a minimum of five (5) days in advance of the planned change in working hours.

.3 Work during non-daylight hours shall be lit with Contractor-supplied lighting such that none of the work is being completed in darkness.

.4 No hauling of material during inclement weather.

1.2 Work Conducted in and Adjacent to Waterways

.1 All components of the work shall be conducted in accordance with Section 01 35 43 – Environmental Protection.

1.3 Utilities

.1 There are active utilities within the Highway Right of Way. The Contractor shall be responsible to have utility locates completed in advance of the work.

.2 The locations of Utilities shown are not necessarily exact, nor is there any guarantee that all Utilities in existence within the limits of the Work Site have been shown on the Drawings.

.3 The Contractor shall allow the utility company the opportunity to locate and assess the potential proposed work / utilities conflicts within the limits of the work. If it is determined by the Departmental Representative and utility owner that the utilities are affected by the permanent Work, the utilities will be abandoned in place and a new fiber optic cable placed on the native ground surface outside the limits of the work, or the utility lowered / relocated at the time of construction by Other Contractors. The Contractor shall cooperate and coordinate as required with Other Contractors engaged in Utility relocation operations on the Work Site.

.4 The Contractor shall notify the Departmental Representative and the Utility companies at least seven (7) Days in advance of any activities which may interfere with the operation of such Utilities.

.5 Whenever working in the vicinity of Utilities, the Contractor shall locate such Utilities and expose those that may be affected by the Work, using hand labour as required.

.6 The Contractor shall assess the possible impact of its operation on all utilities and shall protect, divert, temporarily support or relocate, or otherwise appropriately treat such Utilities to ensure that they are preserved.

.7 The Contractor shall immediately report any damage to Utilities to the Departmental Representative and to the Utility company or authority affected, and shall promptly undertake such remedial measures as are necessary at no additional cost to the Owner.

1.4 Protection of Persons and Property

.1 The Contractor shall comply with all applicable safety regulations of WorksafeBC including, but not limited to the, Workers Compensation Act, Occupational Health and Safety Regulations, Industrial First Aid Regulations, and Workplace Hazardous Materials Information System Regulations (see Section 01 35 33 – Health and Safety for additional requirements).

.2 The Contractor shall take all necessary precautions and measures to prevent injury or damage to persons and property on or near the Work Site.

.3 The Contractor shall promptly take such measures as are required to repair, replace or compensate for any loss or damage caused by the Contractor to any property.

1.5 Use of Public Areas

.1 Off-road construction equipment (including equipment which exceeds legal highway load limits or dimensions) will not be allowed on the Alaska Highway. Steel tracked equipment with cleats will not be allowed on the Alaska Highway unless measures are taken to protect the existing road surface against any damage.

.2 The Contractor shall ensure that its vehicles and equipment do not cause nuisance in public areas. All vehicles and equipment leaving the Work Site and entering public roadways shall be cleaned of mud, dirt, snow, and ice clinging to the body and wheels of the vehicle. All vehicles arriving at or leaving the Work Site and transporting materials shall be loaded in a

manner which will prevent dropping of materials or debris on the roadways, and, where contents may otherwise be blown off during transit, such loads shall be covered by tarpaulins or other suitable covers. Spills of material, including rocks and debris from loaded trucks, shall be removed or cleaned immediately by the Contractor at no cost to the Owner. All activities shall be in accordance with Section 01 35 43 – Environmental Protection and the Environmental Protection Plan prepared by the contractor for the project. The traveled lanes of the Alaska Highway shall remain a Public Highway subject to the rules and laws of Public Highways in the Province of British Columbia. The Contractor is responsible for ensuring all equipment accessing the Highway meets all requirements for vehicles traveling on Public Highways in the Province.

1.6 Construction Signage

.1 No Signs or advertisements, other than regulatory or warning signs, PSPC supplied signage, and portable electrically illuminated message signs are permitted on site.

.2 Signs and notices for Safety and instruction shall be provided by the Contractor (see Section 01 35 00 – Traffic Management for additional details).

.3 Maintain approved signs and notices in good condition for duration of Project and dispose of off-site on completion of Project or earlier as directed by the Departmental Representative.

.4 Signage shall be coordinated with other Contractors working in the area as needed.

1.7 Access Development

.1 The Contractor shall develop access to the site to facilitate construction as indicated in these specifications and on the Contract Drawings. The Contractor is fully responsible for the selection and implementation of all methods to accomplish this requirement. The Contractor is required to develop access to the site within the zones indicated on the Contract Drawings. The locations and methods used to develop access shall be reviewed and accepted by the Departmental Representative prior to implementation.

.2 The completion of the works will likely require removal of some existing trees and brush. The intent is to remove as few trees and brush as possible in order to facilitate the work. Prior to starting work, the number of trees to be cleared and the extent of brush removal shall be confirmed by the Contractor and approved by the Departmental Representative prior to commencement of work. Removal of trees and brush shall be considered incidental to the work and not measured for payment.

1.8 Construction Start-up

.1 The Contractor or his Sub-contractors shall not perform any on-site work until all necessary submittals have been provided, reviewed, and accepted by the Departmental Representative and the Contractor has received from the Departmental Representative a completed version of the "On-site Construction Start-up Form" (see Appendix C) which has been completed and signed by PSPC's the Departmental Representative. PSPC reserves the right to refuse payment for any on-site work performed prior to issuing the completed and signed "On-site Construction Start-up Form".

1.9 Construction Staging

.1 Onsite project work may not start until the application for Change Approval under the provincial Water Sustainability Act, and all other environmental permits applied for by the Departmental Representative have been approved by the applicable regulatory authorities, and the necessary documentation has been received by the Departmental Representative.

.2 The Contractor shall stage the work ensuring that:

.1 All design requirements as specified in the Contract Drawings and contract specifications are achieved.

.2 All requirements of Section 01 35 00 – Traffic Management are achieved.

.3 All requirements of the Section 01 35 43 – Environmental Protection, the Contractor's Environmental Protection Plan, and the construction sequences/staging shown on the contract drawings are achieved.

.4 The work is completed in accordance dates for Substantial Performance and Completion provided in Section 01 11 10 – Summary of Work.

The Contractor is fully responsible for the selection and implementation of all methods to accomplish this requirement.

1.10 Restoration

.1 Remove access points, roads, detours, laydown areas, pads, diversion channels, and all other works installed during access development and construction staging. Re-instate the worksite to a condition equal to or better than the site condition prior to construction by:

.1 Restoring organic soils (if removed or damaged during access development or other works).

.2 Eliminating uneven areas and low spots.

.3 Restoring existing and proposed drainage patterns.

.4 Removal of all gravels, other materials, or structures placed to create access points, roads, detours, or pads. Dispose of gravels, other materials, or structures at an off-site disposal facility acceptable to the Departmental Representative.

.5 Seed all disturbed areas and areas designated for Seeding, per Section 32 93 21 – Seeding.

END OF SECTION

Section Includes

PART 1:

1.1 Definitions.

1.2 Measurement and Payment Procedures.

PART 1 – GENERAL

1.1 Definitions

.1 Mobilization and Demobilization: Consists of preparatory work and operations, including but not limited to:

.1 Preparation and acceptance of submittals (Construction Schedule, Traffic Management Plan, Environmental Protection Plan, Project Specific Health and Safety Plan, and any other submittals required prior to starting work).

.2 Work and costs incurred necessary for the movement of personnel, equipment, supplies and incidentals to/from the work site.

.3 Work and cost incurred in the establishment and operation of offices, camps, and other facilities necessary to undertake the work.

.4 Work and costs incurred in the completion of clean-up and project completion.

.5 All other work and costs incurred in the successful completion of mobilization and demobilization.

1.2 Measurement and Payment Procedures

.1 Payment for Mobilization and Demobilization will be made on the basis of the Price per Unit Bid for Sites 1 to 5 – Mobilization and Demobilization in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs associated with the items of work listed in 1.1 Definitions above.

.2 Measurement for Payment for Sites 1 to 5 – Mobilization and Demobilization will be made at the Lump Sum price and will be scheduled as follows:

.1 50% of the Lump Sum bid price to a maximum of 5% of the Total Tender price at the beginning of construction after the Contractor's required submittals (including Construction Schedule, Traffic Management Plan, Environmental Protection Plan, Project Specific Health and Safety Plan, and any other submittals noted in the specifications as being required prior to starting work) have been submitted for review, accepted for the work in its entirety, and work onsite

has commenced to the satisfaction of the Departmental Representative. Should the Departmental Representative allow the work to start prior to submission or acceptance by the Departmental Representative of any of submittals listed above, the Departmental Representative may choose to hold back a minimum of 5% of the 50% Mobilization & Demobilization payment for each outstanding submittal until an acceptable submission is provided.

.2 50% once the project has achieved "Completion" and all equipment has been demobilized from the sites, the sites have been cleaned to the satisfaction of the Departmental Representative, remaining deficiencies identified during final inspection (Section 01 77 00 – Closeout Procedures) are corrected, and all closeout submittals are provided and accepted by the Departmental Representative.

END OF SECTION

Section Includes

PART 1:

1.1 Terms of Payment.

1.2 Basis of Payment.

1.3 Survey.

PART 1 – GENERAL

1.1 Terms of Payment

.1 The project's terms of payment shall be per General Conditions (GC) 5 – Terms of Payment. Progress payments shall be submitted by the Contractor on a monthly basis unless accepted otherwise by the Departmental Representative. The progress payment shall use PSPC's Request for Progress Payment – Construction Contracts form: PWGSC-TPSGC 1792, found online (see link to Public Works and Government Services Canada – Acquisition Forms within the Reference Documentation section of the Table of Contents for link).

With each progress payment, provide to the Departmental Representative:

.1 Documentation required by General Conditions (GC) 5 – Terms of Payment including signed statutory declaration.

.2 Progress Payment Submittal Form (see Appendix D) completed and signed by the Contractor's representative. Upon receipt of this form and all other required, PSPC will commence review of the progress payment request in accordance with General Conditions (GC) 5 – Terms of Payment.

.3 WorkSafeBC Clearance Letter, indicating the Contractor is in active and good standing per the end date of the progress payment in accordance with Section 51 of the Workers Compensation Act (Departmental Representative may waive this requirement).

.4 Updated construction progress schedule (accepted project schedule shown as the baseline and actual start dates / completion dates / percent complete shown for each task, see Section 01 32 16 – Construction Progress Schedules – Bar (Gantt) Chart).

.5 All survey information (digital csv file with xyz data and breaklines in DXF file format) for each payment item claimed on the progress payment and measured by survey as defined in the Contract Specifications. For each payment item claimed on the progress

payment and measured by survey, provide a Measurement for Payment Survey Details Form (Appendix E).

1.2 Basis of Payment

.1 Basis of payment shall be per the Measurement and Payment Procedures in the applicable specification section. Where not specified, basis of payment for all work included in these specifications or Contract Drawings not specifically mentioned is considered incidental to other work and is part of the Total Contract Amount. No additional payment will be made for incidental work. Basis of payment shall be per the Measurement and Payment Procedures in the applicable specification section.

.2 Payment for work shall be made per the Price per Unit as shown in the Unit Price Table.

.3 For unit price items in the Bid and Acceptance Form, progress payments shall be made based on the quantities of work in place, surveyed, and accepted by the Departmental Representative in the field.

.4 For lump sum items in the Bid and Acceptance Form, progress payments shall be made based on the percent of work completed and accepted by the Departmental Representative at the time of the monthly progress payment (Excluding Mobilization and Demobilization which is paid per Section 01 25 20 – Measurement and Payment Procedures – Item 1.2). Survey may be required to verify the work is completed to the design requirements (thickness, length, grade, volume, area, etc.)

.5 The Contractor must support any claims for products purchased, manufactured, or delivered to the place of work but not yet incorporated into work. The support for such claims must include such evidence as may be required by the Departmental Representative to establish value and the percentage of the work completed. During or at the completion of the work any products purchased, manufactured, or delivered to the place of work but not incorporated into the work shall be removed from the site at the Contractor's cost and no payment (including adjustment to quantities on previous progress payments, see GC5.2 – Amount Payable) shall be made (excluding items resulting from changes to the work made by the Departmental Representative during the work and brought to the attention of the Departmental Representative by the Contractor at the time of the change).

.6 Any work called for in the specifications or shown on the Contract Drawings but not specifically mentioned as an item for which payment will be made, will be considered incidental to the items of work listed. No additional payment will be made for this incidental work.

.7 All equipment, materials, and labour necessary to complete any item of work shall be included in the cost of that work.

.8 Materials shall be excavated or placed within the specified tolerances of the design lines and grades shown on the Contract Drawings but not uniformly high or low. Materials excavated or placed outside the specified tolerances will not be measured for payment unless preapproved by the Departmental Representative.

.9 Measurement for Payment will be at the Departmental Representative's discretion using one or more of the following methods:

.1 Based upon the survey data collected by the Contractor – when the materials have been excavated or placed within the specified tolerances of the design lines and grades shown on the Contract Drawings but not uniformly high or low.

.2 Based upon the survey data collected by the Contractor – when the Contractor's or Departmental Representative's survey data indicates that less materials were excavated or placed than called for by the design lines and grades on the Contract Drawings.

.3 By the design grade / design drawing neat lines – when the Contractor's or Departmental Representative's survey data indicates that materials were excavated or placed outside / beyond the specified tolerances of the design lines and grades on the Contract Drawings.

.10 At any point throughout the project, the Departmental Representative may compile and review the survey data (individual surveys or multiple surveys of particular items of work) to reconcile the total quantities of items of work to date on the project. Adjustments to quantities on future progress payments may then be made per GC5.2 – Amount Payable.

1.3 Survey

.1 Surveys shall be undertaken by the Contractor to verify quantities for payment purposes, or in the case of lump sum items to verify that work has been completed to the design requirements. Survey shall be considered incidental to the work and not measured for payment.

.2 The Contractor shall utilize a qualified surveyor acceptable to the Departmental Representative to perform all the required surveying on the project. Submit name and resume of surveyor to the Departmental Representative upon request.

.3 Survey data collected shall be of sufficient density to fully characterize the work. Survey methods and location of surveyed cross sections is subject to prior approval of the Departmental Representative. At a minimum the Contractor shall survey all features at 10 m station intervals (may be reduced to 5 m in locations with grade changes at the discretion of Departmental Representative) and the location of all treatment boundaries including changes in material type / placement, changes in surface treatment, and changes in the terrain.

.4 A survey of the existing ground surfaces, river banks, stream channels, culverts, and other topographic features shall be undertaken by the Contractor prior to initiation of construction. The survey shall be provided to the Departmental Representative for review and acceptance. During construction no material shall be placed unless the applicable surveys on the completed surfaces have been carried out and the data accepted by the Departmental Representative, and the completed surface has been inspected and accepted by the Departmental Representative. At the Departmental Representative's sole discretion, payment for work completed and measured by survey may not be made should the Contractor fail to complete necessary surveys, or the surveys be of insufficient quality or details.

.5 Survey data shall be collected at an accuracy of +/-0.02 m horizontal and +/-0.02 m vertical or better, and shall be referenced / tie into the PSPC's monument / coordinate system as shown on the Contract Drawings.

.6 Survey data for each payment line item in the unit price table and area of work shall be provided to the Departmental Representative as follows:

.1 Digital csv files with the xyz data and an appropriate descriptor code as to the type of material surface or feature being surveyed.

.2 Breaklines for all survey data in DXF file formation or another format pre-approved by the Departmental Representative.

.3 A list of all point descriptors used in the survey data.

.7 Whenever survey data is provided, provide to the Departmental Representative the completed Measurement for Payment Survey Details Form (Appendix E) for each payment line item in the unit price table and area of work.

.8 Where surveys of an item of work or location of work have been completed multiple times (ex. multiple progress payments), compile individual survey point files into one complete survey file free of overlapping points and other inconsistencies resulting from the completion of individual surveys.

.9 The Contractor shall complete detailed volume calculations using average end area determination or electronic surface to surface comparisons. Details of volume calculations shall be provided to the Departmental Representative for review upon request.

.10 Surveys may be subject to verification by the Departmental Representative. In case of discrepancy, the Departmental Representative's survey will govern.

END OF SECTION

Section Includes

PART 1:

1.1 Pre-Construction Meeting.

1.2 On-Site Documents.

1.3 Schedules.

1.4 Construction Progress Meetings.

1.5 Written Communication / Document Management.

1.6 Submittals.

1.7 Close-out Procedure.

PART 1 – GENERAL

1.1 Pre-construction Meeting

.1 Following tender closing and prior to the construction start, attend in person or via teleconference a pre-construction meeting organized by the Departmental Representative.

.2 Departmental Representatives and senior representatives of the Contractor, including but not necessarily limited to the Project Superintendent, Deputy Project Superintendent, Health and Safety Coordinator, Surveyor, Quality Control Manager, and Environmental Monitor, and major subcontractors shall attend in person or via teleconference.

.3 The Departmental Representative shall establish a time, location, and teleconference number for the meeting and notify the Contractor a minimum of three days prior to the meeting. The Contractor shall notify all concerned parties of the meeting.

.4 The agenda is to include but is not limited to the following:

.1 Appointment of the official representative of participants in the work and lines of communication.

.2 Project schedule.

.3 Contractor submissions (requirements and submissions schedule).

.4 Requirements for temporary facilities, site signage, offices, storage sheds, utilities, and fences.

.5 Permitting and Environmental requirements.

.6 Site security in accordance with Section 01 52 00 – Construction Facilities.

.7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.

.8 As-built drawings in accordance with Section 01 78 00 – Closeout Submittals.

.9 Take-over procedures, acceptance, and warranties in accordance with Section 01 77 00 – Closeout Procedures.

.10 Monthly progress claims, administrative procedures, photographs, and holdbacks.

.11 Contractor's Quality Management and Quality Assurance undertaken by the Departmental Representative.

.12 Insurances and transcript of policies.

.13 Contractor's Project Specific Health and Safety Plan.

.14 Maintenance in accordance with Section 01 78 00 – Closeout Submittals.

.15 Other business as required by the Departmental Representative or Contractor.

.5 Within fourteen (14) days of the pre-construction meeting, the Departmental Representative shall distribute meeting minutes to the Contractor. The Contractor shall review the meeting minutes and provide any comments within 5 working days.

1.2 On-Site Documents

.1 Maintain at job site, one copy each of the following:

.1 Contract Drawings.

.2 Specifications.

.3 Addenda.

.4 Reviewed and accepted submittals.

.5 Change orders.

.6 Other modifications to Contract.

.7 Field test reports.

.8 Copy of approved work schedule.

.9 Manufacturer's installation and application instructions (if applicable).

.10 All permits (FLNRORD, MoE, NWPA, and/or others as required for the project).

.11 Meeting minutes.

.12 Contractor's Project Specific Health and Safety Plan.

.13 Contractor's Environmental Protection Plan (EPP).

.14 Contractor's Traffic Management Plan.

.15 Current construction standards of workmanship listed in the contract specifications.

.16 One set of "Issued for Construction" Contract Drawings (or "Issued for Tender" if being used for construction), contract specifications, and Shop Drawings for as-built purposes.

1.3 Schedules

.1 Submit preliminary construction progress schedule in accordance with Section 01 32 16 – Construction Progress Schedules – Bar (Gantt) Chart to the Departmental Representative.

.2 After review by Departmental Representative, revise project schedule to comply with comments given.

.3 During progress of work, provide schedule with original tasks shown as the baseline and actual work progress updated with each submission (see Section 01 32 16 – Construction Progress Schedules – Bar (Gantt) Chart, subsection 1.4).

1.4 Construction Progress Meetings

.1 During the course of work the Departmental Representative may schedule construction progress meetings approximately every week or every two (2) weeks.

.2 Departmental Representatives and senior representatives of the Contractor, including but not necessarily limited to the Project Superintendent and major Sub-contractors shall attend in person. Other contractor representatives including the Deputy Project Superintendent, Health and Safety Coordinator, Quality Control Manager, Surveyor, and

Environmental Monitor shall attend in person or via teleconference.

.3 The Departmental Representative shall establish a time, location, and teleconference number for the meeting and notify the Contractor a minimum of three days prior to the meeting. The Contractor shall notify all concerned parties of the meeting.

.4 The meetings may be held on site provided teleconference capabilities are available or at PSPC's office in Fort Nelson, BC. If held on site, the Contractor shall provide physical space and make arrangements for the meetings.

.5 Agenda to include the following:

.1 Review and approval of minutes of previous meeting.

.2 Health and Safety Incidents and Concerns.

.3 Review of work progress since previous meeting.

.4 Field observations, problems, conflicts.

.5 Problems which impede construction schedule.

.6 Review of off-site fabrication delivery schedules (if applicable).

.7 Corrective measures and procedures to regain projected schedule.

.8 Revision to construction schedule and project submittals.

.9 Progress schedule, during succeeding work period.

.10 Review submittal schedules: expedite as required.

.11 Maintenance of quality standards.

.12 Review proposed changes for effect on construction schedule and on completion date.

.13 Other business.

.6 Within fourteen (14) days of the construction progress meeting, the Departmental Representative shall distribute meeting minutes to the Contractor. The Contractor shall review the meeting minutes and provide any comments

within five (5) working days.

1.5 Written Communication / Document Management

.1 Written communication and document management shall be completed per the Written Communication / Document Management Protocol prepared by the Departmental Representative following award of the contract. The Written Communication / Document Management Protocol will resemble the template provided in Appendix B.

1.6 Submittals

.1 Provide submittals, Shop Drawings, product data and samples in accordance with Section 01 33 00 – Submittal Procedures for review for compliance with Contract Documents, field dimensions and clearances, compatibility and available space, and for relation to work of other contracts. If requested, after receipt of Departmental Representative comments, revise and resubmit.

.2 Submit requests for payment through the Departmental Representative via email or, if requested by the Departmental Representative or if desired by the Contractor, PSPC's cloud-based document filing system "CentralCollab". Support claims for payment with survey data and other evidence as required by the Departmental Representative.

.3 Submit Requests For Information (RFI) of Contract Documents and obtain instructions through Departmental Representative via PSPC's cloud-based document filing system "CentralCollab". If required by the Departmental Representative, provide supporting documents for proposed substitutions via PSPC's cloud-based document filing system "CentralCollab".

.4 Process substitutions through Departmental Representative. If required by the Departmental Representative, provide supporting documents for proposed substitutions via PSPC's cloud-based document filing system "CentralCollab".

.5 Process change orders through Departmental Representative via PSPC's cloud-based document filing system "CentralCollab".

.6 Deliver closeout submittals for review and preliminary inspections, for transmittal to Departmental Representative via PSPC's cloud-based document filing system "CentralCollab".

1.7 Close-Out Procedure

.1 Close-out procedures as per 01 77 00 – Closeout Procedures.

END OF SECTION

Section Includes

PART 1:

1.1 Project Schedule.

1.2 Schedule Format.

1.3 Submission of Schedules.

1.4 Project Schedule Reporting During the Work.

PART 1 – GENERAL

1.1 Project Schedule

.1 Develop detailed Project Schedule conforming to the project completion dates found in Section 01 11 10 – Summary of Work, and the Construction Staging requirements outlined in Section 01 14 00 – Work Restrictions, Construction Staging, and Restoration.

.2 Ensure detailed Project Schedule includes as a minimum, all relevant milestone activity types as follows:

.1 Project Award.

.2 Receipt of Necessary Permits.

.3 Submittal Schedule:

.1 Pre-construction survey

.2 Environmental Protection Plan.

.3 Traffic Management Plan / Detour Plan.

.4 Construction Staging / Site Access.

.5 Project Specific Health and Safety Plan.

.6 Shop Drawings and Product Samples (if applicable).

.7 As-built Survey and As-Built Drawing Mark-ups.

.8 Test results.

.4 Mobilization.

.5 Work activities and material purchases by segment / locations (unless accepted otherwise, at a minimum each line item of work identified in the unit price

table shall be identified separately on the project schedule).

.6 Interim inspections.

.7 Site Clean-up / De-mobilization.

.8 Project Substantial Completion and Project Completion dates.

.3 Indicate dates for submitting, review time, resubmission time, and last date for meeting fabrication schedule.

.4 Include dates when reviewed submittals will be required from the Departmental Representative.

1.2 Schedule Format

.1 Prepare schedule in form of a horizontal Gantt bar chart.

.2 Provide a separate bar for each item of work identified on the unit price table or if acceptable to the Departmental Representative, each operation.

.3 Provide horizontal time scale identifying first work day of each week.

.4 Format for listings: the chronological order of start of each item of work.

.5 Include complete sequence of construction activities and identify critical path and critical path work items in identifying colour.

.6 Include dates for commencement and completion of each major element of construction.

.7 For submission during the work, split horizontally for projected and actual performance.

1.3 Submission of Schedules

.1 Submit initial format of schedules within fifteen (15) days after award of Contract but in all cases prior to starting onsite work.

.2 Submit schedules in electronic format via PSPC's cloud-based document filing system "CentralCollab" (login details to be provided by Departmental Representative at time of submission following contract award). Provide schedules as a single PDF file format document (multiple files will not be accepted) and native file format (ex. Microsoft Projects format) if requested by the Departmental Representative.

.3 If requested submit two (2) hard copies to be retained by the Departmental Representative.

.4 The Departmental Representative will review the schedule and return any comments within ten days after receipt.

.5 Resubmit finalized schedule within seven (7) days after return of review copy. Once accepted by the Departmental Representative, the accepted schedule shall form a baseline which all schedule updates shall be compared against.

.6 Distribute copies of revised schedule to:

.1 The Contractor's team including Project Superintendent, Deputy Project Superintendent, and others as required.

.2 Subcontractors.

.3 Other concerned parties.

.7 Instruct recipients to report to Contractor within seven (7) days any problems anticipated by timetable shown in the schedule.

1.4 Project Schedule Reporting During the Work

.1 Update project schedule on a monthly basis or with each progress payment (whichever is more frequent) reflecting activity changes and completions, as well as activities in progress.

.2 Include as a baseline, each line item and details from the initial project schedule accepted by the Departmental Representative at the start of the project. On an adjacent line, indicate progress of each activity started and completed to the date of schedule submission by including an actual start date / end date / percent complete.

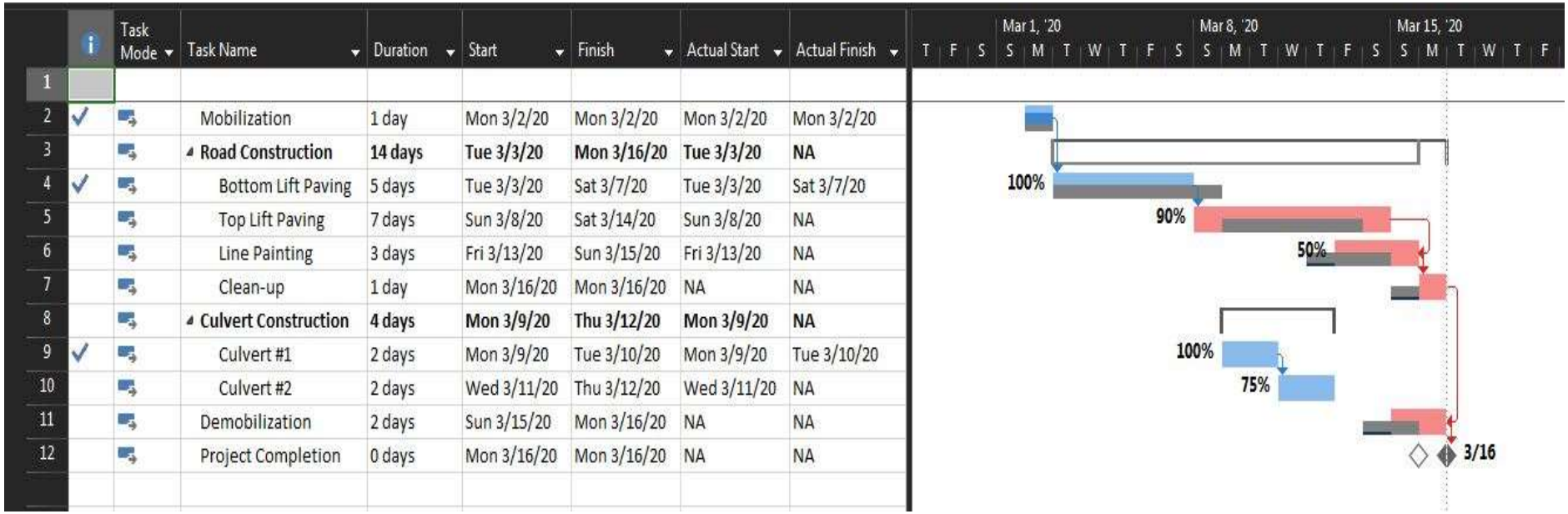
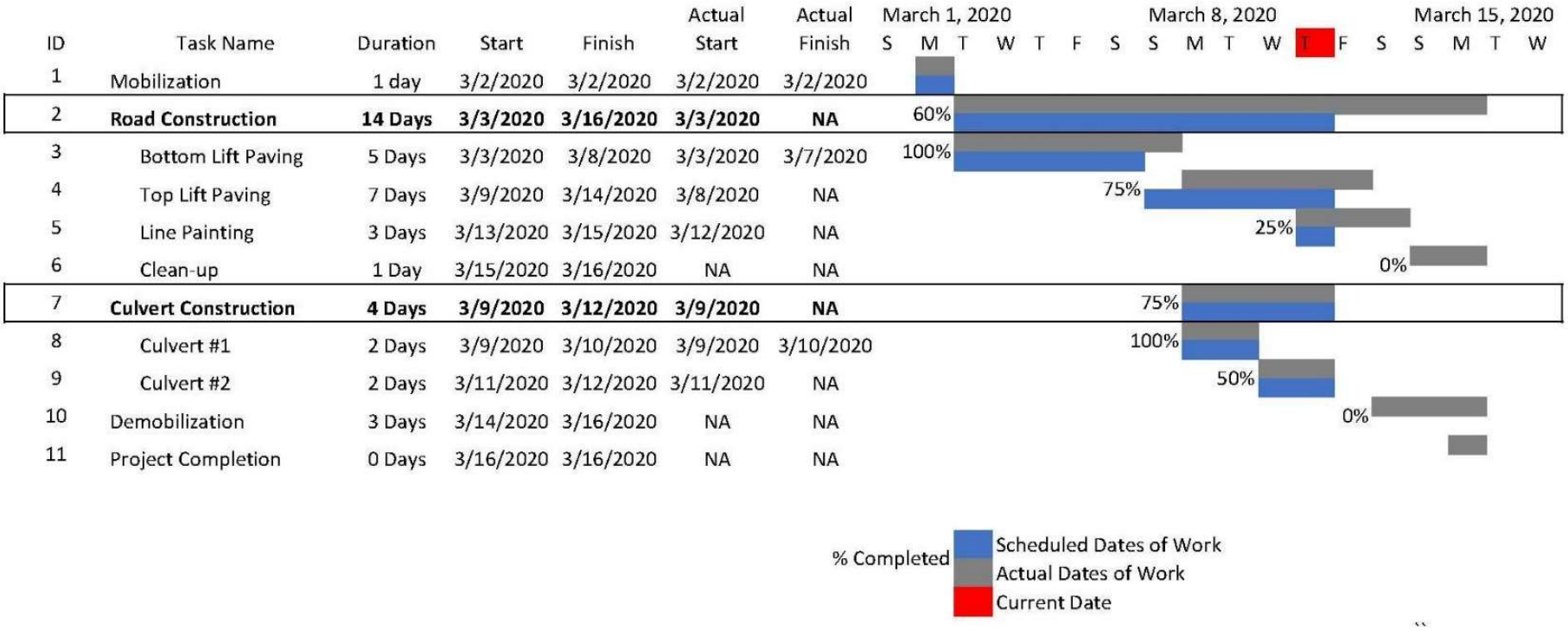


Figure 01 32 16 – 01: Example of Microsoft Project Format



ID	Task Name	Duration	Start	Finish	Actual Start	Actual Finish
1	Mobilization	1 day	3/2/2020	3/2/2020	3/2/2020	3/2/2020
2	**Road Construction**	**14 Days**	**3/3/2020**	**3/16/2020**	**3/3/2020**	**NA**
3	Bottom Lift Paving	5 Days	3/3/2020	3/8/2020	3/3/2020	3/7/2020
4	Top Lift Paving	7 Days	3/9/2020	3/14/2020	3/8/2020	NA
5	Line Painting	3 Days	3/13/2020	3/15/2020	3/12/2020	NA
6	Clean-up	1 Day	3/15/2020	3/16/2020	NA	NA
7	**Culvert Construction**	**4 Days**	**3/9/2020**	**3/12/2020**	**3/9/2020**	**NA**
8	Culvert #1	2 Days	3/9/2020	3/10/2020	3/9/2020	3/10/2020
9	Culvert #2	2 Days	3/11/2020	3/12/2020	3/11/2020	NA
10	Demobilization	3 Days	3/14/2020	3/16/2020	NA	NA
11	Project Completion	0 Days	3/16/2020	3/16/2020	NA	NA

Figure 01 32 16 – 02: Example of Microsoft Excel Format

.3 Show changes occurring since previous submission of schedule:

.1 Major changes in scope.

.2 Activities modified since previous submission.

.3 Revised projections of progress and completion.

.4 Other identifiable changes.

.4 Provide a narrative report to define:

.1 Problem areas, anticipated delays, and impact on schedule.

.2 Corrective action recommended and its effect.

.3 Effect of changes on schedules of other Prime Contractors.

.5 Discuss project schedule at Construction Progress Meetings, identify activities that are behind schedule and provide measures to regain slippage. If requested by the Departmental Representative, provide a schedule recovery plan with details of the approach and changes the Contractor is planning on implementing to bring the project back on schedule.

END OF SECTION

Section Includes

PART 1:

1.1 General Requirements.

1.2 Shop Drawings and Product Data.

1.3 Samples.

PART 1 – GENERAL

1.1 General Requirements

.1 Submit to the Departmental Representative submittals listed for review. Submit with reasonable promptness (per the timelines indicated, if applicable) and in an orderly sequence so as to not cause delay in work. Failure to submit in ample time is not considered sufficient reason for an extension of the contract Substantial Completion Date, and no claim for extension by reason of such default will be allowed.

.2 Unless specified otherwise or requested by the Departmental Representative, submittals shall be submitted to the Departmental Representative in electronic format via PSPC's cloud-based document filing system "CentralCollab" (login details to be provided by Departmental Representative at time of submission following contract award). Submittals shall be named and filed on "CentralCollab" in accordance with the Written Communication / Document Management Protocol (see template in Appendix B). Each submittal shall be compiled into a single PDF document (multiple files will not be accepted).

.3 The Departmental Representative will review the project submittals for accuracy against the appropriate project specifications and contract requirements, and endeavor to complete the reviews within the review time specified for each particular submittal. However, a longer review period may be required. If a longer review period is required, the Contractor will be notified prior to the passing of the specified review period. Upon completion of the submittal reviews by the Departmental Representative, comments and or acceptance of the submittals will be given. Upon review by the Departmental Representative, should comments be provided, the Contractor shall revise the submittal as required and re-submit the complete revised submittal back to the Departmental Representative for review within one week (or within a time preapproved by the Departmental Representative). The submittals will not be accepted until all comments from all reviews have been addressed to the satisfaction of the Departmental Representative. Despite acceptance of a particular submittal, the Departmental Representative reserves the right to provide additional comments to ensure the

correction of any deficiencies with particular submittals at any time during the project.

.4 Work affected by a submittal shall not proceed until the submittal is completed, reviewed, and accepted by the Departmental Representative.

.5 Present all necessary drawings, Shop Drawings, product data, samples, and mock-ups in SI Metric units.

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

.7 Review submittals prior to submission to the Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with the requirements of work and Contract Documents. Submittals not stamped, signed, dated, and identified as to a specific project will be returned without being examined and shall be considered rejected.

.8 Notify the Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents and stating reasons for deviations.

.9 Prior to any submission, verify field measurements and affected adjacent work included on the submission are coordinated.

.10 Contractor's responsibility for errors and omissions in submission is not relieved by the Departmental Representative's review of submittals.

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

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

.13 Comments made from review of submittals are intended to ensure conformance with contract requirements and not intended to change contract price. If the Contractor feels the comments include requirements not required by the contract, the Contractor shall respond in writing to the Departmental Representative indicating as such, prior to undertaking the work.

1.2 Shop Drawings and Product Data

.1 The term "Shop Drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures, and

other data that are to be provided by the Contractor to illustrate details of a portion of work.

.2 Indicate materials, methods of construction, and attachment or anchorage, erection diagrams, connections, explanatory notes, and other information necessary for completion of work or as indicated elsewhere in the specifications. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of the section under which adjacent items will be supplied and installed. Indicate cross-references to design drawings and specifications.

.3 Adjustments made on Shop Drawings by the Departmental Representative are not intended to change the Contract Price. Should the Contractor feel that the adjustments affect the value of work and are outside the contract requirements, the Contractor shall state such in writing to the Departmental Representative prior to proceeding with work.

.4 Make changes in Shop Drawings as the Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify the Departmental Representative in writing of any revisions other than those requested.

.5 Accompany submissions with a transmittal letter, in duplicate, 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.

.6 Submissions shall 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 the Contractor's authorized representative certifying approval of submissions, verification of field measurements, and compliance with Contract Documents and requirements.

.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 Single line and schematic diagrams.

.9 Relationship to adjacent work.

.6 Professional seal and signature of the engineer certifying approval of the work (if required).

.7 After the Departmental Representative's review and acceptance, distribute copies.

.8 Submit an electronic copy of the Shop Drawing for each requested within the specification sections. Submit hard copies as requested by the Departmental Representative.

.9 Submit electronic copies of product data sheets or brochures for requirements requested in specification sections and as requested by the Departmental Representative where Shop Drawings will not be prepared due to standardized manufacture of product.

.10 Delete information not applicable to project.

.11 Supplement standard information to provide details applicable to the project.

.12 If upon review by the Departmental Representative no errors or omissions are discovered, or if only minor corrections are made, copies will be returned, and fabrication and installation of work may proceed. If Shop Drawings are rejected, noted copy will be returned. Resubmission of corrected Shop Drawings, through the same procedure as indicated above, must be performed before fabrication and installation of work may proceed.

.13 The review of Shop Drawings by the Departmental Representative is for the sole purpose of ascertaining conformance with general concept. This review shall not mean that the Departmental Representative approves the detail design inherent in Shop Drawings. Responsibility for the design shall remain with the Contractor, and as such, reviews by the Departmental Representative shall not relieve the Contractor of the responsibility for errors or omissions in Shop Drawings or for meeting all requirements of construction and Contract Documents. Without restricting generality of the foregoing, the Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of work of all sub-trades.

.14 Work affected by Shop Drawing shall not proceed until the Shop Drawing is reviewed and accepted by the Departmental Representative.

1.3 Samples

.1 Submit for review samples in duplicate, as requested in respective specification sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to Departmental Representative's site office or to a location as directed by the Departmental Representative.

.3 Notify Departmental Representative in writing, at time of submission, of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of work, state such in writing to Departmental Representative prior to proceeding with work.

.6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed work will be verified.

.8 Work affected by the sample shall not proceed until the sample is reviewed and accepted by the Departmental Representative.

END OF SECTION

Section Includes

PART 1:

1.1 Measurement and Payment Procedures.

1.2 References.

1.3 General.

1.4 Definitions.

1.5 Submittals.

PART 2:

2.1 Temporary Traffic Control Devices.

PART 3:

3.1 General.

3.2 Traffic Management.

3.3 Protection of Public Traffic.

PART 1 – GENERAL

1.1 Measurement and Payment Procedures

.1 Payment for the cost of Traffic Control for Sites 1 to 5 will be made on the basis of the Price per Unit Bid for Sites 1 to 5 – Traffic Control and Access Development in the Bid and Acceptance Form. The Price per Unit Bid shall include:

.1 All costs for the completion of the Traffic Management Plan, construction signage, traffic flaggers.

.2 All cost for access development required to perform the work per Section 01 14 00 – 1.7 Access Development, including any clear and grubbing and tree removal if required.

.3 All other items necessary for successful completion of the work.

.2 Measurement for Payment for Sites 1 to 5 – Traffic Control and Access Development will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative for each site.

1.2 References

.1 British Columbia Ministry of Transportation and Infrastructure.

.1 Traffic Management Manual for Work on Roadways – 2020 Office Edition.

.2 B.C. Supplement to TAC Geometric Design Guide for Canadian Roads (latest edition).

1.3 General

.1 The traffic management standards and requirements included in these specifications shall be considered the minimum requirements which shall be achieved. The Contractor shall be responsible for ensuring the traffic management used on the project archives these Traffic Management specifications, is appropriate for the project requirements, and achieves the requirements of WorkSafeBC OHS Regulation Part 18: Traffic Control.

1.4 Definitions

.1 Delay: The total amount of time vehicles are stopped by all flaggers due to the contractors operations while driving through the limits of the work. The delay time includes the time for a vehicle to come to a stop position behind a queue of vehicles and then start moving again following a long queue of vehicles. The maximum allowable delay on this project is defined below in Item 3.2.19 of Section 01 35 00 – Traffic Management.

.2 Drop-off: An abrupt change in elevation created by construction activity such as milling, paving, or excavation steeper than 3H:1V.

.3 Long-Duration Work: For Traffic Management purposes and applicable signage requirements, all work on the project shall be considered Long Duration, as defined by the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition.

1.5 Submittals

.1 Traffic Management Plan.

.1 Submit a Traffic Management Plan to the Departmental Representative for review and acceptance. The Traffic Management Plan shall function as a standalone document, provide a complete and unambiguous plan of the traffic accommodation strategies proposed for use during the work, and incorporate the following requirements.

.1 Fully integrated with the Contactor's plan and schedule.

.2 Shall provide a complete and unambiguous plan for the traffic accommodation strategies

proposed for use during the work, using the allowed products, strategies, layouts, and management techniques as described in Part 2 – Products and Part 3 – Execution of this specification.

.3 Shall be in accordance with Section 3: Traffic Management Plans of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition, excluding Sections 3.4.2 and 3.4.3.

.4 Developed and conform to the standards for Category 1 Traffic Management Plans as defined in Section 3: Traffic Management Plans of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition. The Traffic Management Plan shall include a Category 1 Incident Management Plan and Category 1 Public Information Plan, as defined by Section 3.4.1. The Traffic Control Plan shall further include the sign size used for each individual sign (see Item 2.1 – Temporary Traffic Control Devices, subsection .2 of this specification), the sign support used (see Item 2.1 – Temporary Traffic Control Devices, subsection .1.3 of this specification), and details of when flags are used with which signs (if applicable, see Item 2.1 – Temporary Traffic Control Devices, subsection .1.4 of this specification).

.5 Shall at a minimum include all headings, sub-headings, details, and presentation format as provided in the Template for Category 1 Traffic Management Plans, found in Appendix C: Templates for Traffic Management Plans in the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition. The Contractor shall add additional headings to allow for additional required content as deemed necessary. PSPC has the right to reject the Traffic Management Plan if the correct headings from this document are not used by the Contractor.

.6 Traffic Control Plan shall include traffic signage to be used on side access roads within the limits of the work (if applicable).

.7 Shall include a Traffic Control Plan / Site Diagram for each traffic accommodation strategy implemented during the work and details of when each strategy will be used. Examples of when each strategy may be used includes such activities as unloading of equipment, excavation off highway, culvert installation, etc.

.8 Shall include details of the overhead lighting which will be used at each Traffic Control Person (TCP) location if using TCPs during non-daylight hours. Details to include the location, direction, height, brightness, and use of shields on the lights to suitably illuminate the TCP, but not obstruct the visibility of drivers approaching the TCP.

.9 Shall include a copy of the "Daily Sign Check Form", as found in Appendix C: Templates for Traffic Management Plans in the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition.

.2 The Contractor's Traffic Management Plan shall be submitted to the Departmental Representative as a single PDF document (multiple files will not be accepted) for review and acceptance in accordance with the procedures outlined in Section 01 33 00 – Submittal Procedures. The Departmental Representative will review the plan (first submission and if required all subsequent re-submissions) within 14 days of submission. Upon review of the plan the Departmental Representative will do one of the following:

.1 Accept the plan.

.2 Accept portions of the plan and provide comments outlining required changes or additional information in other sections. Following completion of edits by the Contractor, the Contractor shall re-submit the complete plan for review.

.3 Reject the plan and provide comments outlining required changes or additional information needed before the plan will be

reviewed in detail. Following completion of edits by the Contractor, the Contractor shall re-submit the complete plan for review.

.3 The Contractor shall allow time in the schedule for the reviews, and subsequent edits / re-submission.

.4 Work affected by the Traffic Management Plan (as determined by the Departmental Representative) shall not proceed until acceptance of the Traffic Management Plan by the Departmental Representative.

.5 The review of the Traffic Management Plan by the Departmental Representative shall not relieve the Contractor of responsibility for errors or omissions in the accepted Traffic Management Plan, or of responsibility for meeting all requirements of construction and Contract Documents, or for ensuring safe and appropriate traffic management.

.6 Should deficiencies in the Contractor's Traffic Management Plan be noted following acceptance of the submittal by the Departmental Representative but during the project work, the Departmental Representative reserves the right to provide additional comments to the Contractor and require re-submission of the Traffic Management Plan to ensure the correction of any deficiencies.

.2 Daily Sign Check Form.

.1 Submit to the Departmental Representative for review the "Daily Sign Check Form" as found in Appendix C: Templates for Traffic Management Plans in the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition. Submit via CentralCollab in accordance with the procedures outlined in Section 01 33 00 – Submittal Procedures.

