



**Public Services and
Procurement Canada**

Requisition No. 52899-19-2593

SPECIFICATIONS

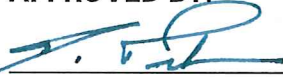
For

Km 311 – 330 Culvert Replacement, Alaska Highway, BC

Project No. R.017173.330

January 7, 2019

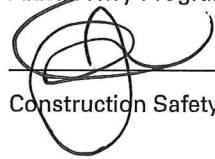
APPROVED BY:



Alaska Hwy Program Manager, IAM

Jan 09 2019

Date



Construction Safety Coordinator

2019-01-09

Date

TENDER:



Project Manager

Jan 09 19

Date

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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, 2015 Interim Traffic Management Manual for Work on Roadways 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/trafficmanagementmanual>

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>

LIST OF CONTRACT DRAWINGS

| Sheet No. | Title | Drawing Number | Revision Number |
|-----------|---------------------------------------------------------------------------------------------|----------------|-----------------|
| 1 | Cover Page | | |
| 2 | Project Location Plan, Project Key Plan, Drawing Index, Legend & Control Monument Locations | C001 | 0 |
| 3 | Plan / Profile / Section – Culvert Km 311.73 & Km 311.81 | C101 | 0 |
| 4 | Plan / Profile / Section – Culvert Km 315.59 & Km 318.34 | C102 | 0 |
| 5 | Plan / Profile / Section – Culvert Km 318.95 & Km 322.98 | C103 | 0 |
| 6 | Plan / Profile / Section – Culvert Km 327.11 & Km 327.67 | C104 | 0 |
| 7 | Plan / Profile / Section – Culvert Km 330.15 & Typical Section | C105 | 0 |

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 Order of Precedence.
- 1.2 Work Covered by Contract Documents.
- 1.3 Work Excluded from Contract Documents.
- 1.4 Codes.
- 1.5 Contractor's Use of Site.

PART 2:

- 2.1 Site Inspection.
- 2.2 Work Completion.
- 2.3 Special Precautions.
- 2.4 Survey.
- 2.5 Contract Drawings.
- 2.6 Electronic Contract Drawings.
- 2.7 Contract Submittals.
- 2.8 Supervisory Personnel.
- 2.9 Work by Others.

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 33) and an item found in one of the Appendices (Reference Documents), the main body of the Specifications

(Division 1 – Division 33) shall govern.

1.2 Work Covered by
Contract Documents

- .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 at the time of tender closing.
- .1 The project includes installation of pipe culverts. The installation sites are located between Km 311 and Km 330 of the Alaska Highway between Fort St. John and Fort Nelson, BC.

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 (Required Work and Optional Work) but is not limited to:
 - .1 Contract submittals (using "CentralCollab") prior to and during the work (see 2.7 – Contract Submittals, Section 01 25 20 – Mobilization and Demobilization and Section 01 33 00 – Submittal Procedures).
 - .2 Supply and maintain of all traffic control for the duration of the works.
 - .3 Quality Management.
 - .4 Development of construction access and temporary earthworks to facilitate construction (during winter conditions and frozen ground as applicable). Restoration of the disturbed areas to pre-construction conditions following the construction.
 - .5 Installation of various sized diameter Steel Pipe Culverts using trenchless technologies (during winter conditions and frozen ground as applicable). Culvert installation via cut and cover construction techniques will not be accepted.
 - .6 Removal and offsite disposal of waste material from the inside of the installed culverts.
 - .7 Surveys (construction layout, payment quantities, as-built survey, and others as required).
 - .8 Environmental protection.
 - .9 Work complete by Change Order (if required and

approved by Departmental Representative).

- 1.3 Work Excluded from Contract Documents .1 Ditch realignment work and the decommissioning of the existing culverts will be performed by others under a separate contract at a later date.
- 1.4 Codes .1 Meets 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).
- 1.5 Contractor's Use of Site .1 Restrict work to within the necessary construction footprint 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.

PART 2 – EXECUTION

- 2.1 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.
- .2 Refer to Invitation to Tender and Special Instructions to Bidders (SI) for details of the mandatory onsite pre-tender meeting.
- 2.2 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 Achieve Substantial Performance by March 20, 2019.
- .3 Achieve Completion by March 22, 2019.
- .4 Works may need to be temporarily shut down during high 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 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 be possible to achieve the environmental requirements due to 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 adverse weather conditions.
 - .5 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.
 - .6 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.
- 2.3 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. The Contractor shall notify the Departmental Representative should utilities be located in areas other than those shown on the drawings or if they conflict with the construction 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, Bituminous Surface Treatment (BST), cut & fill slopes, ditches, culverts, bridges, and all other street furniture, 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.

2.4 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), Survey Monitoring (see Section 01 14 00 – Work Restrictions, Access Development, Restoration, and Survey Monitoring), and as-built surveys (see Section 01 78 00 – Closeout Submittals). All surveys shall achieve the following:
 - .1 Be 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.
 - .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 and quantity surveys shall be considered incidental to the work and not 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. Submit name and address to Departmental Representative.
- .4 Prior to starting on-site construction work, complete a check of the survey control monument coordinates and elevations provided by the Departmental Representative via a static survey of each monument. Provide results to the Departmental Representative for review and acceptance. If deemed necessary by the Departmental Representative, design adjustments may be made by the Departmental Representative to suit the findings of the monument survey checks.
- .5 Report any discrepancies between project survey control monuments, Contract Drawings, and existing conditions to the Departmental Representative as soon as they are discovered. Should a discrepancy be found, await written approval from the Departmental Representative prior to proceeding.
- .6 Establish working control points based on survey control monuments provided (other 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.

- .7 Establish / layout the proposed alignment(s) and grades using paint lines and survey stakes based on working control points and survey control monuments provided.
 - .8 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.
 - .9 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.
 - .10 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.
 - .11 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.
 - .12 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.
 - .13 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.
- 2.5 Contract Drawings
- .1 Upon award of the project, PSPC will at the request of the successful Contractor provide the successful Contractor with up to 4 x 609.6 mm x 914.4 mm (24" x 36") and 6 x 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.
- 2.6 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.
- 2.7 Contract Submittals .1 Complete and submit for Departmental Representative 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.
 - .4 Environmental Protection Plan (see Section 01 35 43).
 - .5 Quality Management Plan and related Quality Management documentation (see Section 01 45 00).
 - .6 As-built Survey and As-built Drawing mark-ups (see Section 01 78 00).
- 2.8 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 Deputy Project Superintendent.
 - .3 Health and Safety Coordinator.
 - .4 Quality Control Manager.
 - .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 Deputy Project Superintendent: shall have the authority of the Project Superintendent during the latter's absence for short periods of time.
 - .3 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).
 - .4 Quality Control Manager: shall be experienced in Quality Management, available to address quality matters from commencement of work until Substantial Performance and Completion of the Work, and remain onsite at all times the Contractor is performing work which must be tested or inspected in-process (see

Section 01 45 00 – Quality Management for further requirements).

2.9 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

PART 1 – GENERAL

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.

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 office trailer may be set up in the locations identified in Section 01 52 00 – Construction Facilities. The Contractor's construction camp will not be permitted with PSPC 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 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 area 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 suitable lighting

.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 is responsible to have utilities 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 If it is determined by the Departmental Representative that Utilities are affected by the permanent Work, the utilities will be relocated 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 (including road damage to road surface caused by equipment).
- 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 BST or asphalt 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 – Special Procedures – Traffic Control 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 is required to develop access to the required work areas. The Contractor is fully responsible for the selection and implementation of all methods to accomplish this requirement. Any access roads or trails extending outside the limits of the work shall be submitted to the Departmental Representative for approval on the Construction Staging / Traffic Management Drawings. All construction access shall be completed in conformance with the requirements of Section 01 35 43 – Environmental Protection and the Contractor’s Environmental Protection Plan.
- 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 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 – Special Procedures – Traffic Control are achieved.
- .3 All requirements of the Section 01 35 43 – Environmental Protection and the Contractor’s Environmental Protection Plan are achieved.
- .4 The work is completed in accordance with the Substantial Performance and Completion Dates 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, 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 Restoring existing drainage patterns and topography to pre-construction conditions and as acceptable to the Departmental Representative such that erosion during freshet and spring run-off is restored to pre-construction conditions.
 - .3 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.

END OF SECTION

PART 1 – GENERAL

Section Includes

PART 1:

1.1 Definitions.

1.2 Measurement and Payment Procedures.

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, Quality 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 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 completion of 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, Quality 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 site, the site has 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.

- .4 Payment for Mobilization and Demobilization (Optional Work) will be made on the basis of the Price per Unit Bid for Mobilization & Demobilization (Optional Work) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs associated with mobilization and demobilization type work listed in 1.1 Definitions above (excluding 1.1.4) but related strictly to the optional work items listed in the Unit Price Table for Optional Work.

- .5 Measurement for Payment for the completion of Mobilization and Demobilization (Optional Work) will be made by Lump Sum based on the percentage of the total costs of optional work (Item No. 10 to 13 of the Unit Price Table (Optional Work)) undertaken by PSPC and accepted by the Departmental Representative. For example, should PSPC undertake work such that the total costs (quantities x unit rates) for Item No. 10 to 13 equal 20% of the maximum total estimated costs for all optional work, 20% of the Lump Sum payment item for Mobilization & Demobilization (Optional Work) will be paid. When calculating the percentage of optional work undertaken, the lump sum items Mobilization and Demobilization (Optional Work), Traffic Control (Optional Work), Quality Management (Optional Work), and Departmental Representative’s Office Trailer (Optional Work) shall all be excluded from the percentage of work undertaken calculation (percentage work undertaken and maximum total estimated costs for all optional work).

END OF SECTION

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 Terms of Payment.
- 1.2 Basis of Payment.
- 1.3 Survey.

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 – Acquisition Forms within the Reference Documentation section of the Table of Contents for link).

With each progress payment, provide to the Departmental Representative:

- .1 Progress Payment Submission Form (available in Appendix D) completed and signed by the Contractor's Representative. Upon receipt of this form and all other required documents, PSPC will commence review of the progress payment request in accordance with General Conditions 5 – Terms of Payment.
- .2 Documentation required by 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 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).

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.

- .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 (prior to excavation or following placement and compaction), compacted (if required) 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 1.2 of Section 01 25 20).
- .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. Survey shall be considered incidental to the work and not measured for payment.
- .2 All quantity surveys, and quantity calculations for the purposes of progress payments shall be completed by a qualified surveyor, with the knowledge, skills and abilities acceptable to the Departmental Representative. A resume detailing the surveyor's experience may be required by the Departmental Representative for review and acceptance if requested.
- .3 A survey of the existing ground surfaces 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 prior to starting work. Additionally, 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.
- .4 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.

- .5 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.
- .6 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.
- .7 If requested by the Departmental Representative, the Contractor shall provide 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.
- .8 Surveys may be subject to verification by the Departmental Representative. In case of discrepancy, the Departmental Representative's survey will govern.

