



Public Works and Government Services Canada

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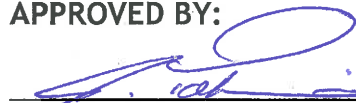
SPECIFICATIONS

For
Barrier Installations at Various Locations,
Km 526 to Km 536
Alaska Highway, B.C.

Project No. R.017173.241

August, 2017

APPROVED BY:



Alaska Hwy Program Manager, EASS

Aug-11-2017
Date



Construction Safety Coordinator

2017-08-1
Date

TENDER:



Project Manager

Aug 11 2017
Date

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Project # R.017173.241

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Barrier Installations at Various Locations,
Km 526 to Km 536
Alaska Highway, B.C.

Section 00 01 10

PSPC – Pacific Region

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PART 1 - GENERAL

- 1.1 Section Includes .1 Title and description of work.
 .2 Contract method.
 .3 Work schedule
 .4 Access to site.
- 1.2 Work Covered by Contract Documents .1 Work to be done under this contract consists of:
- Removing and stockpiling existing 690 mm high pre-cast concrete barrier
 - Prepare area for installation of new 810 mm high pre-cast concrete barrier
 - Supply and install 810 mm high pre-cast concrete barrier
 - Supply and install polyethylene drain pans and down pipe
 - Install supplied "No Stopping" signs
- Fort Nelson is located at km 455, on the Alaska Highway, BC.
- 1.3 Contract Method .1 Construct the work under a Unit Price Contract arrangement as shown on form of tender.
- 1.4 Work Schedule .1 Work under this contract to be completed by December 15, 2017.
- 1.5 Access to Site .1 Maintain access to private and public or commercial facilities for the duration of the contract.
 .2 Maintain all emergency vehicles access/control.
 .3 Allow Departmental Representative and his consultant unrestricted access to site.

PART 2 – PRODUCTS

- 2.1 Aggregate Source .1 Any pre-cast concrete barrier units to be supplied, must be manufactured to the current British Columbia Ministry of Transportation and Infrastructure specification Section 941 Precast Reinforced Concrete Barriers.

PART 3 - EXECUTION

- 3.1 Execution of Work .1 Remove and stockpile existing 690 mm high pre-cast concrete barrier between km 526 and km 536 and stockpile in designated area in km 554.0, Mill Creek gravel pit. Ensure exposed areas where barrier is removed are properly marked for traffic. Only remove sections of existing barriers immediately prior to commencement of roadwork in the immediate vicinity.
 .2 Prepare area for installation of new barrier using existing granular materials. Some areas may require additional material. Haul additional material from pit at km 554.0. No separate payment for hauling material or preparation of area.

- .3 Supply and install 810 mm high pre-cast concrete barrier and transitions in nine locations to the current British Columbia Ministry of Transportation and Infrastructure Specification Section 941 Precast Reinforced Concrete Barriers, and drawing numbers R.017173.241 – 01 – 09.
- .4 Re-use existing drain pans and down pipe where possible or install new drain pans and down pipe if required. New materials not used will be transported to km 455, Airport Compound in Fort Nelson. No separate payment for re-using pans and down pipe, installing new drain pans and down pipe, or transporting unused materials. If required, cold mix is available at km 538.0, Steamboat Maintenance Camp for Contractors use.
- .5 Install four 'No Stopping' signs at designated locations. Signs and posts are available for use at km 455, Airport Compound, in Fort Nelson. No separate payment for transporting materials or installation.

END OF SECTION

PART 1 - GENERAL

- 1.1 Precedence .1 For Federal Government Projects, Division 1 Sections take precedence over technical specification Sections in other Divisions of this Project Manual.
- 1.2 Related Sections .1 Section 01 32 18 – Construction Progress Schedules – Bar (GANNTT) Chart.
.2 Section 01 35 43 – Environmental Protection.
- 1.3 Existing Services .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
.2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions to a minimum. Carry out interruptions after normal working hours of occupants, preferably on weekends.
.3 Provide for pedestrian and vehicular traffic.
- 1.4 Use of the 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 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.
.3 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.
.4 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.
.5 Any damage to the Work Site caused by the Contractor shall be repaired by the Contractor at its expense.
.6 The Contractor may work 24 hours per day, seven days per week with the following restrictions:
.1 No hauling of material during inclement weather.
- 1.5 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.
.2 The Contractor is responsible for the development and supply of construction access to the Work as approved by the Departmental Representative.
- 1.6 Access to Adjacent Properties .1 Construction operations shall be conducted so as to cause minimal inconvenience to the Public and to owners of adjoining property. Existing access to property shall be maintained as far as possible and if new access must be provided, every effort shall be taken to provide the new access before the existing access is removed.