.3 Other Submittals:

.1 Any other traffic control related documents, such as incident reports and traffic control records, shall be distributed to the Departmental Representative in electronic format via "CentralCollab", as discussed in Section 01 33 00 – Submittal Procedures of these specifications.

PART 2 – PRODUCTS

2.1 Temporary Traffic Control Devices

.1 Temporary Traffic Control Devices shall be in accordance with Section 4: Temporary Traffic Control Devices of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition, and the following requirements.

.1 Unless preapproved by the Departmental Representative, where 45 cm, 70 cm, or 90 cm cones are called for by the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition, 100 cm tubular markers shall be used.

.2 Automated Flagger Assistance Devices (AFADs) or Portable Traffic Signals shall not be used on the project.

.3 All sign supports shall either be a post mounted support, per the requirements of Figure 01 35 00 – 01, or Wind Resistance Sign Stand, per the requirements of Figure 01 35 00 – 02.

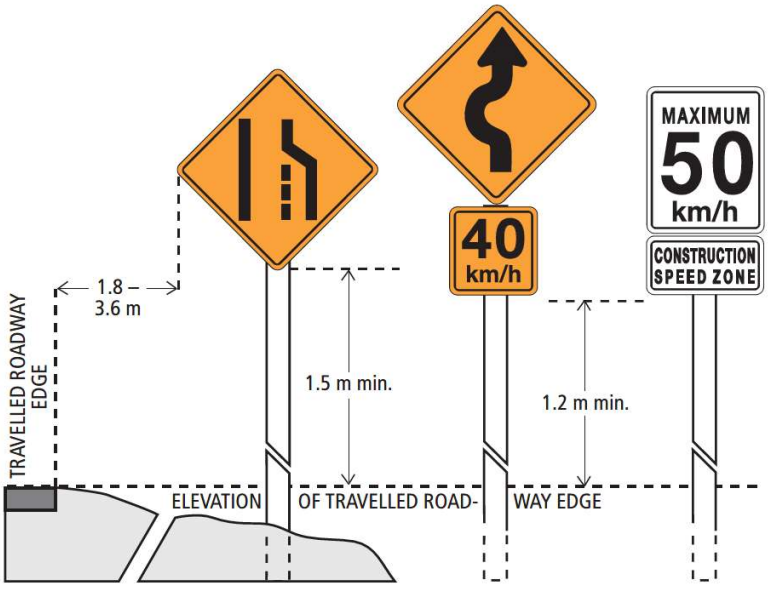


Figure 01 35 00 - 01: Post Mounted Supports

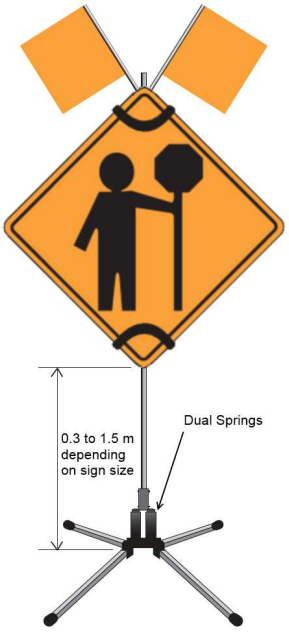


Figure 01 35 00 - 02: Wind Resistant Sign Stand

.4 Flags shall be used on the following signs:

.1 Traffic Control Person Ahead (C-001-1).

.2 Survey Crew Ahead (C-003).

.3 Crew Working Ahead (C-004).

.4 Accident Scene (C-058).

.5 Unless pre-approved by the Departmental Representative, one or more sand bags or weights shall be in used at all times to further stabilize all Wind Resistance Sign Stands.

.2 Where an option for a sign size is available, the sign size used shall be the larger dimension sign as listed in Appendix B.2: Sizes and Applications of Individual Signs of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition.

PART 3 – EXECUTION

3.1 General

.1 All traffic control on the project shall be undertaken in accordance with Section 1.1.3 – Applying the Principles in the Manual as defined in the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition.

.2 Responsibilities for traffic control shall be undertaken in accordance with Section 1.2.3 – Traffic Control Responsibilities of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition and as follows.

.1 Road Authority shall be Public Services and Procurement Canada (PSPC).

.2 Prime Contractor shall be the Contractor as defined by GC1.1.2 – Terminology.

.3 Management and site supervision shall be the responsibility of the Contractor including the:

.1 Site Supervisor/Foreman/Superintendent;

.2 Traffic Control Manager; and

.3 Traffic Control Supervisors and Traffic Control Persons.

.3 PSPC will assist the Contractor with the Public Information Plan by notifying DriveBC of the work and posting notice of the project on PSPC's permanent variable message signs along the highway. All other requirements of the Public Information Plan (Section 3.2.3 of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition shall be included in the Traffic Management Plan and by undertaken / implemented by the Contractor prior to commencing work.

3.2 Traffic Management

.1 Traffic management shall be undertaken in accordance with the requirements of:

.1 The reviewed and accepted Traffic Management Plan prepared by the Contractor for this project (see Item 1.5 – Submittals, in Section 01 35 00 – Traffic Management, of this specification).

.2 Section 2: Fundamentals of Traffic Management and Traffic Control of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition and as follows.

.1 Section 2.5.3 – Road Authority Acceptance shall be replaced with the requirements of Section 1.5 – Submittals, in Section 01 35 00 – Traffic Management, of this specification.

.2 References to Ministry shall be replaced with PSPC.

.3 Section 5: Traffic Control Persons of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition.

.4 Section 6: Traffic Control Layouts – General Instructions of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition and as follows:

.1 Per section 6.3 of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition, traffic management shall be managed as one continuous work zone where the work is one kilometer apart or less.

.2 Drop-offs shall be treated in accordance with Section 6.5 of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition whenever the drop-off is within 1.5 m of the edge of the travel lane. Additionally, the following requirements shall be achieved.

.1 Drop-offs ≥ 150 mm and between 1.5 m and 3.0 m of the travel lane shall be signed with Low Shoulder (C-013) signs at least every 1 kilometer for as long as the condition persists.

.2 A lane width of 3.7 m shall be used at all times.

.5 Section 7: Traffic Control Layouts – Two-Lane, Two-Way Roadways of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition. The traffic control layouts, revisions, and details, as listed below shall be used in conjunction with 7.2 Typical Speed Zone Signing – Two-Lane, Two-Way Roadway (Construction Project C-035 sign not required).

.1 Section 7: Legend, Table A, and Table B.

.2 7.1 General Information – Two-Lane, Two Way Roadways shall apply as follows:

.1 A "buffer space" shall be used for all traffic control layouts.

.2 The use of a portable dynamic message sign (DMS) shall be at the Contractor's discretion.

.3 7.5 Work on Shoulder – Short and Long Duration can be used during the following:

- When work activities on part or all of the shoulder area (including parked vehicles, equipment, and equipment with components within reach of the shoulder) are on one side of the highway and do not encroach onto the driving lane.
- When work activities do not include unloading or loading of equipment, or supplies on part or all of the shoulder area.

The use of 7.5 Work on Shoulder – Short and Long Duration is subject to the following:

.1 Advanced warning signs (Men Working (C-004) and Construction Ahead (C-018-1A)) shall be installed in the opposing direction of travel.

.2 Tubular markers shall replace cones and tubular markers can be used as a replacement for drums.

.3 The use of a vehicle-mounted DMS or flashing arrow board can be omitted at the Contractor's discretion should the work be within the "Work Activity Area" as defined by Figure 7.2 – Typical Construction Speed Zone Signing – Two Lane, Two-Way Roadway of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition (see Item 3.2 – Traffic Management, subsection .1.5.3 of this specification).

.4 7.8 Lane Closure with Traffic Control Persons – Single Lane Alternating Traffic – Short and Long Duration can be used when the length of

the single lane alternating traffic does not exceed 300 m and access through the work area is not dangerous, thus not requiring a pilot vehicle. The traffic control signage layout shall include the Men Working (C-004) sign in advance of the Construction Ahead (C-018-1A) sign, using the applicable Construction Sign Spacing (Dimension A as defined in Table B of Section 7 of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition) for the applicable speed (adjust all other sign spacing as required).

.5 Any duplicate signage resulting from the use of Section 7.2 Typical Speed Zone Signing – Two-Lane, Two-Way Roadway and other Section 7 traffic control layouts shall be removed.

.6 Should the Contractor not require signage for work on shoulder or single lane alternating traffic, the Contractor shall install C172-L/R signs in advance of each access road being used to access the project site.

.7 Maintain existing conditions for traffic throughout the period of contract except when required for contract construction, and when measures have been taken as specified herein and reviewed by Departmental Representative to protect and control public traffic. Existing conditions for traffic may be restricted to single lane (minimum 3.5 m lane width with 1.0 m shoulder on both sides) alternating traffic during completion of on-highway work, including unloading and loading of equipment or other works as preapproved by the Departmental Representative. Speed limit may be reduced during these times to 30 km/h (or 50 km/h, at the Contractor's discretion).

.8 During non-work hours, the work area shall be cleared of construction hazards within the highway clear zone, construction signage removed or covered, two-way traffic restored, and the posted speed (typically 100 km/hr) restored.

.9 The maximum allowable delay to any individual motorist travelling through the project limits as a result of the Contractor's operations will be 10 minutes.

.10 Load limit restrictions will be in accordance with British Columbia Highway Traffic Act, pertaining to registered weight limits and vehicle size both within and outside Contract Limits.

3.3 Protection of Public Traffic .1 Ensure traffic control and other measures as necessary are in place for the duration of the works to protect and accommodate public traffic as follows:

.1 Contractor shall monitor and inspect the work zone frequently to identify and analyze evidence of traffic incidents and conflicts. Should a traffic incident, near miss, or conflict occur, investigate and undertake changes to the traffic control measures per the requirements of Section 3.6 – Analysis of Work Zone Incidents and Near Misses, as provided in the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition.

.2 Contractor to complete and document checks of the signage using the "Daily Sign Check Form", found in Appendix C: Templates for Traffic Management Plans in the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition. Complete checks a minimum of three times a day (start of workday, midday, and at completion of workday). Documentation / sign-off shall be completed by the person who performed the checks. Submit completed "Daily Sign Check Form" to the Departmental Representative weekly, or more frequently as required by the Departmental Representative.

.3 Contractor to maintain traffic control records per the requirements of Section 3.7 – Traffic Control Records, as provided in the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2020 Office Edition.

.4 Ensure that all vehicles can safely travel and traverse the entire length of the project without damage to vehicles, regardless of the material type placed and used as a driving surface.

.5 Protect passing vehicles from damage caused by extraneous materials from construction activities at the site.

.6 Provide and maintain reasonable access to property in vicinity of work under contract and in other area as indicated, unless other reasonable means of road access exist that meet approval of Departmental Representative.

END OF SECTION

Section Includes PART 1:

1.1 References.

1.2 Workers' Compensation Coverage.

1.3 Compliance with Regulations.

1.4 Definitions.

1.5 Submittals.

1.6 Project Specific Health and Safety Plan.

1.7 Contractor's Responsibility.

1.8 Health and Safety Coordinator.

1.9 General.

1.10 Project / Site Conditions.

1.11 Regulatory Requirements.

1.12 Work Permits.

1.13 Filing of Notice.

1.14 Emergency Procedures.

1.15 Hazardous Products.

1.16 Overloading.

1.17 Fire Safety Requirements.

1.18 Unforeseen Hazards.

1.19 Posted Documents.

1.20 Correction of Non-Compliance.

1.21 Medical.

1.22 Accidents and Accident Reports.

1.23 COVID-19.

PART 1 – GENERAL

1.1 References

.1 Government of Canada:

.1 Canada Labour Code - Part II

.2 Canada Occupational Health and Safety Regulations.

.2 National Building Code of Canada (NBC):

.1 Part 8, Safety Measures at Construction and Demolition Sites.

.3 Canadian Standards Association (CSA) as amended:

.1 CSA Z797-2009 Code of Practice for Access Scaffold.

.2 CSA S269.1-1975 (R2003) Falsework for Construction Purposes.

.3 CSA S350-M1980 (R2003) Code of Practice for Safety in Demolition of Structures.

.4 Fire Protection Engineering Services, HRSDC:

.1 FCC No. 301, Standard for Construction Operations.

.2 FCC No. 302, Standard for Welding and Cutting.

.5 American National Standards Institute (ANSI):

.1 ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems.

.6 Province of British Columbia:

.1 Workers Compensation Act Part 3 - Occupational Health and Safety.

.2 Occupational Health and Safety Regulation.

.7 Project Specific Health and Safety Plan Template (Appendix A).

.8 Canadian Construction Association, COVID-19 – Standardized Protocols for All Canadian Construction Sites, Version 4, April 16, 2020

.9 WorkSafeBC Construction and COVID-19 Safety

1.2 Workers' Compensation Coverage	.1	Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the work.
	.2	Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.
1.3 Compliance with Regulations	.1	PSPC may terminate the Contract without liability to PSPC where the Contractor, in the opinion of PSPC, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.
	.2	It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the work as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations.
1.4 Definitions	.1	Workplace: As defined by WorkSafeBC Occupational Health and Safety Guidelines. The project shall be considered as having separate workplaces should the WorkSafeBC Occupational Health and Safety Guidelines - Location Factors provide "Yes" to "Indication of Separate Workplaces", including but not limited to "Locations of one employer are more than 20 minutes apart from each other".
1.5 Submittals	.1	The Contractor's Project Specific Health and Safety Plan shall be submitted to the Departmental Representative as a single PDF document (multiple files will not be accepted) for review and acceptance in accordance with the procedures outlined in Section 01 33 00 – Submittal Procedures. The Departmental Representative will review the plan (first submission and if required all subsequent re-submissions) within 14 days of submission. Upon review of the plan the Departmental Representative will do one of the following:
		.1 Accept the plan.
		.2 Accept portions of the plan and provide comments outlining required changes or additional information in other sections. Following completion of edits by the Contractor, the Contractor shall re-submit the complete plan for review.
		.3 Reject the plan and provide comments outlining required changes or additional information needed before the plan will be reviewed in detail. Following completion of edits by the Contractor, the Contractor shall re-submit the complete plan for review.

.2 Submit the following to the Departmental Representative in accordance with the procedures outlined in Section 01 33 00 – Submittal Procedures:

.1 Copies of reports or directions issued by Federal and Provincial health and safety inspectors.

.2 Copies of incident and accident reports.

.3 Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.

.4 Emergency Procedures.

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

.6 If requested, complete versions of the Contractor's corporate Health and Safety Policies / Procedures manual.

.3 The Contractor shall allow time in the schedule for the reviews, and subsequent edits / re-submission.

.4 Work affected by the submittal (as determined by the Departmental Representative) shall not proceed until acceptance of the submittal by the Departmental Representative.

.5 Submission of the Project Specific Health and Safety Plan, and any revised version, to the Departmental Representative are for information and reference purposes only. It shall not:

.1 Be construed to imply approval by the Departmental Representative.

.2 Be interpreted as a warranty of being complete, accurate and legislatively compliant.

.3 Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

.6 Should deficiencies in the Contractor's Project Specific Health and Safety Plan be noted following acceptance of the submittal by the Departmental Representative but during the project work, the Departmental Representative reserves the right to provide additional comments to the Contractor and require re-submission of the Project Specific Health and Safety Plan to ensure the correction of any deficiencies.

1.6 Project Specific Health and Safety Plan

.1 The Contractor shall prepare and comply with the Project Specific Health and Safety Plan. The preparation and details of the Project Specific Health and Safety Plan shall include conducting a site-specific hazard assessment based on review of Contract Documents, required work, and project site(s). The Project Specific Health and Safety Plan shall address all concerns / requirements identified in the Contract Documents and identify any known and potential health risks and safety hazards.

.2 The Project Specific Health and Safety Plan shall, at a minimum, include all headings, sub-headings, details, and presentation format as provided in the template found in Appendix A (provided to the Contractor as a Word file upon award of contract). The Contractor shall add additional headings and content to the Project Specific Health and Safety Plan as deemed necessary. PSPC has the right to reject the Project Specific Health and Safety Plan if the headings from this document are not used in the Contractor's Project Specific Health and Safety Plan. Minimum requirements for the Project Specific Health and Safety Plan includes:

.1 Contractor's safety policy / statement.

.2 Identification of applicable compliance obligations.

.3 Identify personnel and alternates responsible for project site safety and health. List of health and safety responsibilities for all personnel listed.

.4 General safety rules for project and actions which will be taken by the Contractor should these safety rules be broken by the any workers on the project (includes workers employed by the General Contractor, sub-contractor, or sub-consultants).

.5 Identify health and safety risks / hazards and engineering and administrative control measures to be implemented at each "workplace" for managing identified risks / hazards, including:

.1 Summary of health risks and safety hazards resulting from hazard assessment analysis, with respect to site tasks and operations which must be performed as part of the work and hazard rating assignment (low, moderate, or high) for each "workplace", as defined by WorkSafeBC and acceptable to the application of G3.16 of WorkSafeBC Occupational Health and Safety Regulations.

.2 List hazardous materials to be brought on site as required by the work.

.3 Job-specific safe work procedures that are not already included in the Contractor's corporate Health and Safety Polices / Procedures manual.

.4 Identify personal protective equipment (PPE) to be used by workers.

.5 Identify personnel training requirements and training plan, including site orientation for new workers and personnel designated by the Departmental Representative as needing to visit the site.

.6 Identification of the first aid requirements for each "workplace" on the project including:

.1 Estimated travel time from the "workplace" project site to the nearest hospital.

.2 Maximum numbers of workers at any time per "workplace".

.3 The first aid supplies, equipment, and facilities which will be available at each "workplace".

.4 The first aid attendant certificate level onsite at each "workplace".

.5 The first aid transportation which will be used on the project (i.e. ETV), if required by Contractor or WorkSafeBC requirements.

Details of where the ETV will be located / parked relative to the location of the first aid attendant(s) during the work.

.6 Inspection policy and procedures.

.7 Incident reporting and investigation policy and procedures.

.8 Occupational Health and Safety Committee / Representative procedures.

.9 Occupational Health and Safety meetings.

.10 Occupational Health and Safety communications and record keeping procedures.

.11 Emergency contact information, including PSPC project personnel (including Consultants), Contractor office and field staff, fire, police, ambulance, air ambulance, and forest fire reporting.

.12 Identify employee training plans for wildlife encounters and prevention.

.13 Identify fire safety, fire reporting, and fire evacuation procedures.

.14 Confirmation through the review and signatures from the Contractor's Project Manager, Superintendent, Health and Safety Manager, Quality Control Manager, representatives from all major Sub-Contractor's, and other project roles that may be applicable, that they have reviewed the Health and Safety plan, agree with its contents, and will be enforced by them for the duration of the project.

.15 Completed "Preliminary Hazard Assessment Form" (see Appendix 1 of the Project Specific Health and Safety Plan template).

.16 Completed "Confirmation of Prime Contractor's Main Responsibilities Under the WorkSafeBC Occupational Health and Safety Regulations and Worker's Compensation Act" form (see Appendix 2 of the Project Specific Health and Safety Plan template).

.17 Blank copy of Contractor's Daily Toolbox Meeting Form.

.18 Blank copy of the Contractor's Site Safety Orientation Form.

.19 Blank copy of the Contractor's Incident/Accident Report template.

.20 Resume(s) or certification(s) of Health and Safety Coordinator(s) responsible for site safety and onsite First Aid Attendants.

.21 Maps identifying the location of the nearest hospital(s) to the project site. The maps shall be of appropriate scale and sufficient detail allowing for their use to navigate to the hospital(s) in the event of an emergency.

.3 Develop the plan in collaboration with all Sub-Contractors. Ensure that work/activities of Sub-Contractors are included in the hazard assessment, and are reflected in the plan.

.4 Should health and safety requirements change throughout the project and require information not included in the Project Specific Health and Safety Plan, revise and update Project Specific Health and Safety Plan as required, and re-submit to the Departmental Representative.

.5 Departmental Representative's review: The review of the Project Specific Health and Safety Plan by Public Services and Procurement Canada (PSPC) shall not relieve the Contractor of responsibility for errors or omissions in final Project Specific Health and Safety Plan, or of responsibility for meeting all requirements of construction and Contract Documents.

.6 Contractor's COVID-19 Safe Work plan, describing the protocols and procedures the Contractor shall implement throughout the duration of the work to mitigate the spread and risk of exposure to COVID-19, in accordance with Federal and Provincial COVID-19 guidelines, WorkSafeBC and Canadian Construction Association.

.7 Should Federal and/or Provincial guidelines change during the project, the Contractor shall update the Project Specific Health and Safety Plan and the Contractor's COVID-19 Safe Work Plan accordingly and submit to the Departmental Representative for review and acceptance.

1.7 Contractor's Responsibility

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

.2 Comply with and enforce compliance by employees with safety requirements of Contract documents, applicable Federal, Provincial, Territorial and local statutes, regulations, and ordinances, and with Project Specific Health and Safety Plan.

.3 The protection of persons off-site and the environment such that they may be affected by the conduct of the work.

1.8 Health and Safety Coordinator

.1 Employ and assign to work, a competent and authorized representative as Health and Safety Coordinator. The Health and Safety Coordinator shall:

.1 Be responsible for completing all health and safety training, site orientations, and ensuring personnel who do not successfully complete the required training are not permitted to enter the site to perform work.

.2 Be responsible for implementing, enforcing, and monitoring the Project Specific Health and Safety Plan.

.3 Be on site during execution of critical elements of the work or as required by the Contractor.

.4 Have a minimum of two (2) years site-related working experience specific to activities associated with Construction.

.5 Have working knowledge of occupational safety and health regulations.

.6 Attend pre-construction and construction progress meetings as required, or as requested by the Departmental Representative.

1.9 General

.1 Provide safety barricades and lights around work site as required to provide a safe working environment for workers, and protection for pedestrian and vehicular traffic.

.2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.

.1 Provide appropriate means by use of barricades, fences, warning signs, traffic control persons, and temporary lighting as required.

.2 Secure site during non-work hours at night time, or provide security guard as deemed necessary to protect site against entry.

.3 Conduct daily safety meetings and task specific meetings (toolbox) as required by special work. At a minimum, meetings shall include refresher training for existing equipment and protocols, review ongoing safety issues and protocols, and examine new site conditions as encountered. Keep records of meetings and post to PSPC's cloud-based document filing system "CentralCollab" on a weekly or more frequent basis.

1.10 Project / Site Conditions

.1 Work at the site will, at a minimum, involve contact with:

.1 Utilities.

.2 General public (including large transport trucks) and PSPC maintenance personnel travelling the highway.

.3 Local wildlife.

.4 Unpredictable and adverse weather conditions.

1.11 Regulatory Requirements

.1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at site.

.2 In event of conflict between any provisions of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed.

1.12 Work Permits

.1 Obtain specialty permit(s) related to project before start of work.

1.13 Filing of Notice

.1 The Contractor is to complete and submit an Advance Notice of Project as required by the Worker's Compensation Board and any other authority in effect at the place or work.

.2 Provide copies of all notices to the Departmental Representative.

1.14 Emergency Procedures

.1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/telephone numbers) of:

.1 Designated personnel from Contractor's company.

.2 Regulatory agencies applicable to work and as per legislated regulations.

.3 Local emergency resources.

.4 Departmental Representative.

.2 Include the following provisions in the emergency procedures:

.1 Notify workers and the first-aid attendant, of the nature and location of the emergency.

.2 Evacuate all workers safely.

.3 Check and confirm the safe evacuation of all workers.

.4 Notify the fire department or other emergency responders.

.5 Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.

.6 Notify Departmental Representative.

.3 Provide written rescue/evacuation procedures as required for, but not limited to:

.1 Work at high angles.

.2 Work in confined spaces, or where there is risk of entrapment.

.3 Work with hazardous substances.

.4 Underground work.

.5 Work on, over, under and adjacent to water.

.6 Workplaces where there are persons who require physical assistance to be moved.

.7 Work in areas where sudden movement of native or placed materials may occur.

.4 Design and mark emergency exit routes to provide quick and unimpeded exit.

.5 Emergency drills must be held at least once each year for all projects lasting longer than one year. The purpose of these drills is to ensure awareness and effectiveness of emergency exit routes and procedures. A record of the drills must be kept by the Contractor.

.6 Revise and update emergency procedures as required and re-submit to the Departmental Representative.

1.15 Hazardous Products

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials, and regarding labeling and provision of Material Safety Data Sheets (MSDS), acceptable to the Departmental Representative and in accordance with the Canadian Labour Code.

.2 Where use of hazardous and toxic products cannot be avoided:

.1 Advise Departmental Representative beforehand of the product(s) intended for use. If requested, submit applicable MSDS and WHMIS documents as per Section 01 33 00 – Submittal Procedures. Keep documents available for review on the project site as close as practical to where the hazardous and toxic product is being used.

.2 Provide adequate means of ventilation acceptable to the Departmental Representative and suitable for the hazard.

1.16 Overloading

.1 Ensure no part of the work is subject to a load which will endanger its safety or will cause permanent deformation.

1.17 Fire Safety Requirements

.1 Store oily/paint-soaked rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.

.2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

1.18 Unforeseen Hazards

.1 Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the work, immediately stop work and advise the Departmental Representative verbally and in writing.

.2 Should contaminated site conditions be encountered when completing the work, refer to GC4.4 – Contaminated Site Conditions for procedures which the Contractor shall undertake.

1.19 Posted Documents

.1 Post legible versions of the following documents on site:

.1 Project Specific Health and Safety Plan.

.2 Sequence of work.

.3 Emergency procedures.

.4 Corporate Health and Safety Policies and Procedures manual(s).

.5 Site drawing showing project layout, locations of the first-aid station, evacuation route and marshaling station, and the emergency transportation provisions.

.6 Notice of Project.

.7 Floor plans or site plans.

.8 Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.

.9 Workplace Hazardous Materials Information System (WHMIS) documents.

.10 Material Safety Data Sheets (MSDS).

.11 List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.

.2 Post all Material Safety Data Sheets (MSDS) on site, in a common area, visible to all workers and in locations accessible to tenants when work of this Contract includes construction activities adjacent to occupied areas.

.3 Postings should be protected from the weather, and visible from the street or the exterior of the principal construction site shelter provided for workers and equipment, or as approved by the Departmental Representative.

1.20 Correction of Non-Compliance

.1 Immediately address health and safety non-compliance issues identified by the Departmental Representative.

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

.3 The Departmental Representative may issue a "stop work order" if non-compliance of health and safety regulations is not corrected immediately or within posted time. The General Contractor/subcontractors will be responsible for any costs arising from such a "stop work order".

1.21 Medical

.1 Provide and maintain first aid facilities for all workers as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations.

.2 Provide the appropriate first aid kit, based on the number of workers, in accordance with the Workers' Compensation Act or the Occupational Health and Safety Regulations.

.3 Establish an emergency response plan acceptable to Departmental Representative, for the removal of any injured person to medical facilities or a doctor's care in accordance with applicable legislative and regulatory requirements.

.4 Provide proof of First Aid credentials to Departmental Representative prior to the start of construction. Provide the appropriate number of first aid attendants on site in accordance with Workers' Compensation Act or the Occupational Health and Safety Regulations.

.5 Emergency and First Aid Equipment:

.1 Locate and maintain emergency and first aid equipment in appropriate location on site including first aid kit to accommodate number of site personnel; portable emergency eye wash; fire protection equipment as required by legislation.

.2 Locate sufficient blankets and towels, stretcher; and one handheld emergency siren in all confined access locations.

.3 Provide a minimum of one qualified first aid attendant as per Workers' Compensation Act or the Occupational Health and Safety Regulations on site at all times when Work activities are in progress; duties of first aid attendant may be shared with other light duty Work related activities.

1.22 Accidents and Accident Reports

.1 Immediately report, verbally, followed by a written report within 24 hours, to Departmental Representative, all accidents of any sort arising out of or in connection with the performance of the Work, giving full details and statements of witnesses. If death or serious injuries or damages are caused, report the accident promptly to Departmental Representative by telephone in addition to any report required under federal and territorial laws and regulations.

.2 If a claim is made by anyone against Contractor or Sub-Contractor on account of any accident, promptly report the facts in writing to Departmental Representative, giving full details of the claim.

1.23 COVID-19

.1 The Contractor shall keep informed with the latest Federal and Provincial recommendations and protocols regarding COVID-19 at all times during construction and shall modify their construction approach accordingly to ensure adherence to these recommendations and protocols."

.2 Should Federal and/or Provincial recommendations require that the project work be stopped, the Contractor shall consult with the Departmental Representative and the Departmental Representative will advise as to the course of action the contractor shall take.

END OF SECTION

Section Includes

PART 1:

1.1 Measurement and Payment.

1.2 Definitions.

1.3 References.

1.4 Regulatory Overview.

1.5 Submittals.

1.6 Environmental Protection Plan (EPP).

1.7 Breeding Bird and Bird Nest Survey (If required).

1.8 Environmental Site Inspection Memo.

1.9 Notification

PART 2:

2.1 Products.

PART 3:

3.1 Environmental Monitoring.

3.2 Site Access and Parking.

3.3 Protection of Work Limits.

3.4 Erosion Control.

3.5 Pollution Control.

3.6 Equipment Maintenance, Fueling, and Operation.

3.7 Operation of Equipment.

3.8 Managing Invasive Plant Vegetation.

3.9 Fires and Fire Prevention and Control.

3.10 Wildlife.

3.11 Relics and Antiquities.

3.12 Waste Materials Storage and Removal.

3.13 Wastewater Discharge Criteria.

3.14 Drainage.

3.15 Site Clearing, Plant Protection, and Nesting Bird Protection.

3.16 Environmental Protection Supplies.

PART 1 – GENERAL

1.1 Measurement and Payment

.1 Payment for the cost of Site 1 – Environmental Monitoring – will be made on the basis of the Price per Unit Bid for Site 1 – Environmental Monitoring in the Bid and Acceptance Form. The Price per Unit Bid shall include the preparation of the Environmental Protection Plan, environmental monitoring, including staging of the work and all other items necessary for the successful completion of the task.

.2 Measurement for Payment for Site 1 – Environmental Monitoring will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative

.3 Payment for the cost of Environmental Monitoring and Water Management for Sites 2, 4, and 5 will be made on the basis of the Price per Unit Bid for Environmental Monitoring and Water Management for Site 2, 4 and 5 in the Bid and Acceptance Form. The Price per Unit Bid shall include the preparation of the Environmental Protection Plan, environmental monitoring, dewatering / water management including staging of the work and necessary pumps, hoses, check dams, temporary coir logs and wood posts, fish stop nets, berms, and all other items necessary for the successful completion of the task.

.4 Measurement for Payment for Environmental Monitoring and Water Management for Sites 2, 4, and 5 will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative for each site.

.5 Payment for the cost of Site 3 – Environmental Monitoring and Coir Logs will be made on the basis of the Price per Unit Bid for Site 3 – Environmental Monitoring and Coir Logs in the Bid and Acceptance Form. The Price per Unit Bid shall include the preparation of the Environmental Protection Plan, environmental monitoring, temporary coir logs and wood posts, and all other items necessary for the successful completion of the task.

.6 Measurement for Payment for Site 3 – Environmental Monitoring and Coir Logs will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative.

.7 Payment for the cost of Optional Work – Site 1 – Environmental Monitoring and Water Management for Temporary Diversion Channel will be made on the basis of the Price per Unit Bid for Optional Work – Site 1 – Environmental Monitoring and Water Management for Temporary Diversion Channel in the Bid and Acceptance Form. The Price per Unit Bid shall include the preparation of the Environmental Protection Plan, environmental monitoring, dewatering / water management including staging of the work and necessary pumps, hoses, check dams, temporary coir logs and wood posts, fish stop nets, berms, and all other items necessary for the successful completion of the task. This optional work item will be directed by the Departmental Representative via change order.

.8 Measurement for Payment for Optional Work – Site 1 – Environmental Monitoring and Water Management for Temporary Diversion Channel will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative.

1.2 Definitions

.1 Qualified Environmental Professional (QEP): A qualified environmental professional as defined by Section 21 of the BC Riparian Areas Protection Regulations. An individual may serve as a qualified environmental professional if

.1 The individual is one of the following professionals:

.1 An agrologist;

.2 An applied technologist or technician;

.3 A professional biologist;

.4 A professional engineer;

.5 A professional forester;

.6 A professional geoscientist;

.7 A registered forest technologist,

.2 The individual is registered and in good standing in British Columbia with the appropriate professional association constituted under an Act for the individual's profession, and:

.3 When carrying out that part of the assessment, the individual is acting

.1 Within the individual's area of expertise,

.2 Within the scope of professional practice for the individual's profession, and

.3 Under the code of ethics of the appropriate professional association and is subject to disciplinary action by that professional association.

.2 Environmental Pollution and Damage: Presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

.3 Environmental Protection: Prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

.4 Wetted Perimeter: Area of stream where water is currently running or pooled.

.5 In-stream Work: Any work performed below the high water mark, either within or above the Wetted Perimeter of any Fisheries Sensitive Zone.

.6 Fisheries Sensitive Zone: In-stream aquatic habitats and out of stream habitat features such as side channels, wetlands, and riparian areas.

.7 Invasive plants: Any alien plant species that have the potential to pose undesirable or detrimental impacts on humans, animals or ecosystems. Invasive plants have the capacity to establish quickly and easily on both disturbed and un-disturbed sites, and can cause widespread negative economic, social and environmental impacts.

.8 Noxious weeds: Invasive plants that have been designated under the BC Weed Control Act. This legislation imposes a duty on all land occupiers to control a set list of identified invasive plants.
https://www.for.gov.bc.ca/hra/plants/legislation.htm

1.3 References	.1	Standards and Best Practices for Instream Works, British Columbia Ministry of Land and Air Protection Ecosystem Standards and Planning Biodiversity Branch – March 2004 (See Reference Documentation – Table of Contents).
	.2	Land Development Guidelines for the Protection of Aquatic Habitat, Fisheries and Oceans – September 1993 (See Reference Documentation – Table of Contents).
	.3	Environmental Protection Plan (EPP) – Checklist (Appendix F).
	.4	Responsibility Checklist for Authorizations /Approvals / Notifications / Permitting (Appendix G).
	.5	Relevant Environmental Publications (Appendix H).
	.6	Environmental Management Plan (EMP) (Appendix I)
	.7	Caribou Protection Plan (CPP) (Appendix J)
	.8	FLNRORD Section 11 Approval for Instream Work – Date July 8, 2020 (Appendix L) and extension (Appendix M).
1.4 Regulatory Overview	.1	The Departmental Representative plans to complete the environmental Change Approval permitting required under provincial regulations (Ministry of Forests, Lands, Natural Resource Operations, and Rural Development (FLNRORD) regulations prior to the start of the project. Work within 30 m of any fisheries sensitive zone cannot commence until the Departmental Representative has received the Change Approval permit from FLNRORD. The Contractor shall be aware that submission of the Contractor's Environmental Protection Plan (EPP) to FLNRORD may be required as part of the Change Approval process, and if submission is required the approved EPP shall be provided to the Departmental Representative for submission a minimum of 15 days prior to the start of any construction within 30 m of any fisheries sensitive zone.
	.2	Comply with all applicable environmental laws, regulations and requirements of Federal, Provincial, and other regional authorities, and acquire and comply with such permits, approvals and authorizations as may be required.
	.3	Comply with and be subject to those permits and approvals obtained from the Departmental Representative to conduct the Work.

.4 Pay specific attention to the provincial BC Land Use Permit, Water License and Quarry Permit.

.5 Pay specific attention to the Migratory Birds Convention Act, as amended in 1994.

.6 Pay specific attention to the provincial BC guidelines under Peace Region Least Risk Timing Windows: Biological Rational (2009).

.7 Pay specific attention to provincial standards for instream works, refer to British Columbia Ministry of Land and Air Protection Ecosystem Standards and Planning Diversity Branch publication, Standard and Best Practices for Instream Works – March 2004 (see Reference Documentation – Table of Contents).

.8 The Contractor is required to apply for and obtain a fish salvage permit from the applicable regulatory authorities for use on the project as needed.

1.5 Submittals

.1 The Contractor's EPP, Breeding Bird and Bird Nest Survey Memo (if required), and Environmental Site Inspection Memos shall be submitted to the Departmental Representative. Each report/ memo shall be submitted as a single PDF documents (multiple files will not be accepted) for review and acceptance in accordance with the procedures outlined in Section 01 33 00 – Submittal Procedures. The Departmental Representative will review the EPP, and Environmental Site Inspection Memos (first submission and if required all subsequent re-submissions) within 14 days of submission and the Breeding Bird and Bird Nest Survey (first submission and if required all subsequent re-submissions) within 3 weekdays of submission. Upon review of the plan / report / memo the Departmental Representative will do one of the following:

.1 Accept the plan / report / memo.

.2 Accept portions of the plan / report / memo and provide comments outlining required changes or additional information in other sections. Following completion of edits by the Contractor, the Contractor shall re-submit the complete plan / report / memo for review.

.3 Reject the plan / report / memo and provide comments outlining required changes or additional information needed before the plan / report / memo will be reviewed in detail. Following completion of

edits by the Contractor, the Contractor shall re-submit the complete plan / report / memo for review.

.2 The Contractor shall allow time in the schedule for the reviews, and subsequent edits / re-submission.

.3 Work affected by the submittal (as determined by the Departmental Representative) shall not proceed until acceptance of the EPP and Breeding Bird and Bird Nest Survey by the Departmental Representative.

.4 Upon Departmental Representative acceptance of the Contractor's EPP, the Departmental Representative may submit the EPP as part of the environmental notification / permitting process to FLNRORD.

.5 The review of the EPP, Breeding Bird and Bird Nest Survey memo, and Environmental Site Inspection Memos by the Departmental Representative shall not relieve the Contractor of responsibility for errors or omissions in the accepted submittals or of responsibility for meeting all requirements of the Contract Documents.

.6 Should deficiencies in the Contractor's EPP or Breeding Bird and Bird Nest Survey be noted following acceptance of the submittal by the Departmental Representative but during the project work, the Departmental Representative reserves the right to provide additional comments to the Contractor and require re-submission of the EPP or Breeding Bird and Bird Nest Survey to ensure the correction of any deficiencies.

.7 The Contractor's Fish Salvage Permit shall be submitted to the Departmental Representative.

1.6 Environmental Protection Plan (EPP)

.1 The Contractor is required to prepare an EPP. The EPP should include and address all relevant environmental impacts/issues at the site as indicated by the EPP Checklist (Appendix F), the EMP (Appendix I), the CPP (Appendix J), environmental permitting approvals as provided by FLNRORD (Appendix L and Appendix M), and as identified in this Section of the specifications. The EPP will require the Contractor to carefully think through the entire project, including identifying what activities and works will be occurring, both generally and at specific sites, and by what methods. The Environmental Protection Plan shall be completed by a P.Biol or RPBio, or other qualified professional, and shall, at a minimum include the following:

.1 The specifics of a detailed environmental monitoring program (to be completed by the Contractor). This

includes details and rational concerning sampling locations, timing, duration, and methods, and identification of the person(s) who will be carrying out the monitoring program. Include resumes of proposed environmental monitors and personnel responsible for the preparation of the EPP. See Item 3.1 – Environmental Monitoring of this specification for further details of the required environmental monitoring.

.2 The process and protocol for ensuring that supervisors and individual staff employed by the Contractor are very clear on which environmental standards need to be achieved, how they will be achieved, and establishing how the Contractor will ensure that this is successfully occurring.

.3 Erosion, drainage, and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with the requirements of the applicable provincial regulatory requirements (FLNRORD / MoE) approval or notification for work or under FLNRORD / MoE guidelines, and all other applicable regulations including the requirements of these specifications. The Contractor may utilize marked-up contract drawings within the EPP to show the locations of the proposed activities.

.4 Typical drawings showing the locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of any excess or spoil materials including methods to control runoff and to contain materials on site. The Contractor may utilize marked-up contract drawings within the EPP to show the locations of the proposed activities.

.5 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas.

.6 Spill Control Plan: including procedures, instructions, and reports to be used in the event of unforeseen spill of regulated substance.

.7 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.

.8 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

.9 Outline the avoidance and mitigate measures which the Contractor will undertake and implement to ensure compliance with the environmental regulations applicable to the project (which may include requirements provided in FLNRORD Approval or Notifications for Instream Work, NWPA Approval for Instream Work, DFO Fisheries Act requirements, etc.) and these contract specifications.

.10 The procedures for stopping the work and implementing changes to the construction methods should the Contractor not be achieving the environmental requirements as outlined in these specifications.

.11 The procedures for stopping work should the Contractor encounter archaeological anomalies or human remains.

1.7 Breeding Bird and Bird Nest Survey (If Required)

.1 The Contractor is required to complete a Breeding Bird and Bird Nest Survey prior to the completion of any clearing and grubbing operations conducted during the breeding bird nesting period (April 30 to August 20). No surveys are required if clearing and grubbing operations are conducted outside of the nesting period. The results of the Breeding Bird and Bird Nest Survey shall be compiled in a memo. The Breeding Bird and Bird Nest Survey and memo shall achieve the following:

.1 Be completed by P.Biol, RPBio, or Qualified Environmental Professional (QEP). If a QEP completes the field component of the Breeding Bird and Bird Nest Survey and or memo, the memo must be signed off by a P.Biol or RPBio.

.2 Be completed within 7 days of the commencement of the clearing and grubbing. Should the clearing

and grubbing work stop for any reason longer than 24 hours a new a Breeding Bird and Bird Nest Survey shall be completed.

.3 Be conducted in accordance with the Active Migratory Bird Nest Survey Program outlined by CWS (2008) and the Inventory Methods for Forest and Grassland Birds (RISC 1999).

.2 The Contractor shall contact the Departmental Representative for further instruction should a concern be identified during the Breeding Bird and Bird Nest Survey that would, in the opinion of the QEP, P.Biol, or RPBio, give cause for the delay or cancellation of the clearing and grubbing. Details of the concerns shall be described and itemized in a memo by the QEP, P.Biol, or RPBio and submitted to the Departmental Representative.

1.8 Environmental Site Inspection Memo

.1 The Contractor shall submit an Environmental Site Inspection Memo within 3 weekdays of each site visit or week of full-time site inspections by the P.Biol., RPBio, or Other Qualified Professional. The Environmental Site Inspection Memo shall include the following:

.1 Date and times when environmental monitor was onsite.

.2 General site conditions / construction activities ongoing at the time of the inspection.

.3 Findings, non-conformances with EPP, and items requiring correction by the Contractor from the environmental monitors review and inspection of environmentally sensitive activities including but not limited to:

.1 Fuel and Oil Storage and Fueling Practices

.2 Care and Maintenance of Construction Equipment

.3 Spill Response Preparedness

.4 Construction Activities and Construction Site Management

.5 Erosion and Sediment Issues

.6 Wildlife Observations/Mitigation and Sensitive Habitat

.7 Culvert/In-Stream Work

.8 Camp management

.9 Other/Comments.

.4 Photos of any concerns, non-conformances with EPP, or items requiring attention.

1.9 Notification

.1 Departmental Representative will notify Contractor in writing of observed non-compliance with Federal, Provincial or Municipal environmental laws or regulations, permits, etc.

.2 Contractor: After receipt of such notice, shall inform Departmental Representative of proposed corrective action, and take such action for approval by Departmental Representative.

.3 Departmental Representative will issue stop order of Work until satisfactory corrective action has been taken.

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

PART 2 – PRODUCTS

2.1 Products

.1 Not Used.

PART 3 – EXECUTION

3.1 Environmental Monitoring

.1 At a minimum the environmental monitoring shall be completed by a P.Biol, RPBio, or Qualified Environmental Professional (QEP). If a QEP completes the monitoring, the QEP must work under the direction of the P.Biol or RPBio, who completes the Environmental Protection Plan.

.2 The monitoring program must be anticipatory and responsive to construction practices or environmental changes, reflecting the site-specific conditions, level of sensitivity of the receiving environment, potential adverse effects, and level of environmental risk. Submitted documents regarding the proposed monitoring program should clearly identify how monitoring will adhere to this approach.

.3 The monitoring program shall satisfy all regulatory requirements and terms of these specifications. The onus is on the Contractor to monitor and ensure compliance, to

identify arising problems, and to subsequently take responsibility and all necessary measures in response. At a minimum, the environmental monitor shall be onsite and during all areas of active construction as follow:

.1 Full time onsite presence during all works within 30 metres of a waterway. This includes all culvert removals and related works.

.2 Once every 7 days from commencement of construction to the date substantial performance is achieved.

3.2 Site Access and Parking

.1 The Contractor shall review both short and long term access requirements with the Departmental Representative, both at the start-up and on an on-going basis. In consultation with the Departmental Representative, the Contractor shall formulate an agreement for worker transportation to and from the work site and where workers shall park their private vehicles. Generally, personal vehicles shall be parked at least 10 meters from any water course.

.2 The Contractor shall ensure that the environment beyond the work limits is not negatively impacted or damaged by workers' vehicles or construction machinery and shall instruct workers so that the "footprint" of the project is kept within defined boundaries.

3.3 Protection of Work Limits

.1 The Contractor shall include in the EPP details on the work limits, how these shall be marked and what procedures will be employed to ensure trespass outside these limits does not occur, to the satisfaction of the Departmental Representative.

3.4 Erosion Control

.1 Erosion control measures that prevent sediment from entering any waterway, water body, or wetland in the vicinity of the construction site are a critical element of the project, and shall be implemented by the Contractor as indicated in the EMP (Appendix I).

.2 On-site sediment control measures shall be constructed and functional prior to initiating activities associated with the construction activities. The Contractor shall prepare an Erosion Control Plan, to be part of the EPP, to the satisfaction of the Departmental Representative. The Contractor's Erosion Control Plan shall incorporate the sediment and erosion control features as outlined on the Contract Drawings.