END OF SECTION

PART 1 – GENERAL

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 Procedures.

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, Quality Control Manager, 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, construction camp, storage sheds, utilities, and fences.
 - .5 Permitting and Environmental requirements.

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- .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, DFO, 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 subcontractors, the Deputy Project Superintendent, Health and Safety Coordinator, and Quality Control Manager 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. 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 or 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 Cash flow forecasting including monthly updates.
 - .12 Maintenance of quality standards.
 - .13 Review proposed changes for effect on construction schedule and on completion date.
 - .14 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.

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- 1.5 Written Communication / Document Management .1 Written communication & 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 interpretation of Contract Documents and obtain instructions through Departmental Representative. 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 Procedures .1 Notify Departmental Representative when work is considered ready for Substantial Performance.
- .2 Accompany Departmental Representative on preliminary inspection to determine items listed for completion or correction.
- .3 Comply with Departmental Representative’s instructions for

correction of items of work listed in executed certificate of Substantial Performance.

- .4 Notify Departmental Representative of instructions for completion of items of work determined in Departmental Representative's final inspection.

END OF SECTION

PART 1 – GENERAL

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.
- 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, Access Development, 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.
 - .4 Construction Staging Plan / Site Access.
 - .5 Quality Management Plan.
 - .6 Project Specific Health and Safety Plan, including MSDS sheets.
 - .7 Hazardous Materials Management Plan.
 - .8 Shop Drawings and Product Samples (if applicable).
 - .9 As-built Survey and As-Built Drawing Mark-ups.
 - .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 for the same task. Indicate progress of each activity started/completed to the date of schedule submission by including an actual start date / end date / % complete.
 - .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 Contractor's.
- .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

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 General Requirements.
- 1.2 Shop Drawings and Product Data.
- 1.3 Samples.

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 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 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 the contract price. If the Contractor feels the comments include requirement not required by the contract, the Contractor shall respond in writing to the Departmental Representative 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 as such in writing to the Departmental Representative prior to proceeding with the 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 and resubmission of corrected Shop Drawings, through same procedure 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 which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in Shop Drawings or of responsibility 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

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 Measurement and Payment Procedures.
- 1.2 References.
- 1.3 Definitions.
- 1.4 Submittals.

PART 2:

- 2.1 Temporary Traffic Control Devices.

PART 3:

- 3.1 General.
- 3.2 Traffic Management.
- 3.3 Protection of Public Traffic.

1.1 Measurement and Payment Procedures

- .1 Payment for the cost of Traffic Control will be made on the basis of the Price per Unit Bid for Traffic Control in the Bid and Acceptance Form. The Price per Unit Bid shall include the completion of the Traffic Management Plan, construction signage, traffic flaggers, and all other items necessary for the successful completion of the task.
- .2 Measurement for Payment for completion of the Traffic Control will be made by Lump Sum based on the percentage of the total costs of the work (Items No. 3 – 7) completed and accepted by the Departmental Representative. For example, should the work be completed such that the total costs (quantities × unit rates) for Item No. 3 – 7 equal 90% of the maximum total estimated tender costs for all work items No. 3 – 7, 90% of the Lump Sum payment item for Traffic Control will be paid. Similarly, should the work be completed such that the total costs (quantities × unit rates) for Item No. 3 – 7 equal 110% of the maximum total estimated tender costs for all work items No. 3 – 7, 110% of the Lump Sum payment item for Traffic Control will be paid. When calculating the percentage of work undertaken, the lump sum items Mobilization and Demobilization, Traffic Control, Quality Management, and Departmental Representative's Office Trailer shall all be excluded from the percentage of work undertaken calculation (percentage work undertaken and maximum total estimated costs for the work).

- .3 Payment for the cost of Traffic Control (Optional Work) will be made on the basis of the Price per Unit Bid for Traffic Control (Optional Work) in the Bid and Acceptance Form. The Price per Unit Bid shall include traffic control tasks related strictly to the optional work items listed in Unit Price Table (Optional Work) including any amendments to the Traffic Management Plan, construction signage, traffic flaggers, and all other items necessary for the successful completion of the task.
- .4 Measurement for Payment for the completion of Traffic Control (Optional Work) will be made by Lump Sum based on the percentage of the total costs of optional work (Item No. 10 – 13 of the Unit Price Table (Optional Work)) undertaken by PSPC and accepted by the Departmental Representative. For example, should PSPC undertake work such that the total costs (quantities x unit rates) for Item No. 10 – 13 equal 20% of the maximum total estimated tender costs for all optional work, 20% of the Lump Sum payment item for Traffic Control (Optional Work) will be paid. When calculating the percentage of optional work undertaken, the lump sum items Mobilization and Demobilization (Optional Work) and Traffic Control (Optional Work) shall all be excluded from the percentage of work undertaken calculation (percentage work undertaken and maximum total estimated costs for all optional work).
- 1.2 References
- .1 British Columbia Ministry of Transportation and Highways.
- .1 Traffic Management Manual for Work on Roadways – 2015 Office Edition (Interim).
- .2 Supplement to TAC Geometric Design Guide (latest edition).
- 1.3 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 Section 3.2.1.7 – Traffic Management.
- 1.4 Submittals
- .1 Traffic Management Plan.
- .1 Submit to the Departmental Representative for review and acceptance a Traffic Management Plan. 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 – 2015 Office Edition (Interim), 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 – 2015 Office Edition (Interim). 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 .1.4 of this specification), and the use of flags (if applicable, see Item 2.1 – Temporary Traffic Control Devices, subsection .1.5 of this specification).
- .5 Shall at a minimum include all headings and details 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 – 2015 Office Edition (Interim). 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 things as unloading of equipment, excavation off highway, culvert installation, etc.
 - .8 If using Traffic Control Persons (TCPs) after sunset, shall include details of the overhead lighting which will be used at each TCP location. 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.
- .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 – 2015 Office Edition (Interim). 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 – 2015 Office Edition (Interim) 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 – 2015 Office Edition (Interim), 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.

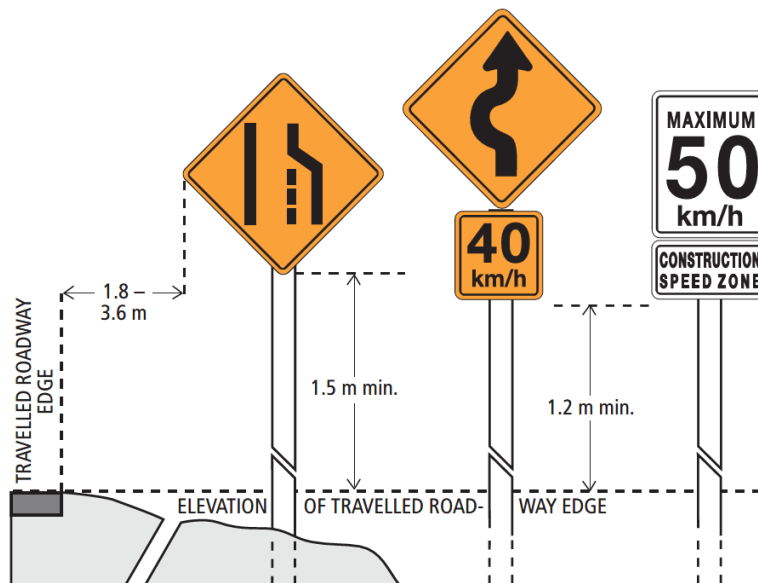


Figure 01 35 00 - 01: Post Mounted Supports

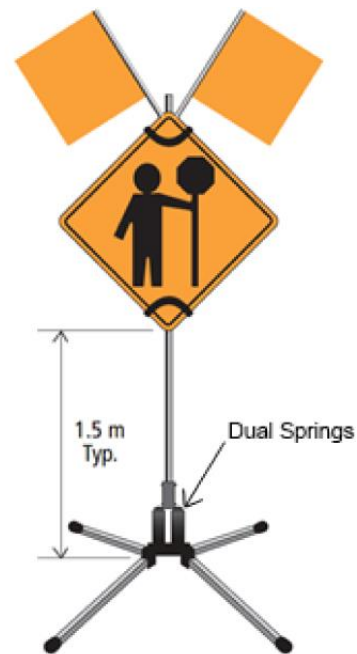


Figure 01 35 00 - 02: Wind Resistant Sign Stand

- .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 – 2015 Office Edition (Interim).

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 – 2015 Office Edition (Interim).

- .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 – 2015 Office Edition (Interim) 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 – 2015 Office Edition (Interim) 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 1.4 – Submittals 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 – 2015 Office Edition (Interim) and as follows.
 - .1 Section 2.5.3 – Road Authority Acceptance shall be replaced with the requirements of Section 1.4 – Submittals 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 – 2015 Office Edition (Interim).
- .4 Section 6: Traffic Control Layouts – General Instructions of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2015 Office Edition (Interim) and as follows:
 - .1 Per section 6.3 of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2015 Office Edition (Interim), 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 – 2015 Office Edition (Interim) with the following exceptions:
 - .1 Barrier Removed (C-013) sign shall be installed in all instances when a barrier is removed.
 - .2 Should temporary barriers be used, distance between the front of the barrier and the edge of the travel lane shall be 1.0 m.
- .5 Section 7: Traffic Control Layouts – Two-Lane, Two-Way Roadways of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2015 Office Edition (Interim). 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.

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- .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 subject to the following:
 - .1 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.
 - .2 Work activities do not include unloading or loading of equipment or supplies.
 - .3 Advanced warning signs shall be installed in the opposing direction of travel.
 - .4 Tubular markers shall replace cones and tubular markers can be used as a replacement for drums.
 - .5 The use of a vehicle-mounted DMS or flashing arrow board can be omitted at the Contractors discretion.
 - .6 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 – 2015 Office Edition (Interim)) for the applicable speed (adjust all other sign spacing as required).
 - .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 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 – 2015 Office Edition (Interim)) for the applicable speed (adjust all other sign spacing as required).

- .5 Any duplicate signage resulting from the use Section 7 Traffic control layouts and the Traffic Control Layouts required under Sections 13, 14, or 15 shall be removed.
- .7 Section 15: Traffic Control Layouts – Surveying of the BC Ministry of Transportation Traffic Management Manual for Work on Roadways – 2015 Office Edition (Interim). The following are minimum requirements if the Contractor’s surveyor will be on site prior to the Contractor setting up signage as per Section 7.2 of the above manual.
 - .1 Section 15: Legend, Table A, and Table B.
 - .2 15.2: Surveying on shoulder.
 - .3 15.3: Surveying on centerline.
- .8 Maintain existing conditions for traffic throughout the period of contract except that, 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 others works as preapproved by the Departmental Representative. Speed limit reduced during these times to 30 km/h (or 50 km/h, at the Contractor’s discretion).
- .9 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.