1.7 Utilities

- .1 There are active utilities within the Highway Right of Way.
- .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 affected by the permanent Work 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 establish and maintain direct and continuous contact with the owners or operators of any Utilities which may interfere with the Work. The Contractor shall cooperate with them at all times and in all places of Work. The Contractor shall keep the Departmental Representative informed of all communications with the Utility companies and authorities.
- .5 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.
- .6 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.
- .7 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.
- .8 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.

1.8 Survey of Existing Property Conditions

- .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 work.
- .2 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.
- .3 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 requested, the Departmental Representative will provide a copy of the survey records to the Contractor for reference.
- .4 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.

- .5 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.

1.9 Protection of Persons and Property

- .1 The Contractor shall comply with all applicable safety regulations of the Workers Compensation Board of British Columbia (WCB) including, but not limited to, WCBs Industrial Health and Safety Regulations, Industrial First Aid Regulations, and Workplace Hazardous Materials Information System Regulations.
- .2 The Contractor shall take all necessary precautions and measures to prevent injury or damage to persons and property on or near the Work Site.
- .3 The Contractor shall promptly take such measures as are required to repair, replace or compensate for any loss or damage caused by the Contractor to any property.

1.10 Use of Public Areas

- .1 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 and dirt 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. Hauling units on Alaska Highway not to exceed legal highway load limits. 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.

1.11 Supervisory Personnel

- .1 Within five Days after 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.

The following personnel shall be included in the list:

- .1 Project Superintendent.
- .2 Safety Representative.

The above personnel shall perform the following duties:

- .1 The 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 Total Performance of the Work.
- .2 Project Superintendent shall nominate a Deputy Project Superintendent who

shall have the authority of the Project Superintendent during the latter's absence.

- .3 Safety Representative shall possess safety experience in general construction. Duties shall encompass all matters of safety activities from commencement of Work until Total Completion of the Work.

1.12 Construction
Signage

- .1 No Signs or advertisements, other than regulatory or warning signs, are permitted on site.
- .2 Signs and notices for Safety and instruction shall be provided by the Contractor. Graphic symbols shall be diamond grade and conform to CAN3-Z321.
- .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.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not Used

END OF SECTION

PART 1 – GENERAL

- 1.1 Submission of Quotation for Contemplated Change Notices
- .1 If the Departmental Representative determines that the cost of the work will be affected due to a contemplated change, the Contractor shall submit a quotation to the Departmental Representative in accordance with the instructions specified herein.
- 1.2 General
- .1 Quotations for Contemplated Change Notices must include a detailed breakdown of all labour, material, plant and equipment costs incurred by the Contractor. Quotations from subcontractors involved in the change must also be supported by similarly detailed breakdowns of the subcontractors' costs.
- .2 It is the responsibility of the Contractor to ensure that all subcontractors' quotations included in the Contractor's quotation to the Departmental Representative are fair and reasonable in view of the terms expressed herein.
- .3 The labour hours required for the contemplated change shall be based on the estimated number of hours to perform the work.
- .4 Time spent by a working foreman may be included in the number of labour hours at a rate agreed to in writing by the Contractor and the Departmental Representative.
- .5 Time attributable to material handling, productivity factors and approved rest periods is to be included in the number of hours required by the contemplated change and will not be paid as a separate item under hourly rates.
- .6 Markups referred to in Sections 1.5 and 1.6 below are not to be included in the hourly labour rates.
- .7 When a change deletes work which has not yet been performed, the Departmental Representative is entitled to an adjustment in the Contract Amount equal to the cost the Contractor would have incurred had the work not been deleted.
- .8 Markups referred to in Sections 1.5 and 1.6 below shall not be applied to any credit amounts for deleted work.
- .9 In those cases where the change involved additions and deletions to the work, the percentage markups referred to in Sections 1.5 and 1.6 below shall apply only when the cost of the additions minus the cost of the deletions would result in an increase in the Contract Amount. The percentage allowance shall only be applied to that portion of the costs of the additions that is in excess of the cost of the deletions.