.3 The regular monitoring and maintenance of all erosion control measures shall be the responsibility of the Contractor. If the design of the control measures is not functioning effectively they are to be repaired. The Departmental Representative will monitor the Contractor's erosion control performance.

.4 Erosion control measures must be in compliance with both Federal and Provincial legislation where required. Contractors should be referencing the provincial MoE Standards and Best Practices for Instream Works (2004).

3.5 Pollution Control

.1 The Contractor shall prevent any deleterious and objectionable materials from entering streams, rivers, wetlands, water bodies or watercourses that would result in damage to aquatic and riparian habitat. Hazardous or toxic products shall be stored no closer than 100 metres to any surface water.

.2 A Spill Response Plan will be prepared as part of the EPP and shall detail the containment and storage, security, handling, use and disposal of empty containers, surplus product or waste generated in the application of these products, to the satisfaction of the Departmental Representative, and in accordance with all applicable federal and provincial legislation. The EPP shall include a list of products and materials to be used or brought to the construction site that are considered or defined as hazardous or toxic to the environment. Such products include, but are not limited to, waterproofing agents, grout, cement, concrete finishing agents, hot poured rubber membrane materials, asphalt cement and sand blasting agents.

.3 The containment, storage, security, handling, use, unique spill response requirements and disposal of empty containers, surplus product or waste generated in the use of any hazardous or toxic products shall be in accordance with all applicable federal and provincial legislation. Hazardous products shall be stored no closer than 100 metres from any surface water.

.4 An impervious berm shall be constructed around fuel tanks and any other potential spill area. The berms shall be capable of holding 110% of tank storage volumes and shall be to the satisfaction of the Departmental Representative. Measures such as collection/drip trays and berms lined with occlusive material such as plastic and a layer of sand, and double lined fuel tanks can prevent spills into the environment.

.5 The Contractor shall prevent blowing dust and debris by covering and/or providing dust control for temporary roads and on-site work such as rock drilling and blasting by methods that are approved by the Departmental Representative.

.6 The Contractor shall provide spill kits, to the satisfaction of the Departmental Representative, at refueling, lubrication and repair locations that will be capable of dealing with 110% of the largest potential spill, and shall be maintained in good working order on the construction site. The Contractor and site staff shall be informed of the location of the spill response kit(s) and be trained in its use.

.7 Timely and effective actions shall be taken to stop, contain and clean-up all spills as long as the site is safe to enter. The Departmental Representative shall be notified immediately of any spill as well as the provincial authorities. Basic instructions and phone numbers shall be part of the Contractor's EPP.

.8 In the event of a major spill, the Contractor shall prioritize the cleanup and all other work shall be stopped, where appropriate, and personnel devoted to spill containment and cleanup.

.9 The costs involved in a major spill incident (control, clean up, disposal of contaminants, and site remediation to pre-spill conditions), shall be the responsibility of the Contractor. The site will be inspected to ensure completion to the pre-spill condition to the satisfaction of the Departmental Representative.

3.6 Equipment Maintenance, Fueling and Operation

.1 The Contractor shall ensure that all soil, seeds and any debris attached to construction equipment to be used on the project site shall be removed (e.g. power washing) before delivery to the work site as indicated in the EMP (Appendix I).

.2 Equipment fueling sites will be identified by the Contractor to the satisfaction of the Departmental Representative. Except for chain saws, any fueling closer than 100 metres to any surface water (streams, wetlands, water bodies or watercourses) shall require discussion with the Departmental Representative. Regardless of fueling location, personnel shall maintain a presence during refueling with immediate attention to the fueling operations.

.3 Diesel and gasoline delivery vehicles, including bulk tankers shall be not be parked within 100 m from any surface water unless actively being used for refueling. Immediately

following refueling, bulk tankers shall be moved to a location 100 m or greater from any surface water. Gravity fed fuel systems are not allowed. Manual or electric pump delivery systems shall be used.

.4 Mobile fuel containers (e.g. slip tanks, small fuel carboys) shall remain in the service vehicle at all times. Protection and containment of approved fuel storage sites is addressed in Item 3.5 – Pollution Control, subsection .4 of this specification.

.5 Equipment used on the project shall be fueled with E10, and low sulphur diesel fuels where available, and shall conform to local emission requirements. The Contractor is to ensure that unnecessary idling of the vehicles is avoided.

.6 Oil changes, lubricant changes, greasing and machinery repairs shall be performed at locations satisfactory to the Departmental Representative. Waste lubrication product (e.g. oil filters, used containers, used oil, etc.) shall be secured in spill-proof containers and properly recycled or disposed of at an approved facility. No waste petroleum, lubricant products or related materials are to be discarded, buried or disposed of in borrow pits, turnouts, picnic areas, viewpoints, etc. or anywhere within the work area.

.7 The Contractor shall ensure that all equipment is inspected daily for fluid/fuel leaks and maintained in good working condition. Maintenance certificates or maintenance logs for all equipment shall be available on site during work.

.8 Fuel containers and lubricant products shall be stored only in secure locations to the satisfaction of the Departmental Representative. Fuel tanks or other potential deleterious substance containers shall be secured to ensure they are tamperproof and cannot be drained by vandals when left overnight. Alternatively, the Contractor may employ a security person to prevent vandalism.

.9 Equipment shall use environmentally sensitive / biodegradable hydraulic fluid in case of accidental loss.

3.7 Operation of Equipment

.1 Equipment movements shall be restricted to the “footprint” of the construction area as identified on the Contract Drawings. The work limits shall be identified by the Contractor using a stake and ribbon or other methods to the satisfaction of the Departmental Representative. No machinery will enter, work in or cross over streams, rivers, wetlands, waterbodies or watercourse, nor damage aquatic and riparian habitat or trees and plant communities outside

the identified work limits without the consent of the Departmental Representative. Where construction activities require working close to surface water or in the water, the Contractor is required to stage the work and employ the mitigation measures shown on the Contract Drawings and undertake other measures as deemed necessary by the Contractor to ensure fugitive materials (e.g. rocks, soil, branches) and especially deleterious substances (e.g. chemicals) does not enter any surface water areas.

.2 The Contractor shall instruct workers to prevent pushing, placement, raveling, storage or stockpiling of any materials (e.g. slash, rock, fill or top soils) in the trees bordering the right-of-way or into surface water.

.3 When, in the opinion of PSPC, negligence on the part of the Contractor results in damage or destruction of vegetation, or other environmental or aesthetic features beyond the designated work area, the Contractor shall be responsible, at his or her expense, for complete restoration including the replacement of trees, shrubs, topsoil, grass, etc. to the satisfaction of the Departmental Representative.

.4 Restrict vehicle movements to the work limits.

.5 Workers vehicles are to remain within the construction footprint.

3.8 Managing Invasive Plant Vegetation

.1 Keep equipment clean and avoid parking, turning around or staging equipment in known invasive species infested areas, or mow prior to use.

.2 Wash equipment prior to mobilization to site.

.3 Minimize unnecessary disturbance of roadside aggregates or soil and retain desirable roadside vegetation whenever possible.

.4 Where possible, begin mowing or brushing in “invasive plant free” areas and end in infested areas.

.5 Where possible, use only clean fill material from an “invasive plant free” source.

.6 Whenever possible, re-seed with grass mixtures that are free of weeds, locally adapted, non-invasive, and quick to establish. Spread seed in the early spring or late fall to ensure successful establishment. Refer to Section 32 93 21 – Seeding for additional requirements.

3.9 Fires and Fire Prevention and Control	.1	Fires or burning of waste materials is not permitted.
	.2	A fire extinguisher shall be carried and available for use on each of the Contractor's construction equipment in the event of a fire. The Contactor's staff shall receive basic training in early response to wildfire events during the "environmental briefing" presented by the Contractor.
	.3	Construction equipment shall be operated in a manner and with all original manufacturers' safety devices to prevent ignition of flammable materials in the area.
	.4	Care shall be taken while smoking on the construction site to ensure that the accidental ignition of any flammable material is prevented.
	.5	In case of fire, the Contractor or worker shall take immediate action to extinguish the fire provided it is safe to do so. The Departmental Representative shall be notified of any fire immediately as well as the applicable Provincial Authorities. Basic instruction and phone numbers will be provided on site by the Contractor and will be discussed in the project pre-construction meeting.
	.6	Where fires or burning is permitted, prevent staining or smoke damage to structures, materials or vegetation which is to be preserved. Restore, clean and return to new condition stained or damaged Work.
	.7	Provide supervision, attendance and fire protection measures as directed by the Departmental Representative or other authorities.
3.10 Wildlife	.1	Avoid or terminate activities on site that attract or disturb wildlife and vacate the area and stay away from bears, cougars, wolves, elk, moose, or bison, or other animals that display aggressive behavior or persistent intrusion. Extra care to control materials that might attract wildlife (e.g. lunches and food scraps) must be exercised at all times.
	.2	Notify the Departmental Representative immediately about dens, litters, nests, carcasses (road kills), bear activity or encounters on or around the site or crew accommodations. Other wildlife related encounters are to be reported within 24 hours.
	.3	Adhere to the requirements of the CPP (Appendix J).

3.11 Relics and Antiquities

.1 Prior to work commencing on any site, the site shall be reviewed jointly by the Contractor's Environmental Manager, the Contractor's Superintendent, and the Departmental Representative. Notify the Departmental Representative a minimum of five (5) days in advance to arrange the site review.

.2 Artifacts, relics, antiquities, and items of historical interest such as cornerstones, commemorative plaques, inscribed tablets and any objects found on the work site that may be considered artifacts as defined by GC6.3 shall be reported to the Departmental Representative immediately. The Contractor and workers shall wait for instruction before proceeding with their work as per GC6.3.

.3 All historical or archaeological objects found in the project site are protected under federal and provincial Acts and regulations. The Contractor and workers shall protect any articles found and request direction from the Departmental Representative as per GC6.3.

.4 Human remains must be reported immediately to the local RCMP and Departmental Representative per GC6.3.

3.12 Waste Materials Storage and Removal

.1 The Contractor and workers shall dispose of hazardous wastes in conformance with the applicable federal and provincial regulations and should be part of the EPP. All waste materials shall be disposed of at a disposal facility acceptable to the Departmental Representative. No waste materials shall be buried onsite.

.2 All wastes originating from construction, trade, hazardous and domestic sources, shall not be mixed, but will be kept separate.

.3 Construction, trade, hazardous waste and domestic waste materials shall not be burned, buried, or discarded at the construction site. These wastes shall be contained and removed in a timely and approved manner by the Contractor and workers, and disposed of at an appropriate waste landfill site located outside the work area.

.4 A concerted effort shall be made by the Contractor and workers to reduce, reuse and recycle materials where possible.

.5 Sanitary facilities, such as portable container toilets, shall be provided by the Contractor and maintained in a clean condition.

3.13 Wastewater Discharge Criteria

.1 Wash water, meltwater collection, rinse water resulting from the cleaning of fuel tanks and pipelines, contaminated groundwater, and/or any other liquid effluent stream will be released onto the ground at a location that is a minimum of 30 metres from natural drainage courses and 100 metres from fish bearing waters, and will conform to the discharge requirements set out in provincial regulations.

.2 Contractor must obtain approval from the provincial Water Act Officer prior to discharging any treated wastewater.

3.14 Drainage

.1 Stage the work and complete excavation work and placement of all erosion protection materials in the dry. Provide temporary drainage, pumping, hoses, temporary coir logs and wood posts, fish stop nets, and check dams as shown on the Contract Drawings as necessary to keep excavations and the work area free from water. Drainage plans shall be part of the EPP.

.2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements such as the provincial Water Act.

.4 Provide an erosion and sediment control plan that identifies type and location of erosion and sediment controls to be provided. Plan to include monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.

.5 As part of the EPP, submit details of proposed erosion, sediment and drainage control to Departmental Representative for review and approval prior to commencing work in fisheries sensitive areas or in areas that may affect fisheries sensitive areas and specifically address the protection of water bodies, water courses, and the following:

.1 Details of grading Work to prevent surface drainage into or out of Work areas.

.2 Details of erosion control works and materials to be used, including the deployment of coir logs, floating silt curtains and containment booms during construction and excavation activities.

.3 Work schedule including the sequence and duration of all related Work activities.

.4 The treatment of site runoff to prevent siltation of watercourses.

.5 Dewatering procedures for excavated materials including silt removal procedures prior to discharge.

.6 Stabilizing procedures during excavation.

.7 Maintenance of filters and sedimentation traps.

.6 Any dewatering activities will be released onto the ground at a location that is a minimum of 30 m from natural drainage courses and 100 m from fish bearing waters.

.7 Have on hand sufficient pumping equipment, machinery, and tankage in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment.

3.15 Site Clearing, Plant Protection, and Nesting Bird Protection

.1 Prior to any clearing performed during the breeding bird nesting period (April 30 to August 20), the Contractor shall have a Breeding Bird and Bird Nest survey completed first, per the requirements of Item 1.7 Breeding Bird and Bird Nest Survey of this specification. No surveys are required if clearing is performed outside of the nesting period.

.2 Protect trees and plants on site and adjacent properties where indicated.

.3 Wrap in burlap, trees and shrubs adjacent to construction Work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m.

.4 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.

.5 Minimize stripping of topsoil.

.6 Restrict tree removal to areas indicated or designated by Departmental Representative and shown on Contract Drawings.

3.16 Environment Protection Supplies

.1 Comply with federal and provincial fisheries and environmental protection legislation, including preventing the loss or destruction of fish habitat, and minimizing the impact of sedimentation, siltation or otherwise causing a degradation in water quality.

.2 Provide a minimum of 30 m and as required, of appropriately sized biodegradable coir logs (minimum diameter of 0.3 m) and the necessary stakes (minimum 1 stake per 1 m of coir log) and materials required by the manufacture's installation specification. Prior to purchase of coir logs, submit manufacturer's product data and installation instructions to the Departmental Representative for review and acceptance. Store and handle in strict compliance with the manufacturer's instructions and recommendations. This will be used as necessary to prevent sediment transport into water bodies.

.3 Provide a minimum of 50 lineal metres and as required of 200 mm diameter hydrophobic, sorbent booms. This will be used as necessary to prevent the migration of hydrocarbons.

.4 Supply, transport, install and maintain erosion, sediment and drainage controls necessary to complete the Work in accordance with the requirements of Departmental Representative.

.5 At the completion of construction, leave coir logs in place if requested by the Departmental Representative.

.6 Unused Erosion, Sediment and Drainage Control supplies will remain the property of Departmental Representative until the completion of the Contract.

.7 Provide inventory of environmental protection supplies prior to mobilization.

END OF SECTION

Section Includes

PART 1:

1.1 Installation and Removal.

1.2 Scaffolding.

1.3 Hoisting.

1.4 Site Storage/Loading.

1.5 Security.

1.6 Equipment, Tool, and Materials Storage.

1.7 Sanitary Facilities.

1.8 Construction Signage.

1.9 Construction Laydown Area, Construction Parking, and Site Office.

1.10 Power.

1.11 Communications.

1.12 Temporary Heating, Ventilation, and Lighting.

1.13 Fire Protection.

PART 1 – GENERAL

1.1 Installation and Removal

.1 Provide construction facilities to execute work expeditiously.

.2 Remove from site all such work after use.

1.2 Scaffolding

.1 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, and temporary stairs as necessary to carry out work.

1.3 Hoisting

.1 Provide, operate, and maintain hoists and cranes as necessary for moving of workers, materials, and equipment.

.2 Hoists and cranes shall be operated by qualified operators.

1.4 Site Storage/Loading

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

.2 Do not load or permit to load any part of work with a weight or force that will endanger the work or existing infrastructure.

1.5 Security

.1 Provide and pay for responsible security personnel as required.

1.6 Equipment, Tool, and Materials Storage

.1 If required by the Contractor, provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with public.

1.7 Sanitary Facilities

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.8 Construction Signage

.1 No other signs or advertisements, other than those required by Section 01 35 00 – Traffic Management, are permitted on site.

1.9 Construction Laydown Area, Construction Parking, and Site Office

.1 Confine construction laydown areas, site office locations, and construction parking to the locations identified below in compliance with Section 01 35 43 – Environmental Protection and as preapproved by the Departmental Representative.

.1 Within highway right of way, in areas previously disturbed, off the traveled potion of the highway, and outside the highway clear zone.

.2 Wood Creek Rock Quarry (Km 651.0) Gravel Pit.

.3 Km 888 Quarry Gravel Pit.

.4 Other areas as preapproved by the Departmental Representative.

1.10 Power

.1 Provide and pay for power as required for the completion of the works and operations of construction offices.

1.11 Communications

.1 Provide and pay for on-site satellite phone communications or other reliable telephone systems allowing the Departmental Representative reliable communication to the Contractors onsite representative when onsite.

1.12 Temporary Heating, Ventilation, and Lighting

.1 Provide temporary heating, ventilation, and lighting as required during construction period to facilitate construction of the works.

1.13 Fire Protection

.1 Provide and maintain temporary fire protection equipment during performance of work.

END OF SECTION

Section Includes

PART 1:

1.1 General Requirements.

1.2 Requirements of Regulatory Agencies.

PART 2:

2.1 Products.

PART 3:

3.1 Mobilization.

3.2 Maintenance.

3.3 Demobilization.

PART 1 – GENERAL

1.1 General Requirements

.1 The Contractor to provide its own construction camp as necessary. Obtain approval from land owner should Contractor choose to setup construction camp. The construction camp shall not be located within PSPC's right-of-way, PSPC's maintenance yards, PSPC's gravel pits / quarries, or on any other land owned or leased by PSPC.

.2 The Contractor shall be responsible for all utility services to the construction camp. The construction camp to be established and operated in accordance with local regulations.

1.2 Requirements of Regulatory Agencies

.1 Obtain necessary licenses and approvals required by Authority having Jurisdiction for authorized use of water and disposal of domestic sewage and other waste.

.2 Comply with Environmental regulations.

PART 2 – PRODUCTS

2.1 Products

.1 Not Used.

PART 3 – EXECUTION

3.1 Mobilization

.1 Mobilize equipment, personnel, and materials as necessary to establish temporary construction camp and offices. Obtain necessary licenses and approvals from authorities having jurisdiction prior to mobilization. Camp and service area location and layout plan to be submitted to Departmental Representative for review and acceptance.

	.2	Temporary construction camps to be established and operated in accordance with local regulations.
3.2 Maintenance	.1	Maintain construction camp and offices in a neat and tidy condition.
3.3 Demobilization	.1	Upon vacating the construction camp, offices and temporary services, clean-up and leave site in a condition satisfactory to the Departmental Representative and the authorities having jurisdiction.

END OF SECTION

Section Includes

PART 1:

1.1 Project Cleanliness.

1.2 Final Cleaning.

PART 1 – GENERAL

1.1 Project Cleanliness

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

.2 Remove waste materials from site at regularly scheduled times, or dispose of as directed by the Departmental Representative.

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

.4 Provide wildlife resistant containers for collection of waste materials and debris.

.5 Dispose of waste materials and debris off site.

.6 Clear snow and ice from areas of work.

.7 Ensure work site cleaning and worker hygiene practices are in accordance with the Contractor's COVID-19 Safe Work Plan.

1.2 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, debris, and materials used in construction. Reinstate the work site to the conditions pre-existing and to the satisfaction of the Departmental Representative.

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

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

.5 Inspect finishes and fitments and ensure specified workmanship and operation.

.6 Remove dirt and other disfiguration from exterior surfaces.

.7 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

.8 Sweep and wash clean paved or Bituminous Surface Treatment (BST) finished areas.

.9 Clean drainage systems.

END OF SECTION

PART 1 – GENERAL

Section Includes

PART 1:

1.1 Substantial Performance.

1.2 Completion

1.1 Substantial Performance

.1 Project "Substantial Performance" shall be attained through the following process:

.1 When the project work has achieved Substantial Performance as defined by GC1.1.4, the Contractor and all subcontractors shall conduct an inspection of work, identify deficiencies and defects and repairs as required to conform to Contract Documents. Correct deficiencies and defects and complete repairs identified.

.2 Notify the Departmental Representative in writing of completion of the Contractor's Inspection, correction of deficiencies, defects, and repairs, and request the Departmental Representative's Substantial Performance inspection.

.3 Upon request from the Contractor, the Departmental Representative will complete a Substantial Performance inspection. If requested by the Departmental Representative, the Contractor shall accompany Departmental Representative during the Substantial Performance inspection.

.4 Unless stated otherwise by the Departmental Representative, the Contractor shall correct all deficiencies, defects, and repairs identified during the Substantial Performance inspection by the Departmental Representative prior to the preparation of the "Certificate of Substantial Performance".

.5 Should the Departmental Representative determine that Substantial Performance as defined by GC1.1.4 has been achieved, the Contractor shall prepare a "Request for Progress Payment" with the final project quantities and all Progress Payment submissions as outlined in Section 01 29 00 – Payment Procedures. The Departmental Representative will use the submitted "Request for Progress Payment" to prepare a "Certificate of Substantial Performance" in accordance with GC 5.5.

.6 Should the "Certificate of Substantial Performance" include remaining defects, faults, and incomplete work etc. the Contractor shall provide to the Departmental Representative a schedule for the completion / correction of each remaining defect, fault, and incomplete work etc. The "Certificate of Substantial Performance" will not be processed for payment until the Contractor's schedule has been provided, reviewed and accepted by the Departmental Representative. The Contractor's schedule shall be provided in writing as follows:

.1 Include the completion / correction dates for all items of defects, faults, incomplete work etc. identified by the Departmental Representative.

.2 Be provide in a letter with company letter head and be signed by an authorized representative of the Contractor.

1.2 Completion

.1 The project shall be deemed to have reached "Completion" when all requirements of GC1.1.5 have been achieved. The "Certificate of Completion" shall then be prepared by the Departmental Representative in accordance with GC5.6.

END OF SECTION

Section Includes

PART 1:

1.1 Submissions.

1.2 Recording As-built Conditions (As-Built Drawings).

1.3 As-Built Survey.

PART 1 – GENERAL

1.1 Submissions

.1 Submit submissions for Departmental Representative review. Following each review, the submission will be returned with the Departmental Representative's comments. Revise and re-submit submission per the comments provided.

.2 Provide the following submissions to the Departmental Representative within two (2) weeks of substantial performance:

.1 As-built drawing mark-ups.

.2 As-built survey.

1.2 Recording As-built Conditions (As-built Drawings)

.1 The Departmental Representative will provide one set of Issued for Construction (or Issued for Tender) drawings for use by the Contractor to record as-built conditions and submit at the completion of the project as the "As-built Drawings".

.2 Record information concurrently with construction progress on the Issued for Construction (or Issued for Tender) drawings. Do not conceal work until the required information is recorded.

.3 Legibly mark each item on the Issued for Construction (or Issued for Tender) drawings and Shop Drawings in red ink to record actual construction conditions and any changes made by addenda and change orders.

.4 Maintain record documents in clean, dry, and legible condition.

.5 Keep record documents available for inspection by the Departmental Representative.

.6 Submit to the Departmental Representative one copy of Issued for Construction (or Issued for Tender) drawings which have been marked by the Contractor up to include all "as-built" conditions.

1.3 As-Built Survey

.1 At the completion of the work, complete an as-built survey of the works. At a minimum the survey shall include.

.1 Topo of all areas disturbed and modified during construction.

.2 Ditches installed.

.3 Limits of scarifying.

.4 Limits of seeding.

.5 Coco fibre geotextile.

.6 Riprap and rock boulders.

.7 Any other feature or elements of work incorporated into the project.

.2 The survey to include sufficient point density to adequately characterize the work. Survey methods and point density is subject to prior approval of the Departmental Representative. At a minimum the Contractor shall survey all features at 10 m station intervals and the location of all treatment boundaries including changes in material type / placement, changes in surface treatment, and changes in terrain.

.3 Survey data shall be collected at an accuracy of +/- 0.020 m horizontal and +/- 0.020 m vertical or better and shall be referenced / tie into the PSPC's monument / coordinate system as shown on the Contract Drawings.

.4 The following files shall comprise the as-built survey provided to the Departmental Representative:

.1 Digital csv file with the xyz data and an appropriate descriptor code as to the type of material surface or feature being surveyed.

.2 Breaklines for all survey data in DXF file formation or another format pre-approved by the Departmental Representative.

.3 A list of all point descriptors used in the survey data.

END OF SECTION

Section Includes

PART 1:

1.1 Measurement and Payment Procedures.

PART 2:

2.1 Not used.

PART 3:

3.1 Debris Removal.

3.2 Creosote Treated Wood and Surrounding Soil.

3.3 Culverts.

PART 1 – GENERAL

1.1 Measurement and Payment Procedures

.1 Payment for the removal and offsite disposal of the debris identified at various locations of various sites will be made on the basis of the Price per Unit Bid for Site 1 – Debris Removal, Site 2 – Debris Removal, and Site 3 – Debris Removal in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for:

.1 Debris: removal, loading, transport, and offside disposal of timber bridge piles, timber training boards, timber box culvert, timber flume, and other visible man-made debris as directed by the Departmental Representative.

.2 Creosote treated wood: removal, loading, transport, and offsite disposal. All timber debris shall be considered to be creosote treated, unless noted otherwise by the Contractor's Environmental Monitor, and removed as per Item 3.2 – Creosote Treated Wood and Surrounding Soil of Section 02 22 50 – Selective Site Demolition.

.3 All other items necessary for successful completion of the work.

.2 Measurement for Payment for Site 1 – Debris Removal, Site 2 – Debris Removal, and Site 3 – Debris Removal shall be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative for each site.

.3 Measurement and payment for removal and offsite disposal of existing culverts for Sites 4 and 5 shall not be made under this specification section. Refer to Section 31 00 99 – Excavation and Scarification.

.4 Measurement and payment for the excavation and disposal of creosote contaminated soil shall not be made under this specification section. Refer to Section 31 00 99 – Excavation and Scarification.

PART 2 – PRODUCTS

.1 Not Used

PART 3 – EXECUTION

3.1 Debris Removal

.1 Debris indicated on contract drawings and by the Departmental Representative shall be removed by the Contractor and disposed offsite at a disposal facility acceptable to the Departmental Representative.

3.2 Creosote Treated Wood and Surrounding Soil

.1 Dispose of creosote treated wood and surrounding soil as per the EMP (Appendix I) such that:

.1 All removed Creosote Treated Wood should be placed on poly sheeting while temporarily stockpiled in order to prevent the possibility of leached creosote from any newly exposed wood surfaces from gaining to the surface and substance soils which would potentially contaminate the soil with PAHs.

.2 The Contractor's Environmental Monitor shall inspect the exposed soils adjacent to the removed Creosote Treated Wood. If the soil does not present visual or olfactory evidence of residual creosote, the soil shall be left in place. The Contractor's Environmental Monitor shall provide documentation of the soil being free of visual or olfactory evidence of residual creosote and submit to the Departmental Representative.

.3 If any exposed soils adjacent to the treated wood presents visual or olfactory evidence of residual creosote, the soil shall be excavated and stockpiled on poly sheeting. The Contractor's Environmental Monitor shall provide evidence and obtain permission from the Departmental Representative prior to performing the work. This soil should be sampled in accordance with accepted soil sampling procedures (i.e., BC Field Sampling Manual) by an appropriately

Qualified Environmental Professional (QEP) and submitted to an accredited analytical laboratory for analysis of polycyclic aromatic hydrocarbons (PAHs) and the analytes required to meet the receiving facility's disposal criteria (one sample for each: flashpoint, pH, total BTEX) to determine disposal options. PAHs are regulated substances per the CSR of the Environmental Management Act of BC and Canadian Council of Ministers of Environment (CCME) Canadian Environmental Quality Guidelines. All analysis results shall be submitted to PSPC prior to disposal of the creosote treated wood and surrounding soil. Should the Contractor encounter substances in the material to be disposed of that are not accepted by any facility within the Northern Rockies Municipality, inform the Departmental Representative and await further instructions.

.3 Until such time that any stockpiled wood or soil is removed from the site, the stockpile(s) should be covered with poly sheeting to prevent precipitation from leaching PAHs from the stockpile.

.4 Prevent contact of creosote-treated wood with water within the watercourse.

.5 Creosote treated wood and soil with residual creosote should be transported in accordance with the Transportation of Dangerous Goods Act and disposed of at a facility within BC approved to accept and store materials treated with creosote. The Contractor must provide the facility's certification with the Ministry of Environment and permit to accept the contaminated material to PSPC prior to disposing of any materials at the facility. The Contractor shall obtain ticket of waste manifest upon disposal of contaminated material and provide it to PSPC.

3.3 Culverts

.1 Perform culvert excavation as per Item 3.1 – Culverts of Section 31 00 99 – Excavation and Scarification.

END OF SECTION

Section Includes

PART 1:

1.1 Definitions.

1.2 Submittals.

1.3 Storage and Handling.

1.4 Transportation.

PART 2:

2.1 Materials.

PART 3:

3.1 Disposal.

PART 1 – GENERAL

1.1 Definitions

.1 Dangerous Goods: Product, substance, or organism that is specifically listed or meets the hazard criteria established in Transportation of Dangerous Goods Regulations.

.2 Hazardous Material: Product, substance, or organism that is used for its original purpose and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.

.3 Hazardous Waste: Any hazardous material that is no longer used for its original purpose and that is intended for recycling, treatment, or disposal.

.4 Workplace Hazardous Materials Information System (WHMIS): A Canada-wide system designed to give employers and workers information about hazardous materials used in the workplace. Under WHMIS, information on hazardous materials is to be provided on container labels, material safety data sheets (MSDS), and worker education programs. WHMIS is put into effect by a combination of federal and provincial laws.

1.2 Submittals

.1 Submit product data in accordance with Section 01 33 00 – Submittal Procedures.

.2 If requested by the Departmental Representative, submit to the Departmental Representative a current Material Safety Data Sheet (MSDS) for each hazardous material required prior to bringing hazardous material on site.

.3 If requested by the Departmental Representative, submit Hazardous Materials Management Plan to the Departmental Representative that identifies all hazardous materials, their use, their location, personal protective equipment requirements, and disposal arrangements.

1.3 Storage and Handling

.1 Abide by internal requirements for labeling and storage of materials and wastes. If required coordinate storage of hazardous materials with the Departmental Representative.

.2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.

.3 Store and handle flammable and combustible materials in accordance with current National Fire Code of Canada requirements.

.4 Store all flammable and combustible liquids in approved safety cans bearing the Underwriter's Laboratory of Canada or Factory Mutual seal of approval.

.5 Transfer of flammable and combustible liquids is prohibited within buildings.

.6 Transfer of flammable and combustible liquids will not be carried out in the vicinity of open flames or any type of heat-producing devices.

.7 Flammable liquids having a flash point below 38°C, such as naptha or gasoline, will not be used as solvents or cleaning agents.

.8 Store flammable and combustible waste liquids for disposal in approved containers located in a safe, ventilated area. Keep quantities to a minimum.

.9 Observe smoking regulations at all times. Smoking is prohibited in any area where hazardous materials are stored, used, or handled.

.10 Abide by the following storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 L for liquids:

.1 Store hazardous materials and wastes in closed and sealed containers that are in good condition.

.2 Label containers of hazardous materials and wastes in accordance with WHMIS.

.3 Store hazardous materials and wastes in containers compatible with that material or waste.

.4 Segregate incompatible materials and wastes.

.5 Ensure that different hazardous materials or hazardous wastes are not mixed.

.6 Store hazardous materials and wastes in a secure storage area with controlled access.

.7 Maintain a clear egress from storage area.

.8 Store hazardous materials and wastes in a manner and location which will prevent them from spilling into the environment.

.9 Have appropriate emergency spill response equipment available near the storage area, including personal protective equipment.

.10 Maintain an inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.

.11 Ensure personnel have been trained in accordance with WHMIS requirements.

.12 Report spills or accidents involving hazardous materials immediately to the Provincial Emergency Program 24 hour phone line at 1-800-663-3456, other local authority having jurisdiction, and the Departmental Representative. Submit a written spill report to the Departmental Representative within 24 hours of incident.

.13 Store and handle all hazardous materials away from any water course as outlined in Section 01 35 43 – Environmental Protection.

1.4 Transportation

.1 Transport hazardous materials and wastes in accordance with federal Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.

.2 If exporting hazardous waste to another country, ensure compliance with federal Export and Import of Hazardous Waste Regulations.

PART 2 – PRODUCTS

2.1 Materials

.1 Only bring on site the quantity of hazardous materials required to perform work.

.2 Maintain MSDS in proximity to where the materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

PART 3 – EXECUTION

3.1 Disposal

.1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines. Costs for disposal to be considered incidental to the work.

.2 Recycle hazardous wastes for which there is an approved, cost-effective recycling process available.

.3 Send hazardous wastes only to authorized hazardous waste disposal or treatment facilities.

.4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.

.5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.

.6 Dispose of hazardous wastes in a timely fashion in accordance with applicable provincial regulations.

END OF SECTION

Section Includes

PART 1: General

1.1 Measurement and Payment Procedures.

PART 2: Products

2.1 Riprap.

2.2 Coco Fibre Geotextile.

PART 3: Execution

3.1 Excavation and Culvert Removal.

3.2 Creosote Treated Wood and Surrounding Soil.

3.3 Ditch and Channel Construction (Following Culvert Removal).

3.4 Placement of Riprap and Nonwoven Geotextile.

3.5 Placement of Coco Fibre Geotextile.

3.6 Excavation for Thalweg Realignment.

3.7 Over-excavation for Thalweg Realignment (Optional Work).

3.8 Placement of Native Riverbed Material in Over-excavated Area for Thalweg Realignment (Optional Work)

3.9 Excavation and Offsite Disposal of Creosote Contaminated Soil (Optional Work).

3.10 Waterbars (Optional Work).

3.11 Scarification of Road Surface.

3.12 Seeding.

PART 1 – GENERAL

1.1 Measurement and Payment Procedures

.1 Payment for scarification for Sites 1 to 5 shall be made on the basis of Price per Unit Bid for Sites 1 to 5 – Scarification in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for labour, equipment, and equipment access associated with scarifying the areas of the decommissioned highway as indicated in the Contract Drawings or as directed by the Departmental Representative, and all other items necessary for the successful completion of the work.

.2 Measurement for payment for Sites 1 to 5 – Scarification will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative.

.3 Payment for Site 1 – Excavation for Thalweg Realignment shall be made on the basis of Price per Unit Bid for Site 1 – Excavation for Thalweg Realignment in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and shaping of the channel to realign the thalweg and prepare for riprap placement, both temporary stockpile and permanent onsite disposal of excavated material, and all other items necessary for successful completion of the work.

.4 Measurement for Payment for Site 1 – Excavation for Thalweg Realignment shall be made on the volume of material excavated, surveyed in cubic metres and accepted by the Departmental Representative.

.5 Payment for Site 2 – Excavate Existing Channel and Slopes – Sta. 20+260 shall be made on the basis of Price per Unit Bid for Site 2 – Excavate Existing Channel and Slopes – Sta. 20+260 in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and shaping of the channel, onsite disposal of excavated material, and all other items necessary for successful completion of the work.

.6 Measurement for Payment for Site 2 – Excavate Existing Channel and Slopes – Sta. 20+260 shall be made on the volume of material excavated, surveyed in cubic metres and accepted by the Departmental Representative.

.7 Payment for Site 2 – Supply and Installation of Coco Fibre Geotextile for Slopes Above Riprap Channel shall be made on the basis of Site 2 – Supply and Installation of Coco Fibre Geotextile for Slopes Above Riprap Channel in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for the supply and install of coco fibre geotextile, and all other items necessary for the successful completion of the work.

.8 Measurement for payment for Site 2 – Supply and Installation of Coco Fibre Geotextile for Slopes Above Riprap Channel will be made by the area of coco fibre geotextile installed, surveyed in square metres, and accepted by the Departmental Representative.

.9 Payment for Site 3 – Excavate Existing Slopes – Sta. 30+450 shall be made on the basis of Price per Unit Bid for Site 3 – Excavate Existing Slopes – Sta. 30+450 in the Bid and Acceptance Form. The Price per Unit Bid shall include:

.1 All costs for excavating and shaping of the channel, and disposal of the excavated native materials on site.

.2 All other items necessary for successful completion of the work.

.10 Measurement for Payment for Site 3 – Excavate Existing Slopes – Sta. 30+450 shall be made on the volume of material excavated, surveyed in cubic metres and accepted by the Departmental Representative.

.11 Payment for Site 3 – Supply and Install of Coco Fibre Geotextile for Excavated Slopes shall be made on the basis of Supply and Install of Coco Fibre Geotextile for Excavated Slopes – Site 3 in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for the supply and install of coco fibre geotextile, and all other items necessary for the successful completion of the work.

.12 Measurement for payment for the Supply and Install of Site 3 – Coco Fibre Geotextile for Excavated Slopes will be made by the area of coco fibre geotextile installed, surveyed in square metres, and accepted by the Departmental Representative.

.13 Payment for Site 4 – Remove Existing Culvert and Install Cross Ditch with Coco Fibre Geotextile – 600 mm dia. CSP Culvert for Sta. 40+400 and Sta. 40+630 shall be made on the basis of Price per Unit Bid for Site 4 – Remove Existing Culvert and Install Cross Ditch with Coco Fibre Geotextile – 600 mm dia. CSP Culvert for Sta. 40+400 and Sta. 40+630 in the Bid and Acceptance Form. The Price per Unit Bid shall include:

.1 All costs for excavating and offsite disposal of existing culverts and associated components (steam pipes, screens, debris catchments etc., if present).

.2 All costs for excavating and shaping of the ditch, disposal of the native materials on site, and if necessary, refilling of the space created by the removal of the existing culvert with material acceptable to the Departmental Representative.

.3 All costs for selecting, loading, transport, and the installing of coco fibre geotextile.

.4 All other items necessary for successful completion of the work.

.14 Measurement for Payment for Site 4 – Remove Existing Culvert and Install Cross Ditch with Coco Fibre Geotextile – 600 mm dia. CSP Culverts for Sta. 40+400 and Sta. 40+630 shall be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative for each site.

.15 Payment for Site 5 – Remove Existing Culvert and Install Cross Ditch – Sta. 50+330, 600 mm dia. CSP Culvert shall be made on the basis of Price per Unit Bid for Site 5 – Remove Existing Culvert and Install Cross Ditch – Sta. 50+330, 600 mm dia. CSP Culvert in the Bid and Acceptance Form. The Price per Unit Bid shall include:

.1 All costs for excavating and offsite disposal of existing culverts and associated components (steam pipe, gabion baskets, screens, debris catchments etc., if present).

.2 All costs for excavating and shaping of the ditch in preparation for riprap placement, disposal of the native materials on site, and if necessary, refilling of the space created by the removal of the existing culvert with material acceptable to the Departmental Representative.

.3 All other items necessary for successful completion of the work.

.16 Measurement for Payment for Site 5 – Remove Existing Culvert and Install Cross Ditch – Sta. 50+330, 600 mm dia. CSP Culvert shall be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative.

.17 Payment for Site 5 – Supply and Install of Coco Fibre Geotextile for on Slopes above Riprap Channel – Sta. 50+330 shall be made on the basis of Site 5 – Supply and Install of Coco Fibre Geotextile for on Slopes above Riprap Channel – Sta. 50+330 in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for the supply and install of coco fibre geotextile, and all other items necessary for the successful completion of the work.

.18 Measurement for payment for Site 5 – Supply and Install of Coco Fibre Geotextile for on Slopes above Riprap Channel – Sta. 50+330 will be made by the area of coco fibre geotextile installed, surveyed in square metres, and accepted by the Departmental Representative.

.19 Payment for Optional Work – All Sites – Excavation and Offsite Disposal of Creosote Contaminated Soil for various sites and stations shall be made on the basis of Price per Unit Bid for Optional Work – All Sites – Excavation and Offsite Disposal of Creosote Contaminated Soil in the Bid and Acceptance Form. The Price per Unit Bid shall include:

.1 All costs for excavating of the creosote contaminated soil agreed upon by the Contractor's Environmental Monitor and the Departmental Representative as per Item 3.2 – Creosote Treated Wood and Surrounding Soil of Section 02 22 50 – Selective Site Demolition, including temporary placement and storage of the excavated materials on site prior to disposal offsite.

.2 All costs loading, transport, and offsite disposal of the creosote contaminated soil at an appropriate facility as per Item 3.2 – Creosote Treated Wood and Surrounding Soil of Section 02 22 50 – Selective Site Demolition.

.3 All other items necessary for successful completion of the work.

This optional work item will be directed by the Departmental Representative via change order.

.20 Measurement for Payment for Optional Work – All Sites – Excavation and Offsite Disposal of Creosote Contaminated Soil for various sites and stations shall be made on the volume of material excavated and disposed, surveyed in cubic metres and accepted by the Departmental Representative.

.21 Payment for Optional Work – Site 1 – Over-excavation for Thalweg Realignment shall be made on the basis of Price per Unit Bid for Optional Work – Site 1 – Over-excavation for Thalweg Realignment in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and shaping of the channel, and onsite disposal of excavated material, and all other items necessary for successful completion of the work. This optional work item will be directed by the Departmental Representative via change order.

.22 Measurement for Payment for Optional Work – Site 1 – Over-excavation for Thalweg Realignment shall be made on the volume of material excavated, surveyed in cubic metres and accepted by the Departmental Representative.

.23 Payment for Optional Work – Site 1 – Placement of Native Riverbed Material in Over-excavated Area for Thalweg Realignment shall be made on the basis of Price per Unit Bid for Optional Work – Site 1 – Placement of Native Riverbed Material in Over-excavated Area for Thalweg Realignment in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for loading, transport and placement of the native riverbed material stockpiled onsite, and all other items necessary for successful completion of the work. This optional work item will be directed by the Departmental Representative via change order.

.24 Measurement for Payment for completion of Optional Work – Site 1 – Placement of Native Riverbed Material in Over-excavated Area for Thalweg Realignment shall be made on the volume of material excavated, surveyed in cubic metres and accepted by the Departmental Representative.

.25 Payment for Optional Work – Site 1 – Excavation and Construction of the Temporary Diversion Channel shall be made on the basis of Price per Unit Bid for Optional Work – Site 1 – Excavate and Construct Temporary Diversion Channel in the Bid and Acceptance Form. This optional work item will be directed by the Departmental Representative via change order. The Price per Unit Bid shall include:

.1 All costs for excavating and shaping of the channel, and temporary placement and storage of the excavated native materials on site.

.2 All costs for selecting, loading, transport, and the supply and install of geotextile for the diversion channel.

.3 All costs for the transport and replacement of excavated materials to restore the area to pre-construction conditions.

.4 All other items necessary for successful completion of the work.

.26 Measurement for Payment for Optional Work – Site 1 – Excavate and Construct Temporary Diversion Channel shall be made on the volume of material excavated, surveyed in cubic metres and accepted by the Departmental Representative.

.27 Payment for construction of Optional Work – All Sites – Waterbars for various sites and stations shall be made on the basis of Price per Unit Bid for Optional Work – All Sites – Waterbars in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for excavating and shaping of the waterbar, disposal of the native materials on site and all other items necessary for the successful completion of the work. This optional work item will be directed by the Departmental Representative via change order.

.28 Measurement for payment for completion of installation of Optional Work – All Sites – Waterbars for various sites and stations will be made by the count of each waterbar installed and accepted by the Departmental Representative.

PART 2 – PRODUCTS

2.1 Riprap

.1 Riprap shall be of 50 kg Class or 250 kg Class Riprap in accordance with Section 31 37 00 – Riprap.

2.2 Coco Fibre Geotextile

.1 Coco Fibre Geotextile shall achieve or exceed the minimum requirements outlined in Table 31 00 99 - 01.

Table 31 00 99 – 01: Coco Fibre Geotextile

Property	Test	Value
Mass Per Unit Area	ASTM D6566	≥ 390 g/m²
Thickness	ASTM D6525	≥ 5.8
Ground Cover	ASTM D6567	≥ 99%
Water Holding Capacity	ASTM D7367	≥ 1,500%

.2 Prior to purchase of materials submit manufacturer's product data and installation instructions to the Departmental Representative for review and acceptance. Include required substrate preparation, list of materials and application rate.

PART 3 – EXECUTION

3.1 Excavation and Culvert Removal

.1 Take all necessary precautions as outline in Section 01 35 43 – Environmental Protection and the Contractor's EPP to mitigate against sediment transport and other environmental pollution or damage during construction. Complete the work as per the Environmental Management Plan (EMP) (Appendix I) and incorporate the sediment and erosion control features as outlined on the Contract Drawings.

.2 Excavate and remove all existing culverts and associated components (steam pipes, culvert markers, etc., if present) within the limits of the work. Dispose of the culverts in an offsite disposal facility within British Columbia permitted to accept the culvert materials (steel and creosote treated timber) and acceptable to the Departmental Representative.

.3 Unless noted otherwise in Section 31 00 99 – Excavation and Scarification, re-use excavated material as embankment (if deemed suitable by the Departmental Representative) or spread material onsite as indicated in the Contract Drawings, in areas which do not cause changes in drainage patterns or create unsafe loading of a slope, and in a condition acceptable to the Departmental Representative.

3.2 Creosote Treated Wood and Surrounding Soil

.1 Perform disposal of creosote treated wood and surrounding soil as per Item 3.2 – Creosote Treated Wood of Section 02 22 50 – Selective Site Demolition.

3.3 Ditch and Channel Construction (Following Culvert Removal)

.1 Complete the ditch or channel construction to the inverts and to the lines and grades shown on the contract drawings. Ensure excavation will allow for positive drainage upon placement of riprap or coco fibre geotextile.