- .10 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.
 - .11 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.
 - .12 For sites with access roads / intersections, the following shall be used:
 - .1 At a minimum, a C-004 (or C-018-1A) sign shall be placed in front of a C-029 sign, followed by a C-001-1 sign (if traffic flaggers are used). Depending on the traffic volumes, flaggers may be necessary at all access road intersections. The need for flaggers shall be determined on site following discussion and acceptance by the Departmental Representative.
 - .2 Signs should be positioned so that they do not block the sight lines of drivers entering a roadway from side roads or other access points.
 - .3 The maximum allowable delay to any individual motorist travelling through the project limits from an access road / intersection as a result of the Contractor's operations will be 10 minutes.
- 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 – 2015 Office Edition (Interim).
 - .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 – 2015 Office Edition (Interim). Complete and document checks a minimum of 3 times a day (start of workday, midday, and at completion of workday when signs are removed or covered). 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 – 2015 Office Edition (Interim).
- .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

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 References.
- 1.2 Workers' Compensation Coverage.
- 1.3 Compliance with Regulations.
- 1.4 Submittals.
- 1.5 Project Specific Health and Safety Plan.
- 1.6 Contractor's Responsibility.
- 1.7 Health and Safety Coordinator.
- 1.8 General.
- 1.9 Project / Site Conditions.
- 1.10 Regulatory Requirements.
- 1.11 Work Permits.
- 1.12 Filing of Notice.
- 1.13 Emergency Procedures.
- 1.14 Hazardous Products.
- 1.15 Overloading.
- 1.16 Fire Safety Requirements.
- 1.17 Unforeseen Hazards.
- 1.18 Posted Documents.
- 1.19 Correction of Non-Compliance.
- 1.20 Medical.
- 1.21 Accidents and Accident Reports.

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- 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).

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| 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 Submittals | .1 | The Contractor's 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 If required, a 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, compile 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 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 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 Health and Safety Plan to ensure the correction of any deficiencies.

1.5 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. 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 and details provided in the template found in Appendix A. 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 correct headings from this document are not used by the Contractor. Minimum requirements for the Project Specific Health and Safety Plan includes:
 - .1 Contractor's safety policy.
 - .2 Identification of applicable compliance obligations.
 - .3 Definition of responsibilities for project safety/organization chart for project.
 - .4 General safety rules for project.
 - .5 Job-specific safe work procedures that are not already included in the Contractor's corporate Health and Safety Policies / Procedures manual.
 - .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 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.
- .12 Blank copy of Contractor’s daily toolbox meeting form.
- .13 Emergency contact information including PSPC project personnel (including Consultants), Contractor office and field staff, fire, police, ambulance, air ambulance, and forest fire reporting.
- .14 Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the work.
- .15 List hazardous materials to be brought on site as required by work.
- .16 Indicate engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.
- .17 Identify personal protective equipment (PPE) to be used by workers.
- .18 Identify personnel and alternates responsible for site safety and health.
- .19 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.
- .20 Identify employee training plans for wildlife encounters and prevention.
- .21 Identify fire safety, fire reporting, and fire evacuation procedures.
- .22 Completed “Preliminary Hazard Assessment Form” (see Appendix 1 of the Project Specific Health and Safety Plan template).
- .23 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

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- Safety Plan template).
- .24 Resume(s) or certification(s) of Health and Safety Coordinator(s) responsible for site safety.
 - .3 Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors 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 Health and Safety Plan by Public Services and Procurement Canada (PSPC) shall not relieve the Contractor of responsibility for errors or omissions in final Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract Documents.
- 1.6 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.
- 1.7 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 that personnel that do not successfully complete the required training are not permitted to enter the site to perform work.
 - .2 Be responsible for implementing, daily enforcing, and monitoring the Project Specific Health and Safety Plan.

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- .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.
- 1.8 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 personnel, and temporary lighting as required.
 - .2 Secure site during non-work 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.
- 1.9 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.

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| 1.10 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. |
| 1.11 Work Permits | .1 | Obtain specialty permit(s) related to project before start of work. |
| 1.12 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. |
| 1.13 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: <ul style="list-style-type: none">.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: <ul style="list-style-type: none">.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 |

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- 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 a 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.
 - .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.
 - 1.14 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 in 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.
- 1.15 Overloading .1 Ensure no part of the work is subject to a load which will endanger its safety or will cause permanent deformation.
- 1.16 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.
- 1.17 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.
- 1.18 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

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- 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.
- 1.19 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".
- 1.20 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.

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- .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 hand held 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.
- 1.21 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.

END OF SECTION

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 Definitions.
- 1.2 References.
- 1.3 Regulatory Overview.
- 1.4 Submittals.
- 1.5 Environmental Protection Plan (EPP).
- 1.6 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 of 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.

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- 3.15 Environmental Protection Supplies.
- 1.1 Definitions
- .1 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.
 - .2 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.
 - .3 Wetted Perimeter: area of stream where water is currently running or pooled.
 - .4 In-stream Work: any work performed below the high-water mark, either within or above the Wetted Perimeter of any Fisheries Sensitive Zone.
 - .5 Fisheries Sensitive Zone: in-stream aquatic habitats and out of stream habitat features such as side channels, wetlands, and riparian areas.
 - .6 Invasive plants: are 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.
 - .7 Noxious weeds: are 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>
- 1.2 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).

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- .3 Environmental Protection Plan (EPP) – Checklist (Appendix E).
- .4 Responsibility Checklist for Authorizations /Approvals / Notifications / Permitting (Appendix F).
- .5 Relevant Environmental Publications (Appendix G).
- 1.3 Regulatory Overview
- .1 The Departmental Representative will complete the environmental notification / permitting required under provincial regulations (British Columbia Ministry of Environment and Climate Change Strategy (MoE)), prior to the start of the project.
- .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.
- 1.4 Submittals
- .1 The Contractor’s EPP shall be submitted to the Departmental Representative. The EPP 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 (first submission and if

required all subsequent re-submissions) within 14 days 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 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 British Columbia Ministry of Forests, Lands, Natural Resource Operations, and Rural Development (FLNRORD) / MoE.
- .5 The review of the EPP 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 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 to ensure the correction of any deficiencies.

1.5 Environmental Protection Plan .1
(EPP)

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 E) 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 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.
- .2 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 instream 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.
- .3 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.
- .4 Spill Control Plan: including procedures, instructions, and reports to be used in the event of unforeseen spill of regulated substance.
- .5 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .6 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.
- .7 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 MoE, FLNRORD, these contract specifications, and other applicable legislation).
- .8 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.
- .9 The procedures for stopping work should the Contractor encounter archaeological anomalies or human remains.
- 1.6 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 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 Contractor's site superintendent and or other onsite personnel shall be responsible for monitoring of environmental concerns or violations. The P.Biol or RPBio or other qualified professional whom prepared the Contractor's EPP shall be available to respond to queries from the Contractor or Departmental Representative or make revisions to the EPP throughout the project. Should the Contractor or the Departmental Representative determine that the Contractor is in violation of applicable regulatory

requirements or these environmental specifications, the P.Biol or RPBio or other qualified professional whom prepared the Contractor's EPP shall visit the site when requested by the Contractor or Departmental Representative to oversee the implementation of the corrective measures to bring the work back into compliance with applicable regulatory requirements or these environmental specifications.

- .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.

3.2 Site Access and Parking

- .1 Generally, personal vehicles shall be parked the maximum practical distance from any watercourse. If less than a distance of 10 m, the location shall be preapproved by the Departmental Representative.
- .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.
- .2 If necessary, 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.
- .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) outside before delivery to the work site.
 - .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 metres 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 use 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 hire a security person employed 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. The work limits shall be identified by 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 if working in the water. Where construction activities require working close to surface water or in the water, the Contractor is required to describe measures to be employed to ensure fugitive materials (e.g. rocks, soil, branches) and especially deleterious substances (e.g. chemicals) does not enter any surface water areas.

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- .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.
- 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 machine in the event of fire. The Contractor’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.

3.11 Relics and Antiquities

- .1 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 shall be reported to the Departmental Representative immediately. The Contractor and workers shall wait for instruction before proceeding with their work.
- .2 All historical or archaeological objects found in the rock quarry 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.
- .3 Human remains must be reported immediately to the local

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- RCMP.
- 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 the provincial Water Act Permit:
- .2 Contractor must obtain approval from the provincial Water Act Officer prior to discharging any treated wastewater.
- 3.14 Drainage .1 Provide temporary drainage and pumping as necessary to keep excavations and site 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 silt fencing, 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 metres from natural drainage courses and 100 metres 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 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 or more and as required of

- polypropylene silt fence (typical height of 0.9 m) and the necessary stakes for installation. This will be used as necessary to prevent sediment transport into water bodies.
- .3 Provide a minimum of 50 lineal metres or more 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 silt fence(s) 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

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 Measurement and Payment Procedures.
- 1.2 References.
- 1.3 Definitions.
- 1.4 Responsibilities.
- 1.5 General.
- 1.6 Submittals.
- 1.7 Quality Management Plan.
- 1.8 Quality Control Personnel.
- 1.9 QC Documentation and Submittal to Departmental Representative.
- 1.10 QC Testing / Survey Inspection.
- 1.11 Non-Conformance Reports.
- 1.12 Departmental Representative Inspection and Audits.

1.1 Measurement and Payment Procedures

- .1 Payment for Quality Management will not be made and shall be considered incidental to the applicable payment item of work.

1.2 References

- .1 British Columbia MoTI – 2016 Standard Specifications for Highway Construction.

1.3 Definitions

- .1 Quality Control (QC): The process of checking specific product or services to determine if they comply with the contract documents and relevant quality standards and identifying ways to eliminate causes of unsatisfactory product or service performance.
- .2 Quality Assurance (QA): The process of ensuring that the Contractor's Quality Management Plan (QMP) (QC, non-conformances, etc.) are being followed. The results of the QA are provided as feedback to the QC team. Where required the Contractor shall implement changes to the project based on the feedback received from the QA process.
- .3 Quality Management Plan (QMP): The complete details of

- the Contractor's plans and processes to ensure quality on the project.
- .4 Deficiency / Non-conformance: Work or product failing to meet the conditions or requirements of the contract (general conditions, specifications, drawings, or other section(s) forming the project contract).
- 1.4 Responsibilities
- .1 The quality management responsibilities for this project are as follows:
- .1 Quality Control: The Contractor's responsibility.
- .2 Quality Assurance: The Departmental Representative's responsibility.
- .3 Quality Management Plan: Prepared by the Contractor.
- .4 Non-conformance Report: Prepared by the Contractor's QC in conjunction with the Contractor and if necessary prepared by the Departmental Representative.
- 1.5 General
- .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 person or persons from the Contractor's organization or hired by the Contractor. Quality Control work includes monitoring, inspecting, testing, and documenting the means, methods, materials, workmanship, processes and products of all aspects of the work as necessary to ensure conformance with the Contract.
- .2 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.
- .3 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 Departmental Representative may request further testing.
- .4 Work failing to meet the conditions of the Contract shall be

considered a non-conformance. A non-conformance report will then be issued by the Contractor's Quality Manager. Non-conforming work shall be removed / replaced from the work unless an exception to the contract documents is accepted by the Owner.