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- 1.2 General (Cont'd)
- .10 If the contemplated change in the work necessitates a change in the contract completion date, or has an impact on the work, the Contractor shall identify and include the resulting cost in the breakdown of its quotation to the Departmental Representative.
 - .11 The work shall conform to the contract documents unless otherwise stated in the Contemplated Change Notice, Change Order or Site Instruction (1) signed by the Departmental Representative.
 - .12 Upon acceptance of the Contractor's quotation by the Departmental Representative, the Departmental Representative shall prepare and issue the formal Change Order.
- 1.3 Hourly Labour Rates
- .1 The hourly labour rates listed in the Contractor's quotation shall be determined in accordance with the collective agreements that are applicable at the site of the work and shall include:
 - .1 The base rate of pay.
 - .2 Vacation pay.
 - .3 Benefits which includes:
 - .1 Welfare contributions;
 - .2 Pension contributions;
 - .3 Union dues;
 - .4 Training and industry funds contributions; and
 - .5 Other applicable benefits, if any, that can be substantiated by the Contractor.
 - .4 Statutory and legislated requirements, assessed and payable under statutory authority, which included:
 - .1 Employment Insurance contributions;
 - .2 Canada Pension Plan or Quebec Pension Plan contributions;
 - .3 Workers' Compensation Board;
 - .4 Public Liability and Property Damage insurance premiums;
 - .5 Health tax premiums.
 - .2 In the case of nonunion labour, all rates claimed shall be in accordance with the terms of the Labour Conditions forming part of this contract and the Contractor must provide satisfactory proof of the rates actually paid. Nonunion rates shall not exceed rates payable under any applicable collective trade agreement unless approved in writing by Departmental Representative.

- 1.4 Material, Plant and Equipment Costs .1 The costs of all purchases and rentals must be based on the actual amount paid to the suppliers by the Contractor or subcontractor and said costs are to include all applicable discounts.
- 1.5 Allowance to the Contractor or Subcontractor on Work by Own Forces .1 A markup equal to 20 percent of the cost of all labour, material, plant and equipment furnished or supplied by the Contractor or subcontractor that is required by the contemplated change, shall be added to the Contractor's or subcontractor's quotation as full compensation for miscellaneous additional costs related to:
- .1 The purchase or rental of material, plant and equipment;
 - .2 The purchase of small tools and supplies;
 - .3 Safety and protection measures; and
 - .4 Permits, bonds, insurance, engineering, as-built drawings, commissioning and site office.
- 1.6 Allowance to Contractor on Work Performed by its Subcontractors .1 A markup equal to 15 percent of the total of all quotations received from subcontractors, shall be added to the Contractor's quotation as full compensation for:
- .1 All supervision, coordination, administration, overhead, margin and the risk of undertaking the work within the stipulated amount; plus
 - .2 Miscellaneous costs related to:
 - .1 Safety and protection measures; and
 - .2 Permits, bonds, insurance, engineering, as-built drawings, commissioning and site office.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not used.

END OF SECTION

PART 1 - GENERAL

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|-----|-------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1 | <u>Section Includes</u> | .1 | Mobilization and Demobilization |
| 1.2 | <u>Related Sections</u> | .1 | Construction Facilities – Section 01 52 00 |
| 1.3 | <u>Description</u> | .1 | Consists of preparatory work and operations including, but not limited to, those necessary for the movement of personnel, equipment, camp, buildings, shops, offices, supplies and incidentals to and from the project site. |
| 1.4 | <u>Measurement Procedures</u> | .1 | 50 percent of Lump Sum Contract Price for Mobilization and Demobilization, not to exceed 5 percent of the Contract Value, to be paid when mobilization to site is complete. |
| | | .2 | Remainder of each Lump Sum Contract Price for Mobilization and Demobilization to be paid when work is complete and all materials, equipment, camp, buildings, shops, offices, and other facilities have been removed from site and site cleaned and left in condition to the satisfaction of the Departmental Representative and all other agencies having jurisdiction. |

PART 2 - PRODUCTS

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|-----|-----------------|----|-----------|
| 2.1 | <u>Not Used</u> | .1 | Not used. |
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PART 3 - EXECUTION