.2 Install 50 Kg Class Riprap, 250 Kg Class Riprap, Riprap Boulders, or Coco Fibre Geotextile to the lines and grades shown on the contract drawings and to the requirements of Item 3.4 – Placement of Riprap and Nonwoven Geotextile and Item 3.5 – Placement of Coco Fibre Geotextile. Ensure positive drainage following riprap or coco fibre geotextile placement.

.3 Dispose of excavated waste material onsite in a condition acceptable to the Departmental Representative in locations shown on the Contract Drawings.

3.4 Placement of Riprap and Nonwoven Geotextile

.1 Placement of riprap and nonwoven geotextile shall be in accordance with Section 31 37 00 – Riprap.

3.5 Placement of Coco Fibre Geotextile

.1 Deliver materials and products in UV and weather resistant factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect form damage, weather, excessive temperatures and construction operations.

.2 Follow the manufacturer's installation specifications. If manufacturer's installation specifications are not available, the following installation method may be used.

.1 Excavate anchor trench 300 mm deep by 200 mm wide, approximately 1 m back from the crest of slope along the length of slope to be protected.

.2 Insert the leading edge of the coco fibre geotextile roll into the trench and back fill and compact soil. Insert anchors at 3000 mm intervals along the edge of the anchor trench.

.3 Roll out coco fibre geotextile out downslope making sure the Coco Fibre Geotextile is not stretched or under tension.

.4 The entire coco fibre geotextile must be loose and be in intimate contact with the underlying soil.

.5 The edges of adjacent parallel rolls must be overlapped 50 to 75 mm and be stapled every 1 m.

.6 When coco fibre geotextile must be spliced down the slope, place coco fibre geotextile end over end (shingle style with the upslope coco fibre geotextile on the top) with 200 mm overlap. Staple through overlapped area at 300 mm intervals.

.7 Blankets shall be stapled sufficiently to anchor coco fibre geotextile and maintain contact with the soil.

.8 Staple the central portion of the coco fibre geotextile at 4 staples/m^2 minimum (0.5 m spacing) for slopes steeper than 2H:1V and 1 staple/m^2 minimum (1.0 m spacing) on slopes shallower than 2H:1V.

.9 Wire staple anchors shall be a minimum of 11 gauge and 150 to 200 mm long and shall be driven flush to the soil surface.

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

.4 Replace damaged or deteriorated coco fibre geotextile to the approval of Departmental Representative.

.5 Upon acceptance by the Departmental Representative, place succeeding material as shown on the contract drawings.

3.6 Excavation for Thalweg Realignment

.1 Take all necessary precautions as outline in Section 01 35 43 – Environmental Protection and the Contractor's EPP to mitigate against sediment transport and other environmental pollution or damage during construction. Complete the work as per the Environmental Management Plan (EMP) (Appendix I) and incorporate the sediment and erosion control features as outlined on the Contract Drawings.

.2 Complete the thalweg realignment excavation to the dimensions and areas shown on the contract drawings, unless otherwise directed by the Departmental Representative. Ensure excavation will allow for positive drainage. The intent of the thalweg realignment excavation is to compensate the river depth and width lost to riprap placement against the existing timber training board as shown on the contract drawings.

.3 Excavated material consisting of course material deemed as suitable for re-use for placement on the riverbed by the Departmental Representative may be directly placed for thalweg realignment (See Item 3.8 Placement of Native Riverbed Material in Over-excavated Area for Thalweg Realignment (Optional Work)). Any excess material must be temporarily stockpiled a minimum of 30 m outside of the top of riverbank in areas acceptable to the Departmental Representative. Place stockpile in locations which do not create ponding or adversely affect drainage. All material shall be spread and flattened to the satisfaction of the Departmental Representative with a maximum thickness of excavated material less than 1 m.

.4 Excavated material determined by the Departmental Representative to consist of erodible material and excessive fines which could promote elevated particulate material in the water column are to be treated as waste material. Place waste material a minimum of 30 m outside of top of riverbank in areas acceptable to the Departmental Representative. Place waste material in locations which do not create ponding or adversely affect drainage. All material shall be spread and flattened to the satisfaction of the Departmental Representative with a maximum thickness of excavated material less than 1 m.

3.7 Over-excavation for Thalweg Realignment (Optional Work)

.1 If the exposed riverbed from excavation for thalweg realignment (refer to 3.6 Excavation for Thalweg Realignment) is determined by the Departmental Representative to contain erodible material and excessive fines which could promote elevated particulate material in the water column, over-excavate the thalweg to the

dimensions and areas shown on the contract drawings, or as otherwise directed by the Departmental Representative.

.2 Treat over-excavated material as waste material. Place waste material a minimum of 30 m outside of top of riverbank in areas acceptable to the Departmental Representative. Place waste material in locations which do not create ponding or adversely affect drainage. All material shall be spread and flattened to the satisfaction of the Departmental Representative with a maximum thickness of excavated material of 1 m.

3.8 Placement of Native Riverbed Material in Over-excavated Area for Thalweg Realignment (Optional Work)

.1 Place the temporarily stockpiled material deemed to be suitable for use on the riverbed by the Departmental Representative in the over-excavated areas identified by the contract drawings, unless otherwise directed by the Departmental Representative. The intent of the material placement is to prevent scouring of the riverbed.

3.9 Excavation and Offsite Disposal of Creosote Contaminated Soil (Optional Work)

.1 Excavate and remove creosote contaminated soil as per Item 3.2 – Creosote Treated Wood and Surrounding Soil of Section 02 22 50 – Selective Site Demolition.

3.10 Waterbars (Optional Work)

.1 Construct waterbars as per the Contract Drawings in location(s) that will be specified by the Departmental Representative prior to the conclusion of the work at each project site.

.2 Protect installed waterbars from damage or deterioration. Construction equipment is not permitted on water bars.

.3 Compact the berm portion of the waterbar to minimum 95% maximum dry density in accordance with ASTM D698-12.

3.11 Scarification of Road Surface

.1 Scarify the un-treed road surfaces and all areas of BST as shown in the Contract Drawings to a minimum depth of 100 mm, with the furrows no more than 300 mm apart, unless otherwise directed by the Departmental Representative.

.2 Do not level or grade the road surface after scarification. Construction equipment is not permitted on the scarified road surface.

.3 Maintain finished scarified surface in condition conforming to this specification until acceptance.

3.12 Seeding	.1	Seed all disturbed areas as per Section 32 93 21 – Seeding, including excavated waste material, coco fibre geotextile and areas disturbed by equipment access but excluding finished riprap surfaces.

END OF SECTION

Section Includes

PART 1: General

1.1 Measurement and Payment Procedures.

1.2 References.

1.3 Quality Control.

PART 2: Products

2.1 General.

2.2 Nonwoven Geotextile.

2.3 50 kg Class and 250 kg Class Riprap.

PART 3: Execution

3.1 Processing.

3.2 Handling and Transportation.

3.3 Stockpiling.

3.4 Placement of Nonwoven Geotextile.

3.5 Placement of Riprap.

3.6 Cleaning After Placement.

PART 1 – GENERAL

1.1 Measurement and Payment Procedures

.1 Payment for the supply and installation of 250 kg Class Riprap will be made on the basis of Price per Unit for Site 1 – Supply and Install 250 kg Class Riprap for Thalweg Realignment and Site 2 – Supply and Install 250 kg Class Riprap for Stream Bed – Sta. 20+260 in the Bid and Acceptance Form. The Price per Unit Bid shall include supply (if PSPC quarry supply not used), sorting, screening, blasting, manufacturing, loading, transport, and placement of riprap, and all other items necessary for successful completion of the work. The price shall further include the supply and installation of nonwoven geotextile.

.2 Measurement and Payment for Site 1 – Supply and Install 250 kg Class Riprap for Thalweg Realignment and Site 2 – Supply and Install 250 kg Class Riprap for Stream Bed – Sta. 20+260 will be made on the volume of riprap material installed and surveyed in cubic metres and accepted by the Departmental Representative.

.3 Payment for the supply and installation of 50 kg Class Riprap material will be made on the basis of Price per Unit for Site 5 – Supply and Install 50 kg Class Riprap for Cross Ditch – Sta. 50+330 in the Bid and Acceptance Form. The Price per Unit Bid shall include supply (if PSPC quarry supply not used), sorting, screening, blasting, manufacture, loading, transport, and placement of riprap, and all other items necessary for successful completion of the work. The price shall further include the supply and installation of nonwoven geotextile.

.4 Measurement and Payment for Site 5 – Supply and Install 50 kg Class Riprap for Cross Ditch – Sta. 50+330 will be made on the volume of riprap material installed and surveyed in cubic metres and accepted by the Departmental Representative.

1.2 References

.1 American Society for Testing and Materials (ASTM)

.1 ASTM D4632-91(1996), Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.

.2 ASTM D4533-91(1996), Standard Test Method for Trapezoid Tearing Strength of Geotextiles.

.3 ASTM D4833-00, Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.

.4 ASTM D698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3) (600 kNm/m^3).

1.3 Quality Control

.1 The Contractor shall be responsible for ensuring the product meets the contractual quality requirements and that Quality Control measuring and documenting the quality of the work is completed by qualified personnel. Quality Control work includes monitoring, inspecting, testing, and documenting the riprap materials to ensure conformance with the Contract.

.2 The Contractor's QC shall complete a formal check and document the riprap on QC forms a minimum of once per every 1 day of sorting / screening of riprap. The check shall include the average dimensions (measured three different directions) of rocks with percent larger than 15%, 50%, 85%, and 100%. Riprap QC documentation shall be provided to the Departmental Representative in accordance

with Section 01 33 00 – Submittal Procedures within 48 hours of completion and in all instances prior to transport to the site.

.3 The Contractor shall provide unrestricted access to all Quality Control operations and documentation produced by or on behalf of the Contractor and shall allow the Departmental Representative full access at any time during working hours.

.4 The Departmental Representative will review the Contractor's performance of the work and determine the acceptability of the work based on the Departmental Representative's Quality Assurance results and, where deemed appropriate by the Departmental Representative, supplemented by the Contractor's Quality Control results. If needed, the Department Representative may request further testing.

.5 Work failing to meet the conditions of the Contract shall be considered a non-conformance. A non-conformance report will then be issued. Non-conforming work shall be removed / replaced from the work unless an exception to the contract documents is accepted by the Departmental Representative.

.6 The Contractor shall not be entitled to payment for work that lacks the appropriate Quality Control documentation, verified by the Quality Control Manger, as required by the Contract or is subject to an unresolved NCR.

.7 The Contractor shall implement a well-coordinated approach to all operations related to the work and will organize its team and operations in keeping with the goal of doing things right the first time.

.8 In addition to the Quality Control undertaken by the Contractor, the Departmental Representative may undertake, through an independent CSA-certified testing firm, random sampling, inspection, and testing for the purpose of Quality Assurance.

.9 Provide access to all portions of the work and cooperate with the Departmental Representatives.

PART 2 – PRODUCTS

2.1 General

.1 All PSPC materials are supplied to the Contractor "as is". The Contractor will be responsible for the sorting, screening, manufacture, or any other required processing to achieve all material requirements from the "as is" material.

If there is insufficient material, the Contractor can produce additional material or source material that is not from a PSPC quarry. If the Contractor chooses to source material that is not from a PSPC quarry, the Contractor shall advise PSPC in a written submission and shall not use proposed source until accepted by the Departmental Representative.

.2 It is recommended the Contractor visit the PSPC quarry sites to review the available material and define the level of effort required by the Contactor to undertake to achieve gradation and other requirements to produce the required product(s).

2.2 Nonwoven Geotextile

.1 The Nonwoven Geotextile shall achieve or exceed the minimum requirements outlined in Table 33 23 33 - 01.

Table 31 37 00 – 01: Nonwoven Geotextile

Property	Test	Unit	Value
Grab Tensile Strength	ASTM-D4632	N (lb)	1335 (300)
Elongation	ASTM-D4632	%	50
CBR Puncture	ASTM-D6241	N (lb)	3671 (825)
Trapezoidal Tear	ASTM-D4533	195	512 (115)
Apparent Opening Size	ASTM-D4751	Mm (US Sieve)	0.150 (100)
Permittivity	ASTM-D4491	sec^{-1}	1.0
Water Flow Rate	ASTM-D4491	$l/m/m^2$ (gpm/ft^2)	3056 (75)
UV Resistance	ASTM-D4355	% retained at 500 hrs	70

2.3 50 kg Class and 250 kg Class Riprap

.1 Riprap shall be 50 kg Class or 250 kg Class Riprap from the following sources:

.1 Previously blasted rock material at PSPC's Wood Creek Rock Quarry (Km 651.0) or Km 888 Quarry (see Section 01 11 10 – Summary of Work, 1.6 – Owner Supplied Materials). The rock material shall be sorted, screened, or manufactured by the Contractor into material achieving the Riprap requirements.

If the available riprap at the PSPC quarries is insufficient in quantity or size, the Contactor can manufacture the rock using blasting. A detailed blasting plan must be submitted by the Contractor and approved by the Departmental Representative prior to undertaking any blasting in PSPC's quarries. The Contractor shall be responsible for obtaining all necessary blasting permits and all cost associated with blasting and production of riprap in

PSPC quarries. Any additional cost incurred through blasting will be incidental to the Unit Rate Bids for the different material types.

.2 From other offsite sources pre-approved by the Departmental Representative, should the Contractor choose. Should the Contractor elect to supply all or part of the riprap from other sources, any additional costs incurred will be incidental to the Unit Rate Bids for the different material types.

.2 The Riprap shall conform with the following requirements:

.1 Crushed / blasted angular stone consisting of hard durable particles free from clay lumps, frozen material and other deleterious materials, and free from splits, seams or defects likely to impair its soundness during handling or under action of water.

.2 Is a graded material conforming with the following gradation limits:

50 Kg Class Riprap		
Mass (kg)	Nominal Diameter (mm) @ 2650 kg/m^3	Percent Larger Than
300	600	0
150	500	15
50	350	50
5	160	85
1	95	100

250 Kg Class Riprap		
Mass (kg)	Nominal Diameter (mm) @ 2650 kg/m^3	Percent Larger Than
1000	950	0
750	875	15
250	550	50
25	260	85
10	195	100

.3 Neither the breadth or the thickness of any individual piece of material is to be less than one-third of its length. A maximum of 2.0 percent by weight of such pieces will be permitted.

.4 Should the Contractor elect to supply all or part of the Riprap from other sources, the material shall conform with the requirements of:

.1 The requirements for the Riprap listed above in sub-section 2.3.2.

.2 Have a relative density: to ASTM C127, not less than 2.65.

PART 3 – EXECUTION

3.1 Processing

.1 Wash riprap, if required to meet specifications. Use only equipment approved by Departmental Representative.

3.2 Handling and Transportation

.1 Avoid segregation, contamination, and degradation of riprap during handling and transporting.

.2 Load limit restrictions will be in accordance with British Columbia Highway Traffic Act pertaining to registered weight limits and vehicle size.

3.3 Stockpiling

.1 Should stockpiles on highway right-of-way or on PSPC property be required, stockpile riprap in locations directed by Departmental Representative. Do not stockpile on pavement surfaces.

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

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

.4 Prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.4 Placement of Nonwoven Geotextile

.1 Place Nonwoven Geotextile materials on slopes and ground property shaped per the lines and grades shown in the Contract Drawings and free from debris, snow and ice or other deleterious material.

.2 Construction equipment is not permitted on nonwoven geotextile surface.

.3 Maintain finished nonwoven geotextile material surfaces in a condition conforming to this section until acceptance.

3.5 Placement of Riprap

.1 Load, transport, and placed riprap material with care to ensure that material does not break or reduce in size smaller than the actual material size requirements when placed.

.2 Place riprap materials on slopes and ground property shaped per the lines and grades shown in the Contract Drawings

and free from debris, snow and ice or other deleterious material.

.3 Riprap material shall be placed to the lines and thickness shown on the Contract Drawings. The finished surface of each riprap material shall be within the following limits but not uniformly high or low:

.1 50 kg Class Riprap: + 100 mm, -50 mm

.2 250 kg Class Riprap: + 200 mm, -100 mm

.4 Place riprap materials using methods that do not lead to segregation or degradation of aggregate. Do not place by end dumping from haul units.

.5 Do not drop riprap materials from a height greater than 0.5 m vertically from its final position.

.6 Place riprap materials commencing at the toe of the slope and proceeding up the slope. Riprap material shall be densely placed, and individual stones shall be worked with placement equipment to form a well-keyed surface. Ensure placement of the riprap materials allows for positive drainage.

.7 Riprap materials not conforming to the requirements of this section shall be removed from the project site with the expense of the removal borne by the Contractor.

.8 The Contractor shall ensure that the construction methods adopted produces a finished surface that is comprised of the full spectrum of particle sizes continuously throughout its length and breadth.

.9 Dress all riprap voids so that the final surface is well keyed, densely placed, and uniform. The Departmental Representative will require that all surface voids be filled into which a rock having a mass equal or greater than 25% of the maximum stone mass can be placed.

.10 Construction equipment is not permitted on riprap surface.

.11 Maintain finished riprap material surfaces in a condition conforming to this section until acceptance.

3.6 Cleaning After Placement

.1 Any stockpiles temporarily placed on the highway right-of-way or on PSPC property will be completely removed and the site restored to its natural condition.

.2 The Contractor shall be responsible for any cleanup of riprap sources.

END OF SECTION

Section Includes

PART 1:

1.1 Measurement and Payment Procedures.

1.2 Product Data.

1.3 Scheduling.

1.4 Product Handling and Storage.

PART 2:

2.1 Materials.

2.2 Equipment.

PART 3:

3.1 Preparation.

3.2 Application.

3.3 Workmanship.

3.4 Warranty and Maintenance.

PART 1 – GENERAL

1.1 Measurement and Payment Procedures

.1 Payment for the seeding of Sites 1 to 5 will be made on the basis of the Price per Unit Bid for Sites 1 to 5 – Seeding in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs for the supply, placement, warranty, maintenance, and all other items necessary for successful completion of seeding in all areas of the decommissioned highway alignment, cut slopes, access development, any disturbed areas, and all other areas requiring seeding as shown on the Contract Drawings and as detailed in these specifications.

.2 Measurement for Payment for Sites 1 to 5 – Seeding will be made by Lump Sum based on the percentage of the work completed and accepted by the Departmental Representative for each site.

The width of the seeding will not be measured or considered during the survey of the length of seeded decommissioned highway.

1.2 Product Data

.1 Provide product data, prior to seeding for:

.1 Seed:

.1 Shipping Bill: issued by supplier of material, identifying manufacturer and supplier, material, and net mass or volume in each container.

1.3 Scheduling

.1 Schedule seeding to coincide with completion of any scarification, furrowing, excavations, and restoration of access development areas.

1.4 Product Handling and Storage

.1 Deliver and store seed in original containers individually labeled in accordance with "Seeds Regulations" and indicating name of supplier.

.2 Protect all product as required during transportation and storage.

.3 Remove from project area, product that has become wet or otherwise damaged during transportation or storage, or does not meet requirements specified.

PART 2 – PRODUCTS

2.1 Materials

.1 Seed: "Canada pedigreed grade" in accordance with Government of Canada Seeds Act and Regulations.

.1 Grass Mixture: "Certified", Canada No. 1 seed for common cultivars in accordance with Government of Canada Seeds Act and Regulations and shall conform to the following:

Table 32 93 21 – 01: Grass Seed Mix

% By Weight	Species
30%	Creeping Red Fescue
20%	Slender Wheatgrass
10%	Alsike Clover
10%	Timothy
10%	Canada Bluegrass
15%	Smooth Brome Grass
5%	Sheep Fescue

2.2 Equipment

.1 Use electric cyclone seeders mountable on ATV capable of broadcasting seed at the required application rate.

.2 All equipment shall be cleaned prior to delivery to site.

PART 3 – EXECUTION

3.1 Preparation	.1	Obtain Departmental Representative's review and acceptance of scarification or furrowing of areas to be seeded prior to beginning seeding.
3.2 Application	.1	Apply seeding in all areas of decommissioned highway scarification, cut slopes, access development, areas disturbed by construction, and other areas requiring seeding as detailed in these Contract Specifications, Contract Drawings, or as directed by the Departmental Representative.
	.2	Application rate shall be between fifteen and twenty kilograms per hectare.
	.3	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, or other adverse conditions unless otherwise preapproved by the Departmental Representative.
3.3 Workmanship	.1	Do not seed onto structures, signs, guardrails, and other surfaces identified by the Departmental Representative as not requiring seeding.
	.2	Clean-up immediately, any material or area seeded where not intended, to the satisfaction of Departmental Representative.
3.4 Warranty and Maintenance	.1	The Contractor shall warranty the seeding free of defects in accordance with General Conditions (GC3.13), for one full growing season or 12 months from the date of Substantial Performance, whichever is greater.
	.2	It is the responsibility of the Contractor to complete maintenance as the Contractor deems necessary on the seeding such that a 90% survival rate is achieved at the end of the warranty period.
	.3	If at the end or prior to the end of the warranty period a 90% survival rate is not achieved the Contractor shall, at his own expense, replace seeding not surviving or in poor condition except when the loss or damage can be proven to be due to abnormal weather, or causes beyond the control of the Contractor.
	.4	An end-of-warranty inspection will be conducted by the Departmental Representative.

END OF SECTION

R.106985.001
Appendix A

Project Specific Health and Safety Plan Template

<insert company logo/information>

PROJECT SPECIFIC HEALTH AND SAFETY PLAN

<Name of Project>
<PROJECT No.>

<Date>

<Rev. Number>

Prepared for:

Public Services and Procurement Canada
Services publics et Approvisionnement Canada

The Contractor shall ensure that this document is available on site for the project duration and available to all workers.

<This template is provided to aid the Contractor in preparing their project specific health and safety plan according to the contract requirements. It is the responsibility of the Contractor to ensure that all required information is presented in their project specific health and safety plan to meet the requirements of the project specifications and WorkSafeBC's health and safety obligations. The Contractor shall review all aspects of this template and make changes and additions as needed to suit the project requirements.>

Table of Contents

Appendix 7: Key Member Resumes and Safety Certifications

Appendix 8: Local Hospital Maps

Appendix 9: Safe Work Procedures

1. Contractor Safety Policy / Statement

<A statement about the Contracting companies policy regarding health and safety on the project site.>

2. Project Health and Safety Compliance Obligations

The submission of the Project Specific Health and Safety Plan indicates <*Contracting Company Name*> commitment to comply with all health and safety related obligations from the following:

- All procedures, rules and policies from this Project Specific Health and Safety Plan
- WorkSafeBC Requirements
- Project Specifications
- *<Other, add any other requirements that apply>*

3. Definition of Responsibilities

<A clear description of the health and safety related responsibilities for key members of the Contractor's project team. The table below is provide to assist with presenting this information.>

Position	Name(s)	Description of Health and Safety Responsibilities
Project Manager		
Project Superintendent		
Health and Safety Coordinator		
First Aid Attendant(s)		
Supervisors		
Workers		
Sub-Contractors		

4. General Project Safety Rules

<*A list of general construction safety rules and regulations that the company will adhere to. Additionally, a description of the disciplinary action procedure for disregard or negligence of the provide rules.****>***

5. Health and Safety Risks / Hazards and Engineering and Administrative Control Measures

5.1 Workplace Hazard Assessment – Health and Safety Risks Identified

<Summary of health risks and safety hazards resulting from hazard assessment analysis of the circumstances of each "workplace" including:

- *The number of workers who may require first aid at any time;*
- *The nature and extent of the risks and hazards in the workplace;*
- *The types of injuries likely to occur;*
- *Any barriers to first aid being provided to an injured worker or member of the public; and*
- *The time that may be required to obtain transportation and to transport an injured worker to medical treatment>*

<Statement from the Contractor indicating the hazard rating assignment (low, moderate, or high) for each "workplace" as defined by WorkSafeBC and applicable to the application of G3.16 of WorkSafeBC Occupational Health and Safety Regulations>

5.2 Hazards Materials

<List of hazardous materials to be brought onsite as required by the work>

5.3 Job Specific Safe Work Procedures

<Review your company safe work procedures to ensure that there are procedures for all tasks relevant to the project. In the case that your company does not have an existing safe work procedure for a specific task please provide this procedure in appendix 8.>

All job specific safe work procedures are available in <*Contracting Company Name*> corporate Health and Safety Plan and are available to all employees on site and the PSPC team upon request. Procedures that are not available in <Contracting Company Name> corporate Health and Safety Plan can be found in Appendix 8. *<remove last sentence if not required>.*

5.4 Required PPE and Training

<Identification of the PPE and description of the training required for any members of the contractor's project team and PSPC's team visiting the site.>

5.5 First Aid Requirements

<Identification of the First Aid Requirements for each "workplace" in compliance with WorkSafeBC and project requirements as follows:

.1 Estimated travel time from the "workplace" to the nearest hospital.

.2 Maximum numbers of workers at any time per "workplace".

.3 The first aid supplies, equipment, and facilities which will be available at each "workplace".

.4 The first aid attendant certificate level onsite at each "workplace".

.5 The first aid transportation which will be used on the project (ie. ETV), if required by Contractor or WorkSafeBC requirements. Details of were the ETV will be located / parked relative to the locations of the first aid attendant(s) during the work.>

6. Inspection Policy and Procedures

<*A description of the site inspection policy and procedure. The procedure should include identification of investigator, completion of a site inspection form and how the findings of the inspection will be presented to the remainder of the construction team.***>**

7. Incident Reporting and Investigation Policy

<*A description of the procedure completed following an incident occurring on site. The procedure should include the completion of an incident/accident report (template to be provided by the contractor in Appendix 5)***>**

8. Occupational Health and Safety

8.1 Representative/Committee Procedures

<A description of the procedures that will be completed regularly throughout the project to keep the project site safe for all contractor's personnel, travelling public and PSPC's project team members.>

8.2 Meetings

<A description of the health and safety meetings that will be completed throughout the project. This section could include the frequency of meetings and the agenda that will be followed.>

8.3 Communications and Record Keeping Policies

<A description of the policies related to health and safety communications and record keeping. This needs to include a description of the files that will be kept and how communication regarding health and safety will proceed with the entire project team, including the owner's team, the prime contractor's team and all sub-contractors.>

9. Emergency Contact Information

9.1 Key Project Contact Numbers

Contractor's Team			
Name and Position	**Office Number**	**Cell Phone Number**	**Sat Phone (If Used)**
Project Superintendent			
Health and Safety Coordinator			
First Aid Attendant(s)			
Key Sub-Contractor Representatives			
PSPC Team			
Name and Position	**Office Number**	**Cell Phone Number**	**Satellite Phone**
George Smith – Contract Asset Performance Manager, Alaska Highway	250.774.6956	250.321.0174	600.700.0131
XXX – Onsite Inspection and QA Representative			

9.2 Emergency Response Agencies/Assistance

*<Note: The contractor is responsible for verifying that all the numbers listed below are correct and up to date and that all required numbers are presented. Please remove any emergency numbers that are not in the project vicinity. **911** is not available in the Fort Nelson Northern Rockies Regional Municipality. Contractor shall confirm if **911** is available in the project location. If not available in project location, make note in table as not available at project site>*

Agency/Assistance	Contact
RCMP	911
Local Police – Fort Nelson (emergency)	250.774.2777
Local Police – Fort Nelson (non-emergency)	250.774.2700
Local Police – Fort St. John (emergency)	250.787.8100
Local Police – Fort St. John (non-emergency)	250.787.8140
Local Police – Watson Lake (emergency)	867.536.5555
Local Police – Watson Lake (non-emergency)	867.536.2677
BC Ambulance (BC Emergency Health Services)	911 / 1.800.461.9911 / 250.374.5937
Ambulance – Fort Nelson	250.774.2344
Ambulance – Fort St. John	250.785.5559
Ambulance – Watson Lake	867.536.4444
S.T.A.R.S Ambulance	1.888.888.4567
Hospitals	
Local Hospital – Fort Nelson	250.774.8100
Local Hospital – Fort St. John	250.262.5200
Local Hospital – Watson Lake	867.536.4444
Fire and Rescue	911
Fire and Rescue – Fort St. John	250.785.4333
Fire and Rescue – Fort Nelson (emergency)	250.774.2222
Fire and Rescue – Fort Nelson (non-emergency)	250.774.3955
Fire and Rescue – Watson Lake (emergency)	867.536.2222
Fire and Rescue – Watson Lake (non-emergency)	867.536.8008
BC Forest Fire Reporting	1.800.663.5555 / *5555 (Cell)
Yukon Forest Fire Reporting	1.888.798.3473
WorkSafeBC Work Site Emergency 24 hr	1.888.621.7233
WorkSafeBC Regional Office	1.800.663.4630 / 250.785.1283
HazMat 24 hr	1.800.663.3456
BC Environmental - PEP 24 hr	1.800.663.3456
BC Environmental Regional Office	250.787.3411
BC Hydro – Power (emergency) 24 hr	911
BC Hydro – Power (non-emergency)	1.800.224.9376
Fortis BC – Natural Gas Emergencies 24 hr	1.800.663.9911
Northwestel – Corporate Office (Whitehorse)	867.668.5300
BC One Call	1.800.474.6886 / *6868 (Cell)
Poison Control	1.800.567.8911 / *311 (Cell)
Commercial Vehicle Inspection and Standards (CVSE)	
Reporting Safety Violations 24 hr	1.888.775.8785
Peace River Regional Office	250.784.2363

10. Wildlife Management

<Identify any training and processes for project members regarding wildlife encounters and prevention.>

11. Fire Safety, Reporting and Evacuation

<Identify any fire safety policies, project specific reporting and evacuation procedures.>

12. Contractor's Team Review and Acceptance

This document has been prepared through discussions with the Contractor's entire project team *<including sub-contractors (if applicable)>*, and will be enforced by the contractor for the duration of the project. By signing this document, the signee confirms that they have reviewed the document and agree with its contents.

Project Manager

Name	Signature	Date

Site Superintendent

Name	Signature	Date

Health and Safety Manager

Name	Signature	Date

<Major Sub-Contractor Representatives>

Name	Signature	Date

<Major Sub-Contractor Representatives>

Name	Signature	Date

Appendix 1: Preliminary Hazard Assessment Form

PRELIMINARY HAZARD ASSESSMENT FORM

Project Number:	R.106985.001
Location:	Km 612.70 – 966.90, Alaska Highway, BC
Date:	Summer / Fall 2021
Name of Departmental Representative:	Alex Taheri
Name of Client:	Public Services and Procurement Canada
Name of Client Project Co-ordinator	George Smith PH: 250-774-6956

Site Specific Orientation Provided at Project Location Yes ☐ No ☐

Notice of Project Required Yes ☐ No ☐

NOTE:
PSPC REQUIRES A Notice of Project FOR ALL CONSTRUCTION WORK RELATED ACTIVITIES

NOTE:
OHS law is made up of many municipal, provincial, and federal acts, regulations, bylaws and codes. There are also many other pieces of legislation in British Columbia that impose OHS obligations.

Important Notice: This hazard assessment has been prepared by PSPC for its own project planning process, and to inform the service provider of actual and potential hazards that may be encountered in performance of the work. PSPC does not warrant the completeness or adequacy of this hazard assessment for the project and the paramount responsibility for project hazard assessment rests with the service provider.

TYPES OF HAZARDS TO CONSIDER	Potential Risk for:				COMMENTS
Examples: Chemical, Biological, Natural, Physical, and Ergonomic	PSPC, OGD's, or tenants		General Public or other contractors		Note: When thinking about this pre-construction hazard assessment, remember a **hazard** is anything that may cause harm, such as chemicals, electricity, working from heights, etc; the **risk** is the chance, high or low, that somebody could be harmed by these and other hazards, together with an indication of how serious the harm could be.
Listed below are common construction related hazards. Your project may include pre-existing hazards that are not listed. Contact the Regional Construction Safety Coordinator for assistance should this issue arise.	**Yes**	**No**	**Yes**	**No**	

Typical Construction Hazards					
Concealed/Buried Services (electrical, gas, water, sewer etc)					
Slip Hazards or Unsound Footing					
Working at Heights					
Working Over or Around Water					
Heavy overhead lifting operations, mobile cranes etc.					
Marine and/or Vehicular Traffic (site vehicles, public vehicles, etc.					
Fire and Explosion Hazards					
High Noise Levels					

Excavations					
Blasting					
Construction Equipment					
Pedestrian Traffic (site personnel, tenants, visitors, public)					
Multiple Employer Worksite					Example: Contractor working in an occupied Federal Employee space.

Electrical Hazards					**Comments**
Contact With Overhead Wires					
Live Electrical Systems or Equipment					
Other:					
Physical Hazards					
Equipment Slippage Due To Slopes/Ground Conditions					
Earthquake					
Tsunami					
Avalanche					
Forest Fires					
Fire and Explosion Hazards					
Working in Isolation					
Working Alone					
Violence in the Workplace					
High Noise Levels					
Inclement weather					
High Pressure Systems					
Other:					
Hazardous Work Environments					
Confined Spaces / Restricted Spaces					Review and provide confined space assessment(s) from PSPC or client confined space inventories. Refer to PSPC Standard on Entry into Confined Spaces. Contact the Regional Construction Safety Coordinator.
Suspended / Mobile Work Platforms					
Other:					
Biological Hazards					
Mould Proliferations					
Accumulation of Bird or Bat Guano					
Bacteria / Legionella in Cooling Towers / Process Water					
Rodent / Insect Infestation					
Poisonous Plants					
Sharp or Potentially Infectious Objects in Wastes					
Wildlife					
Chemical Hazards					
Asbestos Materials on Site					If “yes” a pre-project asbestos survey report is required. Provide

					Contractor with DP – 057 ELF Form 16 “Contractor Notification and Acknowledgement”
Designated Substance Present					If “yes” a pre-project designated substance survey report is required.
Chemicals Used in work					
Lead in paint					If “yes” a pre-project lead survey report is required.
Mercury in Thermostats or Switches					If “yes” a pre-project mercury survey report is required.
Application of Chemicals or Pesticides					
PCB Liquids in Electrical Equipment					
Radioactive Materials in Equipment					
Other:					
Contaminated Sites Hazards					
Hazardous Waste					
Hydrocarbons					
Metals					
Other:					

Security Hazards					**Comments**
Risk of Assault					
Other:					
Other Hazards					

Other Compliance and Permit Requirements[1]	**YES**	**NO**	**Notes / Comments[2]**
Is a Building Permit required?			
Is an Electrical permit required?			
Is a Plumbing Permit required?			
Is a Sewage Permit required?			
Is a Dumping Permit required?			
Is a Hot Work Permit required?			
Is a Permit to Work required?			Mandatory for ALL AFD managed work sites.
Is a Confined Space Entry Permit required?			Mandatory
Is a Confined Space Entry Log required			Mandatory for all Confined Spaces
Discharge Approval for treated water required			

Notes:

(1) Does not relieve Service Provider from complying with all applicable federal, provincial, and municipal laws and regulations.

(2) TBD means To Be Determined by Service Provider.

Service Provider Acknowledgement: We confirm receipt and review of this Pre-Project Hazard Assessment and acknowledge our responsibility for conducting our own assessment of project hazards, and taking all necessary protective measures (which may exceed those cited herein) for performance of the work.			
Service Provider Name			
Signatory for Service Provider		**Date Signed**	
RETURN EXECUTED DOCUMENT TO PSPC DEPARTMENTAL REPRESENTATIVE PRIOR TO ANY WORK COMMENCING			

Appendix 2: Confirmation of Prime Contractor's Main Responsibilities Under WorkSafeBC Occupational Health and Safety Regulations and Worker's Compensation Act Form

Public Services and Procurement Canada | Services publics et Approvisionnement Canada

Confirmation of Prime Contractor's Main Responsibilities Under the WorksafeBC Occupational Health and Safety Regulations and *Worker's Compensation Act*

Name of Project: Deactivation of Former Alignments, Km 612.70 to Km 966.90, Alaska Highway, BC

Owner: Public Services and Procurement Canada

Contractor: _____

Consulting Engineer: Tetra Tech

	YES	NO
1.The Contractor acknowledges appointment as Prime Contractor on the construction project noted below	☐	☐
2. The name of the Prime Contractor's Qualified Coordinator of occupational health and safety activities for this project has been submitted to the Owner and is as shown below.	☐	☐
3. The Prime Contractor understands that in any conflict of directions, WCB OH&S Regulations and/or the Worker's Compensation Act shall prevail.	☐	☐
4. The Prime Contractor understands and will direct that all supervisors/coordinators must immediately report any apparent conflict as described above.	☐	☐
5. The Prime Contractor agrees that their supervisor shall immediately notify the consulting Engineer's representative of any reported conflict.	☐	☐
6. The Prime Contractor has requested and received information from the Owner regarding any known hazards to the health and safety of persons pre-existing at the workplace.	☐	☐
7. The Prime Contractor has conducted an inspection of the workplace to verify the presence of any hazards.	☐	☐
8. The Prime Contractor will communicate hazards information to any persons who may be affected and ensure that appropriate measures are taken to effectively control or eliminate the hazards.	☐	☐
9. The Prime Contractor accepts that written documentation such as notes, records, inspections, meeting minutes, etc., on all health and safety issues must be available upon request to the PSPC departmental representatives and/or to a WCB officer at the workplace.	☐	☐
10. The Prime Contractor will confirm that all workers are suitably trained and competent to perform the duties for which they have been assigned.	☐	☐
11. The Prime Contractor confirms that safety orientation of all new workers will be conducted.	☐	☐
12. The Prime Contractor's written Safety Program has been provided to the Owner's representative.	☐	☐
13. The Prime Contractor confirms that meetings to exchange information on any safety issues, concerns, hazards or safety directives will be conducted weekly or more often if required.	☐	☐
14. The Prime Contractor confirms that before the commencement of work, crews will attend a daily crew safety meeting.	☐	☐
15. The Prime Contractor confirms that their supervisor has assessed and will coordinate the workplace first-aid requirements	☐	☐
16. The Prime Contractor confirms that the procedure to transport injured workers is established	☐	☐

Prime Contractor Representative's

Name:_____

Title:_____ Signature:_____

Date:_____

Prime Contractor's OH&S Coordinator

Name:_____

Title:_____ Signature:_____

Date:_____

Canada

Appendix 3: Contractor's COVID-19 Safe Work Plan

<provided by the Contractor>

Appendix 4: Contractor Daily Toolbox Meeting Form

<provided by the Contractor>

Appendix 5: Site Safety Orientation Form

<provided by the Contractor>

Appendix 6: Incident/Accident Report Template

<*provided by the Contractor*>

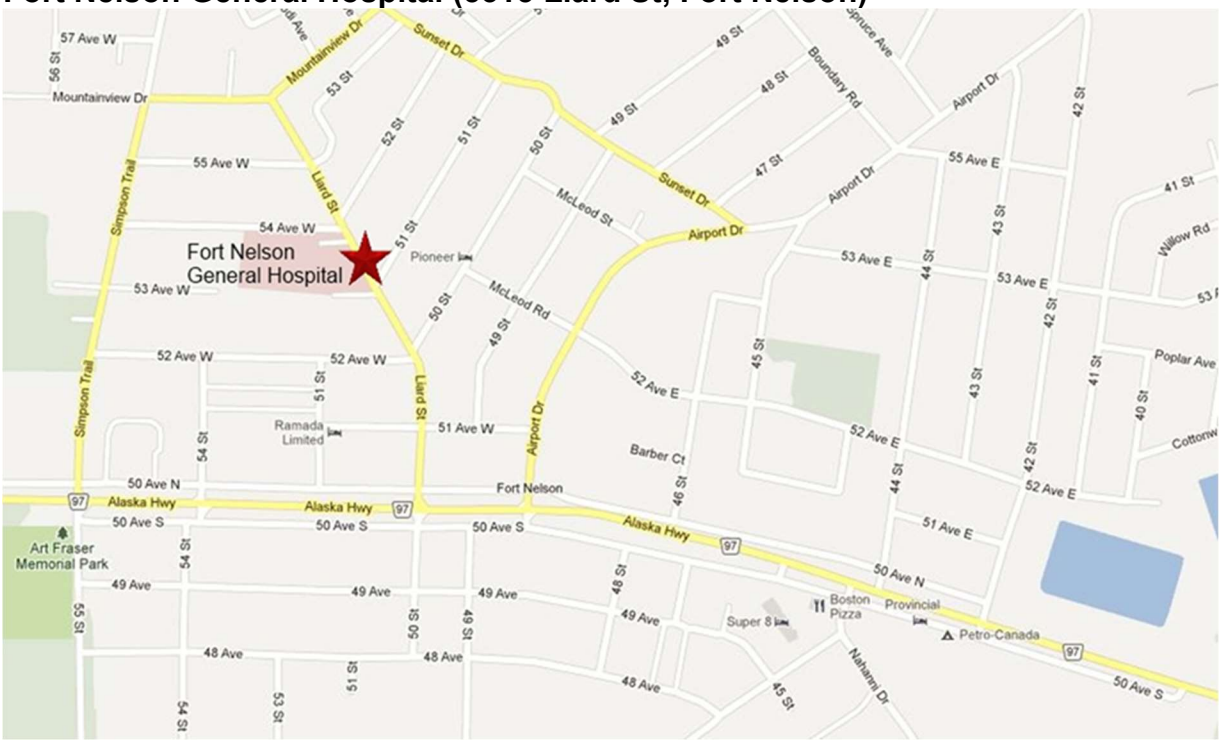
Appendix 7: Key Member Resumes and Safety Certifications

<*provided by the Contractor*>

Appendix 8: Hospital Maps

<remove unnecessary maps>

Fort Nelson General Hospital (5315 Liard St, Fort Nelson)



Directions

<If Project Site South of Fort Nelson>

<Head Northbound on the Alaska Highway

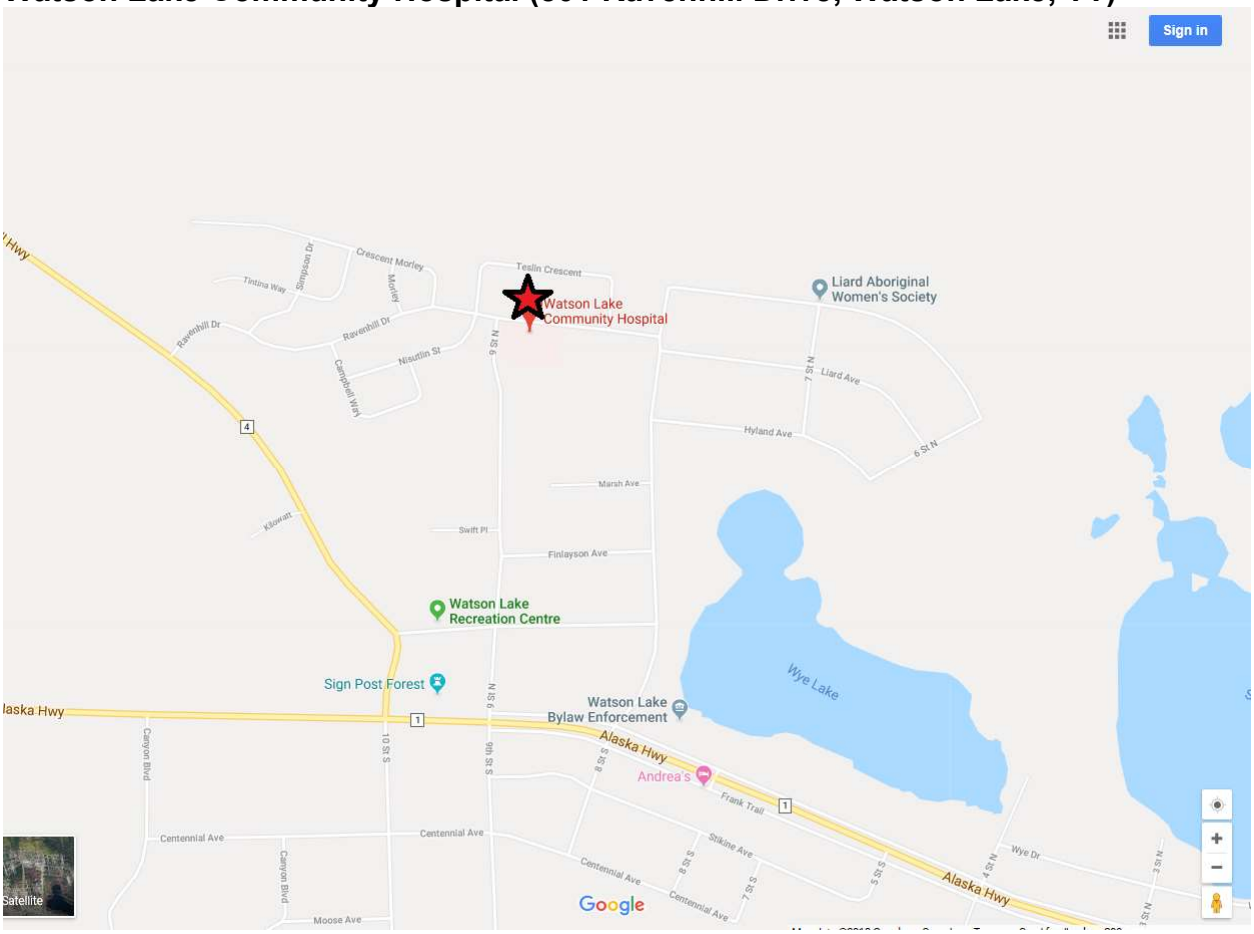
Turn Right onto Liard St.>

<If Project Site North of Fort Nelson>

<Head Southbound on the Alaska Highway

Turn Left onto Liard St.>

Watson Lake Community Hospital (801 Ravenhill Drive, Watson Lake, YT)



Directions

Head Northbound on the Alaska Highway

Turn Right onto 9 St N.