.5 The Contractor shall not be entitled to payment for work that lacks the appropriate Quality Control documentation, verified by the Quality Control Manager, as required by the Contract or is subject to an unresolved NCR.

.6 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.

1.6 Submittals

.1 The Contractor's Quality 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, 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, re-submit the complete plan for review.

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

.3 No work shall be undertaken on any element of Project Work (including payments, incidental work, or submittals for review) for which the applicable portions of the Quality Management Plan have not been accepted by the Departmental Representative.

.4 The review of the Quality Management Plan by the

- Departmental Representative shall not relieve the Contractor of responsibility for errors or omissions in the accepted Quality Management Plan or of responsibility for meeting all requirements of the Contract Documents.
- .5 Should deficiencies in the Contractor's Quality 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 Quality Management Plan to ensure the correction of any deficiencies.
- 1.7 Quality Management Plan
- .1 The Contractor shall prepare a Quality Management Plan. The purpose of the plan is to ensure the performance of the work in accordance with Contract requirements.
- .2 The Quality Management Plan is required to cover the work in its entirety, including without limitation all materials the Contractor and Subcontractors are supplying, monitoring and testing of the construction, documentation, and all items and phases of construction on the Project. At a minimum this shall include:
- .1 Testing and Survey (including minimum frequencies) to be completed by the Contractor (e.g. tolerances of the work completed).
- .2 Procedures for verifying and documenting conformance of the work to the contract requirements including but not limited to review of the work and completion of check sheets.
- .3 The Quality Management Plan will include the following information:
- .1 The name of the Quality Control Staff/Manager (including names, qualifications) and their assigned roles and work scheduling in performing Quality Control Duties.
- .2 The name of Quality Control testing agencies (if any) and details of their qualifications and relevant experience to provide the specific services required for the Project.
- .3 A list of testing equipment to be used for the work.
- .4 The Contractor shall ensure that all workers are familiar with the Quality Management Plan, its goals, and their role under

it, as well as the Contract Specifications associated with the work they are to undertake.

- 1.8 Quality Control Personnel .1 The Contractor shall appoint a qualified and experienced Quality Control Manager and if necessary other staff who are responsible for quality matters, and who will report regularly to the Contractor's management at a level which shall ensure that Quality Management requirements are not subordinated to manufacturing, construction or delivery. The Quality Control Manager shall be a qualified Professional Engineer, Certified Engineering Technician, or Applied Science Technologist, or other person with knowledge, skills and abilities acceptable to the Departmental Representative.
- .2 The Quality Control Personnel (including Quality Control Manager) shall remain on site at all times the Contractor is performing work which must be tested or inspected in-process and must be readily accessible and able to return when off-site.
- .3 At a minimum the Quality Control Manager shall:
- .1 Be responsible to measure conformance of the work with the contract requirements and ensure that quality is not being compromised by production measures.
 - .2 Be empowered by the Contractor to resolve Quality Control matters.
 - .3 Direct and monitor Quality Control work completed by Quality Control testing agencies and Quality Control Staff.
 - .4 Review, sign, and be responsible for all reports (material and testing results).
 - .5 Immediately notify the Contractor's management so work can be stopped, and corrective action taken when material, product, processes or submittals are deficient or non-compliant with the contract requirements.
 - .6 Complete internal Non-conformance Reports (NCR's).
 - .7 Respond to NCR's issued by the Departmental Representative.
 - .8 Attend pre-construction and construction progress

- meetings.
- .4 PSPC reserves the right to reject one or more of the Contractor's Quality Control Personnel and require the Contractor to find alternative Quality Control Personnel prior to or during the work should the Quality Control Personnel not have the necessary qualifications as listed in this specification or not provide quality control services as required by this specification during the work. Should Quality Control Personnel be rejected, any work which cannot undergo complete quality control as outlined in these specifications shall stop while the Contractor finds replacement Quality Control Personnel.
- 1.9 QC Documentation and Submittal to Departmental Representative
- .1 Check sheets:
- .1 Check sheets to verify and document conformance of the work to the quality requirements of the contract are fundamental to the QC process. The check sheets prepared as part of the Quality Management Plan shall include all components of the project work and all checks required to ensure the components of the work are completed in conformance with the requirements of the Contract Documents.
- .2 The frequency of check sheets completed by the Quality Control Staff to verify and document conformance of the work to the quality requirements of the contract shall be established by the Quality Control Manager to ensure the quality of the work is thoroughly documented. At a minimum, the frequency of check sheets shall achieve the following:
- .1 Daily (relative to the work being performed).
- .2 All check sheets shall be reviewed and signed by the Quality Control Manager prior to submission to the Departmental Representative.
- .4 Check sheets, NCR's, test results, and other documents and forms prepared as part of the Quality Management Plan and completed throughout the project to verify conformance with the contract requirements shall be distributed to the Departmental Representative in electronic format via PSPC's cloud-based document filing system "CentralCollab" within 24 hrs. of the completion. Submit to the Departmental Representative hard copies of the same documents, forms, and test results if requested.

1.10 QC Testing / Survey Inspection

- .1 QC testing and survey inspection required to assure that the work strictly complies with the Contract requirements shall be completed by the Contractor as follows:
 - .1 Be completed using a fully equipped laboratory (a field laboratory may be used at the Contractor’s discretion) during times of construction activity and gravel manufacturing.
 - .2 Include all testing and survey inspection specified in the Contract Documents.
 - .3 Any other testing or survey inspection required as a condition for deviation from the specified Contract procedures.
- .2 The frequency of testing / survey inspections shall be outlined in the Quality Management Plan. At a minimum the Contractor shall achieve the most stringent Quality Control testing / survey inspection frequencies as follows:
 - .1 The specific frequencies defined elsewhere in these specifications.
 - .2 The minimum QC testing / survey inspection frequencies as defined in Table 01 45 00 – 01.

| Table 01 45 00 - 01: Minimum QC Testing / Survey Inspection Frequencies | | |
|-------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Activity | Test / Survey Inspection | Frequency |
| Placement / Site Tolerance – Culverts | Survey Inspection | 1 survey shot (invert of culvert) at inlet and outlet ends, and along the length of the culvert as necessary to confirm the culvert is not reverse graded and within +/- 300 mm of the true line and level along the culvert. |

- .3 As defined in the BC MoTI 2016 Standard Specifications for Highway Construction (Volumes 1 and 2, and applicable Amendments available at time of tender closing). Should one of these specifications be silent on a particular testing frequency the testing frequencies shall be as defined in the Alberta Transportation Standard Specification for Highway Construction (latest edition and applicable Amendments available at time of tender

closing). Wherever these standard specifications refer to standards (e.g. CSA, ASTM, and others) the minimum testing frequencies in these standards shall be utilized.

- .4 If not specified elsewhere, one test per each individual area / location the material is utilized.
- .3 Quality Control testing agencies, their inspectors, and their representatives are not authorized to revoke, alter, relax, or release any requirement of the Contract Documents, nor to approve or accept any part of the work.
- .4 The Contractor shall complete testing in the following manner:
 - .1 Provide testing facilities and personnel for the tests and inform the Departmental Representative in advance to enable the Departmental Representative to witness the tests if so desired.
 - .2 Notify the Departmental Representative when sampling will be conducted.
 - .3 Within 24 hrs. of the completion of a test and prior to transport or placement of material, submit the test result to the Departmental Representative (hard copy if requested) and in electronic format via PSPC's cloud-based document system "CentralCollab".
 - .4 Identify test reports with the name and address of the organization performing all tests, and the date of the tests.
 - .5 Immediately after completion of tests, provide all test results on Contractor-supplied forms acceptable to the Departmental Representative or on forms used by the BC Ministry of Transportation and Infrastructure.
 - .6 Initiate other Quality Control tests or procedures as necessary for ensuring production of a quality product and include them in the Quality Control Plan. Tests or procedures may also be introduced after the start of work as necessary as amendments to the Quality Control Plan.
- 1.11 Non-Conformance Reports .1 The Contractor shall, and the Departmental Representative may review the work to determine conformance with the

contract requirements.

- .2 Should the Contractor's Quality Control reporting indicate that the work, product, or methodology is not in conformance, the Quality Control Manager shall:

- .1 Inform the Contractor of the deficiency. The Contractor shall then take appropriate action to correct the deficiency.
- .2 Ensure that the action taken by the Contractor corrected the deficiency and any substandard product was eliminated from the work. If the deficiency was not corrected and substandard product remains or becomes part of the work, an internal Non-Conformance Report (NCR) shall be issued to the Contractor, with a copy to the Departmental Representative. Included as part of the NCR will be a required response time.

The Contractor shall then respond to the NCR (within the specified response time) by notifying the Quality Control Manager and the Departmental Representative of the proposed resolutions and corrective actions. The Contractor and/or the Quality Control Manager may consult with the Departmental Representative on the resolutions but is not required to do so.

Payment for the work for which the NCR has been issued may be withheld until the NCR issue is resolved.

- .3 Should the Contractor's Quality Control reporting indicate that an aspect of the Contractor's work is continually deficient, the Quality Control Manager shall issue an internal procedural Non-Conformance Report (NCR) to the Contractor, with a copy to the Departmental Representative. Included as part of the NCR will be a required response time.

The Contractor shall then respond to the NCR (within the specified response time) by notifying the Quality Control Manager and the Departmental Representative of the proposed resolutions and corrective actions. The Contractor and/or the Quality Control Manager may consult with the Departmental Representative on the resolutions but is not required to do so.

Payment for the work for which the NCR has been issued may be withheld until the NCR issue is resolved.

- .4 Should the Departmental Representative Quality Assurance reporting indicate that the work is not in conformance, the Departmental Representative may issue to the Contractor an NCR with a required response time or direct the Quality Control Manager to prepare an NCR.

The Contractor shall then respond to that NCR, within the specified response time, with proposed resolutions and corrective actions. The Departmental Representative will accept or reject the proposed resolution and corrective action proposal. If the proposed resolution is rejected by the Departmental Representative, the Contractor shall resubmit with an alternative response until a solution acceptable to the Departmental Representative is found.

Quality Assurance testing and inspection may be performed by the Departmental Representative to determine if the corrective action has provided an acceptable product. Acceptance and rejection will continue until the Departmental Representative determines that a quality product has been achieved.

Payment for the work for which the NCR has been issued may be withheld until the NCR issue is resolved.

- .5 If in the opinion of the Departmental Representative it is not viable to correct non-conforming work or work not performed in accordance with Contract Documents, the Departmental Representative may deduct from the Contract Price the difference in value between work performed and that called for by Contract Documents, the amount of which shall be determined by the Departmental Representative.

1.12 Departmental
Representative Inspection and
Audits

- .1 The Departmental Representative may perform quality assurance audits as desired. Such audits will not relax the responsibility of the Contractor to perform work in accordance with Contract Documents.
- .2 Allow the Departmental Representative access to work. If part of the work is in preparation at locations other than the place of work, allow access to such work whenever it is in progress.
- .3 If Contractor covers, or permits to be covered, work that has been designated for Quality Assurance testing, inspections, or approvals before such is made, uncover such work, have inspections or tests satisfactorily completed, and make good such work.