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|-----|-----------------|----|-----------|
| 3.1 | <u>Not Used</u> | .1 | Not used. |
|-----|-----------------|----|-----------|

END OF SECTION

PART 1 - GENERAL

- 1.1 Section Includes
- .1 Coordination of the Work, progress meetings, schedules, submittals, and close out procedures.
- 1.2 Related Sections
- .1 Section 01 11 00 – Summary of Work.
 - .2 Section 01 32 18 – Construction Progress Schedules – Bar (GANTT) Chart.
 - .3 Section 01 33 00 – Submittal Procedures.
 - .4 Section 01 35 43 – Environmental Procedures.
 - .5 Section 01 52 00 – Construction Facilities.
- 1.3 Coordination
- .1 Perform coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work, with progress of Work of Other Contractors, and Work by Owner, under instructions of the Departmental Representative.
- 1.4 Project Meetings
- .1 Schedule and administer weekly project meetings throughout progress of Work as determined by Departmental Representative.
 - .2 Schedule and administer pre-installation meetings when specified in Sections and when required to coordinate related or affected work.
 - .3 Prepare agenda for meetings.
 - .4 Distribute written notice of each meeting four days in advance of meeting date to Departmental Representative.
 - .5 Provide physical space and make arrangements for meetings.
 - .6 Preside at meetings.
 - .7 Record minutes. Include significant proceedings and decisions. Identify action by parties.
 - .8 Reproduce and distribute copies of minutes within three days after each meeting and transmit to meeting participants, affected parties not in attendance and Departmental Representative.
- 1.5 Construction Organization and Start-up
- .1 Within seven (7) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
 - .2 Senior representatives of the Owner, Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors are to be in attendance.
 - .3 Establish the time and location of meeting and notify parties concerned minimum five (5) days before meeting
 - .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
 - .5 Agenda to include the following
 - .1 Appointment of official representative of participants in Work.
 - .2 Schedule of Work, progress scheduling in accordance with Section 01 32 18.
 - .3 Requirement for temporary facilities, offices, storage sheds, utilities, and fences in accordance with Section 01 35 43.

- .4 Site safety and security in accordance with Section 01 52 00.
- .5 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, working hours, and administrative requirements.
- .6 Owner furnished materials.
- .7 Monthly progress claims, administrative procedures, photographs and holdbacks.
- .8 Insurance and transcript of policies.
- .6 Comply with Departmental Representative's allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- .7 During construction, coordinate use of site and facilities through Departmental Representative's procedures for intra-project communications; submittals, reports and records, schedules, coordination of Drawings, recommendations, and resolution of ambiguities and conflicts.
- .8 Comply with instructions of the Departmental Representative for use of temporary utilities and construction facilities.
- .9 Coordinate field engineering and layout work with Departmental Representative.

1.6 On-Site Documents

- .1 Maintain at job site, one copy each of the following:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed Shop Drawings and Asphalt Mix Design.
 - .5 Manufacturer's Installation and Application instructions.
 - .6 Change Orders.
 - .7 Other modifications to Contract.
 - .8 Traffic Management Plan.
 - .9 Safety Plan.
 - .10 WHMIS.
 - .11 Field Test Reports.
 - .12 Copy of approved Work Schedule.
 - .13 Labour Conditions and Wage schedules.
 - .14 Applicable current editions of municipal regulations and by-laws.
 - .15 All applicable Federal Permits and Licenses.
 - .16 All Applicable Provincial Permits and Licenses.

1.7 Schedules

- .1 Submit preliminary construction progress schedule in accordance with Section 01 32 18 to Departmental Representative coordinated with Owner's project schedule.
- .2 After review, revise and resubmit schedule to comply with revised project schedule.
- .3 During progress of Work revise and resubmit as directed by the Departmental Representative.

1.8 Construction Progress Meetings

- .1 During course of Work prior to project completion, schedule weekly progress meetings.
- .2 Contractor, major subcontractors involved in the Work and Departmental Representative are to be in attendance.