Turn Right onto Ravenhill Dr.

Appendix 9: Safe Work Procedures <*if required*>

R.106985.001
Appendix B

Written Communication / Document Management Protocol

Deactivation of Former Alignments, Km 612.70 to 966.90, Alaska Highway Project: Written Communication / Document Management Protocol

Communication for the Deactivation of Former Alignments, Km 612.70 to 966.90, Alaska Highway Project (R.106985.001) will occur using CentraCollab, email, telephone, and through the delivery of hardcopy documents (if requested by PSPC). CentraCollab will act as the primary communication and document management tool throughout the project. It will act as the central file storage location for all project documents, allows for retrieval of these documents at any time during the project by group members and is capable of storing and sharing large electronic files.

Email and telephone may be used for general communication, transitory information and other communications where a record is not considered necessary (e.g. day-to-day coordination, in-depth discussion of project elements, etc.). Email shall not be used for the submission of deliverables or other project documentations. Email contact information for project members is provided in the project contact list.

Hardcopy documents are to only be provided if specifically requested by PSPC. The Departmental Representative will provide the Contractor with the necessary address information at the time of the request. Material samples shall be provided directly to the testing lab specified by the Departmental Representative for Quality Assurance purposes or be delivered to the project site.

CentralCollab

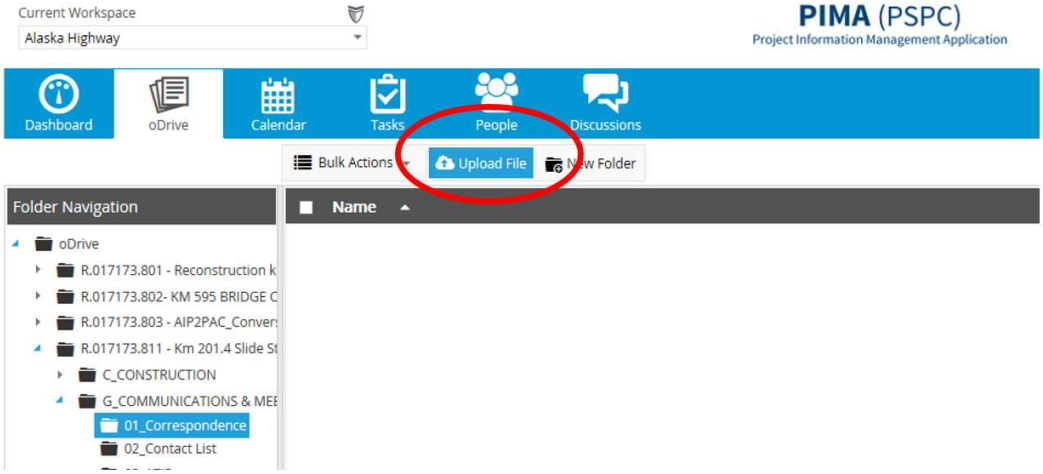
CentralCollab is a web-based collaborative platform that is used to submit and store project documentation. It is the responsibility of the submitting party to upload documents to CentralCollab in the correct folder and with the correct file naming convention.

CentralCollab can be accessed at the following address: https://app.centralcollab.com/
The contractor is encouraged to have CentralCollab accounts for project team members who are involved with accessing or posting project documentation. Accounts can be created by PSPC throughout the project by contacting the PSPC project team.

Project documentation includes but is not limited to: submittals, deliverables, drawings, reports, meeting minutes, project schedules, notifications, contemplated change notices, change orders, etc.

1 Uploading to CentralCollab

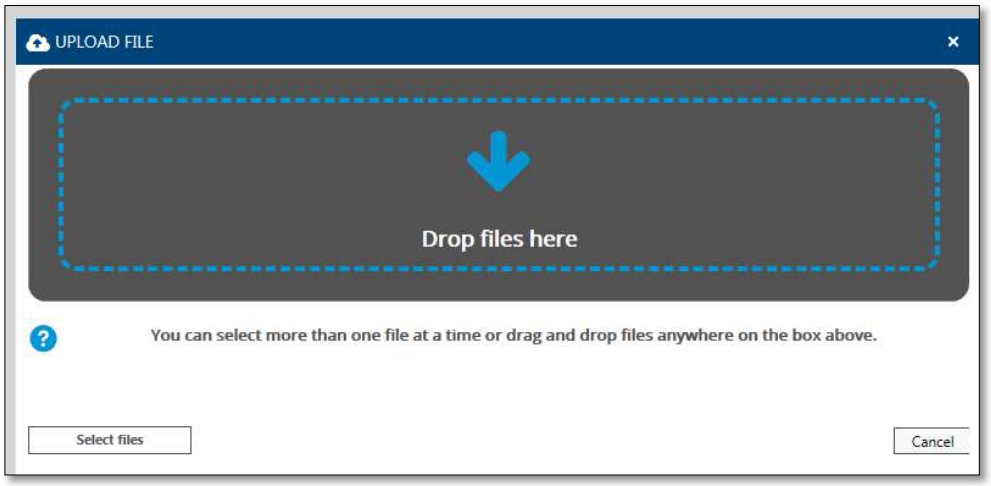
Upload individual documents to the appropriate folder on CentralCollab. For folder names, refer to Table 2 of this document.
To add files, click on **Upload File**:



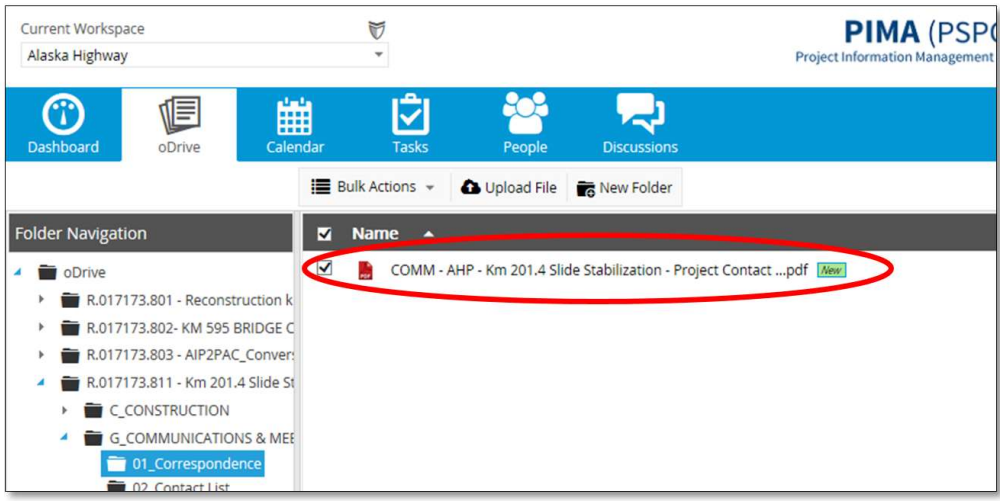
Canada

Drag and drop your document(s), then press Save.

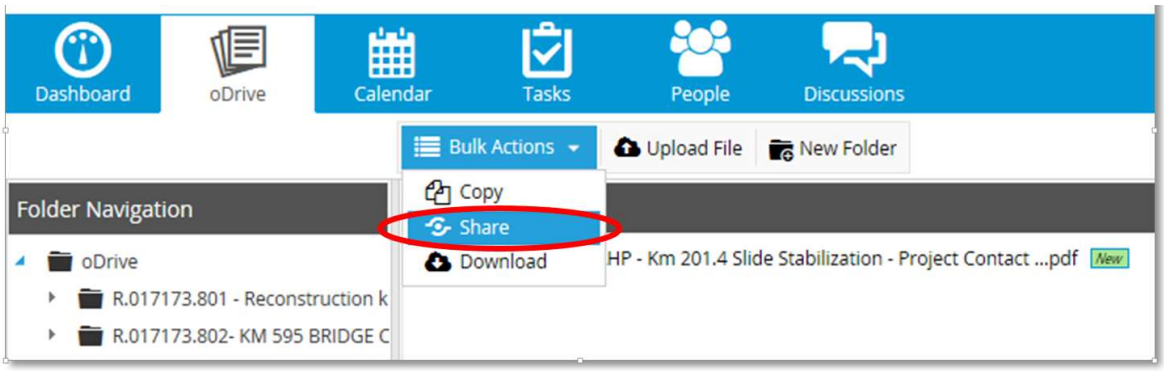
NOTE: Make sure you have named your document correctly, as explained in Section 2.2 CentralCollab File Naming Convention.



Once saved, you will see your new document (circled below), but no one else will be notified until you share it.

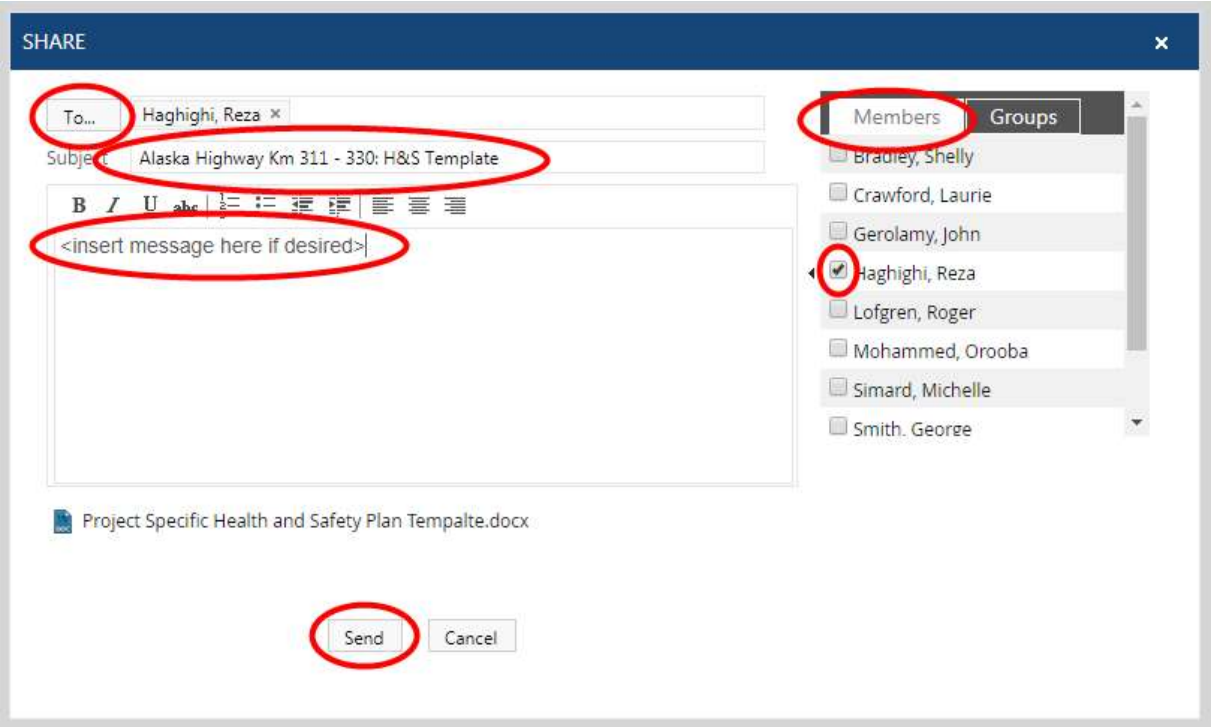


To **notify members** of the new document, check the box next to the document √ then click **Bulk Actions > Share** :

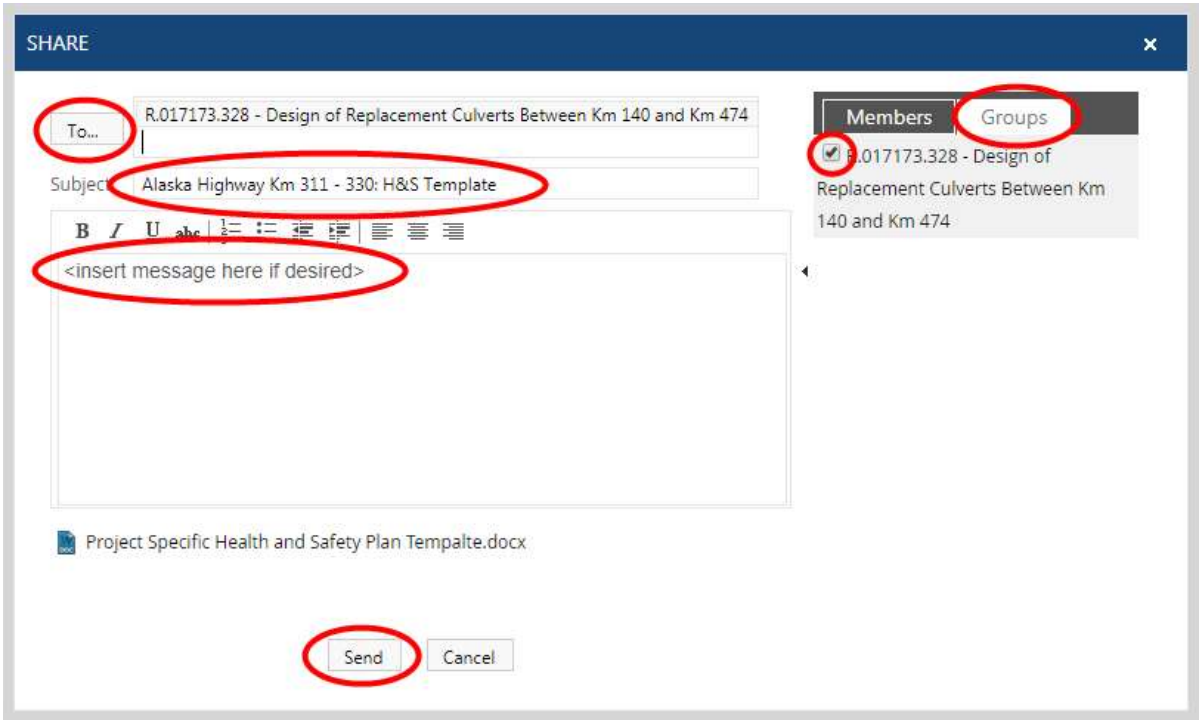


Once the new window opens, select **To,** and then select the **Members** tab and all Members from whom you wish to notify (as directed during the pre-constriction meeting or otherwise by PSPC) or select the **Groups** tab and select the pre-set group:

Example – Notification Members:



Example – Notification Pre-set Group (if available):



Insert a message related to the uploaded submittal in the subject line and if desired in the form before sending. Then press **Send**. An email with the link to the document will then provide to all individuals notified with a copy of this email provided to the sender.

2. CentralCollab File Naming Convention:

All CentralCollab users shall upload files named according to the following convention:

Doc Type – AHP – Km XXX Project – File Description or Document Name – YYYY MM DD

Example file names:

- Plan – AHP – Km XXX Project – Quality Management Plan – 2017 02 15
- Schedule – AHP – Km XXX Project – Project Schedule – 2017 02 20
- Finance – AHP – Km XXX Project – Progress Payment 01 – 2017 02 26

The file description should clearly identify the document. The Document type should be selected from the options provided in Table 1:

Table 1: Document Type Options	
Document Type Acronym	**Description**
Comm	Communication related docs; correspondence, letters, memos, briefing notes, contact lists
Contract	Request for Information (RFI), Contemplated Change Notices (CCN), Change Orders (CO)
Email	Emails
Draw	Drawings and site plans
Finance	Project financial documentation
Image	All non-drawing images, photos etc.
Minutes	Meeting minutes, agendas, and associated documents
Plan	Planning documents, BMPs, SOPs, workplans
Report	Reports of all types- most frequently used for consultant deliverables
Schedule	Any project related schedules
Specs	Specs and terms of references
Other	Other document types, project specific, one-off documents

3. CentralCollab Folder Arrangement:

All files must be uploaded to the correct folder in CentralCollab. To aid in the filing of documents, a listing of common filing / folder locations has been prepared as shown in Table 2.

Table 2: Common Document Filing / Folder Locations	
Folder Names	**Description of Typical Documents**
CentralCollab folder: R.106985.001 – Km 612.70 to 966.90 Project > C_CONSTRUCTION > Contract >	
01_Contract	Contract Documents (typically related to documents posted to Buyandsell.gc.ca)
02_Request for Information	Request for Information from Contractor
03_Permits	Permits obtained by Contactor or PSPC
04_Site Instructions	Site Instructions (typically generated by PSPC)

Table 2: Common Document Filing / Folder Locations	
Folder Names	**Description of Typical Documents**
05_CCN	Contemplated Change Notice forms generated by PSPC and pricing responses from Contractor
06_Change Orders	Change Orders (typically generated by PSPC)
07_Progress Payments	Progress Payment documents (as instructed by PSPC)
08_Field Reviews	Field Review forms (typically generated by PSPC)
09_Health & Safety	Health and Safety related documentation including Project Specific Health and Safety Plan, Tailgate Safety Meeting documentation, and other Health and safety related submittals.
10_Testing Services	Testing Reports completed by Contractor's QC
11_Environmental Plan	Environmental Protection Plan and other environmental related documents
12_Environmental Reporting	Environmental monitoring reports generated by the Contractor's environmental monitor
13_Shop Drawings	Shop drawing submissions provided by the Contractor as required by the contract specifications
14_Deliverables	Contractor Deliverables as required by the contract specifications throughout the project including such items as: • Project Schedule • Traffic Management Plan • Construction Staging Drawings • Culvert Mill Certificates • Other supplier information as needed
15_Deficiency List	Deficiency lists (typically generated by PSPC)
16_Certificate of Substantial Performance	Certificate of Substantial Performance as generated by PSPC
17_Certificate of Completion	Certificate of Completion as generated by PSPC
18_Claims	Documentation related to any claims on the project
19_Contract Close out	Documentation related to contract closeout including closeout submittals such as: • As-built Surveys • As-built Redline Drawing Mark-ups • Warranties • Instruction Manuals
20_Advisory	Advisories in response to RFIs or other notices as generated by PSPC.
21_Quality Management	Quality control and Quality Assurance documentation generated by the Contractor and PSPC

Table 2: Common Document Filing / Folder Locations	
Folder Names	**Description of Typical Documents**
	• Quality Management Plan • Check Sheets • Daily Reports • NCR's
CentralCollab folder: R.106985.001 – Km 612.70 to 966.90 Project > G_COMMUNICATIONS & MEETINGS >	
01_Correspondence	Emails and other correspondence requiring posting to CentralCollab, generated by the Contractor or PSPC
02_Contact List	Project contact list generated by PSPC
03_ATIP	
04_Communications Plan	Communication plan generated by PSPC
05_Supporting Documents	
06_Meeting Minutes	Meeting minutes as generated by PSPC
07_Inquiries	
08_Public Notices	
09_Other	
CentralCollab folder: R.106985.001 – Km 612.70 to 966.90 Project > Z_BASE DATA>	
01_Base Data	Digital drawings and other documentation required by the Contractor (typically generated by PSPC)

Typical folders Users are encouraged to create sub-folders and categorize documents of similar or related data.

Example sub-folders:

- 09_Health & Safety > **Tailgate Meetings > February**
- 14_Deliverables > **Project Schedule**
- 21_Quality Management > **Check Sheets > February**

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Appendix C

On-site Construction Start-up Form

On-site Construction Start-up Form

Project Name:	
Project Number:	
Departmental Representative:	Ph:
Contractor:	
Contractor Representative:	Ph:

The Contractor or its subcontractors shall not perform any on-site work until they receive a completed version of this form which has been signed by PSPC's Departmental Representative.
PSPC reserves the right to refuse payment for any on-site work performed prior to the receipt of the completed and signed form.
The list below is meant to be a guide and is not intended to be a comprehensive list of required submittal items for the project. Refer to Contract Documents and Contract Specifications for a Complete List.

Submission Item	**Reviewed & Accepted by PSPC**	**Date** (yyyy-mm-dd)	**Comments / Exclusions**
Contract, Bonding and Insurance	☐		
Health & Safety Plan	☐		
Traffic Management Plan	☐		
Environmental Protection Plan	☐		
Project Construction Schedule	☐		
Quality Management Plan	☐		
Other:	☐		
Other:	☐		

Below to be completed by the Departmental Representative and returned to the Contractor

Has the Contractor submitted all required documents for construction work to commence? ☐ Yes ☐ No

Have all listed documents required prior to construction commencement been accepted by PSPC? ☐ Yes ☐ No

Comments:_____

_____

_____

_____

Name of Departmental Representative: _____

Signature: _____ Date: _____

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Appendix D

Progress Payment Submittal Form

Progress Payment Submittal Form

Project Name:	
Progress Payment Number:	
Departmental Representative:	Ph:
Contractor:	
Contractor Representative:	Ph:

This form, completed and signed by the Contractor's Representative, shall be submitted with all documentation listed below for each progress payment request.
Upon receipt of this form and all documents, PSPC will commence review of the progress payment request in accordance with General Conditions 5 – Terms of Payment.
The list below is meant to be a guide and is not intended to be a comprehensive list of required submittal items for each progress payment. PSPC may request additional documentation not listed below.

Submission Item	Submitted	Comments
Progress Payment	☐	
Statutory Declaration	☐	
WorkSafeBC Clearance Letter	☐	
Project Schedule (with baseline tasks and updates showing completion dates and % complete)	☐	
Survey Details for each quantity claimed (See Appendix E)	☐	
Other:	☐	
Other:	☐	

Prime Contractor Representative:

Name:_____

Title:_____ Signature:_____

Date:_____

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Appendix E

Measurement for Payment Survey Details Form

Measurement for Payment Survey Details Form

Project Name:	
Progress Payment Number:	

This form shall be submitted with the progress payment request form to identify how the surveyed quantities for specific line items were obtained.

<Note: remove the examples below and add lines as needed to provide details for every item included in the progress payment measured by survey. Provide individual entries for each task (ex: a line for gravel placed at rest stop A and a separate line for gravel placed at rest stop B). A progress payment line item may have more than one entry – the total entries for a particular line item shall equal the quantity shown on the progress payment)>

Progress Payment Line Item	Specification Defining Payment Requirements	Work Description	Claimed Quantity for Payment	File Name(s) (include point files and break line files names to be compared to compute quantity)	Additional Details
13	*31 24 14*	*Excavation at Km 282 Rest Stop Sta. 282+020 to Sta. 282+070*	*1400 m^3*	• *Km 282 Rest Stop – OG.csv* • *Km 282 Rest Stop – OG Breaklines.dxf* • *Km 282 Rest Stop – Bottom Excavation.csv* • *Km 282 Rest Stop – Bottom Excavation Breaklines.dxf*	*In the provided csv files the difference between the 2 surfaces "OG" and "As-built" is equal to 1400 m^3*
14	*32 11 19*	*Crushed Base Gravel at Km 282 Rest Stop Sta. 282+020 to Sta. 282+070*	*800 m^3*	• *Km 282 Rest Stop – Bottom Excavation.csv"* • *Km 282 Rest Stop – Bottom Excavation Breaklines.dxf* • *Km 282 Rest Stop – As-Built Survey Data.csv* • *Km 282 Rest Stop – As-Built Survey Breaklines.dxf*	*In the provided csv files the difference between the 2 surfaces "OG" and "As-built" is equal to 800 m^3*

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Appendix F

Environmental Protection Plan (EPP) – Checklist

Environmental Protection Plan (EPP) — Checklist

Note: This checklist was developed to assist the Contractor in determining and mitigating environmental issues at site. It is considered a generic checklist and it is in the Contractor's best interest to review the PSPC Environmental Management Plan (EMP) or the Environmental Assessment (EA) as supporting documents in the completion of the site Environmental Protection Plan (EPP). This EPP Checklist does not need to be submitted for review by the Departmental Representative.

EPP Framework	Content Requirements	No	Yes	N/A
Project Setting and Site Activities				
Project	A brief description of the project and its location is provided.			
Environmental Sensitivities	Sensitive or protected features that could be impacted as a result of the Contractor's activities are described.			
Site Activities	A scope of work and a list of all construction or related activities to be undertaken during the project are provided.			
Project Schedule and Site Drawings				
Project Schedule	A project schedule is provided, including scheduled shut-downs and restricted work periods due to environmental requirements.			
Site Drawing	One or more site drawings(s) are provided, indicating the site location; site set-up and layout; erosion and sediment controls; in-stream work areas; and environmental sensitivities.			
Potential Environmental Impacts and Controls				
Potential Environmental Issues and Impacts	The potential environmental issues and impacts that may result from the construction activities are described. Environmental Reports (Environmental Assessments; Fish Habitat and Compensation etc.) will be provided to the contractor especially with respect to any in-stream work procedures that will be required. For example, in-stream works will impact fish and fish habitat in the surrounding ecosystem. It is the Contractor's responsibility to ensure the work is completed in a manner that causes the least impact on the ecosystem (see section on Mitigation).			
Permits, Approvals, and Authorizations	List required permits, approvals and authorizations. As applicable, environmental mitigation measures prescribed by regulatory agencies and included in project permits, approvals and authorizations are described. NOTE: DFO, MoE and NWPA approvals and authorizations for in-stream works are PSPC's responsibility however, the Contractor must be aware of the requirements of these approvals/authorizations. Permitting for water withdrawal from the waterbody as part of construction activities is part of the Contractor's responsibility.			
Mitigation Strategies	Procedures, controls or best management practices (BMPs) to prevent or reduce adverse impacts on the environment are provided. All work in BC must adhere to the BC MoE "Standards and Best Practices for Instream Works".			
Erosion and Sediment Control	Erosion and sediment controls are provided, as appropriate for the jurisdiction.			

Waste Management and Hazardous Materials				
Waste Management and Hazardous Materials	Hazardous materials that will be used and/or stored on site are listed. Expected hazardous and non-hazardous waste materials along with proper handling, containment, storage, transportation and disposal methods are listed. As appropriate for the jurisdiction, estimated waste quantities and specific handling procedures are also provided. For example, refueling of equipment will be conducted at least 100m away from any active drainage courses.			
EPP Implementation				
Site Representative	Name(s) and contact details for the person(s) who will be the Contractor's Site Representative(s) are provided.			
Training and Communication	Training and communication details are provided.			
Monitoring and Reporting	Monitoring and inspection procedures, including a schedule of monitoring activities and reporting procedures are provided. For example, this would include downstream monitoring activities for increased siltation during in-stream works.			
Documentation	Information and/or records that will be maintained relating to the EPP and end environmental matters on the project site are described.			
EPP Update	EPP review and update procedures are provided.			
Environmental Emergency Response Procedures				
Environmental Emergency Response Procedures	Potential incidents that may impact the environment are identified, and emergency response procedures to prevent and respond to incidents are provided. An environmental emergency response contact list is also provided.			

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Appendix G

Responsibility Checklist for Authorizations / Approvals / Notifications / Permitting

Responsibility Checklist For Authorizations/Approvals/Notifications/Permitting

Project Title	
Project Description	
Project Type	
Comments	

Issued By	Document Type	Yes	No	N/A
PSPC Responsibility				
Federal				
DFO - Fisheries Act http://laws.justice.gc.ca/en/F-14/	Section 35(2) Authorization for Harmful Alteration Disruption or Destruction (HADD) to fish habitat (eg. new bridges that are not clear span; erosion protection works that extend into the river channel).			
	Section 32 Authorization for Destruction of Fish (when explosives are used). Protects fish from being destroyed except by fishing or as Authorized by DFO.			
	Section 20 Approval – The Need for Safe Fish Passage – Every obstruction across or in any stream where DFO determines it necessary that a fish-pass should exist requires either a fish way or canal around the obstruction.			
	Notification process required for culverts and those works that fall under DFO Operational Statements. Stream Crossings by Roads: • Clear Span Bridges • Temporary Ford Stream Crossing • Ice Bridges and Snow Fills • Bridge Maintenance • Maintenance of Riparian Vegetation in Existing Rights-of Way			
	Section 36 – under this Section of the Fisheries Act the proponent can be FINED resulting from deposition of substances deleterious to fish in waters frequented by fish – this includes release of silt laden waters from construction activities.			

Transport Canada NWPA http://laws.justice.gc.ca/en/N-22/text.html	Section 5(1) Formal Approval for construction of new structures (new bridges, culverts, scour protection).			
	Section 5(2) Work Assessment for work resulting in insignificant impacts on navigability.			
	Section 6(4) Formal Approval for existing structures (existing bridges).			
	Minor Works and Waters Order – This is an amendment to the NWPA that streamlines the federal review process by establishing classes of waters and works (projects) that do not require an Application or Approval through the NWPP because they are "minor" in nature. These would include such "works" as repairs to riprap (no groynes) or "waters" that are not large enough for vessel traffic (ie. Contact Creek). http://www.tc.gc.ca/eng/marinesafety/oep-nwpp-minorworks-menu-1743.htm			
Indian and Northern Affairs Canada – Indian Act	Approval for activities on lands under their jurisdiction. This is addressed under the EA review process in most cases. If the project is exempt from an EA it must be addressed by the PM or ES personnel.			
Migratory Birds Convention Act (MBCA)	Environment Canada is responsible for implementing the *Migratory Birds Convention Act*, which provides for the protection of migratory birds through the *Migratory Birds Regulations*. This is addressed under the EA review process in most cases. If the project is exempt from and EA it must be addressed by the PM or ES personnel.			
ECMP	Has taken over for our old CEAA form. The ECMP Checklist and the Preliminary Identification of Environmental Support Required (PIESR) Form have been developed to ensure that applicable environmental legislation and relevant aspects are identified during a project. The ECMP Checklist replaces the PSPC CEAA Checklist, and will be the mechanism by which project information is submitted to PSPC Environmental Services to determine whether environmental support is required. The ECMP Checklist is located in ELF (Form 183_e). By completing and submitting the ECMP Checklist to Environmental Services, PSPC project managers1 will ensure that their projects are systematically evaluated for compliance with			

[1] Project Manager refers to anyone who leads, manages or delivers a project

	environmental legislation, policies and sustainable development requirements			
Species at Risk Act (SARA) http://www.sararegistry.gc.ca/default_e.cfm	A list of federally-listed species at risk likely to occur at a given subject site must be compiled in order to identify potential impacts & propose mitigation measures for minimizing impacts to these species as a result of project activities. In cases where suitable habitat for a given species exists at/near the project site, mitigation measures are recommended, including avoidance of areas containing said habitat and informing site workers of these issues to prevent incidents.			
First Nations Notifications and Consultations http://clss.nrcan.gc.ca/googledata-donneesgoogle-eng.php	Natural Resources Canada has developed an overlay to be used with Google Earth & Google Maps to identify First Nations lands throughout the country. Notifications of projects within 5 km of such lands and/or directly upstream from such lands should be submitted to the relevant First Nations for a determination of their interest in a given project and/or to request any traditional knowledge they may have to offer.			
Provincial – **Note one submission package for instream works is sent to FrontCounter BC at MoE who then send off to the appropriate departments for approval/notification/permitting – this does not apply to the archeological.**				
Wildlife Act – WLAP – MoE http://www.qp.gov.bc.ca/statreg/stat/W/96488.01.htm	Wildlife Act – Section 34 – Birds, Nests and Eggs – vegetation clearing should not occur during critical bird nesting periods, which typically occur in the spring and summer. Contact the local WLAP for vegetation clearing timing windows.			
Water Act - Water Stewardship Division - Ministry of Forests, Lands, Natural Resource Operations, and Rural Development	Section 11 – regulates changes in or about a stream and ensure that water quality, riparian habitat, and the rights of licensed water users are not compromised. This is an approval process and takes approximately 140 days. An application fee is also required. Works requiring approval include channel realignment, retaining wall or bank protection stabilization etc.			
Environmental Stewardship Division - MoE	Notification process for such works as replacement and maintenance of culverts and outfalls; temporary stream diversions around a worksite and takes approximately 45 days to receive notification approval. In general, those works requiring a notification are those that do not involve any diversion of water.			
Fish Protection Act – MoE http://wlapwww.gov.bc.ca/habitat/fishprotectionact/	This Act was passed in 1997 and is reviewed as part of the Water Act under Section 11 when applying for approval.			

Ministry of Forests, Lands, Natural Resource Operations, and Rural Development Archaeological http://www.for.gov.bc.ca/archaeology/requesting_archaeological_site_information/process_steps.htm *Contact: Hayley Bond (250) 953-3343*	When completing projects such as quarry pits and new highway alignments, a request is put into the archaeological branch of MFLNSO via the EA process to search the data base. An archaeological assessment may be required on those areas that are previously undisturbed or undeveloped.			
BC Parks	Various permits are required when completing construction activities within the Parks. Please note that all works within 150 feet of the centreline of the highway (Right-of-Way) are NOT subject to construction permitting. (this does not include permitting for fish surveys).			
Canada-British Columbia Agreement for Environmental Assessment Cooperation http://www.ceaa.gc.ca/default.asp?lang=En&n=04A20DBC-1	Most Alaska Highway Projects will not trigger this agreement, as both the Vancouver CEAA office and the Victoria BC Environmental Assessment Office (EAO) have confirmed that the types and scopes of the projects are not described in the BC Environmental Assessment Act – Reviewable Projects Regulation. However, for due diligence, it is recommended that notifications for all Alaska Highway projects be submitted to CEAA (info@ceaa-acee.gc.ca) for review and, if necessary, a determination of whether or not CEAA and/or the BC EAO should be involved.			
BC Ministry of Environment – BC Species and Ecosystems Explorer http://a100.gov.bc.ca/pub/eswp/	A list of provincially-listed species at risk likely to occur at a given subject site must be compiled in order to identify potential impacts & propose mitigation measures for minimizing impacts to these species as a result of project activities. This process involves conducting a search of the BC Species and Ecosystems Explorer inventory for the specific area of BC containing the proposed project site.			
Consultant Responsibility				
Provincial				
BC Parks ***Ministry of Forests, Lands, Natural Resource Operations, and Rural Development*** *http://www.env.gov.bc.ca/bcparks/permits/*	Permit to Collect Fish For a Scientific Purpose - Regulation Research activities in parks and protected areas, including: collection; monitoring; survey and inventory; and, other research trigger a Park Permit - Ministry of Forests, Lands, Natural Resource Operations, and Rural Development is responsible for the administration of fish and wildlife permits. Note that these permits are taking approx. 6 months to receive due to recent involvement and subsequent consultation with Treaty 8.			

Water Act – Regulation's Protection of Habitat - Section 42(1)	Permit to Collect Fish For a Scientific Purpose – Subsection 42(1)(e) – It is the responsibility of the salvage crew to obtain the necessary permit required to complete a fish and amphibian salvage – in conjunction with the BC Parks permitting.			
Note: research projects and inventory projects are under the same Permit and are applied for under the "Application to Collect Fish for a Scientific Purpose". **http://www.env.gov.bc.ca/pasb/applications/process/scientific_fish_collect.html#a5**				
Contractor Responsibility				
Federal				
DFO – End of Pipe Guidelines	End-of- pipe guidelines for freshwater intake to avoid fish entrainment.			
Provincial				
Water Act - MoE	Schedule A – Water License Applications – use of water from waterbody for road maintenance.			

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Appendix H

Relevant Environmental Publications

Relevant Environmental Publications

The below list of documents are those commonly used when determining how to design and advance a project with the potential to impact a waterbody.

Agency	Publications	Summary
DFO	***Land Development Guidelines for the Protection of Aquatic Habitat - 1993***	This document is a good reference guide for any works that are occurring in or around the water.
	Canada's Fish Habitat Law	Document explaining the fish and fish habitat laws under the Fisheries Act.
	Riparian Revegetation	Information on minimizing, stabilizing and revegetating construction areas.
	Freshwater Intake End-of Pipe Fish Screen Guideline - 1995	Provides guidelines for the contractor to follow to ensure fish screens are used during freshwater intake operations at construction sites.
	Operational Statements Stream Crossings by Roads: • Clear Span Bridges • Temporary Ford Stream Crossing • Ice Bridges and Snow Fills • Bridge Maintenance • Maintenance of Riparian Vegetation in Existing Rights-of Way	Fisheries and Oceans Canada has developed a series of Operational Statements to streamline the undertaking of low risk activities. The Operational Statements outline conditions and measures for avoiding harmful alteration, disruption and destruction (HADD) of fish habitat, and applying them will ensure the project complies with subsection 35(1) of the *Fisheries Act*. You are NOT required to submit a proposal for review by Fisheries and Oceans Canada when you incorporate the measures and conditions outlined in an appropriate Operational Statement into your plans. http://www.pac.dfo-mpo.gc.ca/habitat/os-eo/index-eng.htm
MoE	***Fish-stream Crossing Guidebook - 2002***	Guidelines in protection of fish and fish habitat and the safe passage of fish during construction at/on stream crossings.
	Standards and Best Practices for Instream Works - 2004	Guide to planning and carrying out the proposed construction activities to comply with relevant legislation, regulations and policies.
	A User's Guide to Working In and Around Water - 2005	Understanding the regulation under British Columbia's Water Act.
	Fish-Stream Identification Guidebook - 1998	Assists in providing information on determining fish streams.
	The Streamkeepers Handbook	A practical guide to stream and wetland care in regards to rehabilitation planting.

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Appendix I

Environmental Management Plan (EMP)

TETRA TECH

Environmental Management Plan

Decommissioning of Former Alaska Highway Alignments KM 612.70 to KM 966.90

PRESENTED TO

Public Services and Procurement Canada

FEBRUARY 24, 2020
ISSUED FOR USE
FILE: 704-TRN.VHWY03085-01

Tetra Tech Canada Inc.
Suite 1000 – 10th Floor, 885 Dunsmuir Street
Vancouver, BC V6C 1N5 CANADA
Tel 604.685.0275 Fax 604.684.6241

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APPENDIX SECTIONS

APPENDICES

ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
BC MOE	British Columbia Ministry of Environment and Climate Change Strategy
BST	Bituminous Surface Treatment
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
EM	Environmental Monitor
EMP	Environmental Management Plan
EPP	Environmental Protection Plan
EOA	Environmental Overview Assessment
FLNRORD	BC Ministry of Forests, Lands and Natural Resource Operations and Rural Development
km	Kilometre
m	Metre
PSPC	Public Services and Procurement Canada

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of Public Services and Procurement Canada (PSPC) and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than PSPC or for any Project other than the proposed work at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on the Use of this Document attached in the Appendix 1 or Contractual Terms and Conditions executed by both parties.

1.0 INTRODUCTION AND BACKGROUND

Tetra Tech Canada Inc. (Tetra Tech) has been retained by Public Services and Procurement Canada (PSPC) to prepare an Environmental Management Plan (EMP) for the decommissioning of five sections of the former Alaska Highway (herein referred to as the "Project"), located between KM 612.70 and KM 966.90 of the current highway alignment.

The EMP is the primary document that guides overall environmental management practices that are to be implemented by the Contractor during all phases of the Project. Developed from federal, provincial, and industry standards and regulations, EMPs provide guidance, general mitigation measures and best management practices (BMPs) to protect the receiving environment. They are based on the known environmental conditions along the Alaska Highway and the nature of the Project; and make recommendations to mitigate Project-related effects to the receiving environment during decommissioning activities. In addition to general environmental mitigation measures, this EMP provides site-specific mitigation measures to address the environmental sensitivities present at each of the five decommissioning sites.

Based on an understanding that the Project will entail a variety of decommissioning activities that will be developed on a case by case basis, this EMP will identify mitigation measures designed to:

- Avoid or minimize sedimentation of watercourses from decommissioning activities;
- Prevent the introduction of deleterious substances to ground or water that potentially result from heavy machinery use;
- Prevent the spread of invasive species between decommissioning sites;
- Maintain flow downstream of the works during in-stream works (i.e., culvert removals);
- Permit the free passage of fish following construction; and
- Minimize impacts to wildlife, including Species at Risk (e.g., woodland caribou, little brown myotis).

It will be the responsibility of the successful Contractor to develop activity-specific mitigation measures in an Environmental Protection Plan (EPP). That is, the EMP identifies the features that must be protected during the Project and provides recommendations for how to protect them in terms of "industry standards," while the Contractor's EPP will detail exactly how the recommendations will be implemented based on the specific designs and construction methodology/equipment used. For example, an EMP may recommend that refuelling occurs more than 30 m from a watercourse and the EPP will identify exactly where the refuelling will occur for the project, while meeting that recommendation.

This EMP will be included in the tender package and available to the contractors during the bid and will form part of the contract. It is recommended that the bidding Contractors read this EMP in full, to ensure that they will be able to sufficiently meet the environmental requirements of this Project and that the EMP requirements are met in the EPP.

1.1 Project Description and Scope

PSPC's current operational jurisdiction of the Alaska Highway extends from KM 133 (north of Fort St. John) to the BC-Yukon border at KM 968 and has undergone multiple highway alignment modifications since its construction in 1942 (PSPC n.d.). As such, there are many former alignment sites along the Alaska Highway that are no longer active and require deactivation and divestiture.

Since 1964, PSPC has been the federal custodian for the Alaska Highway and is responsible for the maintenance of the current highway and deactivation of former highway alignments (PSPC n.d.). PSPC retained Tetra Tech to identify former alignment sites to be prioritized for deactivation. The deactivation sites were further grouped into tender packages based on close geographical proximity and/or the types of deactivation works required. Tetra Tech has identified five priority sites between KM 612.70 and KM 966.90 of the Alaska Highway to undergo decommissioning/deactivation works.

The deactivation prescriptions will be largely based off BC Ministry of Forestry Guidelines as described in the Tetra Tech report, *Alaska Highway Former Alignments Project: Typical Criteria / Standards for Road Deactivation (August 14, 2018)*; as well as feedback received from PSPC, BC Ministry of Transportation and Infrastructure, and BC Ministry of Environment and Climate Change Strategy.

For these five sites, the objective is to permanently deactivate the former highway segments. Permanent deactivation is typically used when use of the road will no longer be required and no further inspections or maintenance is required.

Decommissioning works for permanent deactivation may include, but are not limited to the following:

- Restoration of bank and channel stability through installation of erosion protection such as riprap;
- Removal of culverts and replacement with cross-ditches, berms, or water bars to re-establish drainage patterns;
- Scarifying road segments by pulverizing the remaining former gravel driving surface and Bituminous Surface Treatment (BST) layer;
- Removal of infrastructure debris including stream training boards and timber cribbing piles (where applicable); and
- Revegetation through seeding.

1.2 Former Alignment Sites

The five former alignment sites included in the Project are located west and northwest of Fort Nelson, between KM 612.70 and KM 966.90 of the Alaska Highway. The location of each site relative to the current highway alignment and the length of each road segment to be decommissioned can be found in Table 1. Each site has different environmental considerations and will require a different combination of decommissioning activities based on current conditions of the site, and these are outlined below.

Table 1: Site Information for Five Former Alaska Highway Alignments to Undergo Decommissioning Works

Station	Length (km)	Area (ha)	Decommissioning Work	Environmental Considerations*
612.70 – 614.20	1.43	10.68	▪ Remove seven potentially creosote-treated timber bridge piles from One Thirteen Creek and dispose off-site. ▪ Stabilize the stream embankment by installing riprap in front of approximately 40 m long creosote-treated timber river training board. This will require channel realignment of One Thirteen Creek. – Recontour channel bed to compensate for channel depth and width lost to riprap placement. ▪ Scarify and seed former alignment areas disturbed by equipment access.	▪ Alignment crosses One Thirteen Creek and will require decommissioning activities to occur near to and within that watercourse. Ideally, work should be performed during low flow periods. ▪ Installation of rip rap in front of training board will require re-alignment of the watercourse channel. ▪ Construction of a temporary diversion channel, and berms/check dams will be required to facilitate rip rap installation if there is flow in the channel at the time of construction. ▪ Removal of potentially creosote-treated timber.
841.95 – 844.40	0.60	5.64	▪ Remove 12 m long creosote-treated timber flume and dispose off-site. ▪ Remove 15 m long timber training wall and dispose off-site. Restore and stabilize the slope with rip rap. ▪ Remove creosote-treated timber cribbing buried in embankment and dispose off-site. ▪ Remove 20 m creosote-treated timber box culvert and construct cross-ditch with rip rap. ▪ Remove any visible man-made debris in area ▪ Restore stream channel with 1,000 mm riprap with nonwoven geotextile underlay. ▪ Scarify and seed former alignment areas disturbed by equipment access.	▪ Alignment crosses a watercourse and will require decommissioning activities to occur near to and within that watercourse. ▪ Removal of creosote-treated timber.
892.40 – 893.30	0.87	7.34	▪ Restore and stabilize approximately 30 m long channel with riprap and geotextile underlay at the previously removed culvert locations ▪ Remove CSP culvert debris ▪ Scarify and seed former alignment areas disturbed by equipment access. ▪ Regrade the slope on either side of the watercourse to stabilize and prevent further erosion.	▪ Alignment crosses a watercourse and will require decommissioning activities to occur near to that watercourse. ▪ Nearby beaver pond within the ROW upstream of the former highway alignment.
960.35 – 961.20	0.89	7.19	▪ Removal of two 18 m long CSP culverts (500 mm dia.) – Install two cross ditches (19 m long) with coco fiber geotextile. ▪ Scarify and seed BST and former alignment areas disturbed by equipment.	▪ Culverts to be removed convey surface drainages which may drain into fish bearing watercourses.

Station	Length (km)	Area (ha)	Decommissioning Work	Environmental Considerations*
966.50 – 966.90	0.42	2.87	▪ Removal of a 26 m long CSP culverts (600 mm dia.) – Install a 27 m long cross ditch (27 m long) lined with rip rap. ▪ Scarify and seed former alignment areas disturbed by equipment access.	Alignment crosses a watercourse and will require decommissioning activities to occur near to and within that watercourse.

* No Archaeological Sites were identified near the Project area.