-
- .4 Independent Inspection/Testing Agencies may be engaged by the Departmental Representative for the purpose of Quality Assurance inspection and/or testing portions of the work. Costs of such services will be borne by the Departmental Representative.

END OF SECTION

PART 1 – GENERAL

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.

1.1 Installation and Removal

- .1 Provide construction facilities in order 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 weather proof 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 – Special Procedures – Traffic Control, 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 portion of the highway, and outside the highway clear zone. |
| | .2 | 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 | Ensure Contractor's onsite representatives have suitable onsite phone communications allowing the Departmental Representative reliable communication to the Contractor's 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

PART 1 – GENERAL

| Section Includes | PART 1: |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 1.1 Installation and Removal. |
| | 1.2 Hoarding. |
| | 1.3 Guiderails and Barricades. |
| | 1.4 Access to Site. |
| | 1.5 Public Traffic Flow. |
| | 1.6 Fire Routes. |
| | 1.7 Protection for Off-site and Public Property. |
| | 1.8 Protection of Structure Finishes. |
| 1.1 Installation and Removal | .1 Provide temporary controls in order to execute Work expeditiously. .2 Remove from site all such work after use. |
| 1.2 Hoarding | .1 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures (see Section 01 35 43 – Environmental Protection for more information). |
| 1.3 Guiderails and Barricades | .1 Provide secure, rigid guiderails and barricades around deep excavations and open shafts. .2 Provide as required by governing authorities. |
| 1.4 Access to Site | .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work. |
| 1.5 Public Traffic Flow | .1 Provide and maintain competent signal flag persons, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect the Public. |
| 1.6 Fire Routes | .1 Maintain access to property for use by emergency response vehicles. |
| 1.7 Protection for Off-site and Public Property | .1 Protect surrounding private and public property from damage during performance of Work. .2 Be responsible for damage incurred. |
| 1.8 Protection of Structure Finishes | .1 Provide protection for finished and partially finished structure finishes and equipment during performance of Work. .2 Provide necessary screens, covers and hoardings. .3 Confirm with Departmental Representative locations and installation schedule three (3) days prior to installation. |

END OF SECTION

PART 1 – GENERAL

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.

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

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 Project Cleanliness
 - 1.1 Project Cleanliness.
 - 1.2 Final Cleaning.
- 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.
- 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. Reinstatement of 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 BST finished areas.
 - .9 Clean drainage systems.

END OF SECTION

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 Inspection and Declaration.
- 1.1 Inspection and Declaration
 - .1 Contractor's Inspection: Contractor and all subcontractors shall conduct an inspection of work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify the Departmental Representative in writing of satisfactory completion of the Contractor's Inspection and that corrections have been made.
 - .2 Request the Departmental Representative's Inspection.
 - .2 Departmental Representative's Inspection: The Departmental Representative and Contractor will perform inspection of work to identify obvious defects or deficiencies. Contractor shall correct work accordingly.
 - .3 Completion: Submit written certification that the following have been performed:
 - .1 Work has been completed and inspected for compliance with Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Work is complete and ready for final inspection.
 - .4 Final Inspection: When the items noted above are completed, request final inspection of work by the Departmental Representative and Contractor. If work is deemed incomplete by the Departmental Representative, complete the outstanding items and request re-inspection.

END OF SECTION

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 Submissions.
 - 1.2 Recording As-built Conditions (As-Built Drawings).
 - 1.3 As-Built Survey.
- 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 and Shop 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 Culverts (inverts at inlet and outlet) and size and type.
- .2 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 20 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

PART 1 – GENERAL

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.

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.

- 1.3 Storage and Handling
- .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 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 naphtha 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

PART 1 – GENERAL

Section Includes

PART 1:

- 1.1 General.
- 1.2 Measurement and Payment Procedures.
- 1.3 References.
- 1.4 Definitions.
- 1.5 Submittals.
- 1.6 Environmental.
- 1.7 Delivery, Storage, and Handling.

PART 2: PRODUCTS.

- 2.1b Steel Pipe Culvert.
- 2.2b Welding.

PART 3: EXECUTION.

- 3.1 Equipment.
- 3.2 Installation.
- 3.3 Clean-up.

1.1 General

- .1 The replacement / install of 750 mm (Km 330.15), 900 mm (Km 311.73, Km 311.81, Km 315.59, Km 318.34 & Km 318.96), and 1050 mm (Km 322.99, Km 327.11, and Km 327.67) diameter culverts shall be installed by the Contractor using trenchless methods as defined by this specification.

1.2 Measurement and Payment Procedures

- .1 Payment for the supply and install of varying sizes of new culverts will be made on the basis of the Price per Unit Bid for Culvert Replacement (Varying Diameters) in the Bid and Acceptance Form. The Price per Unit Bid shall include all costs included with the work, including:
 - .1 Supply and transport trenchless install equipment, complete excavation for working gravel pad or jacking pit to accommodate equipment and length of Steel Pipe Culvert, supply and install of the steel pipe

- culvert, removal and offsite disposal of earth material inside the steel pipe culvert, welding, restoration of the ditch, and all other items necessary for successful completion of the work. If an obstruction is encountered during the installation process which prevents further installation of the pipe via pipe jacking, PSPC shall be responsible for the removal costs.
- .2 Measurement for Payment for completion of Culvert Replacement (Varying Diameters) will be made on the length of culvert surveyed in lineal metres, measured parallel to the direction of the culvert along the invert of the culvert, and accepted by the Departmental Representative.
- 1.3 References
- .1 Canadian Standards Association (CSA International), latest edition:
- .1 CSA W59, Welded steel construction (metal arc welding).
- .2 CSA W48, Filler metals and allied materials for metal arc welding.
- .2 The Pipe Jacking Association – Guide to Best Practices for the Installation of Pipe Jacks and Microtunnels.
- .3 American Society for Testing and Materials (ASTM), latest edition:
- .1 ASTM A252, Standard Specification for Welded and Seamless Steel Pipe Piles.
- 1.4 Definitions
- .1 Trenchless: Culvert installation through existing ground within strict alignment and grade tolerances using hydraulic equipment without the need for the excavation of the existing ground.
- .2 Obstruction: Rock, stumps, or other material which must be removed prior to the continuation of the trenchless culvert installation work. Frozen ground shall not be considered an obstruction.
- 1.5 Submittals
- .1 Submittals shall be in accordance with Section 01 33 00 – Submittal Procedures.
- .2 The following submittals are required:
- .1 Submit to the Departmental Representative for review and acceptance the steel producer's

certificates for the steel pipe culverts in accordance with ASTM A252.

.2 Unless advised otherwise in advance of the work by the Departmental Representative, submit to the Departmental Representative for review and acceptance a Tunneling Methodology report. The report shall be sufficient to convey the following:

.1 Proposed method of tunnel construction and type of face support.

.2 Manufacturer and type of tunneling equipment proposed.

.3 Sequence of operations.

.4 Method of spoil transportation from the face and surface storage.

.5 Capacity of trenchless equipment and cushioning.

.6 Identify critical utility crossings and special precautions proposed.

.7 Proposed methodology to remove any obstructions encountered.

1.6 Environmental

.1 Complete culvert installation and related works in conformance with the requirements of Section 01 35 43 – Environmental Protection, the Contractor's accepted Environmental Protection Plan (EPP).

.2 The Contractor shall account for the possibility of not being able to complete work due to high flows or adverse weather conditions in the construction schedule and in the unit prices. No payment for temporary work stoppages due to high flows or adverse weather conditions will be made. See Item 2.2 – Work Completion, Subsection .5 through .7 inclusive of Contract Specification Section 01 11 10 – Summary of Work for more information.

1.7 Delivery, Storage, and Handling

.1 Handle and store pipe products in a manner to avoid damage, alteration, deterioration and soiling.

.2 Where the material supplied is damaged, the Contractor shall immediately separate nested sections of the plate or pipe to facilitate more detailed inspection by the Departmental Representative. Culvert material designated by the

Departmental Representative as unacceptable, due to damage or failure to meet specified requirements, shall be immediately repaired or replaced by the Contractor to the acceptance of the Departmental Representative.

PART 2 – PRODUCTS

2.1 Steel Pipe Culverts

- .1 Provide steel pipe culverts of required diameter, minimum 12 mm wall thickness, and length as shown on the Contract Drawings. Substitution of pipe with larger diameter or thicker wall thickness to suit equipment availability or ground conditions shall be pre-approved by the Departmental Representative. The substitution of pipe with smaller diameter or thinner wall thickness will not be permitted.
- .2 Steel pipe culverts shall be seamless or welded pipe (spiral or seam) conforming with the requirements of ASTM A252 with a minimum yield strength of 310 MPa.
- .3 Steel pipe culverts shall be delivered to the site in uniform lengths.
- .4 The Contractor shall be responsible for selection of appropriate pipe, pipe joints, and pipe wall thickness to carry the thrust of any trenchless installation forces or any other construction loads (including frozen ground and winter temperatures) in combination with overburden, earth and hydrostatic loads. The trenchless installation equipment shall not unduly damage or distort the ends of the steel pipe culverts during the installation process.

2.2 Welding

- .1 Welding materials to CSA W59.
- .2 Welding electrodes to CSA W48 Series.

PART 3 – EXECUTION

3.1 Equipment

- .1 The Contractor shall be solely responsible for selection of trenchless installation equipment capable of handling the culvert size, ground conditions (including frozen ground and winter temperatures), and existing soils.

3.2 Installation

- .1 Divert the existing flows from the area of work using a berm or pumps as required and prevent sediment-laden water from entering the water course.
- .2 Use trenchless methods that will minimize movement of the ground in front of and surrounding the steel pipe culverts.
- .3 Perform the trenchless installation as to avoid interference with the operation of the vehicles travelling the highway.

- .4 Install new culvert such that the length of the culvert as per the Contract Drawings or as approved by the Departmental Representative.
- .5 Install suitable gravel pad and or thrust reaction blocks as required for trenchless equipment. Complete excavation as necessary for install of the pipe lengths while keeping the construction footprint within the limits of the construction shown on the Contract Drawings to the maximum extent possible.
- .6 Divert stream water, drainage, and discharge from dewatering away from the trenchless operations to a location in compliance with the Contractor's accepted Environmental Protection Plan (EPP).
- .7 Install steel pipe culvert ensuring the culvert is not reverse graded and within +/- 300 mm of the true line and level at any point along the culvert. Adjustments to the line and level should be gradual to ensure that the steel pipe or joints are not damaged. Monitor line and level of the culvert with appropriate instruments.
- .8 Monitor ground movement (settlement and heave) throughout the trenchless installation through visual observations and the installation of a minimum of 4 survey points per culvert (2 on each road shoulder / road embankment) prior to undertaking the work. Check each survey point a minimum of every second working day or more frequently if movement is suspected or requested by the Departmental Representative. Halt all operations, take immediate remedial action (including notification of the Departmental Representative) if ground movements greater than +/- 50 mm are detected.
- .9 If ground movements in excess of +/- 50 mm are detected the Departmental Representative will consult with the Contractor and others to determine the most appropriate course of action. The install of the steel pipe culverts can only commence again following approval from the Departmental Representative.
- .10 Cushion pipe joints as necessary to transmit the jacking forces without damage to the steel pipe or steel pipe joints.
- .11 Fuse Steel Pipe Culverts sections using Full Penetration Butt welds. Complete welding in accordance with CSA W59.
- .12 If necessary maintain an envelope of bentonite slurry around

the exterior of the pipe during the trenchless installation to reduce the exterior friction and reduce the possibility of the pipe seizing in place.