- .3 Notify parties a minimum of seven (7) days prior to meetings.
- .4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within five (5) calendar days after meeting.
- .5 Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain project schedule.
 - .7 Revision to construction schedule.
 - .8 Progress schedule for next work period.
 - .9 Review Submittal schedules: expedite as required.
 - .10 Maintenance of Quality standards, review of test results.
 - .11 Review proposed changes for affect on construction schedule and on completion date.
 - .12 Review site Safety and Security issues.
 - .13 Other business.
 - .14 Schedule next meeting.

1.9 Submittals

- .1 Submit product data in accordance with Section 01 33 00 for review for compliance with Contract Documents.
- .2 Submit requests for payment for review, and for transmittal to the Departmental Representative.
- .3 Submit requests for interpretation of Contract Documents, and obtain instructions through the Departmental Representative.
- .4 Process any proposed substitutions through Departmental Representative.
- .5 Process Change Orders through the Departmental Representative.
- .6 Deliver Closeout submittals for review and preliminary inspections, for transmittal to Departmental Representative.

1.10 Closeout 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.

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used

END OF SECTION

PART 1 - GENERAL

1.1 Precedence

- .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

1.2 Measurement Procedures

- .1 Cost of providing Construction Progress Schedules will be considered incidental to the work and no additional payment will be made.

1.3 Definitions

- .1 **Activity:** An element of Work performed during course of Project. An activity normally has an expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 **Bar Chart (GANTT Chart).** A graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Bar Chart should be derived from MS Project or compatible software.
- .3 **Baseline:** Original approved plan for Project, plus or minus approved scope changes.
- .4 **Construction Work Week:** Monday to Sunday, inclusive, will provide seven day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 **Duration:** Number of work periods (not including holidays or other nonworking periods) required to complete an activity or other Project element. Usually expressed as workdays or workweeks.
- .6 **Master Plan:** A summary-level schedule that identifies major activities and key milestones.
- .7 **Milestone:** A significant event in Project, usually completion of major deliverable.
- .8 **Project Schedule:** The planned dates for performing activities and the planned dates for meeting milestones. A dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout project life cycle.
- .9 **Project Planning, Monitoring and Control System:** Overall system operated by Departmental Representative to enable monitoring of project work in relation to established milestones.

1.4 Requirements

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately 20 working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Substantial Completion Certificate and Final Certificate as defined times

of completion are of essence of this contract.

.5 Include the requirements of Section 01 14 00, Work Restrictions

1.5 Submittals

- .1 Submit to Departmental Representative within Seven (7) working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .2 Submit Project Schedule to Departmental Representative within ten (10) working days of receipt of acceptance of Master Plan. Within seven (7) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

1.6 Project Milestones

- .1 Project milestones form interim targets for Project Schedule:
 - .1 Substantial Completion by March 31, 2017.

1.7 Master Plan

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Departmental Representative will review and return revised schedules within five (5) working days.
- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.8 Project Schedule

- .1 Develop detailed Project Schedule derived from Master Plan
- .2 Ensure detailed Project Schedule includes as minimum milestone and Activity types as follows:
 - .1 Award.
 - .2 Submission of:
 - .1 Shop Drawings.
 - .2 Asphaltic Concrete Mix Design.
 - .3 Mobilization and preparation of staging area(s).
 - .4 Grading.
 - .5 Paving.
 - .6 Site Clean-up and demobilization.

1.9 Project Schedule Reporting

- .1 Update Project Schedule on monthly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.10 Project Meetings

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current

approved dates shown on baseline schedule.

- .2 Weather related delays with their remedial measures will be discussed and negotiated.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not Used

END OF SECTION

PART 1 - GENERAL

- 1.1 Section Includes
- .1 Shop drawings and production data.
 - .2 Certificates and transcripts.
 - .3 Required Contractor Submittals.
 - .1 Pre-mobilization Submittals.
 - .2 Construction Phase Submittals.
 - .3 Project Completion Submittals
- 1.2 Related Sections
- .1 Section 01 32 18 – Construction Progress Schedules
 - .2 Section 01 35 33 – Health and Safety Requirements
 - .3 Section 01 35 43 – Environmental Procedures
- 1.3 Administrative
- .1 Submit to Departmental Representative, submittals listed for review. Submit with reasonable promptness and in 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 time and no claim for extension by reason of such default will be allowed.
 - .2 Work affected by submittal shall not proceed until review is complete.
 - .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
 - .4 Where items or information is not produced in SI Metric units, converted values are acceptable.
 - .5 Review submittals prior to submission to 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 requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
 - .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
 - .7 Verify field measurements and affected adjacent work are coordinated.
 - .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
 - .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
 - .10 Keep one reviewed copy of each submission on site.
- 1.4 Shops Drawings and Product Data
- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by contractor to illustrate details of a portion of work.
 - .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of

Section under which adjacent items will be supplies and installed. Indicate cross references to design drawings and specifications.