2.0 ENVIRONMENTAL SENSITIVITIES

This Project entails work within environmentally sensitive areas, including Woodland Caribou habitat, watercourses, wetlands, and riparian areas. A number of the decommissioning sites will require in-stream works to remove and replace culverts with cross ditches and riprap and may pose a risk to fish or fish habitat. In addition, there is the potential that Species at Risk (SAR) will be encountered during the decommissioning activities. As such, it is important that the Contractor is aware of these sensitivities and is diligent in regard to environmental planning and mitigation to avoid deleterious effects to the environment.

The most likely environmental concerns and potential impacts related to the Project are summarized in Table 2.

Table 2: Project-specific Environmental Considerations

Environmental Concern	Project-Specific Considerations	Mitigation Summary*
Wildlife and Wildlife Habitat		
Woodland Caribou	The populations and critical habitats of Woodland Caribou are protected under federal legislation. Northern Mountain Caribou are provincially blue-listed and designated as 'special concern' under the Federal *Species At Risk Act* (SARA). There is potential for Woodland Caribou to be encountered during the decommissioning activities since a large portion of the Alaska Highway between KM 612.70 to KM 966.90 is within provincially-mapped caribou range. The decommissioning site at KM 612.70 – KM 614.20 is located within the Muskwa Herd range and the site at KM 966.50 – KM 966.90 is located within the Horseranch Herd range. There are three sites not within caribou range. The site at KM 841.95 – KM 844.40 is ~8 km north of the Rabbit Herd range, the site at KM 892.40 – KM 893.30 is ~40 km north of the Rabbit Herd and Horseranch Herd ranges and the site at KM 966.50 – KM 966.90 is ~2 km north of the Horseranch herd range. None of the decommissioning sites fall within the federally-designated critical habitat. Best Management Practices specific to working within caribou habitat and a figure showing mapped caribou range within the Project area are provided in the Caribou Protection Plan (Appendix D of the EOA).	▪ Implement the mitigation measures outlined in the Caribou Protection Plan. ▪ Retain an environmental monitor to monitor for Caribou within the Project area during decommissioning works. ▪ If Caribou are observed within the Project area, cease all Project activities until they have left the area. ▪ **See Section 4.0 Environmental Mitigation Measures subsection 4.00 and the Caribou Protection Plan for further mitigation strategies.**
Wood Bison	The populations and critical habitats of Wood Bison are protected under federal legislation. Wood Bison are provincially red-listed and designated as 'threatened' under the Federal SARA. The site at KM 841.95 – KM 844.40 is within Wood Bison range. There is potential for Wood Bison to be encountered during the decommissioning activities at this site.	▪ Retain an environmental monitor to monitor for Wood Bison within the Project area during decommissioning works at KM 841.95 – KM 844.40. ▪ If Wood Bison are observed within the Project area, cease all Project activities until they have left the area. ▪ **See Section 4.0 Environmental Mitigation Measures subsection 4.00 for further mitigation strategies.**

Environmental Concern	Project-Specific Considerations	Mitigation Summary*
Wildlife and Species at Risk	The BC Conservation Data Centre (CDC) search revealed six documented occurrences of SAR within 5 km of the Project, 2 of which, Woodland Caribou (Special Concern) and Wood Bison (Threatened) are listed under SARA. An additional 44 SAR (9 of which are listed under SARA) were identified as having potential to be present or near to the Project based on their habitat requirements and range (See section 5.6 of the EOA for more details). In-stream works may negatively impact amphibians that utilize these habitats for part or all of their life cycle, such as Western Toad. As such, prior to in-stream works, the impacted area should be isolated, and amphibians should be salvaged and relocated by the contractor's EM. A General Wildlife Permit will have to be obtained from FrontCounter under the *Wildlife Act*.	▪ Inspect culverts and wooden structures for wildlife (especially bats) prior to their removal. ▪ Minimize vegetation clearing and clear vegetation outside of the breeding bird nesting period for the B6 region (i.e., April 30 until August 20) or immediately following a Qualified Environmental Professional (QEP) led nest survey. ▪ Wildlife salvages should be conducted prior to conducting in-stream works. ▪ Should a rare or sensitive species be identified at the site at any time during the Project, the EM should be notified immediately for further direction. ▪ **See Section 4.0 Environmental Mitigation Measures subsection 4.00 for further mitigation strategies.**
Birds and Their Nests	Section 34 of the BC *Wildlife Act* specifically protects the nests of Eagles, Peregrine Falcons, Gyrfalcons, Osprey, Herons, and Burrowing Owls year-round, regardless of whether they are active. The *Migratory Bird Convention Act* (MBCA) prohibits the disturbance or destruction of migratory birds and their nests or eggs. Some vegetation clearing is expected during the Project, to facilitate access of vehicles and machinery to the decommissioning sites. It is important that these clearing activities do not disturb birds or their nests.	▪ When possible, clear vegetation outside of the breeding bird nesting period for the region (April 30 until August 20). If this is not possible, a QEP-led nest survey will be required prior to clearing. ▪ Minimize vegetation clearing. ▪ **See EMP section 4.00 for further mitigation strategies.**
Fish and Fish Habitat		
In-stream Works	The decommissioning works include in-stream works such as culvert removals, installation of cross ditches and placement of riprap to stabilize the banks. Based on the Project activities, Tetra Tech anticipates that a Change Approval will have to be obtained by PSPC under the *Water Sustainability Act*.	▪ Any work conducted below the high-water mark of streams containing water must occur in isolation of flow. ▪ If there is water within the watercourse during the in-stream works, a qualified Environmental Monitor (EM) must be on site for isolation and fish salvage operations.

Environmental Concern	Project-Specific Considerations	Mitigation Summary*
	If there is water within the watercourse at the time of construction, the work area must be isolated from flowing water before in-stream works can begin. If there is no water in the watercourse at the time of in-stream works, no isolation will be required. To avoid deleterious effects to the affected watercourses within the Project area, the mitigation measures outlined in this EMP must be followed	▪ If there is no flow/water within the watercourse during the in-stream works the EM must be available/on-call in case of an emergency. ▪ **See Section 4.0 Environmental Mitigation Measures subsections 3.00 and 7.00 for further mitigation strategies.**
Disturbance to Fish	Each affected watercourse has undergone a Fish Habitat Assessment and surveyed for fish presence. All watercourses assessed were large or small permanent streams with poor-moderate habitat quality. No fish were captured during the field work. Regardless, each stream must be treated as if there is the potential for fish to be found within the watercourse, since these small streams may connect to larger fish-bearing streams downstream. As such, they are still considered "Fish Habitat" under the *Fisheries Act.* If there is water within the watercourse at the time of construction, the work area must be isolated, and a concurrent fish salvage must be conducted to avoid potential harm to fish prior to dewatering. To perform fish salvages, a scientific fish collection permit will be required from FLNRORD. The Project should be conducted during the appropriate regulatory timing windows. It is recommended that in-stream works should be carried out during the reduced risk work windows for streams in northeastern BC. Because the tributaries at the culvert crossing locations flow into watercourses known to contain both spring and fall spawners, the reduced risk work window for the Project is July 15 through August 15 (FLNRORD 2016).	▪ In-stream work should be timed to occur within the window of least risk for fish in the Project Area (July 15 – August 15) or when water is at its lowest levels. ▪ Tetra Tech understands that some of the Project activities are proposed to occur outside of the Reduced Risk Timing Window during low flow conditions. It is unlikely that the Project would negatively impact fish or fish habitat if works are conducted outside the reduced risk window as long as the mitigation detailed within this EMP is applied. ▪ Fish salvages must be conducted after isolation of the work site and before dewatering. ▪ An EM must be on-site during fish salvage operations. ▪ **See Section 4.0 Environmental Mitigation Measures subsection 3.00 for further mitigation strategies.**

Environmental Concern	Project-Specific Considerations	Mitigation Summary*
Erosion and Sediment Control	This Project has the potential to create sediment-laden run-off which if introduced into a stream could harm fish or fish habitat. The contractor must complete the decommissioning activities in such a manner that the risk of releasing sediment-laden water into nearby streams is minimized.	▪ Avoid construction during periods of poor weather and phase work appropriately. ▪ The Contractor should prepare an Erosion and Sediment Control (ESC) Plan and ensure proper installation of ESC structures (i.e., silt fences). ▪ Frequent field water quality monitoring at pre-determined stations or as required by weather conditions. ▪ **See Section 4.0 Environmental Mitigation Measures subsection 6.00 for further mitigation strategies.**
Vegetation and Invasive Species Management		
Vegetation	The iMapBC search identified documented occurrences of four vegetation SAR within 5 km of the decommissioning site at KM 612.70 – KM614.20. These species are: ▪ Abbreviated Bluegrass ▪ Arctic Bladderpod ▪ Davis' Locoweed ▪ Raup's Willow In addition, based on range and habitat requirements, the BC CDC search identified 29 vegetation SAR that had potential to occur near or at the Project location. Minimal vegetation removal is expected as a result of this project to allow the machinery to access the decommissioning sites. The majority of the trees to be removed are young, early successional species such as Balsam Poplar. As part of the decommissioning process, sites will be seeded with a native grass mixture following the scarification of the BST surfacing on the road prism.	▪ Limit vegetation removal. ▪ Vegetation searches should be conducted prior to clearing at KM 612.70 – KM 614.20 to prevent removal of SAR. ▪ Contain decommissioning activities within the former highway ROW ▪ Machinery and vehicles should be restricted to defined travel routes to avoid excess trampling/compaction of vegetation. ▪ Disturbed vegetated areas should be restored through seeding or planting as soon as possible. ▪ Implement standard sediment and erosion control measures and dust-suppression measures during decommissioning to minimize impacts to surrounding vegetation. ▪ **See Section 4.0 Environmental Mitigation Measures subsection 5.00 for further mitigation strategies.**

Environmental Concern	Project-Specific Considerations	Mitigation Summary*
Non-native or invasive plant spread.	Many invasive species grow well in disturbed areas, and can be spread through vehicle traffic, making them commonly found along roadways. Therefore, there is potential for invasive species to be found at all decommissioning sites. Measures must be taken to prevent spread of invasive species between decommissioning sites.	▪ Vehicles and equipment must be inspected prior to arriving on site to ensure they are free of soil and plant material. ▪ In areas with abundant invasive plant species, matting should be laid down prior to mobilization of machinery to the work area. ▪ **See Section 4.0 Environmental Mitigation Measures subsection 5.00 for further mitigation strategies.**
Waste Management and Disposal		
Disposal of creosote-treated wood	This decommissioning work will include removal of creosote-treated wood. The removal of creosote-treated wood requires special considerations that are outlined in this EMP.	▪ Prevent contact of creosote-treated wood with water within the watercourse. ▪ Place removed wood and exposed soils on poly sheeting and cover the stockpile until it can be appropriately disposed of off-site. ▪ **See Section 4.0 Environmental Mitigation Measures subsection 9.00 for further mitigation strategies.**
Archaeological Resources		
Damage to historical or archaeological artifacts.	There is potential to encounter archaeological sites and artifacts during project activities (i.e. excavations and culvert removals) which are protected under the *Heritage Conservation Act*. A desktop search and site walk-through of the five decommissioning sites found no identified archaeological sites in the area.	▪ Retain an Archaeological Monitor to be on call for any ground-disturbance activities and culvert removals. ▪ Apply the chance find protocol included in Appendix 2. ▪ **See Section 4.0 Environmental Mitigation Measures subsection 13.00 for further mitigation strategies.**

* This summary of mitigation measures is not comprehensive. For a full list of mitigation measures, please refer to the EMP (Section 4.0).

3.0 ENVIRONMENTAL REGULATORY REQUIREMENTS

The Project will be subject to the terms and conditions of any regulatory permit or approval obtained. At the time this EMP was prepared, all permits/approvals for the Project were in the process of being secured from the applicable regulatory agencies. The Project is subject to various environmental legislation, as described in the subsections below.

3.1 Federal

Fisheries Act

The *Fisheries Act* is the main federal legislation providing protection for all fish, fish habitat, and water quality. The *Act* is administered federally by Fisheries and Oceans Canada (DFO) and Environment Canada. The new Federal *Fisheries Act* (Government of Canada 2019) was introduced on June 21, 2019 and was enacted on August 28, 2019. It includes amendments to restore lost protections and incorporate modern safeguards. This *Act* provides protection against the 'death of fish, other than by fishing' and the 'harmful alteration, disruption or destruction of fish habitat' (HADD), unless authorized by DFO.

Fish habitat is defined as spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes. This definition indicates that a watercourse (which includes but is not limited to streams, ditches, ponds and wetlands), which provides water, food or nutrients to a fish bearing stream, is considered fish habitat even if it does not contain fish and/or if it only has temporary or seasonal flows. The definition also indicates that not only the watercourse itself but also the vegetated stream side or riparian areas which provide nutrients and shade to the stream are considered fish habitat.

DFO encourages all project to avoid and mitigate the impacts of projects to fish. A self-assessment process provides common measures and best practices to avoid or minimize impacts to fish and fish habitat. If impacts can be avoided or mitigated the project does not require further review from DFO. If impacts cannot be mitigated, a Request for Review must be submitted to the Fisheries Protection Program office and DFO will work with the proponent to find additional ways to reduce those impacts. If the project cannot be designed so that serious harm to fish is unlikely to occur, a *Fisheries Act* authorization is required.

Through the self-review process, Tetra Tech has determined that the decommissioning activities proposed for 4 of the 5 sites are unlikely to trigger the *Fisheries Act*. Based on Tetra Tech's understanding of the Project and on an assessment of the proposed activities, it is unlikely that the Project will cause a HADD at these four locations if, at a minimum, standard best management practices and mitigation as presented in Table 6-1 are implemented. Each watercourse undergoing in-stream works will be treated as if it is fish-bearing and will undergo isolation of the work area and concurrent fish salvages if there is water/fish present within the channel. The decommissioning activities proposed for one of the sites, Site 1 (KM 612.70 – KM 614.20), are more involved and may require input from DFO. Due to the need for channel re-alignment within One-Thirteen Creek, a Request for Review will be submitted to DFO to notify them of the works and so that they can provide input.

Species at Risk Act

The *Species at Risk Act* (SARA) prohibits the killing, harming, harassing, capturing or taking of species at risk, or destruction of their critical habitats. Species are designated 'at risk' by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), an independent body of experts that assesses species according to a broad range of scientific data. The federal Cabinet then decides whether those species should receive legal protection under the SARA.

Should a SARA-listed species or any other rare species be identified prior to or during the Project, the Canadian Wildlife Service (CWS) and the BC Ministry of Environment & Climate Change (MOE) should be notified immediately for direction on appropriate action as measures employed would vary greatly with the species encountered, its sensitivity to the Project, and its proximity to the works.

There is potential to encounter SARA-listed species throughout the duration of the Project. An EM should be on site to identify SAR and issue a stop work order if a SAR is detected within the Project area.

The BC CDC search for Species at Risk found two occurrences of SARA-listed species within 5 km of the Project:

- **Woodland Caribou** - The northern mountain ecotype is designated as special concern under SARA.
- **Wood Bison** – Designated as threatened under SARA.

In addition, 9 other SARA-listed species were identified as having potential to occur at the Project location, based on range and habitat requirements. These species are listed in Table 5-7 of the EOA.

Migratory Birds Convention Act

This *Migratory Birds Convention Act* restricts the disturbance or destruction of migratory birds and their nests, eggs, and shelters, except in accordance with a permit. The *Act* (1994) prohibits the taking or killing of migratory bird nests and eggs, and the deposition of harmful substances in areas frequented by migratory birds. Vegetation removal that will affect trees used by all birds and other wildlife should be avoided while they are breeding, nesting, roosting or rearing young.

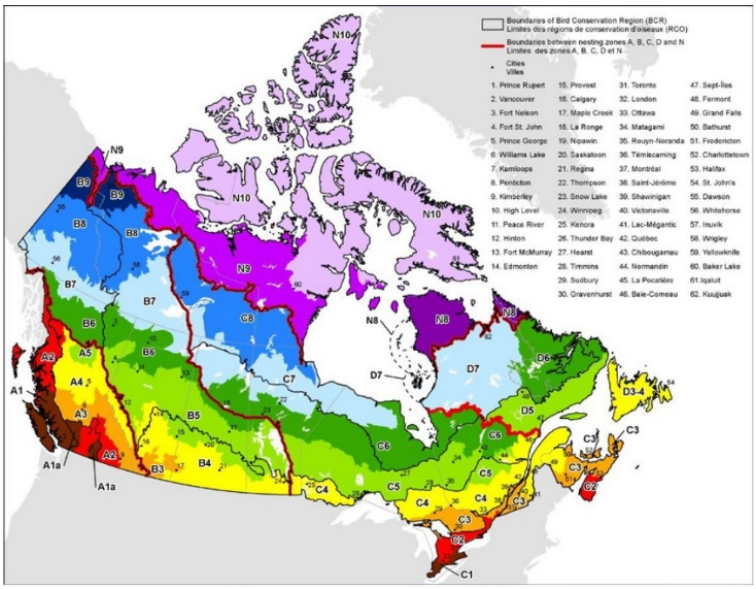

Figure 1. Map of nesting zones in Canada (ECCC 2017)

Federal restrictions require that vegetation removal/clearing be conducted outside of the bird nesting season, which is considered April 30 to August 20 for the Project area (Zone B6 and Zone B7) (Figure 1; ECCC 2017).

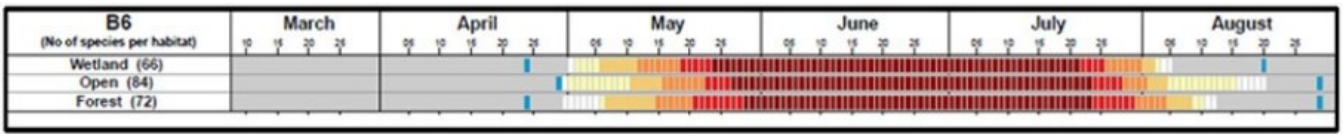

Figure 2. Nesting Calendars for Nesting Zone B6 (ECCC 2017)

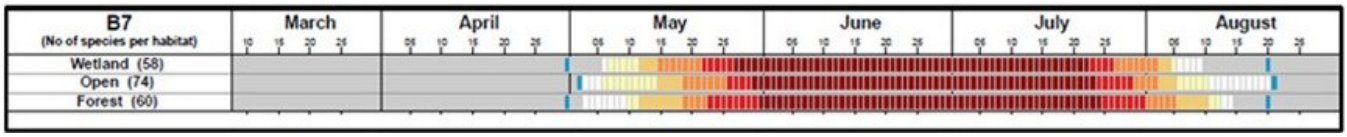

Figure 3. Nesting Calendars for Nesting Zone B7 (ECCC 2017)

Some trees and shrubs may be cleared during the Project to allow for equipment and machinery access. If clearing is to occur within the bird nesting season (April 30 – August 20), a nest survey by the onsite EM will be required prior to clearing (Figure 2; Figure 3).

Transportation of Dangerous Goods Act

The transportation of dangerous goods is regulated by the BC *Transport of Dangerous Goods Act* and Transport of Dangerous Goods (TDG) Regulation. The transportation of dangerous goods is also regulated federally by the Transportation of Dangerous Goods Program and Regulations, administered by Transport Canada. The provincial TDG program is limited to transportation via roads. Nine categories of substances are regulated within the provincial TDG Regulation: explosives, gases, flammable and combustible liquids, flammable solids, oxidizing substances, poisonous and infectious substances, radioactive material, corrosive substances and miscellaneous substances.

It is the responsibility of Contractor to ensure that all materials within the TDG Schedule are transported in accordance with TDG Regulations.

3.2 Provincial

Water Sustainability Act

The British Columbia (BC) *Water Sustainability Act* (WSA*)* is the main provincial statute regulating water resources in British Columbia. Under the *Act*, it is an offence to divert or use water, or alter a stream, without formal Change Approval from the Province. Under the WSA a stream is defined as “a natural watercourse, or a natural source of water supply, including, a lake, pond, river, creek, spring, ravine, gulch, wetland or glacier, whether or not usually containing water”. Section 11 of the *Water Sustainability Act* ensures that water quality, riparian habitat, and the rights of licensed water users are not compromised. Under Section 11, any changes in and about a stream must also meet with DFO approval under the federal *Fisheries Act*.

For low-risk changes in and about a stream, proponents can submit a “Notification of Instream Works” to the Ministry of Forests, Lands and Natural Resource Operations and Rural Development (FLNRORD) for review by the region’s habitat officer. For proposed works that constitute “complex changes in and about a stream” then a Section 11 Change Approval under the *WSA* will have to be obtained for the Project. The application for a Change Approval should be submitted with detailed design plans, the EOA and this EMP).

It is anticipated that the in-stream works required for the Project (i.e., culvert removals and riprap installation) will require a Change Approval from FLNRORD prior to construction. Project works should not go ahead until this permit is obtained.

Wildlife Act

The BC *Wildlife Act* protects most vertebrate animals from direct harm or harassment except as allowed by regulation (e.g., hunting or trapping). Section 34 of the Wildlife Act protects the nests of herons and raptors all year round and the nests of all species of birds when birds or eggs are present in the nest. Searching for potential raptor and heron nests can be completed by the onsite EM during Project start-up. All tree removal shall be completed outside of the breeding bird window for the region (April 30 to August 20) or immediately following QEP-led nest surveys. If nests, dens, or species at risk habitat are identified within the project footprint, mitigation and/or compensation plans will need to be developed under the direction of FLNRORD.

The Project will require construction works to be conducted within a number of watercourses, which may provide habitat for fish and wildlife, such as Western Toad. To avoid undue harm to fish and wildlife under the *Wildlife Act*, fish and wildlife salvages must be completed by the Contractor's EM to remove animals from the construction area. As such, a General *Wildlife Act* Permit will have to be obtained through FrontCounter BC to allow for the capture and relocation of numerous potential wildlife species. In addition, a Fish Collection Permit must be obtained through FrontCounter BC for the capture and relocation of all potential fish species in water courses affected by construction activities. Acquisition of this permit will be pursuant to the Angling and Scientific Collection regulations of the *Wildlife Act*. For both of these permits, at minimum, 30 days should be allowed for permit processing

Weed Control Act

The BC *Weed Control Act* defines a list of invasive plants as "noxious weeds" at the regional and provincial level. All of these species are non-native plants that create problems for agriculture and/or natural habitats. Private property owners and government agencies are required to control these species that occur on their property or jurisdiction. Contractors must ensure that any invasive species that are identified are controlled and not allowed to spread. Information related to the control and management of invasive species can be found on the Invasive Plant Council of BC's website (http://www.invasiveplantcouncilbc.ca/).

Under the *Weed Control Act,* Schedule A of the Weed Control Regulation designates 66 plant species as noxious weeds. Currently, 39 weeds are listed as noxious weeds within all regions of the province (Table 3) and a further 27 are classified as noxious within the boundaries of specific regional districts. Three of the sites are located in the Northern Rockies Regional District (NRRD) and two sites are located in the Stikine Regional District (SRD). There are no additional noxious weeds listed for the SRD or NRRD.

Table 3: Noxious Weeds Regulated in all Regions of Province

Annual Sow Thistle (*Sonchus oleraceus)*	Bohemian Knotweed (*Fallopia bohemica)*	Bur Chervil (*Anthriscus caucalis*)	Canada Thistle (*Cirsium arvense*)
Common Crupina (*Crupina vulgaris)*	Common Reed (*Phragmites australis subsp. australis*)	Common Toadflax (*Linaria vulgaris)*	Dalmatian Toadflax (*Linaria dalmatica*)
Dense Flowered Cordgrass (*Spartina densiflora)*	Diffuse Knapweed (*Centaurea diffusa*)	Dodder (*Cuscuta spp.*)	English Cordgrass (*Spartina angelica)*
Flowering Rush (*Butomus umbellatus*)	Garlic Mustard (*Alliaria petiolata*)	Giant Hogweed (*Heracleum mantegazzianum*)	Giant Knotweed (*Fallopia sachalinensis*)
Giant Mannagrass/Reed Sweetgrass (*Glyceria maxima*)	Gorse (*Ulex europaeus*)	Himalayan Knotweed (*Polygonum polystachyum*)	Hound's-tongue (*Cynoglossum officinale*)
Japanese Knotweed (*Fallopia japonica*)	Jointed Goatgrass (*Aegilops cylindrica*)	Leafy Spurge (*Euphorbia esula*)	Milk Thistle (*Silybum marianum*)

Table 3: Noxious Weeds Regulated in all Regions of Province

Annual Sow Thistle (*Sonchus oleraceus)*	Bohemian Knotweed (*Fallopia bohemica)*	Bur Chervil (*Anthriscus caucalis*)	Canada Thistle (*Cirsium arvense*)
Common Crupina (*Crupina vulgaris)*	Common Reed (*Phragmites australis subsp. australis*)	Common Toadflax (*Linaria vulgaris)*	Dalmatian Toadflax (*Linaria dalmatica*)
North Africa Grass (*Ventenata dubia*)	Perennial Sow-thistle (*Sonchus arvensis*)	Purple Loosestrife (*Lythrum salicaria*)	Purple Nutsedge (*Cyperus rotundus*)
Rush Skeletonweed (*Chondrilla juncea*)	Saltmeadow Cordgrass (*Spartina patens*)	Scentless Chamomile (*Matricaria maritima*)	Smooth Cordgrass (*Spartina alterniflora)*
Spotted Knapweed (*Centaurea stoebe*)	Tansy Ragwort (*Senecio jacobaea*)	Velvetleaf (*Abutilon theophrasti*)	Wild Oats (*Avena fatua*)
Yellow Flag Iris (*Iris pseudacorus*)	Yellow Nutsedge (*Cyperus esculentus)*	Yellow Starthistle (*Centaurea solstitialis*)	

Environmental Management Act

The BC *Environmental Management Act* (EMA) governs solid waste and manages introduction of waste into the environment by providing an authorization framework and environmental management tools to protect human health and environmental quality.

Under the Waste Discharge Regulations of the EMA, certain industries, trades, businesses and operations require authorization to discharge waste into the environment. However, even if an industry, trade, business or operation does not require an authorization, waste discharge must not cause pollution [EMA, Section 6 (4)].

The Spill Reporting Regulations of the EMA establishes a protocol for reporting the unauthorized release of substances into the environment as well as a schedule detailing reportable amounts for certain substances. A **Spill Response Plan**, including reportable quantities for spills, is provided below.

The Hazardous Waste Regulations of the EMA ensures that the generators, carriers and receivers of hazardous waste handle, store, transport, treat and dispose of hazardous waste in a safe manner. Hazardous wastes must be disposed of properly to ensure human health and environmental protection.

Heritage Conservation Act

The BC *Heritage Conservation Act* confers automatic protection upon archaeological and historic heritage sites that meet the definitions within section 13(2) of the Act. These include:

- All sites pre-dating AD1846;
- All sites of unknown age or origin which may pre-date AD1846;
- All burial places and rock art sites of historical or archaeological value; and
- All vessels or aircraft wrecked for two or more years.

All areas within the boundaries of a heritage site are protected under the *Act*, including areas without archaeological deposits or other kinds of heritage remains (e.g., land without archaeological deposits between several culturally modified trees at one site, or between several storage pits at one site).

Known Heritage Resources have been investigated at or adjacent to the decommissioning sites. One documented archaeology site is present (outside of the Project area) on the opposite side of the current highway from the

KM 841.95 site. A Chance Find Protocol (CFP) has been developed for this Project in the event that cultural artifacts or anthropogenic deposits (e.g., remains of hearths, dwellings, storage pits) are uncovered during construction (Appendix 2). It is the responsibility of the Contractor to follow the CFP should this occur.

There is always a limited possibility for unknown archaeological sites to exist. Archaeological sites (both recorded and unrecorded) are protected under the *Heritage Conservation Act* and must not be altered or damaged without a site alteration permit from the Archaeology Branch. If an archaeological site is encountered during development, activities must be halted, and the Archaeology Branch of the BC Archaeology Branch contacted at **250-953-3334** for direction.

4.0 ENVIRONMENTAL MITIGATION MEASURES

The BMPs and mitigation measures included in the EMP provide general instructions for managing Project activities to minimize potential environmental effects by limiting their duration, frequency, and intensity. Throughout all phases of the Project, the Contractors are expected to comply with all federal, provincial, and municipal regulations, permits, authorizations, conditions, and agreements with respect to environmental protection. Additional guidance for project-related environmental management practices and activities will be determined by the terms and conditions of relevant permits, licenses and approvals as they are acquired. It should be recognized that the employment of site personnel experienced in implementation of BMPs, particularly at the Site Superintendent level, is integral to the successful implementation of the Project EPP.

This EMP, in its current form, has been prepared in advance of a Contractor being identified, or permits/approvals acquired. Therefore, following selection of the successful Contractor, and acquisition of approvals and permits, the Contractor should prepare an EPP to meet all regulatory terms and conditions detailed or referenced therein. Additionally, the EPP should specifically, in relation to the work methods proposed and equipment used during decommissioning works, incorporate DFO's measures to avoid causing harm to fish and fish habitat, and detail the measures that will be taken to protect Woodland Caribou and bats.

General requirements of applicable environmental legislation, regulations, standards, guidelines, and BMPs will be adhered to throughout the duration of the Project. Supplementary environmental standards, guidelines, and BMPs are also contained in the following documents:

- DFO. 1992. Land Development Guidelines for the Protection of Aquatic Habitat.
- DFO. 2018. Measures to Avoid Causing Harm to Fish and Fish Habitat.
- FLNRORD. 2016. Terms and Conditions for Water Sustainability Act Changes in and about a Stream as specified by the Ministry of Forests, Lands & Natural Resource Operations (FLNRORD) Habitat Officers, Northeast Region.
- FLNRORD. 2014. A Compendium of Wildlife Guidelines for Industrial Development Projects in the North Area, British Columbia - Interim Guidance.
- MOE. 2014. Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia.
- MOE. 2005. A User's Guide to Working In and Around Water: Understanding the Regulation under British Columbia's Water Act. Water Management Branch.
- MOE. 2004. Standards and Best Management Practices for Instream Works.

- MOE. 2016. Best Management Practices for Bats in British Columbia.
- Tetra Tech. 2019. Caribou Protection Plan (Appendix D of the EOA)
- Northwest Response Ltd. 2018. BC Fuel Guidelines (8th Edition).

It is the responsibility of the Contractor to acquire and familiarize themselves with the requirements of the guideline documents and of the legislation discussed in Section 3.0.

4.1 General Mitigation Measures and Requirements

EMP #	General Mitigation Measures and Requirements
1.00	**General**
1.01	All Contractors must review this EMP, the subsequent EPP, and the applicable guidelines prior to starting the Project.
1.02	The Contractor is responsible for ensuring that a QEP prepares an EPP following the provisions outlined in this EMP.
1.03	All relevant federal and provincial acts, regulations, guidelines, and BMPs will apply to all work and activities associated with the Project.
1.04	The Contractor must be aware of and implement all permitting and approval requirements/conditions.
1.05	Contractors must hold a pre-construction meeting that includes the EM and all persons undertaking work on site to facilitate a common understanding of the contents of this EMP, the EPP and all BMPs for the Project.
1.06	Daily tailboard meetings should make reference to environmental issues that may arise and inform new employees about environmental compliance on site.
1.07	Plan and schedule project activities for dry weather whenever possible to minimize potential Erosion and Sediment Control (ESC) issues.
1.08	Ensure Contractors know how to properly install any protection measure and understand BMPs used on the Project. Improperly installed measures/BMPs do not perform their intended functions and will not achieve desired environmental protection outcomes.
1.09	Adopt an “adaptive management” management strategy for the Project. Adaptive management evaluates and adjusts management decisions (i.e., mitigation measures) to reflect the actual interactions. Contractors should be prepared to change existing measures and BMPs should they fail or in the event additional measures are warranted. The EM should be notified of any changes to assess that they are adequate and installed properly.
1.10	All decommissioning activities will be maintained within the former Alaska Highway alignment. Upon completion of activities, all equipment, supplies, materials and waste will be removed from the work site.
1.11	All environmental incidents should be reported to the EM, Project Manager, the Contractor Site Superintendent, and PSPC’s Environmental Coordinator as soon as possible.
1.12	The work area should be established and clearly marked. Orange construction (snow) fence installed on rebar stakes or highly visible flagging can be used to delineate the active work area. Ensure all Contractors are familiar with the marking system and are given clear instructions/training before work begins. Augment and replace field markers as needed.
2.00	**Site Access, Mobilization, and Laydown Areas**
2.01	Mobilization should be planned to minimize the number of trips to and from the site.
2.02	A laydown area for storage of equipment and materials should be established. It should be located on a flat, stable area at least 30 m from the top of bank any nearby watercourses.
2.03	Ensure all equipment is brought to site clean (power washed) and in good working order free of sediment, oil and grease staining/leaks, weeds/seeds. Equipment servicing with environmentally sensitive hydraulic fluids is recommended.

EMP #	General Mitigation Measures and Requirements
3.00	**Protection of Fish, Fish Habitat and Aquatic Resources**
3.01	A Change Approval under the WSA will be required for this Project. In the event that permits are required, the Contractor is responsible for implementing the terms and conditions outlined in the permits. No work can occur after the permits expire.
3.02	In-stream work should be timed to occur within the window of least risk for fish in the Project Area (July 15 through August 15) or when water is at its lowest levels. If work is planned to occur outside the window of least risk for fish, the Contractor must work with a QEP to develop proper mitigation to avoid harm to fish. If the streams are dry (i.e. no flow) at the time of the decommissioning works, in-stream work can occur outside of the least risk window for fish without consultation of a QEP.
3.03	If flow is present, the EM must be on-site when work is occurring within 30 m of the high-water mark, during instream works, and during fish salvage operations.
3.04	Any work conducted below the high-water mark must occur in isolation of flow. Flow isolation can be achieved by constructing temporary dams upstream and downstream of the work area, and then pumping or temporarily redirecting the stream around this isolation area. Flow must be maintained upstream and downstream of the work area at all times. Flow isolation can only occur **after** fish salvage activities are complete.
3.05	If a “dam and pump” system is used to isolate instream work areas, all water intakes must be screened according to DFO’s (1995) Freshwater Intake End-of-Pipe Fish Screen Guideline to prevent entrainment or impingement of fish and other aquatic organisms. (Available at: http://www.dfo-mpo.gc.ca/Library/223669.pdf)
3.06	Follow the applicable BMPs outlined in DFO’s Measures to Avoid Causing Harm to Fish and Fish Habitat (Available at: http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html) BC MOE’s (2004) Standards and Best Management Practices for Instream Works (Available at: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/iswstdsbpsmarch2004.pdf).
3.07	All fish and wildlife (e.g., amphibians) must be salvaged (i.e., captured and relocated to appropriate upstream habitat) by QEPs **prior** to dewatering. A Scientific Fish Collection Permit must be obtained from FLNRORD prior to conducting salvage activities.
3.08	Equipment and vehicles should avoid crossing watercourses. If crossing is unavoidable, limit machinery crossing to a one-time event (i.e., over and back). If repeated crossings are necessary, a temporary crossing structure will have to be built to facilitate these movements.
3.09	Equipment should operate above the high-water mark of any watercourse. While working instream, equipment should work from a dry location, such as above the bank or from an area that has been isolated. Minimize the area of disturbance below the high-water mark as much as possible. Limit equipment movement and ensure it is situated on stable surfaces (e.g., coarse substrates or rig mats).
3.10	Refueling and maintenance of equipment as well as the storage of any excess fuels, oils, lubricants or other petrochemical products should occur at least 30 m from any watercourse and/or catch basin.
3.11	Equipment and machinery used in or near a watercourse should be inspected daily to ensure they are in good operating condition and free of leaks, excess oil, grease and invasive or noxious weeds and seeds (power wash if necessary).
3.12	If feasible, machinery used in proximity to any watercourse should use environmentally friendly fluids (i.e., non-toxic, biodegradable or vegetable oil based).
3.13	No water should be extracted from any watercourse for Project use.
3.14	The Project involves activities, such as soil disturbance and excavation, that have potential to contribute sediments to nearby watercourses, which may either contain fish or drain into streams that contain fish. Transportation of sediments or sediment-laden runoff downstream should be prevented by implementing the appropriate ESC measures as discussed below (Section 4 Subsection #6.00) and detailed more fully within the Contractor’s ESC Plan.
3.15	Water quality will be frequently monitored by the Contractor’s EM to ensure TSS/turbidity are maintained at an acceptable level (see Section 4 Subsection #7.03 to #7.05 for additional details).
3.16	No deleterious materials or Project-related debris are allowed to enter any watercourse. Debris generated from the decommissioning works must be contained, collected and disposed of properly off-site.

EMP #	General Mitigation Measures and Requirements
3.17	In the event of any fluid spills or leaks into a watercourse, the Spill Response Plan (Appendix 3) should be enacted and notifications are to begin immediately.
4.00	**Protection of Wildlife and Wildlife Habitat**
4.01	The SARA protects rare and sensitive wildlife species (i.e., Wood Bision, Woodland Caribou). Should a rare or sensitive species be identified at the site at any time during the Project, the EM should be notified immediately for further direction. The BMPs to be employed to mitigate the potential effects would vary greatly depending on the identified species, its sensitivity to the activities, and its proximity of habitat to the Project footprint.
4.02	To avoid and minimize impacts to Woodland Caribou, it is recommended that caribou mitigation efforts follow the guidelines presented in FLNRORD's Compendium of Wildlife Guidelines for Industrial Development Projects in the North Area, British Columbia (2014). (Available at: http://a100.gov.bc.ca/pub/eirs/finishDownloadDocument.do?subdocumentId=9921)
4.03	For decommissioning activities occurring within known caribou ranges, the Contractor is responsible for implementing the provisions outlined in the Caribou Protection Plan (Appendix D of the EOA).
4.04	An EM should be on site to give a stop work order if caribou, Wood Bison, or any other SARA-listed species are observed nearby during decommissioning activities.
4.05	The *Migratory Birds Convention Act* (1994) prohibits the taking or killing of migratory bird nests and eggs, and the deposition of harmful substances in areas frequented by migratory birds. Likewise, the Wildlife Act also prohibits the possession, taking, injury, molestation or destruction of a bird or its eggs. No vegetation removal or disturbance is anticipated to occur within the breeding bird period (generally April 30 to August 20). The breeding bird window also coincides with bat breeding period. If vegetation clearing occurs in this period, pre-clearing bird nest and/or bat roost surveys will be required to minimize the potential that active nests are destroyed. If an active nest of any bird species is found, a no-disturbance zone will be established, and the area will remain undisturbed until young have fledged.
4.06	Any active nests or roosts of species protected by the SARA or the MBCA detected on-site must not be disturbed and consultation with the EM will occur to determine appropriate mitigation. Under the *Wildlife Act*, heron and raptor nests are protected all year round, regardless of whether they are active or inactive, and must not be disturbed.
4.07	The federally endangered little brown myotis and other wildlife species have been known to roost/den in old culverts and structures. Prior to removal, all culverts and collapsed structures should be inspected (both inside and outside) for denning wildlife. If any denning, roosting or nesting wildlife is detected on-site, work should be stopped until a QEP can be consulted.
4.08	Follow applicable BMPs outlined in MOE's (2016) Best Management Practices for Bats in British Columbia (Available at: http://a100.gov.bc.ca/pub/eirs/viewDocumentDetail.do?fromStatic=true&repository=BDP&documentId=12460).
4.09	All food waste and other materials that may attract wildlife are to be removed from the site daily. Lunches, coolers, and food products, including waste food products should be securely stored to prevent access by animals.
4.10	Notify the EM immediately if dens, burrows, or nests, are detected within the Project area or if there are encounters with bears, coyotes, cougars, or any species at risk. The following should be reported to the EM: (i) aggressive encounters involving any species, (ii) nuisance wildlife, (iii) sightings of large carnivores, (iv) wildlife deaths or (v) observations of carcasses.
4.11	Feeding, harassment, or destruction of any wildlife is strictly prohibited. Wildlife encountered at or near the Project should be allowed to passively disperse without undue harassment.
5.00	**Vegetation and Soil Management**
5.01	While some trees are anticipated to be removed during the project to facilitate access to the decommissioning sites, tree removal should be minimized as much as possible. Any vegetation to be removed should be surveyed by the EM, or other QEP, to identify any breeding, nesting, roosting or rearing birds and determine the appropriate BMPs.
5.02	Vegetation removal that will affect low shrubs and aquatic plants used by all birds and other wildlife should be avoided while they are breeding, nesting, roosting, or rearing young. Adherence to the nesting windows for clearing activities is required (see Section 4 Subsection # 4.05).
5.03	To prevent the spread of invasive plant species, vehicles and equipment must be inspected prior to arriving on site to ensure they are free soil and plant material (power washed if necessary).

EMP #	General Mitigation Measures and Requirements
5.04	In areas with abundant invasive plant species, rig matting should be laid down prior to mobilization of machinery to the work area. The bottom of the rig mats should be fully inspected and cleaned of any vegetative matter or soils before being moved from each location.
5.05	Machinery and vehicles should be restricted to defined travel routes to avoid excess trampling/compaction of vegetation and soil. Decommissioning activities should be contained within the former Alaska Highway ROW.
5.06	To minimize the establishment and spread of invasive plants, a post-construction vegetation monitoring and control program should be developed as part of the EPP.
5.07	Vegetated areas disturbed by Project related works (including lay-down sites, temporary work sites, and material stock pile sites) should be restored as quickly as possible. Disturbed areas should be restored by replacing any excavated topsoil, recontouring and seeding with an approved seed mix appropriate to the site and following approval by PSPC. A revegetation and site restoration plan should be included in the Contractor's EPP.
5.08	To prevent soil compaction around the root zone, avoid storing machinery within the drip-line of trees.
5.09	To remediate soil compaction and encourage the re-establishment of native vegetation communities, the former road prism should be scarified and seeded.
5.10	Minimize use of equipment on exposed soils and when possible, restrict vehicle traffic to existing roadways or disturbed areas to avoid unnecessary soil compaction.
5.11	A fire prevention plan should be developed as part of the EPP. The fire prevention plan should comply with applicable fire prevention policies.
6.00	**Erosion and Sediment Control**
6.01	The Contractor is responsible for developing an Erosion and Sediment Control Plan as part of their EPP prior to starting decommissioning activities.
6.02	ESC devices (such as, but not limited to, silt fencing, geotextiles, polyethylene sheeting, straw, mulch, approved grass seed, gravel for check dams, etc.) should be available for use on-site. The Site should be prepared to quickly install devices and Project members should be trained in the installation and use of the devices. The EM should confirm appropriate use and location of ESC measures prior to start of Project activities.
6.03	Sediments must not be tracked off site. Contractors should ensure that materials tracked onto public roadways adjacent to the Project area are swept at the end of each work day. Tracked materials should be removed by sweeping, shoveling, or vacuuming; materials should not be removed by hosing or sweeping sediments into drainage channels.
6.04	All instream works must occur in the dry, isolated from flowing water. Erodible materials should not be used in construction of the isolation structure.
6.05	Prior to starting work, appropriate ESC measures should be implemented to prevent sediment from entering into any surface water feature or watercourse within the Project area.
6.06	Periods of heavy precipitation are probable during the proposed decommissioning schedule. As much as possible, earthworks should be scheduled to be conducted and completed during dry weather. Excavation activities should be halted if heavy or prolonged rainfall events result in evident sediment mobilization such as sloughing of exposed soils or overland flow of sediment laden water. Work may be stopped completely or works may require additional ESC measures be implemented to permit work to continue. *A rainfall event is considered significant when 25 mm or greater falls within a 24-hour period, or when 10 mm or greater falls within a one-hour period.*
6.07	All ESC measures should be routinely inspected, especially during or after intense or prolonged rainfall events, to ensure proper function. A quick response to assess and correct damages of the controls is required, especially before subsequent precipitation events. The integrity of the structural components should be verified, and the accumulated sediment be measured. Generally, if sediment levels exceed half the volume or one-third the height of a sediment barrier, the sediments should be removed to ensure continued operating effectiveness. Any structural failures should be repaired, and any major defective sections replaced upon detection.
6.08	Soil stockpiling, if necessary, will occur within designated areas that are a reasonable distance (i.e., > 30 m) from high water mark of any flowing watercourse. The designated location(s) should be approved by the EM. Stockpile volume and area should be minimized where possible and should not be placed on sloped terrain.
6.09	Stockpiles required to remain in place for an extended period will be protected by covering them with polyethylene sheeting and a sediment barrier, such as silt fencing or a lined, sandbag berm, will be installed within 1 m around the perimeter.