- .13 If the steel pipe culvert seizes in place and Contractor elects to construct a recovery access shaft, pre-approval must first be obtained from the Departmental Representative.
- .14 In the event a section of pipe is damaged during the trenchless installation, or joint failure occurs, as evident by inspection, visible ground water inflow or other observations, the Contractor shall submit for approval his methods for repair or replacement of the steel pipe culvert. Any steel pipe damage or misalignment of the steel pipe culvert (except as caused by an unanticipated obstruction) shall be removed and replaced by the Contractor at no additional costs to the owner.
- .15 Ensure no voids between the outside of the steel pipe culvert and ground result from the trenchless installation process. Any voids which form shall be filled with pressure grouting. If pressure grouting is necessary, submit pressure grouting materials and procedures to the Departmental Representative for review and acceptance prior to undertaking the work.
- .16 In the event an obstruction is encountered during the trenchless less installation process, notify the Departmental Representative immediately. Await further instruction from the Departmental Representative before proceeding.
- .17 Remove soil materials from within the steel pipes using appropriate equipment. Dispose of materials offsite outside of PSPC's ROW and borrow pits at a disposal location chosen by the Contractor and acceptable to the Departmental Representative.
- .18 Trim ends of steel pipe culverts per the lines shown on the Contract Drawings.

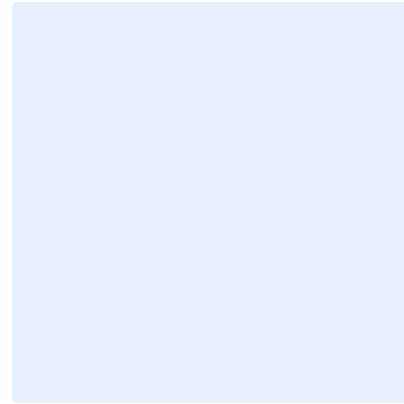
3.3 Clean-up

- .1 Clean-up all disturbed areas to an equal or better condition to that prior to construction.
- .2 Restore topography to pre-construction or better conditions as acceptable to the Departmental Representative. The intent is to minimize erosion during freshet and spring run-off.

END OF SECTION

R.017173.330
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

This document will be available on site for the project duration and available to all workers.

<This template is provided to aid the Contractor in preparing their 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.>

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| 8.1 Representative/Committee Procedures | XX |
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| 11. Fire Safety, Reporting and Evacuation | XX |
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Appendix 1: Preliminary Hazard Assessment Form

Note: The Preliminary Hazard Assessment Form is provided for the Contractor's reference only and is not necessarily a comprehensive list of all hazards. PSPC takes no responsibility for the completeness or any misrepresentation by the Contractor of the on-site hazards based on the information found in the Preliminary Hazard Assessment Form. The Contractor shall remain responsible for the identifying and mitigating against all hazards on the project.

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

Appendix 3: Contractor Daily Toolbox Meeting Form

Appendix 4: Site Safety Orientation Form

Appendix 5: Incident/Accident Report Template

Appendix 6: Key Member Resumes and Safety Certifications

Appendix 7: Local Hospital Maps

Appendix 8: Safe Work Procedures

1. Contractor Safety Policy / Statement

<A statement about the Contracting company's 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 provided to assist with presenting this information.>

| Position | Name | Description of Health and Safety Responsibilities |
|-------------------------------|------|---------------------------------------------------|
| Project Manager | | |
| Project Superintendent | | |
| Health and Safety Coordinator | | |
| First Aid Attendant | | |
| 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. 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>*.

5.1 On-Site Safety Hazards Identification and Control Procedures

<Identification and description of job site specific hazards. Additionally, procedures that will be applied to mitigate the risks involved in the provided hazards. Completion of the Preliminary Hazard Assessment Form provided (Appendix 1) may assist in determining applicable hazards.>

5.2 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.>

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 could 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 |
| Project Superintendent | | |
| Health and Safety Coordinator | | |
| First Aid Attendant | | |
| Key Subcontractor Representatives | | |
| | | |
| | | |
| | | |

| PSPC Team | | |
|------------------------------------------------------|---------------|-------------------|
| Name and Position | Office Number | Cell Phone Number |
| George Smith - Operations Manager, Alaska Highway | 250.774.6956 | 250.321.0174 |
| 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. Please check whether **911** is available in the project location.>

| Agency/Assistance | Contact |
|----------------------------------------------------|---------------------------------|
| RCMP | 911 |
| Local Police – Fort Nelson (emergency) | 1.250.774.2777 |
| Local Police – Fort Nelson (non-emergency) | 1.250.774.2700 |
| Local Police – Fort St. John (emergency) | 1.250.787.8100 |
| Local Police – Fort St. John (non-emergency) | 1.250.787.8140 |
| BC Ambulance | 911 |
| Local Hospital – Fort Nelson | 1.250.774.8135 |
| Local Hospital – Fort St. John | 1.250.262.5200 |
| S.T.A.R.S Ambulance | 1.888.888.4567 |
| Fire and Rescue | 911 |
| Fire and Rescue – Fort St. John | 1.250.785.4333 |
| Fire and Rescue – Fort Nelson (emergency) | 1.250.774.2222 |
| Fire and Rescue – Fort Nelson (non-emergency) | 1.250.774.3955 |
| Forest Fire Reporting | 1.800.663.5555 |
| WorkSafeBC Work Site Emergency 24 hr | 1.888.621.7233 |
| WorkSafeBC Regional Office | 1.800.663.4630 / 1.250.785.1283 |
| HazMat 24 hr | 1.800.663.3456 |
| BC Environmental - PEP 24 hr | 1.800.663.3456 |
| BC Environmental Regional Office | 1.250.787.3411 |
| 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 |
| BC One Call | 1.800.474.6886 |
| Poison Control | 1.800.567.8911 |
| Commercial Vehicle Inspection and Standards (CVSE) | |
| Reporting Safety Violations 24 hr | 1.888.775.8785 |
| Peace River Regional Office | 1.250.784.2363 |

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 (remove if in corporate health and safety policy), 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>*, 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

Date

Health and Safety Representative

Date

Quality Control Manager

Date

<Major Sub-Contractor Representatives>

Date

This page is intentionally blank.

Appendix 1: Preliminary Hazard Assessment Form

PRELIMINARY HAZARD ASSESSMENT FORM

| | |
|---------------------------------------------|----------------------------------------------|
| Project Number: | |
| Location: | |
| Date: | |
| Name of Departmental Representative: | <i>Alex Taheri</i> |
| Name of Client: | <i>Public Service and Procurement Canada</i> |
| Name of Client Project Co-ordinator | <i>Alex Taheri</i> PH: (604)- 666 - 9374 |

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 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. | 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. |
| | 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 Requirements¹ | YES | NO | Notes / Comments² |
|-------------------------------------------------------------|------------|-----------|-------------------------------------------|
| 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**

Confirmation of Prime Contractor's Main Responsibilities Under the WorkSafeBC Occupational Health and Safety Regulations and *Worker's Compensation Act*

Name of Project: _____

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 | <input type="checkbox"/> | <input type="checkbox"/> |
| 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. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. The Prime Contractor understands that in any conflict of directions, WCB OH&S Regulations and/or the Worker's Compensation Act shall prevail. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. The Prime Contractor understands and will direct that all supervisors/coordinators must immediately report any apparent conflict as described above. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. The Prime Contractor agrees that their supervisor shall immediately notify the consulting Engineer's representative of any reported conflict. | <input type="checkbox"/> | <input type="checkbox"/> |
| 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. | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. The Prime Contractor has conducted an inspection of the workplace to verify the presence of any hazards. | <input type="checkbox"/> | <input type="checkbox"/> |
| 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. | <input type="checkbox"/> | <input type="checkbox"/> |
| 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. | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. The Prime Contractor will confirm that all workers are suitably trained and competent to perform the duties for which they have been assigned. | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. The Prime Contractor confirms that safety orientation of all new workers will be conducted. | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. The Prime Contractor's written Safety Program has been provided to the Owner's representative. | <input type="checkbox"/> | <input type="checkbox"/> |
| 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. | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. The Prime Contractor confirms that before the commencement of work, crews will attend a daily crew safety meeting. | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. The Prime Contractor confirms that their supervisor has assessed and will coordinate the workplace first-aid requirements | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. The Prime Contractor confirms that the procedure to transport injured workers is established | <input type="checkbox"/> | <input type="checkbox"/> |

Prime Contractor Representative's

Name: _____

Title: _____ Signature: _____

Date: _____

Prime Contractor's OH&S Coordinator

Name: _____

Title: _____ Signature: _____

Date: _____

Appendix 3: Contractor Daily Toolbox Meeting Form
<provided by the contractor>

Appendix 4: Site Safety Orientation Form
<provided by the contractor>

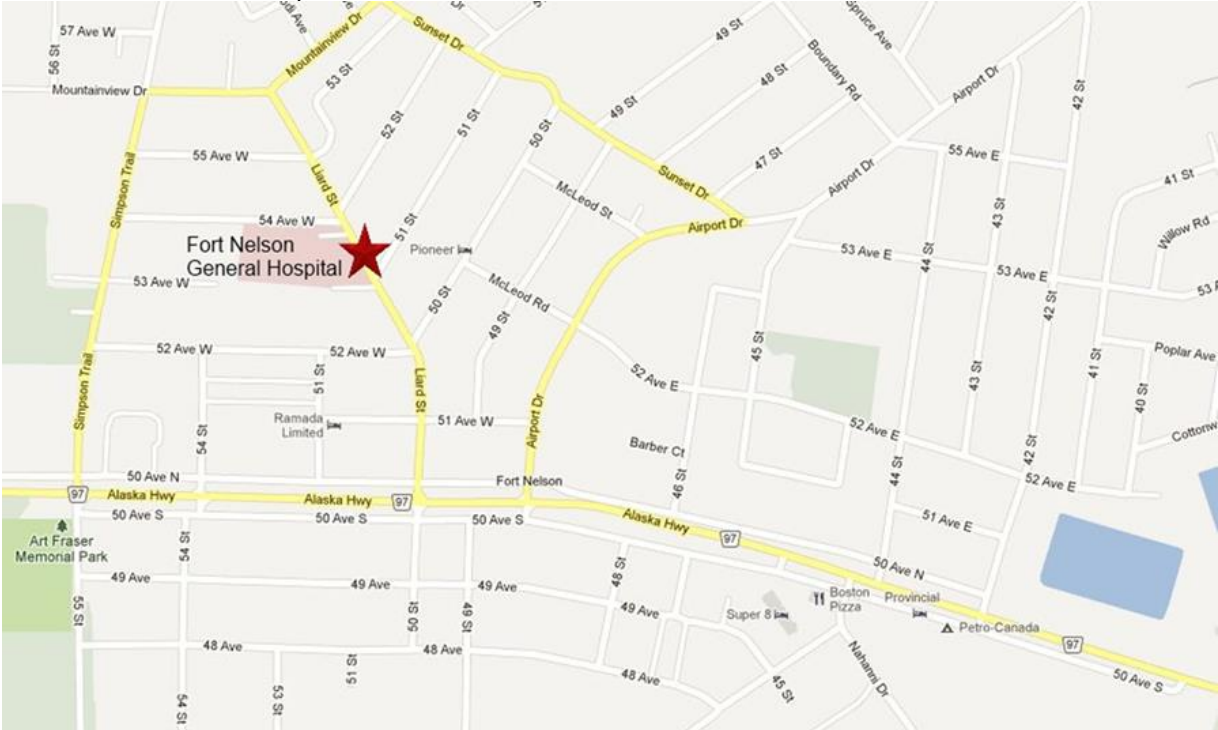
Appendix 5: Incident/Accident Report Template
<provided by the contractor>