- .3 Allow ten (10) days for Departmental Representative's review of each submission.
- .4 Adjustments made on shop drawings 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.
- .5 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.
- .6 Accompany submissions with transmittal letter containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .7 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 Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of work as applicable:
 - .1 Fabrication.
 - .2 Performance characteristics.
 - .3 Standards.
- .8 After Departmental Representative's review, distribute copies.
- .9 Make all submissions via online project system OPROMA unless otherwise directed by the Departmental Representative.
- .10 Submit six hard copies and one electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawing will not be prepared due to standardized manufacture of product.
- .11 Delete information not applicable to project.
- .12 Supplement standard information to provide details applicable to project.
- .13 If upon review by 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.
- .14 The review of shop drawings by Public Works & Government Services Canada (PWGSC) is for the sole purpose of ascertaining conformance with general

concept. This review shall not mean that PWGSC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve 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 foregoing, 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.

1.5 Certificates and Transcripts

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of contract.

1.6 Required Contractor Submittals

- .1 General
 - .1 This Clause identifies the plans, programs and documentation required prior to mobilization on site and during the construction phase.
- .2 Pre-Mobilization Submittals
 - .1 Submittal Schedule and Acceptance
 - .1 Submit the following plans and programs to the Departmental Representative for review a minimum of 10 days prior to mobilization to the project site. The Contractor shall not begin any sit work until the Departmental Representative has authorized acceptance of the submittals in writing. The Contractor shall not construe the Departmental Representative's authorization of the submittals to imply approval of any particular method or sequence for conducting the work, or for addressing health and safety concerns. Authorization of the programs shall not relieve the Contractor from the responsibility to conduct the work in strict accordance with the requirements of Federal or Provincial regulations, this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor shall remain solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them:
 - .1 Project Schedule, detailing the schedule of the workdays and manpower required to complete each phase of the project (e.g., mobilization, construction sequencing, excavation, steel erection, backfilling, roadway reconstruction and demobilization).
 - .2 Contractor Chain of Command, listing key Contractor personnel, including names and positions, addresses, telephone, cellular telephone and/or pager numbers. The list shall include the names and telephone/cellular telephone/pager numbers for contact persons who are available on a 24-hour basis in the event of emergencies.
 - .3 Work Plan, describing the Contractor's intended methods of

- construction including, but not limited to, the environmental mitigation strategies and projected number of personnel on site.
- .4 Construction Access Plan, which shall include, but not be limited to, engineering drawings and procedures for accessing all areas of the work.
 - .5 Environmental Protection Plans (EPP), which shall meet the requirements of Section 01 35 43 – Environmental Procedures.
 - .6 Camp Site Plan, showing the layout of fences, parking areas and buildings, and describing the facilities for food and waste storage in accordance with Section 01 35 43 – Environmental Procedures. The maximum area of the campsite shall be 50 m by 50 m.
 - .7 Occupational Health and Safety Program – The Contractor shall have a Certificate of Recognition (COR) or Registered Safety Plan (RSP) including a site specific Health and Safety Plan acceptable to the Departmental Representative. The Contractor shall implement and maintain the Health and Safety Plan during the work.
- .3 Construction Phase Submittals
- .1 Monthly Progress Reports in accordance with Section 01 32 18 – Construction Progress Schedules – Bar Chart (GANTT).
 - .2 Quality Control Inspection Reports – The Contractor shall maintain a daily inspection report that itemizes the results of all Quality Control inspections conducted by the Contractor. The reports shall be made available for review by the Departmental Representative upon request. A summary of all Quality Control inspections conducted to date shall be submitted by the Contractor with each request for payment.
 - .3 Shop Drawings – The Contractor shall submit all shop drawings required to fabricate and conduct the work a minimum 30 days prior to fabrication.
 - .4 Progress Photographs:
 - .1 Formats:
 - .1 Prints 200 x 300 mm, colour, glossy, complete with binding edge or in three hole plastic sleeves.
 - .2 Electronic: jpg files, minimum three mega pixels.
 - .2 Submission requirements: three sets prints and one set of electronic files.
 - .3 Identification: typewritten name and number of project, description of photography and date of exposure on 25 x 50mm white patch in upper right hand corner.
 - .4 Viewpoints: viewpoints determined by Construction Manager or Departmental Representative.
 - .5 Submission Frequency: prior to commencement of work and monthly thereafter with progress statement, or as directed by construction Manager or Departmental Representative.
 - .6 Submit all negatives of all photographs before final acceptance. Submit CD