EMP #	General Mitigation Measures and Requirements
6.10	All ESC structures will be decommissioned once the Project area has been reclaimed to a level where surface erosion and sedimentation have been stabilized, and potential adverse effects to receiving aquatic systems during peak precipitation events are deemed unlikely by the EM. Non-degradable materials will be removed and disposed of off-site.
6.11	Vegetation outside of the work area should be protected. Surface disturbance should be kept to within the limits of work area and the amount of time surfaces are exposed should be minimized.
6.12	Any exposed soils created as a result of decommissioning activities must be protected from erosion by implementing the appropriate ESC measures (i.e., seeding, ESC blanket, straw etc.)
7.0	**Water Quality**
7.01	Water quality should be frequently monitored downstream of the work area during instream works to ensure turbidity is at an acceptable level. When turbidity exceeds the established acceptable levels outlined in MOE's (2018) Approved Water Quality Guidelines (BCAWQG) for Aquatic Life, the EM may direct activities, including additional sediment control measures or halting work.
7.02	Establishing a background level of turbidity in the affected watercourses is necessary to ensure that guidelines are not exceeded. According to BC MOE's Technical Appendix Addendum Sampling Strategy for Turbidity, Suspended and Benthic Sediment baseline (or background) conditions can be established before project activities commence or by establishing appropriate upstream sites that can be referenced throughout the Project.
7.03	The BC Aquatic Life Water Quality Guideline (BCAWQG) for Turbidity state that turbidity should not increase from background levels by more than 8 NTU at any one time in a 24-hour period during low/clear flows (i.e. dry weather).
7.04	The BCAWQG state that turbidity should not increase from background levels by more than 5 NTU at any one time when background is 8 to 50 NTU during high/turbid flows (i.e., wet weather).
7.05	The BCAWQG state that turbidity should not increase from background levels by greater than 10% at any one time when background is over 50 NTU during high/turbid flows (i.e., wet weather).
7.06	Proper ESC measures should be installed prior to starting decommissioning activities to protect adjacent watercourses from sediment run-off. If sediment laden runoff is observed entering nearby watercourses, the EM should be notified and water quality measurements (i.e., turbidity) obtained.
7.07	Debris from the decommissioning activities must not enter adjacent watercourses. Generated debris must be contained, collected and disposed of properly off site.
7.08	Any spill into or nearby a watercourse, of a substance that is toxic, polluting, or deleterious to aquatic life must immediately be reported to the Emergency Management BC (EMBC) 24-hour phone line at 1-800-663-3456. For proper spill response procedures, refer to the Spill Response Plan (Appendix 3).
8.00	**Waste Management (Including Hazardous Wastes and Potentially Contaminated Soils)**
8.01	The Contractor is expected to adhere to all applicable legislation with respect to the handling, transportation, and/or disposal of all materials related to this Project (waste or otherwise). This legislation may include (but not be limited to) the BC Environmental Management Act, BC Hazardous Waste Regulations (HWR), Spill Reporting Regulations, Workers Compensation Board Regulations, TDG Regulations, BC Contaminated Site Regulation (CSR) in the event contaminated soil is generated or encountered, etc.
8.02	The Contractor is expected to abide by the general 'leave no trace' rule. All Project personnel are responsible for removing all litter, domestic garbage, recyclables and organic wastes that are brought to site for appropriate off-site disposal. General housekeeping should be monitored by the EM.
8.03	Should garbage containers be required on site, they should be made inaccessible to wildlife, including bear-proof lids.
8.04	Non-hazardous construction waste should be collected at designated areas on the site and removed to appropriate facilities on a regular basis.
8.05	Maintain a tidy work area to minimize loose waste from leaving the site. The site should be cleaned upon the completion of work daily.
8.06	Recycle materials whenever possible.
8.07	Waste materials should not be buried or burned.

EMP #	General Mitigation Measures and Requirements
8.08	Sanitary facilities must be utilized by all personnel on-site, located 30 m from any watercourse, stable and secured to avoid tipping, and emptied on a regular basis.
8.09	Hazardous wastes generated could include waste petroleum products (engine oils, lubricants) from machinery and equipment, spent batteries, solvents and cleaning agents, etc. The Contractor should provide labelled separate container(s) for potentially hazardous waste such as oily rags and hydrocarbon absorbent pads.
8.10	All hydrocarbon products and other hazardous wastes potentially present during project activities should be identified and the associated Workplace Hazardous Materials Information System (WHMIS) and Materials Safety Data Sheets (MSDS) made available to all Project members.
8.11	If hazardous or contaminated material (including suspect soils) is encountered, stop work immediately and report it to the Site Superintendent and EM who will determine appropriate BMPs. Hazardous materials should only be handled by appropriately trained personnel.
8.12	Any waste considered to be hazardous will be labeled and disposed of off-site according to the WHMIS criteria and the *BC Environmental Management Act* and TDG Regulations.
8.13	All work sites must have emergency spill kits (stocked with pads and sorbent booms) available on site. The kits should be suitable for the quantities and types of material in use and stored at the site. All mobile equipment must contain fully stocked, dedicated spill kits. Contractors must be trained in the proper use of the kits in case of a spill.
8.14	Soils suspected of contamination, should be sampled in accordance with accepted soil sampling procedures. The sample(s) should be submitted via Chain of Custody protocol to an accredited analytical laboratory to confirm it is not contaminated. If parameter concentrations exceed applicable standard(s), the contaminated soil should be remediated in accordance with the applicable standards and/ or guidelines under the supervision of an appropriately Qualified Environmental Professional or disposed of at a licensed facility in accordance with the CSR and/or HWR.
9.00	**Proper Disposal of Creosote-treated Wood**
9.01	During removal of Creosote-treated Wood at KM 612.70 to KM 614.20 and KM 841.95 to KM 844.40, all wood and/or disturbed soil should not come in contact with water within the watercourses.
9.02	Exposed soils that present visual or olfactory evidence of residual creosote (or at minimum all soil within approximately 1 m radius from the treated wood) should be excavated and stockpiled on poly sheeting. This soil should be sampled in accordance with accepted soil sampling procedures (i.e., BC Field Sampling Manual[1]) by an appropriately Qualified Environmental Professional (QEP) and submitted to an accredited analytical laboratory for analysis of polycyclic aromatic hydrocarbons (PAHs) and the analytes required to meet the receiving facility's disposal criteria (one sample for each: flashpoint, pH, total BTEX) to determine disposal options. PAHs are regulated substances per the CSR of the *Environmental Management Act* of BC and Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines.
9.03	All removed Creosote-treated Wood should be placed on poly sheeting while temporarily stockpiled in order to prevent the possibility of leached creosote from any newly exposed wood surfaces from gaining access to the surface and subsurface soils which would potentially contaminate the soils with PAHs.
9.04	Until such time that any stockpiled soil is removed from the site, the stockpile(s) should be covered with poly sheeting to prevent precipitation from leaching PAHs from the stockpile.
9.05	Creosote-treated Wood should be transported in accordance with the Transportation of Dangerous Goods Act and disposed of at a facility approved to accept and store materials treated with creosote.
10.00	**Fuel Storage and Spill Response**
10.01	Handle, store and transfer fuel in accordance with the BC Fuel Guidelines (Available at: http://www.northwestresponse.ca/resources/2018%20BC%20Fuel%20Guidelines.pdf)
10.02	Equipment and machinery should be inspected on a daily basis to ensure that they are in good operating condition, free of leaks, and excess oil and grease.
10.03	If feasible, machinery used in proximity to watercourses should use environmentally friendly hydraulic fluids (i.e., biodegradable or vegetable oil based).

[1] BC Ministry of Environment and Climate Change Strategy, formerly BC Ministry of Environment (2013) B.C. Field Sampling Manual. BC Ministry of Environment & Climate Change Strategy, Victoria, BC, retrieved January 2019 from https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/laboratory-standards-quality-assurance/bc-field-sampling-manual

EMP #	General Mitigation Measures and Requirements
10.04	When vehicles and equipment are not in use and/or left on site overnight, place drip trays or absorbent pads should be placed beneath the vehicle/equipment to capture any drips or leaks.
10.05	Refueling and maintenance of equipment as well as the storage of any excess fuels, oils, lubricants or other petrochemical products should occur at least 30 m from any watercourse and/or drainage system. Topographic features and slope should be considered; flat surfaces are recommended.
10.06	Hydrocarbon and coolant storage, if required on site, should be within a secondary impermeable containment facility capable of holding 110% of the storage tank contents. This may be achieved through the use of double-walled storage tanks. These containment basins should be inspected daily for leaks and wear points, kept clean and any measurable rainwater removed and disposed of appropriately. If practical, the containment area should be covered to prevent infilling with rainwater. Where leaks and/or wear points are found, they should be repaired promptly to restore full containment.
10.07	Tanks, hoses, and connections should be inspected before fuel transfers. All hose connections should be wrapped and secured with absorbent pads during fuel/oil transfers and remain wrapped, contained, and in an upright orientation during all other times. All hoses, valves, and equipment should be kept in a containment area whenever possible. Minimize hose length and the number of connections - use dripless connections if possible. Drain hoses when finished.
10.08	Contractors should ensure that small containers (i.e., jerry cans) will be stored within secondary containment in a secure location, protected from weather. These containers must be designed solely for the purpose of storing and pouring fuel and should not be more than 5 years old. Containers must not leak and must be sealed with a proper fitting cap or lid.
10.09	The Contractor is responsible for ensuring that site-specific Spill Response Plan is prepared and on-site at all times (Appendix 3).
10.10	All spill containment kits should be readily accessible both onsite and on each piece of equipment in the event of a release of a deleterious substance to the environment. Spill kits should be capable of dealing with 110% of the largest potential spill.
10.11	All Project personnel should be trained in the use of spill kit materials and supplies and be aware of their location. Any spill to ground of a substance that is toxic, polluting, or deleterious to life of reportable quantities must immediately be reported to the EMBC 24-hour phone line at 1-800-663-3456 (see Spill Response Plan, Appendix 3).
10.12	A pre-construction meeting should be held to identify all materials of a deleterious nature that could be spilled. The Contractor's EPP should provide a list of all materials that may be hazardous or of a deleterious nature and include the WHMIS paperwork.
10.13	Hazardous materials and wastes should be stored in covered containers and in secondary containment.
10.14	Minimize the potential for spills through proper use, handling, storage, and disposal of products. If a spill occurs, stop work immediately to respond and follow the protocol outlined in the Spill Response Plan (Appendix 3). Action should be taken to contain the spill and then, if necessary, reported.
11.00	**Air Quality**
11.01	All equipment, vehicles and stationary emission sources should be well-maintained and operated at optimum rated loads and be turned off when not in use to minimize exhaust emissions.
11.02	Vehicles or equipment producing excessive exhaust pollution should be repaired or replaced.
11.03	Dust-generating activities will be minimized as much as possible, especially during windy periods and dry weather, to minimize airborne dust emissions. Given the habitat sensitivity of the area, water is considered the only appropriate dust suppressant (e.g., a sprinkler system) and should be used as needed. Unless PSPC holds a permit that allows water extraction from certain locations, water can't be withdrawn from surrounding watercourses for this purpose.
11.04	When hauling materials with the potential to generate dust, loads should be tarped to avoid blow-off.
11.05	No burning of oils, rubber, tires and any other material should take place at the site.
11.06	Stationary emission sources (e.g., portable diesel generators, compressors, etc.) should be used only as necessary and turned off when not in use.

EMP #	General Mitigation Measures and Requirements
11.07	Equipment and vehicles should be turned off when not in active use so to reduce idling.
12.00	**Noise and Vibration**
12.01	Noise exposure levels should comply with Part 7, Division 1 of the Occupational Health and Safety Regulation. WorkSafeBC has several publications regarding noise in the work place and are available at: ▪ http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/basic_noise_calculations.pdf ▪ http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/occupational_noise_surveys.pdf
12.02	All equipment should be properly maintained to limit noise emissions and fitted with functioning exhaust and muffler systems. Machinery covers and equipment panels should be well fitted and remain in place to muffle noise. Bolts and fasteners should be tight to avoid rattling.
12.03	Engines should be turned off when not in use or reduced to idle, and equipment operators should avoid unnecessary revving and use of engine breaks.
13.00	**Archaeological Resources and Historical Sites**
13.01	The Contractor is responsible for having an Archeological Monitor (AM) on-call during all ground disturbance activities to provide guidance in the event that an archeological artifact is uncovered.
13.02	The Chance Find Procedure (Appendix 2) should be part of the Contractor's EPP in the event that cultural artifacts or anthropogenic deposits (e.g., remains of hearths, dwellings, storage pits) are uncovered during construction.
13.03	If an archaeological site is encountered during construction, activities must be halted within 30 m of the find, and the Contractor must follow the CFP. The Archaeology Branch should be contacted at 250-953-3334 for direction.

5.0 ENVIRONMENTAL MANAGEMENT ROLES AND RESPONSIBILITIES

The effective environmental management of this Project requires a coordinated effort from all individuals involved. The following sections outline the responsibilities of key personnel involved with the Project.

5.1 Key Project Personnel

The Project contact list (Table 4) for the works proposed in this EMP should be completed as soon as the information is known and made available to all parties. At the time this EMP was completed, PSPC was in the process of preparing tender documents for bidding. The successful contractor should provide details to complete and update this list as part of their EPP.

Table 4: Project Contact List

Name	Role	Phone Number	Email
TBD	Contractor Site Superintendent	TBD	TBD
TBD	Contractor's Environmental Monitor (EM)	TBD	TBD
TBD	TBD	TBD	TBD
Laurie Crawford	PSPC Environmental Coordinator	(250) 520-0363	Laurie.Crawford@pwgsc-tpsgc.gc.ca
Andrew Horwood	Project Design Lead	(778) 945-5879	Andrew.Horwood@tetratech.com

5.2 Contractor Responsibilities

The successful contractor will review Tender Specifications for environmental compliance and this EMP with their staff and subcontractors and prepare an EPP prior to undertaking any work. The Contractor is responsible for ensuring that all the activities related to the decommissioning works are conducted in such a way that impacts to environment are either avoided or minimized.

- Contractors will comply with all laws, orders, rules, regulations, and codes of any provincial or federal environmental agency or like authority, which are applicable to the Project.
- Contractors are responsible for implementing the BMPs and mitigation measures outlined in the EMP.
- Contractors will cooperate with the EM and AM appointed for the work. They must comply with written or verbal instructions with respect to execution of the proposed work in compliance with the mitigation measures outlined in the Tender Specifications, this EMP and their EPP, which are at a minimum, consistent with the regulatory agencies having jurisdiction over the area of the Project.
- Contractors must complete their work in such a fashion that all watercourses, including any ditches and swales, where works are to occur, are effectively isolated from downstream habitat. The Contractor will coordinate with the EM prior to and during the installation of the isolation measures in order that the EM can arrange for the concurrent salvage of fish within the isolated work areas, should fish be present at a crossing location.
- Contractors will correct deficiencies and any non-compliance upon direction from the EM whether written or verbal. Corrections should be made as soon as reasonably possible, ideally within 24 hours of directions.
- Contractors will arrange provision of appropriate on-site waste containers, if required.
- Contractors are responsible for the restoration of all disturbed areas resulting from any of the works they undertake. The contractor is responsible for reinstatement of the Project area after construction, to the satisfaction of the Project Manager and the EM.
- If an archeological site is detected, the Contractor is responsible for following the Chance Find Protocol (Appendix 2).

5.3 Environmental Monitor Responsibilities

On-site monitoring is a key component of ensuring that the mitigation measures recommended in the EMP (and ultimately the EPP) are implemented properly (e.g., appropriate location and correct installation) and function as intended. The Contractor should retain a Qualified Environmental Professional (QEP) as the environmental monitor (EM) to provide guidance on implementing the recommended measures and, if necessary, to develop additional mitigation measures if the need arises.

It is expected that the monitoring schedule will establish the frequency and duration of EM visits; an appropriate schedule should be established between the EM, the Contractor, PSPC, and all involved regulatory agencies. The EM should carry out inspections at regular intervals, as well as additional inspections during any accidents or malfunctions that affect the decommissioning works and following any significant rainfall events[2]. It is equally important to take corrective action prior to inclement weather events rather than to react during or after the event.

[2] A rainfall event is considered significant when 25 mm or greater falls within a 24-hour period, or when 10 mm or greater falls within a one-hour period.

At a minimum, the EM should visit the Project area prior to the start of construction works to ensure all Project personnel are aware of environmental sensitivities and the requirements of the EMP, as well as to assess that the EPP is effectively implemented. Monitoring should be conducted with greater frequency during periods of inclement weather (i.e., heavy precipitation, strong winds) and during critical stages of the Project. Generally, work within the 30 m buffer of watercourses in which flow is present requires the close oversight of the EM. While the EM is not required to be on site when in-stream works (i.e., culvert removals) are being conducted on dry streams, it is recommended that the EM be on site when in-stream works are being conducted within streams containing water, as isolation and fish salvage operations will be required in these instances.

An EM should be available during key monitoring stages such as:

- During start-up of the Project and installation of erosion and sediment control measures;
- During work that occurs within 30 m of the high-water mark of any watercourse in which flow is present (i.e., within the riparian zone);
- During instream works (i.e., work below the high-water mark), especially during worksite isolation;
- During fish salvage operations that take place when stream isolation infrastructure is being installed; and
- During completion of the Project and decommissioning/removal of mitigation measures.

The primary responsibility of the EM is to confirm that the environmental protection objectives of the Project are met and that the requirements of this EMP and contractor's EPP are enacted. EM responsibilities include:

- Monitor compliance with the EMP, EPP, permits and other legal requirements.
- Communicate the requirements of the EPP to the contractors and their respective employees during pre-job and tailboard meetings.
- Be on site as per the schedule established between parties prior to Project start and remain on-call (via phone or email) during non-critical work periods to respond to emerging environmental issues or emergencies.
- Review the contractors work procedures to assess functionality and compliance with the EPP and applicable regulations, standards and BMPs.
- Have the authority to modify and/or halt any construction activity at any time if deemed necessary for the protection of the environment or if SAR (i.e., Wood Bison, Woodland Caribou) are observed in the Project area.
- Advise Project personnel if Project activities have caused or are likely to cause an environmental incident and make recommendations for corrective action.
- Liaise directly with Project personnel and provide technical advice to resolve situations that may impact the environment as they arise.
- Monitor all works conducted within watercourses when flow is present to ensure downstream habitat is effectively isolated.
- Conduct routine field water quality data collection (turbidity, pH, temperature, conductivity) using portable water quality meters prior to (baseline) and during construction activity within watercourses. Results will be compared to the British Columbia Approved Water Quality Guidelines for Aquatic Life. If a Guideline is exceeded, the EM will direct the contractor to undertake corrective measures.
- Maintain complete records of activities related to the implementation of the EPP. This should include any readings or measurements taken, photographs and incident reports.

- Complete and submit a monitoring report to PSPC and report any unanticipated adverse effects to the environment within 24 hours of occurrence. Such reports should include the nature of the effect, its cause, mitigation and/or remediation implemented, and whether a work stoppage was ordered, as well photographs, analyses, and measurements, if applicable.

5.4 Archaeological Monitor Responsibilities

A qualified archaeological monitor (AM) will provide guidance on potential archaeological sensitivities that could affect the Project, and if necessary, to develop additional mitigation measures if the need arises. The AM has the authority to modify and/or halt any construction activity at any time if deemed necessary for the protection of archaeological resources. The role of the Archaeological Monitor (AM) includes the following:

- Perform a mapping review of archeological sensitivities prior to starting any decommissioning activities;
- Conduct a walk-through of each of the decommissioning locations with the Contractor and Environmental Monitor prior to starting the decommissioning works. During this time the AM will point out any archaeological considerations relevant to the Project area and go over the Archaeological Chance Find Protocol (CFP) with the Contractor; and
- Be available (i.e., on-call) during all ground disturbing activities to provide guidance in the event that an artifact is identified.

5.5 Public Services and Procurement Canada Responsibilities

PSPC will delegate a Departmental representative/Environmental Coordinator (EC) to oversee the Project to completion and to coordinate project activities between all parties involved. Throughout the duration of the Project, PSPC is committed to undertake the following:

- Require that the successful Contractor has an appropriate Environmental Protection Plan, an EM and an AM in place prior to starting work.
- A Project-specific Environmental Protection Plan (EPP) will be prepared by the successful Contractor as part of the Tender requirements for the Project and provided to the PSPC EC for review prior to work commencing. The PSPC EC will review the contractors EPP for accuracy against the this EMP, appropriate Project specifications, and contract requirements. Work related to the EPP submittal (as determined by the PSPC EC) shall not proceed until acceptance of the EPP by the PSPC EC.
- Upon PSPC EC acceptance of the Contractor's EPP, the PSPC EC may submit the EPP as part of the environmental notification/permitting process.
- The PSPC EC monitors compliance with the contract specifications.
- The PSPC EC has the responsibility to notify Contractor verbally and in writing of observed non-compliance with environmental Project specifications and/or Federal, Provincial or Municipal environmental laws or regulations, permits, etc.
- The PSPC EC has the authority to issue a stop work order when an existing or potential environmental non-compliance is observed until satisfactory corrective action has been taken.
- The PSPC EC ensures that environmental incidents are reported.
- The PSPC EC liaises with regulatory agencies as required.

5.6 Environmental Auditor (Tetra Tech) Responsibilities

Tetra Tech will provide environmental oversight on behalf of PSCP for the Project. The role of Tetra Tech includes the following tasks:

- Prepare and update the Fish Habitat Assessment, Environmental Management Plan, Caribou Protection Plan and Chance Find Protocol as necessary;
- Apply for environmental permits on behalf of PSPC required for Project activities;
- Liaise with PSPC's Environmental Coordinator to meet Project objectives; and
- Prepare project design details, drawings, and specifications on PSPC's behalf.

6.0 ENVIRONMENTAL COMMUNICATION / REPORTING REQUIREMENTS

6.1 Environmental Protection Plan

A Project-specific Environmental Protection Plan (EPP) will be prepared by the successful Contractor as part of the Tender requirements for the Project and provided to the PSPC Environmental Coordinator for comment and review prior to work commencing. An appropriately qualified Environmental Monitor (EM) will be designated by the Contractor before the commencement of the Project to oversee the execution of the EPP. The EPP will:

- Be available to all staff during Project activities. The Contractor will be required to keep a copy of the EPP on-site during the decommissioning activities.
- Include an access plan including access routes, traffic safety, type of equipment used for various construction phases, and location of lay down areas in order to prevent/minimize disturbance to vegetation and soils. Lay down areas will occur on paved and/or hardened surfaces, where possible.
- Include spill response procedures and hazardous materials plan (e.g., fuels, lubricants, concrete etc.), including appropriate containment, storage, security, handling, and transportation of applicable materials/substances, spill kit requirements, and emergency response contacts. The Material Safety Data Sheets (MSDS) for all chemicals used will be made available on site.
- Include an Emergency Response Plan that outlines procedures to follow in case of emergency (e.g., wildlife encounter, equipment malfunction/failure, fire, avalanche).
- Details of environmental monitoring and rehabilitation.
- Includes an Erosion and Sediment Control Plan.
- Include provisions to reduce human-wildlife interactions.
- Integrate fully with the Traffic Management Plan, Quality Management Plan and Site-Specific Health and Safety Plan.

6.2 Environmental Monitoring Reports

The EM is responsible for completing and submitting environmental monitoring reports at a frequency acceptable to PSPC, detailing the decommissioning activities that occurred during the days the EM was on-site and any observations of environmental non-compliance with the EMP or EPP. EM reports should include the following information:

- The name of the EM and the date, time and duration the EM was on site;
- A description of the weather during the site visit;
- A list of personnel on site;
- A summary and photo documentation of the decommissioning activities that were taking place during the site visit, or that took place since the last site visit;
- Water turbidity measurements and/or fish salvage results if works were being conducted in or around a watercourse;
- In cases where environmental non-compliance or environmental incidents are observed, the EM report should include:
  - The nature of the effect and its cause,
  - Whether a work stoppage was ordered,
  - Photographs,
  - Analyses, and measurements, if applicable,
  - Mitigation and/or remediation measures that were implemented or recommended, and
  - In subsequent site visits, the EM should document if non-compliances identified during previous EM visits had been resolved and/or addressed.

6.3 Emergency Response and Environmental Incident Reporting

All environmental incidents/emergencies should be reported to the EM, the Contractor Site Superintendent, and PSPC as soon as possible, so that appropriate notifications can be made, and Project management can ensure that incidents are handled appropriately. In the case of any environmental concern and or incident, Project personnel are responsible for informing their Site Superintendent, who must then report to the EM. Contractors are responsible to ensure that all crew are adequately trained and equipped to deal with potential environmental incidents related to their work. Any concerns about preparedness for environmental incidents should be brought to the attention of the Site Superintendent or the EM.

The Emergency Contacts List (Table 5) should be updated as part of the EPP, as necessary.

Table 5: Emergency Contact List

Agency	Phone Number
Emergency Services	911 Please note that there is no 911 service in the NRRD
Fort Nelson Emergency Contacts	
Fort Nelson – Local Police (Non-emergency)	1-250-774-2700
Fort Nelson - Police Emergency	1-250-774-2777
Fort Nelson Fire Department (Non-emergency)	1-250-774-3955
Fort Nelson – Fire Emergency	1-250-774-2222
Watson Lake Emergency Contacts	
Watson Lake RCMP (Emergency)	867-536-5555
Watson Lake RCMP (Non-emergency)	867-536-2677
Watson Lake Fire Department (Emergency)	867-536-2222
Watson Lake Fire Department (Non-emergency)	867-536-8008
Watson Lake Ambulance	867-536-4444
Public Works – Emergency, After Hours (on-call)	867-536-8040
Government Emergency Contacts	
BC Wildfire Reporting Line	1-800-663-5555 or *5555 on cell
Emergency Management BC	1-800-663-3456
Conservation Officer Service (wildlife issues)	1-877-952-7277
DFO (aquatic habitat/fisheries issues, Record and Report 24-hour Hotline)	1-800-465-4336
FLNRORD – Fort Nelson Office	250-774-5511

An Environmental Incident Report (EIR) should be prepared as soon as possible following an incident. Contractors are responsible for completing the EIR and the EM should follow-up with the Contractors to ensure it is filed. The target for reporting is within one (1) working day from the time of the incident. A sample EIR is included as Appendix 4. **All significant emergencies (as determined by the EM) should be reported to Emergency Management BC (EMBC) at 1-800-663-3456.**

Any incidents that result in non-compliance with a permit or environmental legislation such as the *Fisheries Act* must be reported within 12 hours to the MOE, DFO, and Emergency Management BC (EMBC) [formerly the Provincial Emergency Program (PEP); if reportable spill quantity].

If the incident results in severe environmental impact or involvement of the public, the media, or government representatives, PSPC must be notified immediately. The target for this type of notification is within one hour of the incident or its escalation to severe status.

An environmental incident is one that has caused, or has the potential to cause, one or more of the following:

- Deleterious effects to the environment including those affecting the air quality, aquatic resources, wildlife, including SAR or other environmental resources;
- Unauthorized discharge of deleterious substances into a watercourse;
- Disturbance or damage of heritage resources or archaeological sites
- Adverse publicity with respect to environment; and
- Legal action with respect to violation of legislation, regulation, policy or environmental damage.

Examples of Environmental Incidents include, but are not limited to:

- Spills of oil, fuel, hydraulic fluids, PCBs or chemicals;
- Discharge of deleterious substances (sediment, spills, concrete) into fish-bearing water;
- Mass wasting, landslides, erosion, or floods as they affect environmental or water quality;
- Activities that affect fish or fish habitat, wildlife or recreation;
- Violation of environmental regulations, permits, or approvals;
- Negative wildlife interactions;
- Forest fires related to activities; and
- Work and/or removal of vegetation in or near water bodies without regulatory approval.

7.0 CLOSURE

We trust this document meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

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APPENDIX 1

TETRA TECH'S LIMITATIONS ON THE USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

NATURAL SCIENCES

1.1 USE OF DOCUMENT AND OWNERSHIP

This document pertains to a specific site, a specific development, and a specific scope of work. The document may include plans, drawings, profiles and other supporting documents that collectively constitute the document (the "Professional Document").

The Professional Document is intended for the sole use of TETRA TECH's Client (the "Client") as specifically identified in the TETRA TECH Services Agreement or other Contractual Agreement entered into with the Client (either of which is termed the "Contract" herein). TETRA TECH does not accept any responsibility for the accuracy of any of the data, analyses, recommendations or other contents of the Professional Document when it is used or relied upon by any party other than the Client, unless authorized in writing by TETRA TECH.

Any unauthorized use of the Professional Document is at the sole risk of the user. TETRA TECH accepts no responsibility whatsoever for any loss or damage where such loss or damage is alleged to be or, is in fact, caused by the unauthorized use of the Professional Document.

Where TETRA TECH has expressly authorized the use of the Professional Document by a third party (an "Authorized Party"), consideration for such authorization is the Authorized Party's acceptance of these Limitations on Use of this Document as well as any limitations on liability contained in the Contract with the Client (all of which is collectively termed the "Limitations on Liability"). The Authorized Party should carefully review both these Limitations on Use of this Document and the Contract prior to making any use of the Professional Document. Any use made of the Professional Document by an Authorized Party constitutes the Authorized Party's express acceptance of, and agreement to, the Limitations on Liability.

The Professional Document and any other form or type of data or documents generated by TETRA TECH during the performance of the work are TETRA TECH's professional work product and shall remain the copyright property of TETRA TECH.

The Professional Document is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of TETRA TECH. Additional copies of the Document, if required, may be obtained upon request.

1.2 ALTERNATIVE DOCUMENT FORMAT

Where TETRA TECH submits electronic file and/or hard copy versions of the Professional Document or any drawings or other project-related documents and deliverables (collectively termed TETRA TECH's "Instruments of Professional Service"), only the signed and/or sealed versions shall be considered final. The original signed and/or sealed electronic file and/or hard copy version archived by TETRA TECH shall be deemed to be the original. TETRA TECH will archive a protected digital copy of the original signed and/or sealed version for a period of 10 years.

Both electronic file and/or hard copy versions of TETRA TECH's Instruments of Professional Service shall not, under any circumstances, be altered by any party except TETRA TECH. TETRA TECH's Instruments of Professional Service will be used only and exactly as submitted by TETRA TECH.

Electronic files submitted by TETRA TECH have been prepared and submitted using specific software and hardware systems. TETRA TECH makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

1.3 STANDARD OF CARE

Services performed by TETRA TECH for the Professional Document have been conducted in accordance with the Contract, in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided. Professional judgment has been applied in developing the conclusions and/or recommendations provided in this Professional Document. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of the Professional Document.

If any error or omission is detected by the Client or an Authorized Party, the error or omission must be immediately brought to the attention of TETRA TECH.

1.4 DISCLOSURE OF INFORMATION BY CLIENT

The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by persons other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

1.6 GENERAL LIMITATIONS OF DOCUMENT

This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary investigation and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL ISSUES

The ability to rely upon and generalize from environmental baseline data is dependent on data collection activities occurring within biologically relevant survey windows.

It is incumbent upon the Client and any Authorized Party, to be knowledgeable of the level of risk that has been incorporated into the project design or scope, in consideration of the level of the environmental baseline information that was reasonably acquired to facilitate completion of the scope.

1.8 NOTIFICATION OF AUTHORITIES

TETRA TECH professionals are bound by their ethical commitments to act within the bounds of all pertinent regulations. In certain instances, observations by TETRA TECH of regulatory contravention may require that regulatory agencies and other persons be informed. The client agrees that notification to such bodies or persons as required may be done by TETRA TECH in its reasonably exercised discretion.

APPENDIX 2

ARCHAEOLOGY CHANCE FIND PROTOCOL

TETRA TECH

TECHNICAL MEMO

ISSUED FOR USE

To:	Public Services and Procurement Canada	**Date:**	February 24, 2020
c:		**Memo No.:**	
From:	Tetra Tech Canada Inc.	**File:**	704-TRN.VHWY03085-01
Subject:	Archaeological Site Chance Find Protocol Decommissioning of Former Alaska Highway Alignments – KM 612.70 to KM 966.90		

1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) has been retained by Public Services and Procurement Canada (PSPC) to provide engineering and environmental services for the decommissioning of five sections of the former Alaska Highway (herein referred to as the "Project"), located between KM 612.70 and KM 966.90 of the current highway alignment.

Throughout the Project there is potential to encounter archaeological sites and artifacts that are protected under the *Heritage Conservation Act*. As such, Tetra Tech was asked to provide archaeological services for the Project, including the preparation of a site-specific Chance Find Protocol (CFP). For mapped locations of all five decommissioning sites, please refer to the Environmental Overview Assessment (EOA).

The purpose of this Archaeological Site Chance Find Protocol (CFP) is to provide guidance to PSPC employees and contractors on what to do if they come across or expose an archaeological site while conducting ground disturbing operations. This document provides a framework for recognizing archaeological artifacts and avoiding unforeseen disturbance to them. The Protocol, consisting of two parts, (1) ensures employees and contractors understand the regulations that protect archaeological sites from disturbance and what archaeological sites look like and (2) what procedural steps to follow if a suspected archaeological or heritage resource is encountered during ground disturbing activities.

1.1 Project Contacts

Name	Role	Phone Number	Email
Laurie Crawford	Project Manager / Representative, PSPC	250.520.0363	Laurie.Crawford@pwgsc-tpsgc.gc.ca
Charla Arnott	Archaeologist, SORIAK Consulting	780.995.4859	Charla@soriakconsulting.com
Andrew Horwood	Project Manager, Tetra Tech	778.945.5879	Andrew.Horwood@tetratech.com

Tetra Tech Canada Inc.
Suite 1000 – 10th Floor, 885 Dunsmuir Street
Vancouver, BC V6C 1N5 CANADA
Tel 604.685.0275 Fax 604.684.6241

1.2 Archaeological Mapping Review

A mapping review of five decommissioning sites was completed to determine the Project's potential to impact previously recorded cultural resource sites. Provincial site data files were obtained, and a review of ground disturbance relative to the Project was completed. No previously recorded archaeological sites are located in conflict with the Project. In addition, an Archaeologist conducted a walk-through of each site, and no new archaeological sites were identified. However, potential remains for cultural material to be identified during construction, particularly in areas close to water sources. If cultural material is identified during construction additional assessment will be required and Project revision may be needed.

2.0 EDUCATION

This section ensures employees are aware that archaeological sites are protected by law, provides examples of what archaeological sites look like and how they can be identified.

2.1 Heritage Conservation Act

The British Columbia (BC) *Heritage Conservation Act* confers automatic protection upon archaeological and historic heritage sites that meet the definitions within section 13(2) of the Act. These include:

- All sites pre-dating AD1846;
- All sites of unknown age or origin which may pre-date AD1846;
- All burial places and rock art sites of historical or archaeological value; and
- All vessels or aircraft wrecked for two or more years.

All areas within the boundaries of a heritage site are protected under the Act, including areas without archaeological deposits or other kinds of heritage remains (e.g., land without archaeological deposits between several culturally modified trees at one site, or between several storage pits at one site).

No archaeological sites have been identified near the five decommissioning sites included in this Project; however, it is recommended that a CFP be developed in advance of construction, in the event that cultural artifacts or anthropogenic deposits (e.g., remains of hearths, dwellings, storage pits) are uncovered during construction.

There is always a limited possibility for unknown archaeological sites to exist, particularly in proximity to water sources. Archaeological sites (both recorded and unrecorded) are protected under the *Heritage Conservation Act* and must not be altered or damaged without a site alteration permit issued by BC's Archaeology Branch, Ministry of Forests, Lands, Natural Resource Operations and Rural Development. If an archaeological site is encountered during development, activities must be halted, the discovery protocol provided in section 3.0 should be followed, and the BC Archaeology Branch is to be contacted at 250.953.3334 for direction.

2.2 Artifact Identification

In northeast British Columbia cultural material identified can widely range depending on location. Material is generally found in areas that were favorable to the needs of the area's earliest inhabitants. Examples of possible artifacts in the region may include, but are not limited to, the following:

Type:	Description
Stone Tools	These were made for hunting or fishing, can be formed from a variety of materials, and can come in many different colours. Examples include projectile points, hide scrapers, as well as the material cast off when they are manufactured (lithic debitage):   
Culturally Modified Trees (CMTs): Trails:	Trees were modified in different ways and for different purposes, including bark stripping and trail marking. Trees with blazes on either side of them sometimes marked trails. These trails may also warrant protection. 
Historic Structures	Historic objects identified during construction should be inspected/ documented; however, depending on their antiquity, they may or may not be protected under the *Heritage Conservation Act.* 
Burials:	The BC government's *Found Human Remains* mandate details procedures to follow in the event human remains are identified. Burials traditionally occurred in elevated areas overlooking water. Unusual rock piles or soil depressions may be indicative that a burial is present. 

3.0 DISCOVERY PROTOCOL

This section describes the necessary steps required when a suspected archaeological site is identified by an employee or contractor in the field. Section 6.3 of the Government of Canada's General Provisions for Construction Services outlines the responsibilities of the Contractor in the event that human remains, archaeological remains or items of historical or scientific interest are discovered (GOC 2018). These provisions have been incorporated into this protocol.

If materials are encountered during the course of development that could be archaeological or heritage resources, the following steps will be taken:

1. Cease all forms of ground disturbance in the immediate vicinity of the find and leave all possible archaeological or heritage materials in place.
2. Establish a protective buffer of at least 30 m around the extent of the find area and demarcate the buffer in a highly visible and clear manner (e.g., with "No Work Zone" flagging).
3. Record the GPS location of the found materials, take photos, and fill out the attached form.
4. Inform the Archaeological Monitor and the Project Manager of the possible archaeological site and submit the associated form and photos.
5. The Project Manager will contact PSPC and all personnel will await further instruction. All archaeological remains encountered at the Project location shall be deemed to be the property of Canada.
6. After consulting with PSPC, the Archaeological Monitor is to notify the BC Archaeology Branch at 250.953.3334 for direction.

3.1 Form

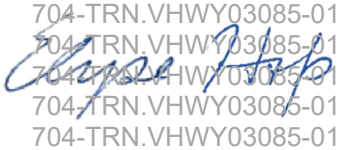
General Information		
Date of Discovery:		
Discovery Made By:		
Other Parties Present:		
Location (UTM):		
Site Description		
What is the closest waterbody (or other identifying feature – KM marker etc.)?		
Describe the Site Characteristics:		
Provide a sketch of the site with appropriate measurements:		
Photograph Summary		
Picture #:	Direction:	Description:
Picture #:	Direction:	Description:
Picture #:	Direction:	Description:
Picture #:	Direction:	Description:

Picture #:	Direction:	Description:
Picture #:	Direction:	Description:
Forward all information, pictures, maps and communications to the Project Manager:		□Yes □No Date:
Forward all information, pictures, maps and communications to Archaeological Monitor:		□Yes □No Date:
Forward all information, pictures, maps and communications to PSPC:		□Yes □No Date:

4.0 CLOSURE

We trust this technical memo meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.



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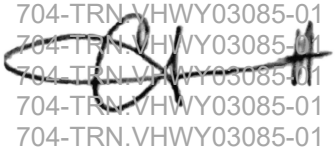

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Attachments: Tetra Tech's Limitations on the use of this Document

REFERENCES

Government of Canada [GOC]. 2018. General Conditions of a Service Contract (GC) 1: General Provisions – Construction Services.

Heritage Conservation Act, RSBC 1996, c 187. Available at: http://canlii.ca/t/52qv7. Retrieved on Feb 11, 2019.

LIMITATIONS ON USE OF THIS DOCUMENT

NATURAL SCIENCES

1.1 USE OF DOCUMENT AND OWNERSHIP

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Both electronic file and/or hard copy versions of TETRA TECH's Instruments of Professional Service shall not, under any circumstances, be altered by any party except TETRA TECH. TETRA TECH's Instruments of Professional Service will be used only and exactly as submitted by TETRA TECH.

Electronic files submitted by TETRA TECH have been prepared and submitted using specific software and hardware systems. TETRA TECH makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

1.3 STANDARD OF CARE

Services performed by TETRA TECH for the Professional Document have been conducted in accordance with the Contract, in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided. Professional judgment has been applied in developing the conclusions and/or recommendations provided in this Professional Document. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of the Professional Document.

If any error or omission is detected by the Client or an Authorized Party, the error or omission must be immediately brought to the attention of TETRA TECH.

1.4 DISCLOSURE OF INFORMATION BY CLIENT

The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by persons other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

1.6 GENERAL LIMITATIONS OF DOCUMENT

This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary investigation and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL ISSUES

The ability to rely upon and generalize from environmental baseline data is dependent on data collection activities occurring within biologically relevant survey windows.

It is incumbent upon the Client and any Authorized Party, to be knowledgeable of the level of risk that has been incorporated into the project design or scope, in consideration of the level of the environmental baseline information that was reasonably acquired to facilitate completion of the scope.

1.8 NOTIFICATION OF AUTHORITIES

TETRA TECH professionals are bound by their ethical commitments to act within the bounds of all pertinent regulations. In certain instances, observations by TETRA TECH of regulatory contravention may require that regulatory agencies and other persons be informed. The client agrees that notification to such bodies or persons as required may be done by TETRA TECH in its reasonably exercised discretion.

APPENDIX 3

SPILL RESPONSE PLAN

EXAMPLE SPILL RESPONSE PLAN

The Contractor should ensure that the information provided in this Example Spill Response Plan is included within their prepared EPP.

The Contractor must be familiar with the Spill Response Plan and must ensure that the entire Project personnel understands it. Each member of the Project personnel should know what constitutes a "significant" spill which needs to be reported. In the case of any environmental concern and/or incident, the Project personnel is responsible for informing the Site Superintendent, who must then report to the EM and PSPC. The Site Superintendent is responsible to ensure that all Project personnel are adequately trained and equipped to deal with potential environmental incidents related to their work. Any concerns regarding preparedness for environmental incidents will be brought to the attention of the Site Superintendent or the EM.

1.0 KEY CONTACTS

Key contacts in the event of spill are presented in Table A1, which should be updated when information is available.

Table A1: Key Project Emergency Contacts

Contact	Name	Phone #	Contact Details
PSPC Project Manager	TBD	TBD	Report all incidents to contact
PSPC Site Manager	TBD	TBD	Report all incidents to contact
PSPC Environmental Manager	TBD	TBD	Report all incidents to contact
Contractor Site Superintendent	TBD	TBD	Report all incidents to contact
Environmental Monitor (EM)	TBD	TBD	Report all incidents to contact
Fire, ambulance, police service		911	Emergency Assistance
Emergency Management BC		1.800.663.3456	Report as required
Conservation Officer Service (wildlife issues)		1.877.952.7277	Wildlife issues
DFO (aquatic habitat/fisheries issues, Record and Report 24-hour Hotline)		1.800.465.4336	Aquatic habitat/ fisheries issues

2.0 BEST PRACTICES

The following measures/best practices should be implemented as part of the **Spill Response Plan**:

- The Contractor's EPP should provide a list of all materials that may be hazardous or of a deleterious nature and include the Workplace Hazardous Materials Information System (WHMIS) paperwork.
- A pre-construction meeting should be held to identify all materials of a deleterious nature that could be spilled.
- Hazardous materials and wastes should be stored in covered containers and in secondary containment.
- Appropriate spill cleanup materials should be readily available and easily accessible. Project personnel should be aware of the specific materials required to clean-up various spills.
- Minimize the potential for spills through proper use, handling, storage, and disposal of products.
- Work should be undertaken and completed in such a manner as to prevent the release of silt, sediment-laden water, fuels or lubricants, uncured concrete or any other deleterious substance.

- All waste fuel, oil, petroleum products, other hydrocarbons and their storage containers must be disposed of off-site at an approved disposal site.
- Contractors should ensure that all construction machinery is to arrive on site in a clean, washed condition, in good operating condition and is to be maintained free of fluid leaks, excess oil, and grease.
- Hydraulic fluids for machinery used within around watercourses should be biodegradable in case of accidental loss of fluid.
- Contractors should ensure vehicles and equipment are not serviced or refuelled within 30 m of any watercourse or catch basins. Tanks, hoses, and connections should be inspected before use. All hose connections should be wrapped and secured with absorbent pads during fuel/oil transfers and remain wrapped, contained, and in an upright orientation during all other times. All hoses, valves, and equipment should be kept in a containment area whenever possible. Minimize hose length and the number of connections - use dripless connections if possible. Drain hoses when finished.
- Hazardous materials must be labelled and disposed of according to the WHMIS criteria and the TDG Regulations.
- Hydrocarbon and coolant storage, if required on site, should be within a secondary impermeable containment facility capable of holding 110% of the storage tank contents. This may be achieved through the use of double-walled storage tanks. These containment basins should be inspected daily for leaks and wear points, kept clean and any measurable rainwater removed and disposed of appropriately. If practical, the containment area should be covered to prevent infilling with rainwater. Where leaks and/or wear points are found, they should be repaired promptly to restore full containment.
- Contractors should ensure that small containers (i.e., jerry cans) will be stored in a secure location, protected from weather. These containers must be designed solely for the purpose of storing and pouring fuel and should not be more than 5 years old. Containers must not leak and must be sealed with a proper fitting cap or lid.
- All work sites must have emergency spill kits (stocked with pads and sorbent booms) available on site. The kits should be suitable for the quantities and types of material in use and stored at the site. All mobile equipment must contain fully stocked, dedicated spill kits. Contractors must be trained in the proper use of the kits in case of a spill.
- If a spill occurs, stop work immediately to respond. Action should be taken to contain the spill and then, if necessary, reported. When cleaning up the spill:
  - Use appropriate absorbent pads or other materials based on the type of substance spilled. The method of disposing of the waste is dependent on the amount and type of deleterious sub-stance that was spilled.
  - Technical assistance is available from the EM on clean-up procedures and residue sampling.
  - All equipment and/or material used in clean-up (e.g. used sorbent, oil containment materials, etc.) must be disposed of properly.
  - Accidental spills may produce hazardous wastes (e.g. material with > 3% oil) and contaminated soil. All waste disposal must comply with the Environmental Management Act and Regulations.
  - Contaminated soil must be treated and dealt with as required on a site-specific basis.