Appendix 6: Key Member Resumes and Safety Certifications
<provided by the Contractor>

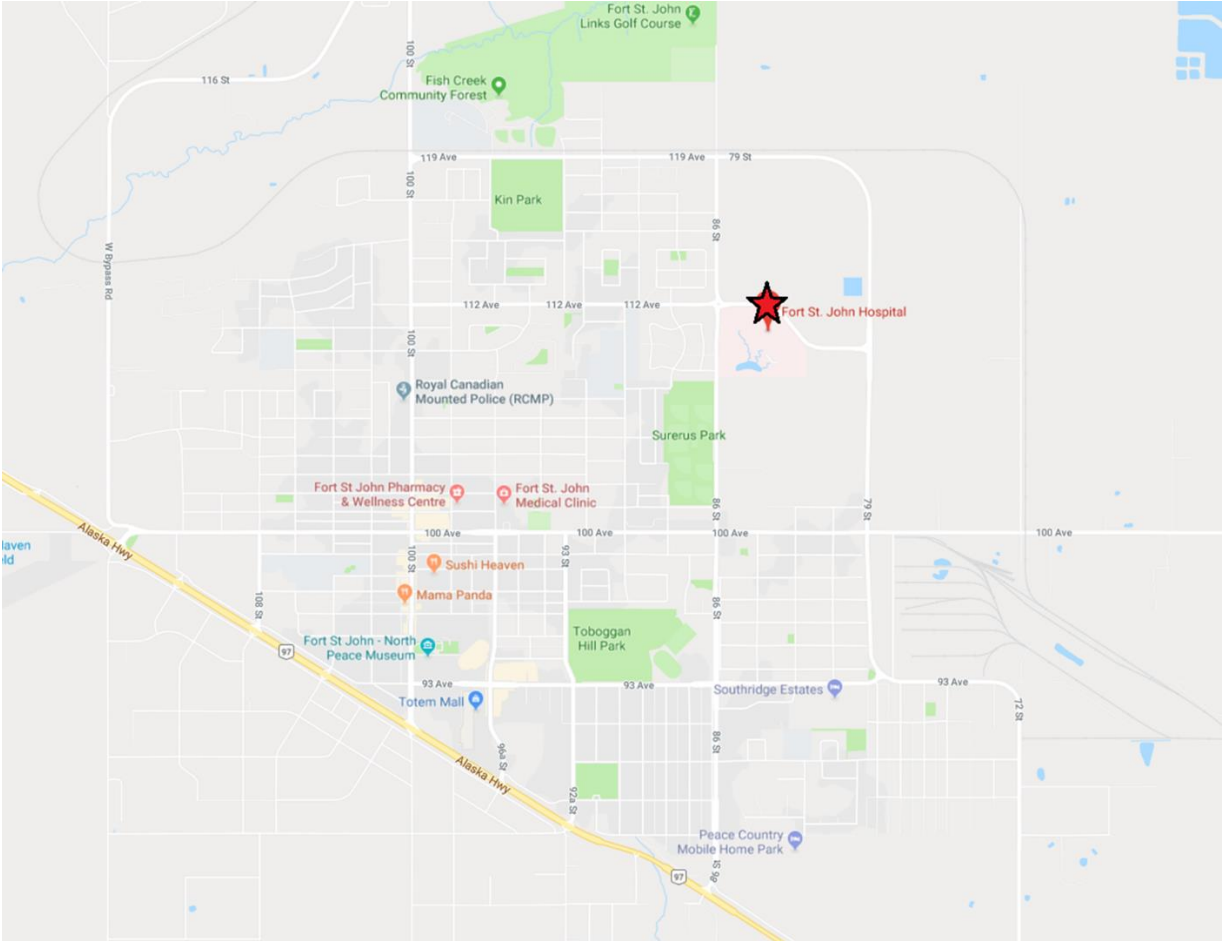
Appendix 7: Hospital Maps

<remove unnecessary maps>

Fort Nelson General Hospital



Fort St. John



Appendix 8: Safe Work Procedures *<if required>*

R.017173.330
Appendix B

Written Communication / Document Management Protocol



Alaska Highway Km 311 – 330 Culvert Replacement Project: Written Communication / Document Management Protocol

Communication for the Alaska Highway Km 311 – 330 Culvert Replacement Project (R.017173.330) 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.

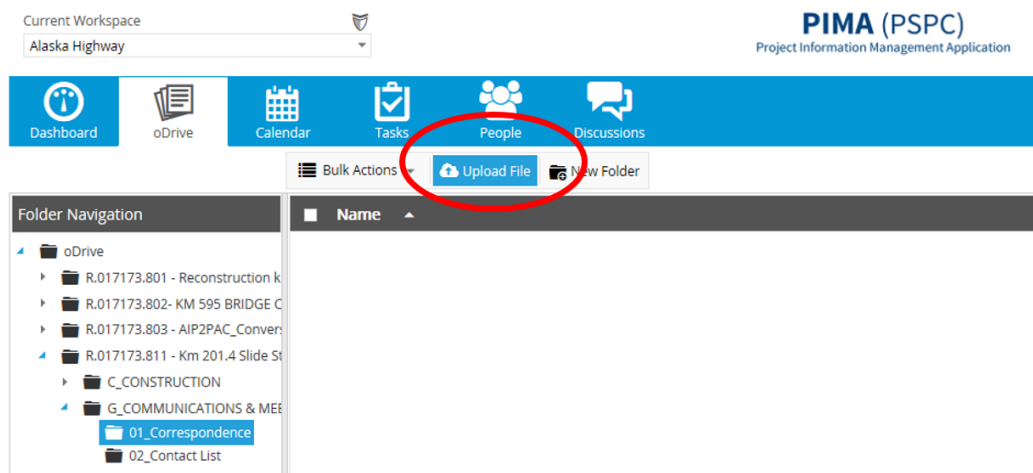
CentralCollab can be accessed at the following address: <https://app.centralcollab.com/>

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

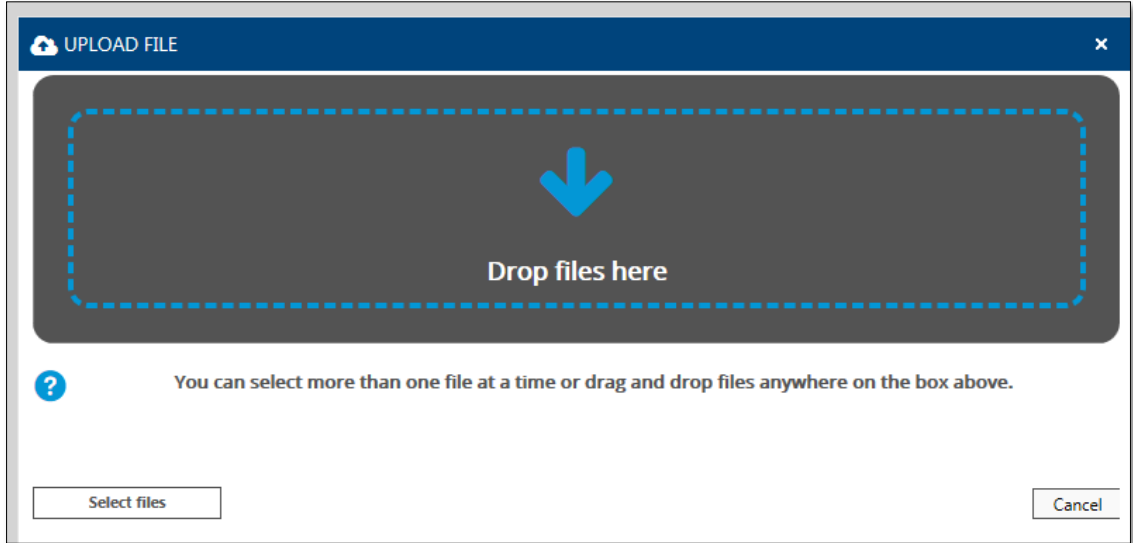
Upload individual documents to the appropriate folder on CentralCollab. For folder names, refer to Table 2 of this document. To add files, click on **Upload File**:



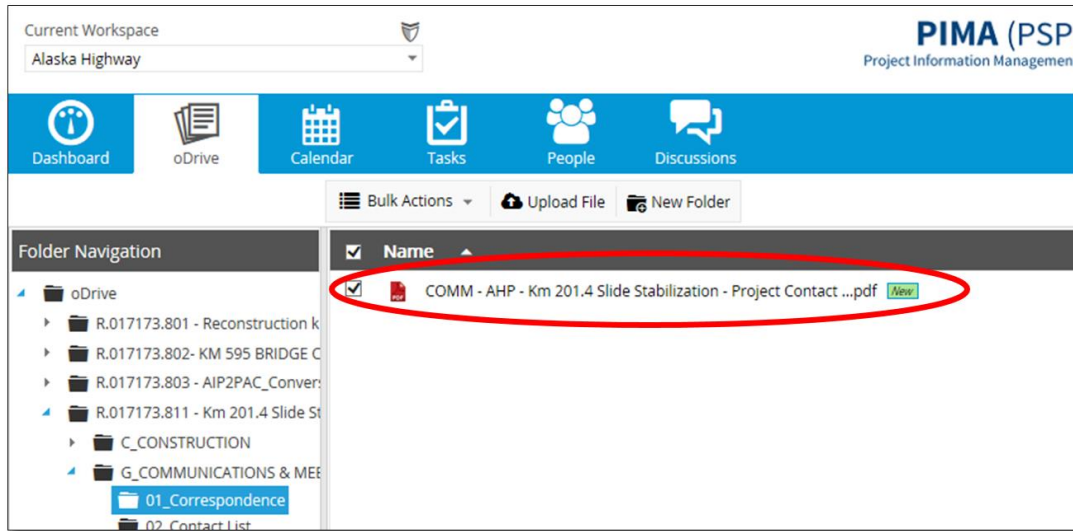


Drag and drop your document(s), then press Save.