with all electronic pictures as part of closeout package.

- .7 Insert negatives in envelopes and identify with name and number of project.
- .8 Indicate exposure dates and viewpoints of each frame of 35mm film strips.
- .9 Weekly traffic control reports detailing any traffic accidents, near misses, disruption to traffic or observed abnormal traffic patterns.
- .4 Project Completion Submittals:
 - .1 Record Drawings – The Contractor shall submit copies of all Contractor's Drawings revised as necessary to record all as-built changes to the work and the Contractor shall submit a set of Contract Drawings clearly marked to record as-built changes to the work.
 - .2 Quality Control Records – The Contractor shall submit a bound and itemized set of project quality control.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not used.

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Sections .1 All Sections.
- 1.2 References .1 Government of Canada
.1 Canada Labour Code, Part II
.2 Canada Occupational Health and Safety Regulation.
.2 Province of British Columbia
.1 Worker's Compensation Act Part 3, Occupational Health and Safety.
.2 Occupational Health and Safety Regulation.
- 1.3 Workers' Compensation Coverage .1 Comply fully with the Workers' Compensation Act, regulations and orders pursuant thereto, and any amendments up to the completion of the work.
.2 Maintain Workers' Compensation Board coverage during term of the contract, until and including the date that the Final Certificate of Completion is issued.
- 1.4 Compliance With Regulations .1 PWGSC may terminate the contract without liability to PWGSC where the Contractor, in the opinion of PWGSC, 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.
- 1.5 Submittals .1 Submit the following:
.1 Copies of reports or directions issued by Federal, Provincial, Territorial Health and Safety inspectors.
.2 Copies of incident and accident reports.
.3 Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.
.4 Emergency Procedures.
.5 Health and Safety Plan

-
- 1.5 Submittals
(Cont'd)
- .2 The Departmental Representative will review the Contractor's site-specific project Health and Safety Plan and emergency procedures and provide comments to the Contractor within two days after receipt of the plan. Revise the plan as appropriate and resubmit to Departmental Representative.
- .3 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.
- .4 Submission of the Health and Safety Plan and any revised version, to the Departmental Representative, is for information and reference purposes only. It shall not:
- .1 Be construed to imply approval of 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.
- 1.6 Responsibility
- .1 The Contractor shall be responsible for:
- .1 Assume responsibility as the Prime Contractor or work under this contract.
- .2 The safety of persons and property on site.
- .3 The protection of persons off site and the environment to the extent that they may be affected by the conduct of the work.
- .4 Comply with and enforce compliance by employees with safety requirements of Contract documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan
- 1.7 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 at nighttime as deemed necessary to protect site against entry.
- 1.8 Regulatory Requirements
- .1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at site.
- In the event of conflict between any provision of the above authorities, the most

-
- .2 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.
- 1.9 Filing of Notice
- .1 The Contractor is to complete and submit an Advance Notice of Project as required by British Columbia Worker's Compensation Branch.
- .2 Provide copies of all notices to the Departmental representative
- 1.10 Health and Safety Plan
- .1 Conduct a site-specific hazard assessment based on review of Contract Documents, required work and project site. Identify any known and potential health risks and safety hazards.
- .2 Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including, but not limited to, the following:
- .1 Primary requirements:
- .1 Contractor's Safety Policy.
- .2 Identification of applicable compliance obligations.
- .3 Definition of responsibilities for project/organization chart for project.
- .4 General safety rules for project.
- .5 Job-specific safe work procedures.
- .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.
- .2 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.
- 1.10 Health and Safety Plan (Cont'd)
- .3 List hazardous materials to be brought on site as required by the work.
- .4 Indicate engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.
- .5 Identify personal protective equipment (PPE) to be used by workers.
- .6 Identify personnel and alternates responsible for site safety and health.
- .7 Identify personnel training requirements and training plan, including site orientation for new workers.
- .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 Revise and update Health and Safety Plan as required and resubmit to

Departmental Representative.