3.0 SPILL RESPONSE PROCEDURES

1. **Assess/Ensure Safety**
   - Ensure personal/public, electrical, and environmental safety.
   - Ensure that people with proper training and equipment deal with the spill and unnecessary people are kept clear of the area.
   - Wear appropriate Personal Protective Equipment (PPE) and consult Material Safety Data Sheets.
   - Never rush in, always determine the product spilled before taking action.
   - Warn people in the immediate vicinity.
   - Ensure no ignition sources if spill is of a flammable material.
2. **Stop the Source (When Possible)**
   - If required, and when it is safe to do so, stop the spill at its source. This may simply be righting an overturned container or sealing a hole.
   - Act quickly to reduce the risk of environmental impacts.
   - Close valves, shut off pumps or plug holes/leaks, set containers upright.
   - Stop the flow of the spill at its source.
3. **Secure the Area**
   - Limit access to the spill area.
   - Prevent unauthorized entry onto the site.
4. **Contain and Control the Spill**
   - The spill should be prevented from infiltrating into the ground or entering a watercourse.
   - If the spill occurs to water, booms should be deployed to prevent its spread.
   - Block off and protect drains and culverts.
   - Prevent spilled material from entering drainage structures (ditches, culverts, drains).
   - Use spill sorbent material to contain spill.
   - If necessary, use a dyke or any other method to prevent any discharge off-site.
   - Make every effort to minimize contamination.
   - Contain as close to the source as possible.
5. **Notify/Report Incident to Appropriate Authority**

4.0 ENVIRONMENTAL INCIDENT REPORTING

All environmental incidents, including spills, must be reported to the EM, the Site Superintendent and PSPC as soon as possible by phone so that appropriate notifications can be made, and the incident is handled appropriately. Spills must be promptly cleaned up and subsequently reported. Make a note of what, how, and where the incident happened. An EIR should be prepared as soon as possible following an incident. The target for reporting is within one (1) working day from the time of the incident occurs. All personnel on-site have a responsibility to report all environmental concerns or incidents regardless of magnitude. The Contractor will be responsible for completing and filing the EIR.

4.1 External Reporting:

For all spills to ground in amounts requiring external notification/reporting or of any substance toxic to life, the person who had possession, charge or control of a substance immediately before its spill, or the person that discovers a spill, will report the spill to EMBC 24-hour phone line at **1-800-663-3456.** This same person must also immediately report the spill details to the Site Superintendent and EM who will report the spill internally.

When reporting a spill, the caller should be prepared to provide the dispatcher the following information, if possible:

- Name and phone number of person reporting the spill;
- Name and phone number of person involved with the spill;
- Location, time, and date of spill;
- Type and quantity of material spilled;
- Cause and effect of the spill;
- Details of action taken or proposed to contain the spill and minimize its effect;
- Duration of occurrence;
- Weather conditions;
- Description of the spill location and surrounding area;
- Names of government agencies on scene, if any;
- Names of other persons or agencies advised or to be advised concerning the spill; and
- Planned follow-up.

*****ALL SPILLS TO WATER ARE REPORTABLE TO Emergency Management BC AND DFO*****

*****If in doubt as to whether or not to report a spill, err on the side of caution and report the spill*****

4.2 Reportable Spill Quantities

Table A2 outlines specific substances and reportable quantities according to the EMA Spill Reporting Regulation (includes amendments up to BC Reg. 376/2008, December 9, 2008):

Table A2: Reportable Spill Quantities

Item	Substance Spilled	Specific Amount
1	Class 1, Explosives as defined in Section 2.9 of the Federal Regulations*	Any quantity that could pose a danger to public safety or 50 kg
2	Class 2.1, Flammable Gases, other than natural gas, as defined in Section 2.14 (a) of the Federal Regulations	10 kg
3	Class 2.2 Non-Flammable and Non-Toxic Gases as defined in Section 2.14 (b) of the Federal Regulations	10 kg
4	Class 2.3, Toxic Gases as defined in Section 2.14 (c) of the Federal Regulations	5 kg
5	Class 3, Flammable Liquids as defined in Section 2.18 of the Federal Regulations	100 L
6	Class 4, Flammable Solids as defined in Section 2.20 of the Federal Regulations	25 kg
7	Class 5.1, Oxidizing Substances as defined in Section 2.24 (a) of the Federal Regulations	50 kg or 50 L
8	Class 5.2, Organic Peroxides as defined in Section 2.24 (b) of the Federal Regulations	1 kg or 1 L
9	Class 6.1, Toxic Substances as defined in Section 2.27 (a) of the Federal Regulations	5 kg or 5 L
10	Class 6.2, Infectious Substances as defined in Section 2.27 (b) of the Federal Regulations	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
11	Class 7, Radioactive Materials as defined in Section 2.37 of the Federal Regulations	Any quantity that could pose a danger to public safety and an emission level greater than the emission level established in Section 20 of the "Packaging and Transport of Nuclear Substances Regulations"
12	Class 8, Corrosives as defined in Section 2.40 of the Federal Regulations	5 kg or 5 L
13	Class 9, Miscellaneous Products, Substances or Organisms as defined in Section 2.43 of the Federal Regulations	25 kg or 25 L
14	Waste containing dioxin as defined in Section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
15	Leachable toxic waste as defined in Section 1 of the Hazardous Waste Regulation	25 kg or 25 L
16	Waste containing polycyclic aromatic hydrocarbons as defined in section 1 of the Hazardous Waste Regulation	5 kg or 5 L
17	Waste asbestos as defined in Section 1 of the Hazardous Waste Regulation	50 kg
18	Waste oil as defined in Section 1 of the Hazardous Waste Regulation	100 L
19	Waste containing a pest control product as defined in Section 1 of the Hazardous Waste Regulation	5 kg or 5 L
20	PCB Wastes as defined in Section 1 of the Hazardous Waste Regulation	25 kg or 25 L

Table A2: Reportable Spill Quantities

Item	Substance Spilled	Specific Amount
21	Waste containing tetrachloroethylene as defined in Section 1 of the Hazardous Waste Regulation	50 kg or 50 L
22	Biomedical waste as defined in Section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
23	A hazardous waste as defined in Section 1 of the Hazardous Waste Regulation and not covered under items 1 – 22	25 kg or 25 L
24	A substance, not covered by items 1 to 23, that can cause pollution	200 kg or 200 L
25	Natural gas	10 kg, if there is a breakage in a pipeline or fitting operated above 100 psi that results in a sudden and uncontrolled release of natural gas

*"Federal Regulations" means the Transportation of Dangerous Goods Regulations made under the Transportation of Dangerous Goods Act (Canada)

APPENDIX 4

ENVIRONMENTAL INCIDENT REPORT FORM

Environmental Incident Reporting (EIR) Form

Project Name _____ Project No. _____

Location _____

Date and Time of Spill _____

SEE guidelines on the reverse page for reporting protocols.

Person	Name	Number
Reporting Spill		
Involved in Spill		
Spill Cleanup		

Type and quantity of material spilled

Cause of spill

Action taken to contain and minimize effects

Notification to:

PSPC Representative ☐	Phone/cell:		EM ☐	Phone/cell:	
Tetra Tech Representative ☐	Phone/cell:		EMBC ☐	Phone/cell:	
Site Superintendent ☐	Phone/cell:		DFO ☐	Phone/cell:	
	Phone/cell:			Phone/cell:	

What Incidents are Reportable?

All incidents must be reported to the Project team, in accordance with the EIR Communications Plan Section described in Section 6.3 of the EMP. Any environmental incidents of reportable quantities will be reported immediately to EMBC, according to the guidelines of the Spill Reporting Notification Chart (Below).

ALL SPILLS TO WATER ARE REPORTABLE TO THE EMERGENCY MANAGEMENT BC (EMBC) AND FISHERIES AND OCEANS CANADA (DFO).

If in doubt as to whether or not to report a spill, err on the side of caution and report the spill.

The following information must be reported to the project team and appropriate government agencies:

- Name and phone number of person reporting the spill.
- Name and phone number of person who witnessed or was involved with the spill.
- Location and time of the spill.
- Type and quantity of material spilled.
- Area or habitat effected.
- Cause, nature, and effect of spill.
- Details of action taken or proposed to contain the spill and minimize its effect or limit the activity causing the incident.
- Names of other persons or agencies advised.
- Aquatic, terrestrial and/or cultural resources affected.
- Mitigation measures taken to control.
- Additional recommended remedial or corrective actions.
- Communications held with Project personnel.
- Communications with regulatory agencies.

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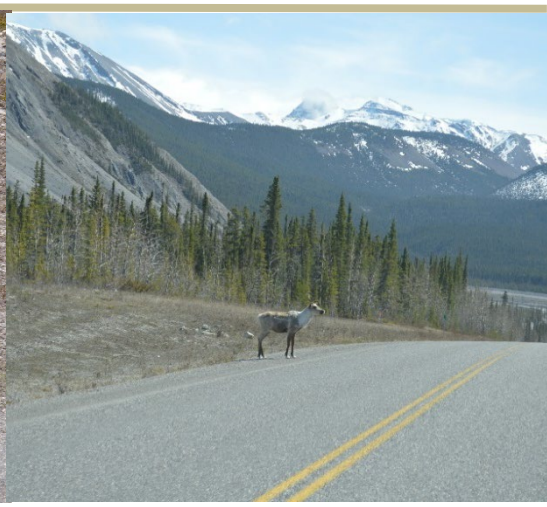
Appendix J

Caribou Protection Plan (CPP)

Caribou Protection Plan

Decommissioning of Former Alaska Highway Alignments Between KM 612.70 to KM 966.90





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Public Services and Procurement Canada

FEBRUARY 24, 2020
ISSUED FOR USE
FILE: 704-TRN.VHWY03085-01

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ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
BST	Bituminous Surface Treatment
BMP	Best Management Practices
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPP	Caribou Protection Plan
ECCC	Environment and Climate Change Canada
EMP	Environmental Management Plan
FLNRORD	British Columbia Ministry of Forests, Lands and Natural Resource Operations and Rural Development
FRPA	*Forest, Range and Practices Act*
GWM	General Wildlife Measures
km	kilometre
m	metre
MOE	British Columbia Ministry of Environment and Climate Change Strategy
PSPC	Public Services and Procurement Canada
SARA	*Species at Risk Act*
UWR	Ungulate Winter Range
WHA	Wildlife Habitat Area

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1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) was retained by Public Services and Procurement Canada (PSPC) to prepare this Caribou Protection Plan (CPP) to supplement the Environmental Management Plan (EMP) being prepared for decommissioning works on five former Alaska Highway alignments (herein referred to as the "Project"). The Project is located at various sites between Fort Nelson and the Yukon-British Columbia (BC) Border, along the stretch of the Alaska Highway that runs from KM 612.70 to KM 966.90.

Woodland caribou (*Rangifer tarandus*) are federally designated as Species at Risk (SAR) under the *Species at Risk Act* (SARA), and as such, their populations and critical habitats are legally protected. The Project falls within the range of the Woodland Caribou and there is potential for the northern mountain (*Rangifer tarandus* pop. 15) ecotype to be present within the Project area. Caribou likely occur infrequently along the highway, especially in winter when lower elevation habitats are used more for foraging (COSEWIC 2014).

This CPP has been prepared to support the decommissioning works along the Alaska Highway. The CPP objectives are to provide standard strategies and best management practices to:

1. Avoid, where practical, and minimize Project-related effects on caribou and caribou habitat;
2. Support provincial caribou conservation objectives; and
3. Provide a practical construction planning and mitigation checklist.

This CPP includes the project overview and description of proposed work, a summary of caribou management in British Columbia, mitigation measures to protect caribou and caribou habitat, and a map of decommissioning locations (Figure 1). Mitigation should consider reducing all sources of human-related caribou mortality, minimizing excessive predation on both calves and adults, limiting habitat loss, minimizing partial avoidance, and reducing potential increases to alternate prey species abundance and distribution.

2.0 CARIBOU AND CARIBOU HABITAT PROTECTION

British Columbia is home to 54 herds of Woodland Caribou, which have been separated into four ecotypes, or populations, based on range and habitat use (Gov. of BC 2018). The four ecotypes are as follows:

1. Southern mountain population (*Rangifer tarandus* pop. 1);
2. Boreal population (*Rangifer tarandus* pop. 14);
3. Northern mountain population (*Rangifer tarandus* pop. 15); and
4. Central mountain population (*Rangifer tarandus* pop. 18).

A map showing the distribution of each woodland caribou ecotype can be found in Appendix 2 (FLNRORD 2018a).

2.1 Conservation Status

Woodland Caribou (*Rangifer tarandus*) are federally designated under the SARA as either as 'Threatened' (boreal, southern mountain, and central mountain populations) or 'Special Concern' (northern mountain population) and as such, their populations and critical habitat are legally protected from harm. In 2012, the federal government released

the *Recovery Strategy for the Woodland Caribou (Rangifer tarandus), Boreal Mountain Population in Canada* and the *Management Plan for the Northern Mountain Population of Woodland Caribou (Rangifer tarandus caribou) in Canada*. These documents aim to recover, maintain, and or increase the size and distribution of self-sustaining local populations (ECCC 2012a; ECCC 2012b).

Provincially in British Columbia, the southern mountain, central mountain, and boreal caribou ecotypes are red-listed, and the northern mountain ecotype is blue-listed. The British Columbia Government is currently preparing a Caribou Recovery Program to meet the requirements outlined by the federal government (under the authority of the SARA) in the Federal Recovery Strategy for Woodland Caribou (FLNRORD 2018b).

Table 1: The Conservation Status of the Four Caribou Ecotypes in British Columbia

Ecotype	Population	BC List	COSEWIC	SARA
Southern mountain	Pop. 1	Red	Endangered	Threatened
Boreal	Pop. 14	Red	Threatened	Threatened
Northern mountain	Pop. 15	Blue	Special Concern	Special Concern
Central mountain	Pop. 18	Red	Endangered	Threatened

By definition, woodland caribou are likely to become endangered if factors leading to their decline are not reversed. Natural and human-related habitat loss and alteration (i.e., fragmentation, degradation) leading to an increase in predation is the primary factor contributing to caribou population declines (ECCC 2012, GOA 2016).

2.2 Habitat Use and Distribution

The length of highway between KM 612.70 and KM 966.90 intersects with the ranges of three Woodland Caribou herds: the Muskwa herd, the Rabbit herd and the Horseranch herd. All three of these herds belong to the northern mountain caribou ecotype (Figure 1).

Northern mountain caribou spend the winter months in low-elevation pine-lichen stands or high-elevation alpine habitats, where they rely primarily on terrestrial lichens for forage. During calving season, female northern mountain caribou will migrate long distances to sub-alpine ridges, where they give birth to their calves at high elevation to avoid the threat of predation (FLNRORD 2014).

Caribou are most sensitive to disturbance during late winter (pre-calving season), due to the poor body condition of pregnant females and the calving season in the spring. FLNRORD has identified this time period (January 15 to July 15) as a critical timing window for caribou and the fall rut (September 15 to January 14) has been identified as a cautionary timing window.

2.3 Caribou Habitat Management in British Columbia

2.3.1 Critical Habitat Areas

Under SARA, critical habitat is defined as habitat that is “necessary for the survival or recovery of a listed wildlife species” and has been identified as such in the recovery strategy for that species (SARA 2002). Environment and Climate Change Canada (ECCC) has determined that on federal lands managed outside of the jurisdiction of Parks Canada Agency “existing federal laws and regulations do not currently provide for mandatory, enforceable prohibitions against the destruction of boreal caribou critical habitat” (ECCC 2018). None of the decommissioning sites included in this Tender are located near critical habitat (Figure 1).

2.3.2 Ungulate Winter Range

Ungulate Winter Ranges (UWR) are established under the *Forest and Range Practices Act* (FRPA) with the objective of meeting the winter habitat requirements of an ungulate species (MOE 2018a). Work that is to occur within an UWR must follow the General Wildlife Measures (GWM) outlined in the UWR order (FLNRORD 2011). None of the decommissioning sites included in this Tender are located within an UWR (Figure 1).

2.3.3 Wildlife Habitat Areas

As Species at Risk, Woodland Caribou are considered “Identified Wildlife” under the FRPA. Wildlife Habitat Areas (WHAs) are designated areas that the British Columbia Government considers critical habitat (i.e., necessary to fulfill the habitat requirements) of Identified Wildlife. To protect the critical habitats within the WHAs, certain activities such as forestry and industrial developments are limited and/or prohibited within these areas (MOE 2018b). No WHAs for Woodland Caribou are located within the Project area.

3.0 PROJECT DESCRIPTION

PSPC’s current operational jurisdiction of the Alaska Highway extends from KM 133 (north of Fort St. John) to the Yukon-BC border at KM 968 and has undergone multiple highway alignment modifications since it’s construction in 1942 (PSPC n.d.). As such, there are many former alignment sites along the Alaska Highway that are no longer active and require deactivation and divestiture.

Since 1964, PSPC has been the federal custodian for the Alaska Highway and is responsible for the maintenance of the current highway, and deactivation of former highway alignments (PSPC n.d.). PSPC retained Tetra Tech to identify former alignment sites to be prioritized for deactivation. This project includes decommissioning work at five sites between KM 612.70 and KM 966.90.

3.1 Project Activities

Inside caribou range, the Project occurs entirely within the former Alaska Highway right-of-way. Habitats immediately adjacent to roads are effectively lost to many species (Jalkotzy and Nasserden 1997), including caribou. Anticipated Project-related effects on caribou and caribou habitat are limited due to the Project’s location immediately adjacent to the Alaska Highway. Nonetheless PSPC is committed to mitigating Project-related effects to caribou and caribou habitat.

The deactivation prescriptions will be largely based off BC Ministry of Forestry Guidelines as described in the Tetra Tech report, *Alaska Highway Former Alignments Project: Typical Criteria / Standards for Road Deactivation (August 14, 2018)*, and feedback received from PSPC, BC Ministry of Transportation and Infrastructure, and BC Ministry of Environment and Climate Change Strategy (MOE).

For these five sites, the objective is to permanently deactivate the former highway segments. Permanent deactivation is typically used when use of the road will no longer be required, and no further inspections or maintenance is required.

Decommissioning works for permanent deactivation includes:

- Restoration of bank and channel stability through installation of erosion protection;
- Removal of culverts and replacement with cross-ditches, berms, or water bars to re-establish drainage patterns;
- Scarifying road segments by pulverizing the remaining former gravel driving surface and Bituminous Surface Treatment (BST) layer;

- Removal of infrastructure debris including W-beam barriers and signage (where applicable); and
- Revegetation through seeding and tree planting and placement of large boulders to remove ATV/vehicle access to these deactivated road segments.

3.2 Project Footprint in Caribou Range

The length of highway between KM 612.70 and KM 966.90 intersects with the ranges of the Muskwa, Rabbit and Horseranch herds, but only two of the five sites are located within caribou range (Figure 1). Site 1 is located within the range of the Muskwa caribou herd and Site 4 is located within the range of the Horseranch herd. Sites 2 and 3 are located near to, but outside of the range of the Rabbit herd and Site 5 is located just outside of the range of the Horseranch Herd. Inside caribou range, the total Project footprint is 17.87 ha (Table 2). At each site, the decommissioning activities will occur entirely within the former Alaska Highway right-of-way to avoid new impacts to caribou habitat. None of the decommissioning activities will be occurring within critical caribou habitat.

Table 2: The Five Decommissioning Sites and their Footprints within Caribou Range

Site ID	Station (from)	Station (to)	Former Alignment Length (km)	Former Alignment ROW (ha)	Within Caribou Range?
Site 1	612.70	614.20	1.43	10.68	Yes - Muskwa
Site 2	841.95	844.40	0.60	5.64	No*
Site 3	892.40	893.30	0.87	7.34	No
Site 4	960.35	961.20	0.89	7.19	Yes - Horseranch
Site 5	966.50	966.90	0.42	2.87	No*

*These 2 sites are near the Rabbit Herd range (within 10 km), but not actually within it.

3.3 Project Schedule

The Project is scheduled to occur between July 1, 2020 and March 31, 2021. Ideally construction would take place during the low risk period for caribou (July 16 – September 14). However, the large date range given for this project means that the culvert replacements could be completed within the cautionary or critical risk periods for woodland Caribou (see CPP #1.3 in Section 4.0). Special care should be taken for construction activities conducted during these times.

4.0 CARIBOU-RELATED MITIGATION COMMITMENTS

Caribou may be directly and indirectly affected by the proposed Project and its activities. There is the potential that some individuals from the surrounding caribou populations may be present near the Alaska Highway during the proposed Project activities (July 1, 2020 – March 31, 2021). During this time, caribou may be directly or indirectly affected or disturbed to the point of avoiding the area as a result of Project activities such as sustained or repeated noise or light disturbances. Behavioral responses to Project activities may vary depending on the frequency, timing, and severity of the disturbing activity, as well as the receptor (e.g., bull vs. pregnant female). Caribou, especially pregnant cows and young calves are particularly sensitive to disturbances from late winter to early summer.

The Project might also indirectly affect caribou by changing habitat quality (e.g., through changes to local hydrology and increasing habitat fragmentation), quantity (through direct loss of habitat from disturbance), availability/ accessibility to habitat, and potentially altering predator-prey dynamics. The localized nature of the activities associated with this Project, and their restriction to the existing highway right-of-way, however, make these potential effects unlikely to occur.

Effects to caribou may include the following:

- Permanent habitat loss and/or alteration as a result of the Project footprint;
- Direct mortality from collisions with Project-related traffic (including equipment);
- Indirect mortality from increased predation risk if the following occur along linear corridors:
  - Caribou visibility to predators is enhanced;
  - Predator mobility is enhanced; or
  - Forage for other ungulate prey species is enhanced in revegetated areas.
- Sensory disturbance and restricted movement from equipment operation (i.e., noise and light disturbance) and human presence during all project activities.

4.1 Caribou Protection Plan

To mitigate potential caribou habitat, mortality, disturbance, and movement effects, various strategies in the form of best management practices should be implemented throughout the duration of the Project. Mitigations considered for this CPP follow those outlined the following documents:

- A Compendium of Wildlife Guidelines for Industrial Development Projects in the North Area, British Columbia (FLNRO 2014);
- Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal population, in Canada (EC 2014);
- Interim Operating Practices for Oil and Gas Activities in Identified Boreal Caribou Habitat in British Columbia (FLNRO 2011); and
- A Caribou Protection Plan that Tetra Tech prepared for a Project along Highway 40 in Alberta, following the caribou management guidelines and BMPs developed by the Alberta Government (Tetra Tech 2017).

Caribou-specific mitigation commitments that should be followed and implemented throughout the duration of the Project are summarized in Table 3.

Table 3: Best Management Practices for Working in Woodland Caribou Habitat

CPP #	Mitigation Measures
1.0 General Measures	
1.1	▪ Adhere to approved Environmental Management Plan (EMP) for the Project. This includes requiring all contractors working within the caribou range to be responsible for retaining an Environmental Monitor and to provide adequate education and training to their employees of the mitigation commitments to address caribou and caribou habitat conservation (i.e., training and orientation programs, kickoff, and tailgate meetings).
1.2	▪ Follow the BMPs for working in Woodland Caribou habitat that are outlined in the Compendium of Wildlife Guidelines for Industrial Development Projects in the North Area, British Columbia (FLNRORD 2014).
1.3	▪ Be aware of the risk periods for Woodland Caribou and try to work outside of the critical-use periods. The late winter and calving period, occurring from mid-January to mid-July, is identified as critical for both northern and mountain caribou. The winter/rut period is identified as a cautionary timing window. ▪ The risk periods for Woodland Caribou in northern British Columbia are as follows: – Low risk: July 16 – September 14 – Caution: September 15 – January 14 – Critical: January 15 – July 15

CPP #	Mitigation Measures
1.4	▪ Ensure caribou and caribou habitat mitigations are implemented throughout the Project by retaining an Environmental Monitor to be on-call during construction activities and to train the Contractor in caribou identification and mitigation.
2.0 Measures to Protect Caribou	
2.1	▪ Monitor for caribou presence during decommissioning activities and report all caribou observed and worker/wildlife conflicts and incidents to the EM and PSPC.
2.2	▪ If caribou are observed within the Project area, a stop-work order must be issued until the individual has left the area.
2.3	▪ Limit collision related mortality by obeying speed restrictions and signage.
2.4	▪ Equipment and truck traffic to yield the right-of-way to wildlife.
2.5	▪ Deactivate the roads in a condition that discourages motorized access and passage by predators.
2.6	▪ Sequence to avoid/reduce repeat operations or multiple entries in caribou range.
2.7	▪ Prohibit workers feeding, harassing, and approaching wildlife.
2.8	▪ Prohibit temporary work camps inside caribou range to minimize predator attraction.
2.9	▪ Prohibit firearms or hunting and fishing by workers.
2.10	▪ Avoid idling equipment and trucks.
2.11	▪ Ensure all exhaust systems have mufflers and all equipment operates as per specifications.
2.12	▪ Apply the following BMP during aircraft operations: – Remain 2000 m horizontal distance away from mineral licks – Remain 400 m above ground level and do not circle above all winter range, mineral licks and for birthing areas. – No direct approach to animals or special features such as mineral licks.
3.0 Measures to Protect Caribou Habitat	
3.1	▪ Limit all Project-related footprints and activities to existing disturbances within the former Alaska High-way right-of-way.
3.2	▪ Avoid constructing new linear features (i.e., roads) to facilitate access to the decommissioning sites. Use existing access whenever possible. If needed, use helicopter access to avoid the creation of new access corridors.
3.3	▪ If working in winter, avoid plowing or packing snow in caribou habitat.
3.4	▪ Reduce the risk of wildfire by properly maintaining equipment and vehicles and regularly cleaning flammable material from the exhaust system. Similarly, have approved firefighting equipment (i.e., fire extinguishers and shovels) on hand.
3.5	▪ Brief on-site personnel on proper cigarette (and match) field handling procedures.
3.6	▪ Clean all construction equipment prior to on-site arrival to minimize the risk of weed or disease introduction.
3.7	▪ Maintain proper waste handling and removal practices to minimize predator attraction and contaminating caribou habitat.
3.8	▪ Avoid use of road salts or chemical dust control chemicals to prevent impacts to the water quality of surrounding watercourses.
3.9	▪ Avoid or minimize vegetation clearing and wherever possible. Minimize the amount of physical disturbance to soil and vegetation.
3.10	▪ Fell trees in a manner to avoid adjacent timber damage. No trees will be felled into watercourses or waterbodies.
3.11	▪ Maintain the integrity of the root layer (i.e., avoid grubbing), to the extent possible.
3.12	▪ When possible, retain visual buffers that will obstruct the line of sight along linear features. This could include minimizing vegetation clearing or strategically placing boulders/planted trees within the former highway ROW after decommissioning activities have been completed.
3.13	▪ Support the rapid natural revegetation of temporary disturbances immediately after Project completion.

5.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

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FIGURES

850000 900000 950000 1000000 1050000

1650000 1600000 1550000 1500000

Watson Lake
Site 5: KM 966.50 to KM 966.90
Site 4: KM 960.35 to KM 961.20
Site 3: KM 892.40 to KM 893.30
Site 2: KM 841.95 to KM 844.40
Site 1: KM 612.70 to KM 614.20
Lower Post
Fireside
Coal River
Muncho Lake
Toad River
Summit Lake
Liard River

Little Rancheria Herd
Horseranch Herd
Rabbit Herd
Muskwa Herd
Liard Plateau Herd

Dease River
Liard River
Coal River
Kechika River
Alaska Hwy
Racing River
Toad River

YUKON
BRITISH COLUMBIA

HYLAND RIVER PARK
HORNELINE CREEK PARK
DALL RIVER OLD GROWTH PARK
DENETIAH CORRIDOR PROTECTED AREA
DENETIAH PARK
DUNE ZA KEYIH PARK
PORTAGE BRULE RAPIDS ECOLOGICAL RESERVE
SMITH RIVER ECOLOGICAL RESERVE
SMITH RIVER FALLS-FORT HALKETT PARK
LIARD RIVER HOTSPRINGS PARK
LIARD RIVER CORRIDOR PARK
MUNCHO LAKE PARK
TOAD RIVER HOTSPRINGS PARK
GRAYLING RIVER HOTSPRINGS ECOLOGICAL RESERVE
SCATTER RIVER OLD GROWTH PARK
STONE MOUNTAIN PARK
NORTHERN ROCKY MOUNTAINS PARK

Frog Herd
Gataga Herd

N W E S

LEGEND

- Former Alaska Highway Alignment - Priority Site
- Alaska Highway
- Populated Place
- Road
- Resource/Recreational Road
- Provincial/Territorial Boundary
- Park or Protected Area

Caribou Distribution
- Northern Mountain Caribou Herd

Ungulate Winter Range
- No Harvest Zone
- Conditional Harvest Zone

NOTES
Base data sources:
Caribou Distribution and Ungulate Winter Range from DataBC (accessed Jan 2019).
Imagery from ESRI; DigitalGlobe.

STATUS
ISSUED FOR USE

ALASKA HIGHWAY FORMER ALIGNMENTS PROJECT

Project Location Overview

PROJECTION BC Albers	**DATUM** NAD83			**CLIENT** Public Services and Procurement Canada
Scale: 1:750,000 (10 5 0 10 Kilometres)				TETRA TECH
FILE NO. VHWY03085-01_CPP_Fig01_Overview.mxd				
OFFICE Tt-VANC	**DWN** SL	**CKD** YL	**APVD** EH	**REV** 0
DATE February 21, 2020	**PROJECT NO.** TRN.VHWY03085-01			**Figure 1**

Q:\Vancouver\GIS\TRANSPORTATION\VHWY\VHWY03085-01\Maps\EnvironmentalTender2\VHWY03085-01_CPP_Fig01_Overview.mxd modified 2/21/2020 by Darren.Schouls

APPENDIX 1

TETRA TECH'S LIMITATIONS ON THE USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

NATURAL SCIENCES

1.1 USE OF DOCUMENT AND OWNERSHIP

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The Professional Document is intended for the sole use of TETRA TECH's Client (the "Client") as specifically identified in the TETRA TECH Services Agreement or other Contractual Agreement entered into with the Client (either of which is termed the "Contract" herein). TETRA TECH does not accept any responsibility for the accuracy of any of the data, analyses, recommendations or other contents of the Professional Document when it is used or relied upon by any party other than the Client, unless authorized in writing by TETRA TECH.

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Where TETRA TECH submits electronic file and/or hard copy versions of the Professional Document or any drawings or other project-related documents and deliverables (collectively termed TETRA TECH's "Instruments of Professional Service"), only the signed and/or sealed versions shall be considered final. The original signed and/or sealed electronic file and/or hard copy version archived by TETRA TECH shall be deemed to be the original. TETRA TECH will archive a protected digital copy of the original signed and/or sealed version for a period of 10 years.

Both electronic file and/or hard copy versions of TETRA TECH's Instruments of Professional Service shall not, under any circumstances, be altered by any party except TETRA TECH. TETRA TECH's Instruments of Professional Service will be used only and exactly as submitted by TETRA TECH.

Electronic files submitted by TETRA TECH have been prepared and submitted using specific software and hardware systems. TETRA TECH makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

1.3 STANDARD OF CARE

Services performed by TETRA TECH for the Professional Document have been conducted in accordance with the Contract, in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided. Professional judgment has been applied in developing the conclusions and/or recommendations provided in this Professional Document. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of the Professional Document.

If any error or omission is detected by the Client or an Authorized Party, the error or omission must be immediately brought to the attention of TETRA TECH.

1.4 DISCLOSURE OF INFORMATION BY CLIENT

The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by persons other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

1.6 GENERAL LIMITATIONS OF DOCUMENT

This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary investigation and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 ENVIRONMENTAL ISSUES

The ability to rely upon and generalize from environmental baseline data is dependent on data collection activities occurring within biologically relevant survey windows.

It is incumbent upon the Client and any Authorized Party, to be knowledgeable of the level of risk that has been incorporated into the project design or scope, in consideration of the level of the environmental baseline information that was reasonably acquired to facilitate completion of the scope.

1.8 NOTIFICATION OF AUTHORITIES

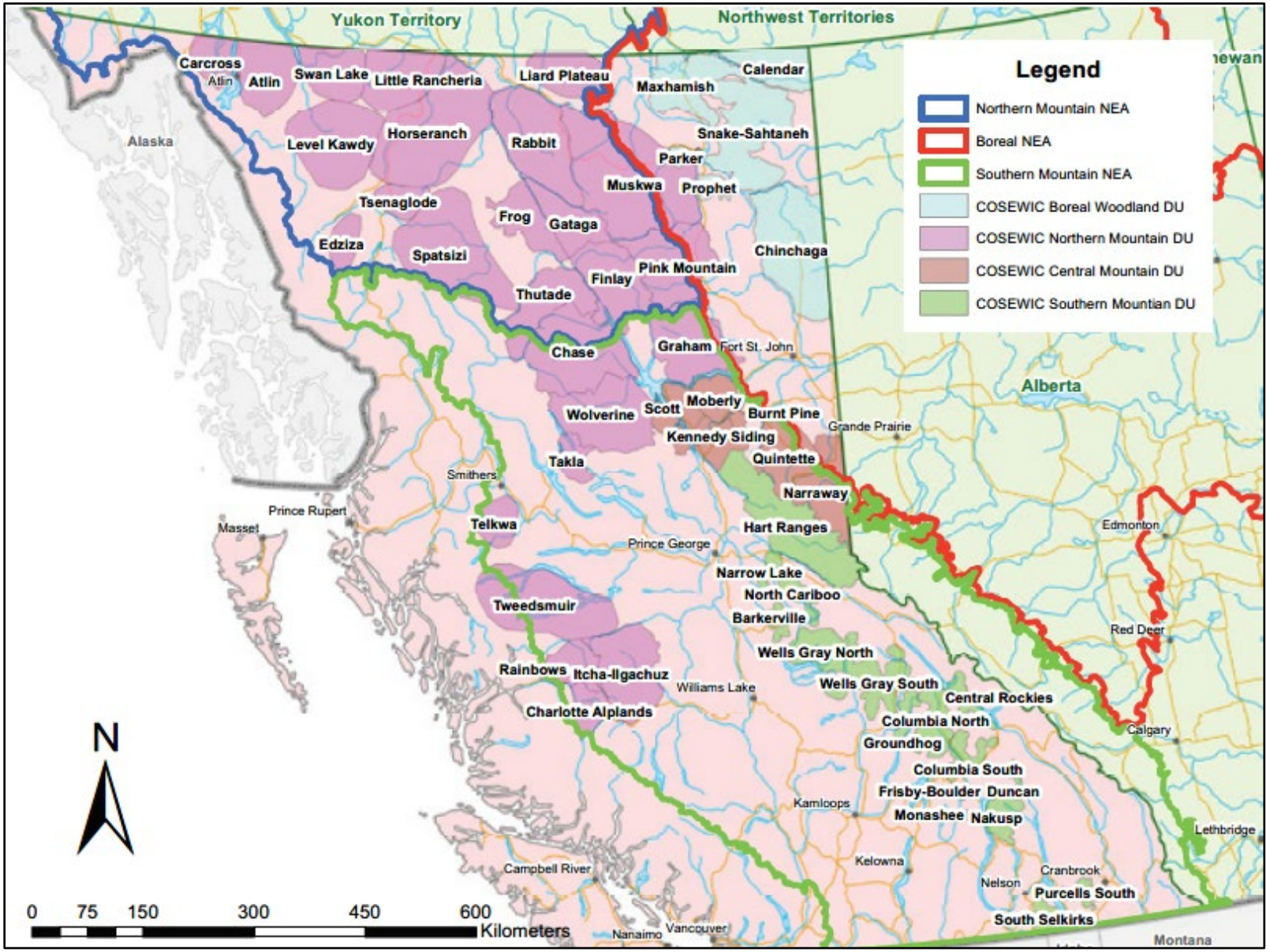
TETRA TECH professionals are bound by their ethical commitments to act within the bounds of all pertinent regulations. In certain instances, observations by TETRA TECH of regulatory contravention may require that regulatory agencies and other persons be informed. The client agrees that notification to such bodies or persons as required may be done by TETRA TECH in its reasonably exercised discretion.

APPENDIX 2

MAP OF CARIBOU DISTRIBUTION IN BRITISH COLUMBIA BY ECOTYPE

Source:

BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development [FLNRORD]. 2018. Provincial Caribou Recovery Program – 2017/2018 Annual Report. Province of British Columbia. Available at: https://www.for.gov.bc.ca/ftp/HTH/external/!publish/Caribou%20Recovery%20Program/Reports/17_18_Caribou%20Annual%20Report.pdf



Distribution of Caribou in British Columbia

R.106985.001
Appendix K

Site Photos

Note: The selective site photos are provided for the Contractor's general information only. Photos have not been provided for all required sites and all required work. PSPC takes no responsibility for the completeness or any misinterpretation by the Contractor of the site conditions based on the photos provided. Site conditions may have changed since the photos were taken. It is the Contractor's responsibility to visit the site and confirm all existing site conditions.

Photo 1: Site 1 (Km 612.70 to Km 481.50) – Timber Bridge Piles - Photo 1 of 2

Photo 2: Site 1 (Km 612.70 to Km 481.50) - Timber Bridge Piles - Photo 2 of 2

Photo 3: Site 1 (Km 612.70 to Km 481.50) – Timber Training Board - Photo 1 of 3

Photo 4: Site 1 (Km 612.70 to Km 481.50) – Timber Training Board - Photo 2 of 3

Photo 5: Site 1 (Km 612.70 to Km 481.50) – Timber Training Board - Photo 3 of 3

Photo 6: Site 2 (Km 841.95 to 844.40) – Debris Location A - Photo 1 of 1

Photo 7: Site 2 (Km 841.95 to 844.40) – Timber Box Culvert - Photo 1 of 3

Photo 8: Site 2 (Km 841.95 to 844.40) – Timber Box Culvert - Photo 2 of 3

Photo 9: Site 2 (Km 841.95 to 844.40) – Timber Box Culvert - Photo 3 of 3

Photo 10: Site 2 (Km 841.95 to 844.40) – Timber Cribbings - Photo 1 of 1

Photo 11: Site 2 (Km 841.95 to 844.40) – Timber Training Wall - Photo 1 of 1

Photo 12: Site 2 (Km 841.95 to 844.40) – Timber Flume - Photo 1 of 1

Photo 13: Site 2 (Km 841.95 to 844.40) – Debris downstream of box culvert - Photo 1 of 6

Photo 14: Site 2 (Km 841.95 to 844.40) – Debris downstream of box culvert - Photo 2 of 6

Photo 15: Site 2 (Km 841.95 to 844.40) – Debris downstream of box culvert - Photo 3 of 6

Photo 16: Site 2 (Km 841.95 to 844.40) – Debris downstream of box culvert - Photo 4 of 6

Photo 17: Site 2 (Km 841.95 to 844.40) – Debris downstream of box culvert - Photo 5 of 6

Photo 18: Site 2 (Km 841.95 to 844.40) – Debris downstream of box culvert - Photo 6 of 6

Photo 19: Site 3 (Km 892.40 to 893.30) – Debris Location B - Photo 1 of 1

Photo 20: Site 3 (Km 892.40 to 893.30) – Debris Location C - Photo 1 of 1

R.106985.001
Appendix L

British Columbia Ministry of Forests, Lands, Natural Resource Operations, and Rural Development (FLNRORD) Section 11 Approval for Instream Work – Date July 8, 2020.

File: 9000511

July 08, 2020

Public Services and Procurement Canada
800 Burrard Street
Vancouver BC V6Z 0B9

Dear Laurie Crawford

Re: Change Approval Application – 9000511

Approval for the above work has been granted and the approval document verifying this is attached. The approval is valid until March 31, 2021.

Please note that an Environmental Protection Plan (EPP) must be provided 15 days prior to the commencement of instream work.

The permit holder is required to adhere to all other applicable provincial, federal and/or municipal legislation and regulations; including, but not limited to, the *Water Sustainability Act* and the *Water Sustainability Regulation*. It is also expected that all work will be consistent with the Standards and Best Practices for Instream Works.

The *Water Sustainability Act* gives the recipient of this notice the right to appeal my decision. You may file an appeal within 30 days of the date indicated on this letter. Information on filing an appeal can be found on the Environmental Appeal Board website at http://www.eab.gov.bc.ca/.

If you have any questions or concerns regarding the document issued, please contact Cali Seater at 250-787-3427.

Yours truly,

Brian Farwell
Assistant Water Manager

Enc. Approval 9000511

Ministry of Forests, Lands, Natural Resource Operations and Rural Development
Water Stewardship
Mailing Address:
100-10003-110th Ave
Fort St John BC V1J 6M7
Telephone: (250) 787-3415
Facsimile: (250) 261-2084

Province of British Columbia
Water Sustainability Act

Change Approval
Section 11 (1)

Public Services and Procurement Canada 800 Burrard Street Vancouver BC V6Z 0B9 is hereby authorized to make changes in and about a stream as follows:

1) The names and locations of the streams included in the approval are listed below:

Site ID	KM Marker	Stream Name	Site Location (Lat Long)
1	11+320	One Thirteen Creek 214-362900-05600-42700	58.7044870 -124.8831950
2	20+260	Unnamed Watercourse 210-602600	59.6917230 -127.2025300
3	30+450	Sandin Brook 210-643700	59.9595150 -127.4937750
4	40+400	None	59.9506030 -128.5020270
	40+625	None	59.9523850 -128.504950
5	50+320	Unnamed Watercourse 200-692231-718080	59.9936480 -128.5507220

2) Authorized works are described in the document titled *Decommissioning of Former Alaska Highway Alignments KM 612.70 to KM 966.90 Environmental Overview Assessment* prepared by Tetra Tech Canada Inc. dated February 24, 2020.

3) The following document shall be provided to the Assistant Water Manager, 15 days prior to the commencement of instream work:
   - Environmental Protection Plan (EPP)

4) The holder of this Approval must comply with all other applicable Provincial and Federal Legislation prior to commencement of work.

5) The instream works authorized shall be completed by March 31, 2021.

6) All reasonable efforts shall be made to avoid any negative impacts to the stream's ecosystem including the riparian area.

7) All instream works in fish-bearing streams must be completed in the dry.

8) Measures shall be taken to ensure that no harmful material (e.g. Fuel and other hydrocarbons, soil, road fill, or sediment), which could adversely impact water quality, fish and other aquatic life, and/or fish habitat, can enter the wetted perimeter as a result of project activities.

9) Equipment operating near the stream shall be free of external grease, oil or fluid leaks and an emergency spill response kit shall be kept on-site. Refueling of machinery shall be conducted 30m from all water bodies to ensure that deleterious substances do not enter the watercourse.

10) The changes shall be completed to the satisfaction of the Assistant Water Manager under the *Water Sustainability Act.*

11) This Approval does not authorize entry onto private land. It is the responsibility of the holder of this Approval to obtain appropriate landowner permissions / agreements prior to the works occurring.

12) All instream works will be completed under the supervision of an appropriately qualified environmental monitor.

13) A fish and amphibian salvage within areas of site isolation, authorized under separate permit issued under the *Wildlife Act*, shall be conducted prior to the start of works.

14) All work shall be done in accordance with the "Standards and Best Practices for Instream Works" (MWLAP 2004).

15) The natural rate of water flow must be maintained upstream and downstream of the worksite during all phases of instream activity.

16) Care shall be exercised during all phases of construction to minimize siltation.

17) Ambient water quality guidelines for turbidity must be met prior to discharge of water back into any stream.

18) All disturbed areas of the banks and the stream channel must be restored and provided with long-term protection from erosion. All excavated material and debris shall be placed in a stable area above the high water mark of the stream and protected from erosion by planting grass and/or vegetation.

19) The Assistant Water Manager must be notified if the work plan changes significantly from those outlined in the documents identified in clause (2). The changes shall be completed to the satisfaction of the Assistant Water Manager under the *Water Sustainability Act*.

20) This Approval, or a copy of it, must be kept or posted on the work site so that it may be shown to a Ministry official upon request.

Brian Farwell
Assistant Water Manager

Date Issued: July 8, 2020 **Approval/File No. 9000511**

R.106985.001
Appendix M

British Columbia Ministry of Forests, Lands, Natural Resource Operations, and Rural Development (FLNRORD) Section 11 Approval for Instream Work – Extension –Date November 2, 2020.

File: 9000511

November 2, 2020

Public Services and Procurement Canada
800 Burrard Street
Vancouver BC V6Z 0B9

Dear: Laurie Crawford

Re: Order Associated with Change Approval Application – 9000511

The enclosed order under Section 26 (1) (d) of the *Water Sustainability Act* has been issued to amend clause 5 of Approval 9000511 that was issued July 8, 2020.

The permit holder is required to adhere to all other applicable provincial, federal and/or municipal legislation and regulations; including, but not limited to, the *Water Sustainability Act*, the *Water Sustainability Regulation* and the *Wildlife Act*. It is also expected that work will be consistent with the Standards and Best Practices for Instream Works.

The *Water Sustainability Act* gives the recipient of this notice the right to appeal the decision. You may file an appeal within 30 days of the date indicated on this letter. Information on filing an appeal can be found on the Environmental Appeal Board website at http://www.eab.gov.bc.ca/.

If you have any questions or concerns regarding the document issued, please contact Lenore Mallis at 778-576-1141.

Yours truly,

Margaret Gibbs
Assistant Water Manager

Enc. Order for 900511

Ministry of Forests, Lands, Natural Resource Operations and Rural Development
Water Stewardship
Mailing Address:
100-10003-110th Ave
Fort St John BC V1J 6M7
Telephone: (250) 787-3415
Facsimile: (250) 261-2084

Province of British Columbia
Water Sustainability Act

ORDER

SECTION 26(1)(d)

In the matter of Section 11 Change Approval, file No. 9000511.

I hereby amend clause 5 in Approval file No. 9000511 to read as follows:

6) The instream works authorized shall be completed by November 30, 2021.

The permit holder is required to adhere to all other terms and conditions in Approval file No. 9000511 and applicable Provincial and Federal Regulations.

Dated at the City Fort St John, British Columbia, this 2nd day of November 2020.

Margaret Gibbs
Assistant Water Manager