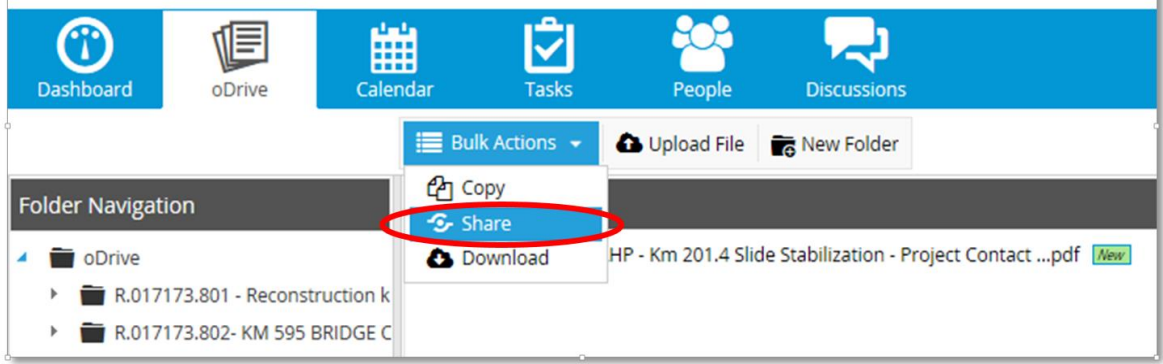
NOTE: Make sure you have named your document correctly, as explained in Section 2.2 CentralCollab File Naming Convention.



Once saved, you will see your new document (circled below), but no one else will be notified until you share it.

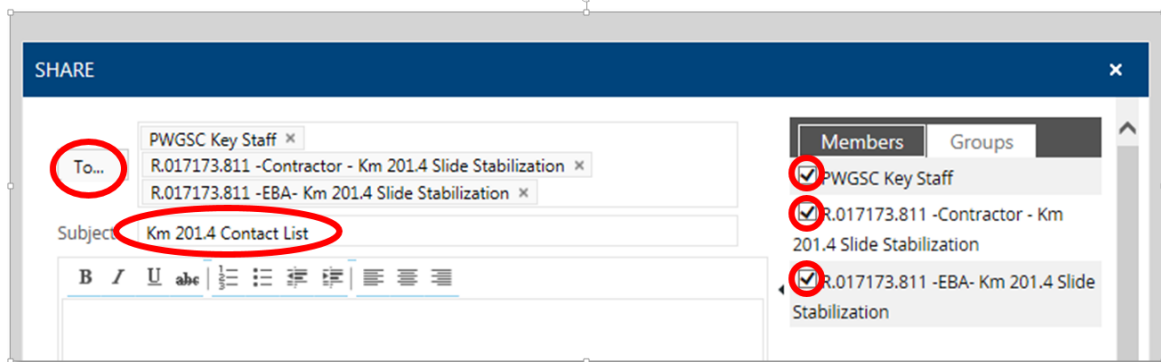


To notify members of the new document, check the box next to the document ✓ then click **Bulk Actions > Share** :



Once the new window opens, select **To**, and then select all pre-set groups:

- ✓ PWGSC Key Staff
- ✓ R.017173.XXX – Contractor – Km XXX Project
- ✓ R.017173XXX – Consultant – Km XXX Project



If desired, insert a message related to the uploaded submittal in the form of **subject line** before sending. To ensure the entire project team is aware of CentralCollab postings, unless instructed otherwise, notification of the pre-set group is preferred rather than selection of individual users.

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.017173.330 – Km 311 – 330 Culvert Replacement 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) |
| 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) |



| Table 2: Common Document Filing / Folder Locations | |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Folder Names | Description of Typical Documents |
| 08_Field Reviews | Field Review forms (typically generated by PSPC) |
| 09_Health & Safety | Health and Safety related documentation including 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Quality Management Plan • Check Sheets • Daily Reports • NCR's |
| CentralCollab folder: | |



| Table 2: Common Document Filing / Folder Locations | |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Folder Names | Description of Typical Documents |
| R.017173.330 – Km 311 – 330 Culvert Replacement 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.017173.330 – Km 311 – 330 Culvert Replacement Project > H_PROJECT MONITORING> | |
| 01_Project Time Scope Budget | For PSPC only |
| 02_Progress Report | For PSPC only |
| 03_Photos | For PSPC only |
| 04_Project Commissioning | For PSPC only |
| 05_Compliance & Audits | For PSPC only |
| CentralCollab folder: R.017173.330 – Km 311 – 330 Culvert Replacement 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: | Km 311-330 Culvert Replacement Project, Alaska Highway, BC | |
| Project Number: | R.017173.330 | |
| Departmental Representative: | Alex Taheri | Ph: (604)-666-9374 |
| 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 a comprehensive list of required submittal items for the project. Refer to 2.8 Contract Submittals for the list of submittals.

| Submission Item | Reviewed & Accepted by PSPC | Date (yyyy-mm-dd) | Comments / Exclusions |
|---------------------------------|-----------------------------|-------------------|-----------------------|
| Contract, Bonding and Insurance | <input type="checkbox"/> | | |
| Health & Safety Plan | <input type="checkbox"/> | | |
| Traffic Management Plan | <input type="checkbox"/> | | |
| Environmental Protection Plan | <input type="checkbox"/> | | |
| Quality Management Plan | <input type="checkbox"/> | | |
| Tunneling Methodology Report | <input type="checkbox"/> | | |
| Other: | <input type="checkbox"/> | | |
| Other: | <input type="checkbox"/> | | |

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: _____

PSPC

Appendices

Km 311 – 330 Culvert Replacement, Alaska Highway, BC

Project No. R.017173.330

R.017173.330

Appendix D

Progress Payment Submission Form



Progress Payment Submittal Form

| | | |
|------------------------------|------------------------------------------------------------|--------------------|
| Project Name: | Km 311-330 Culvert Replacement Project, Alaska Highway, BC | |
| Progress Payment Number: | R.017173.330 | |
| Departmental Representative: | Alex Taheri | Ph: (604)-666-9374 |
| 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 | <input type="checkbox"/> | |
| Statutory Declaration | <input type="checkbox"/> | |
| WorkSafeBC Clearance Letter | <input type="checkbox"/> | |
| Project Schedule (with baseline tasks and updates showing completion dates and % complete) | <input type="checkbox"/> | |
| Other: | <input type="checkbox"/> | |
| Other: | <input type="checkbox"/> | |

Prime Contractor Representative:

Name: _____

Title: _____ Signature: _____

Date: _____

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Appendix E

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 | | | | |
| <i>Project Description</i> | A brief description of the project and its location is provided. | | | |
| <i>Environmental Sensitivities</i> | Sensitive or protected features that could be impacted as a result of the Contractor's activities are described. | | | |
| <i>Site Activities</i> | 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 | | | | |
| <i>Project Schedule</i> | A project schedule is provided, including scheduled shut-downs and restricted work periods due to environmental requirements. | | | |
| <i>Site Drawing</i> | 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 | | | | |
| <i>Potential Environmental Issues and Impacts</i> | 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). | | | |
| <i>Permits, Approvals, and Authorizations</i> | 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. | | | |
| <i>Mitigation Strategies</i> | 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". | | | |
| <i>Erosion and Sediment</i> | 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 F

**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 (ex. 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: <ul style="list-style-type: none"> • 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 gryones) or "waters" that are not large enough for vessel traffic (i.e. 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 | <p>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).</p> <p>By completing and submitting the ECMP Checklist to Environmental Services, PSPC project managers¹ will ensure that their projects are systematically evaluated for compliance with environmental</p> | | | |

¹ Project Manager refers to anyone who leads, manages or delivers a project

| | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| | 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. | | | |

| | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| <p>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</p> | <p>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.</p> | | | |
| <p>BC Parks</p> | <p>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).</p> | | | |
| <p>Canada-British Columbia Agreement for Environmental Assessment Cooperation http://www.ceaa.gc.ca/default.asp?lang=En&n=04A20DBC-1</p> | <p>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.</p> | | | |
| <p>BC Ministry of Environment – BC Species and Ecosystems Explorer http://a100.gov.bc.ca/pub/eswp/</p> | <p>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.</p> | | | |
| Consultant Responsibility | | | | |
| Provincial | | | | |
| <p>BC Parks Ministry of Forests, Lands, Natural Resource Operations, and Rural Development http://www.env.gov.bc.ca/bcparks/permits/</p> | <p>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.</p> | | | |
| <p>Water Act – Regulation’s Protection of Habitat - Section 42(1)</p> | <p>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</p> | | | |

| | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--|--|--|
| | salvage – in conjunction with the BC Parks permitting. | | | |
| <p>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”.</p> <p>http://www.env.gov.bc.ca/pasb/applications/process/scientific_fish_collect.html#a5</p> | | | | |
| Contractor Responsibility | | | | |
| Federal | | | | |
| <i>DFO – End of Pipe Guidelines</i> | End-of- pipe guidelines for freshwater intake to avoid fish entrainment. | | | |
| Provincial | | | | |
| <i>Water Act - MoE</i> | Schedule A – Water License Applications – use of water from waterbody for road maintenance. | | | |

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Appendix G

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 | <i>Land Development Guidelines for the Protection of Aquatic Habitat - 1993</i> | This document is a good reference guide for any works that are occurring in or around the water. |
| | <i>Canada's Fish Habitat Law</i> | Document explaining the fish and fish habitat laws under the Fisheries Act. |
| | <i>Riparian Revegetation</i> | Information on minimizing, stabilizing and revegetating construction areas. |
| | <i>Freshwater Intake End-of Pipe Fish Screen Guideline - 1995</i> | Provides guidelines for the Contractor to follow to ensure fish screens are used during freshwater intake operations at construction sites. |
| | <i>Operational Statements</i> Stream Crossings by Roads: <ul style="list-style-type: none"> • 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 <i>Fisheries Act</i> . 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 | <i>Fish-stream Crossing Guidebook - 2002</i> | Guidelines in protection of fish and fish habitat and the safe passage of fish during construction at/on stream crossings. |
| | <i>Standards and Best Practices for Instream Works - 2004</i> | Guide to planning and carrying out the proposed construction activities to comply with relevant legislation, regulations and policies. |
| | <i>A User's Guide to Working In and Around Water - 2005</i> | Understanding the regulation under British Columbia's Water Act. |
| | <i>Fish-Stream Identification Guidebook - 1998</i> | Assists in providing information on determining fish streams. |
| | <i>The Streamkeepers Handbook</i> | A practical guide to stream and wetland care in regards to rehabilitation planting. |