- .5 The review of Health and Safety Plan by Public Works & Government Services Canada (PWGSC) 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.

1.11 Emergency Procedures

- .1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contact (i.e. Names/telephone numbers) of:
- .1 Designated personnel from own company.
 - .2 Regulatory agencies applicable to work and as per legislated regulation.
 - .3 Local emergency resources.
 - .4 Departmental Representative (site staff).
- .2 Include the following provisions in the emergency procedures:
- .1 Notify workers and first aid attendant of the nature and location of the emergency.
 - .2 Evacuate all workers safely.
 - .3 Check and confirm the safe evacuation of all workers.
 - .4 Notify the fire department or other emergency responders.
 - .5 Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.
 - .6 Notify Departmental Representative.
- .3 Provide written rescue/evacuation procedures as required for but not limited to:

1.11 Emergency Procedures
(Cont'd)

- .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 requires physical assistance to be moved.
- .4 Revise and update Emergency Procedures as required and re-submit to the Departmental Representative.

1.12 Health and Safety Coordinator

- .1 Employ and assign to work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:
- .1 Have minimum 2 years' site-related working experience specific to activities associated with Construction.
 - .2 Have working knowledge of occupational safety and health regulations.

-
- .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform work.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
 - .5 Be on site during execution of work and report directly to and be under direction of site supervisor.
- 1.13 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 Canada Labour Code.
 - .2 Where use of hazardous or toxic waste cannot be avoided:
 - .1 Advise Departmental Representative beforehand of the products intended for use. Submit applicable MSDS and WHMIS documents.
 - .3 Comply with section 02 61 33
- 1.14 Unforeseen Hazards
- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of work, immediately stop work and advise Departmental Representative verbally and in writing.
- 1.15 Posted Documents
- .1 Post legible versions of the following documents on site:
 - .1 Health and Safety Plan.
 - .2 Sequence of Work.
 - .3 Emergency Procedures.
 - .4 Site drawing showing project layout, locations of first-aid station, evacuation route and marshaling station and the emergency transportation provisions.
 - .5 Notice of Project.
 - .6 Floor Plans.
 - .7 Notice as to where copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.
 - .8 Workplace Hazardous Information System (WHMIS) documents.
 - .9 Material Safety Data Sheets (MSDS).
 - .10 List of names of joint Health and Safety Committee members of 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 the contract includes construction activities adjacent to occupied areas.
 - .3 Postings and Insert Postings should be approved by Departmental Representative.

- 1.16 Meetings .1 Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative.
- 1.17 Correction of Noncompliance .1 Immediately address health and safety noncompliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct noncompliance of health and safety issues identified.
- .3 Departmental Representative may stop work if noncompliance of health and safety regulations is not corrected. The Contractor will be responsible for any costs arising from such a “stop work order”.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

PART 3 - EXECUTION

- 3.1 Not Used .2 Not used.

END OF SECTION

PART 1 - GENERAL1.1 Section Includes

- .1 Related Sections
- .2 Definitions
- .3 Measurement Procedures
- .4 Regulatory Overview
- .5 Submittals
- .6 Environmental Effects Evaluation
- .7 Site Access and Parking
- .8 Protection Work Limits
- .9 Erosion Control
- .10 Pollution Control
- .11 Equipment Maintenance, Fueling and Operation
- .12 Operation of Equipment
- .13 Managing Invasive Plant Vegetation
- .14 Fire Prevention and Control
- .15 Wildlife
- .16 Relics and Antiquities
- .17 Waste Materials Storage and Removal
- .18 Wastewater Discharge Criteria
- .19 Camp Wastewater Discharge Criteria
- .20 Drainage
- .21 Site Clearing and Plant Protection
- .22 Blasting
- .23 Environmental Protection Supplies
- .24 Notification
- .25 Environmental Monitoring

1.2 Related Sections

- .1 Section 01 33 00 – Submittal Procedures
- .2 Section 02 61 33 – Hazardous Waste Material

1.3 Definitions

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to 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 Environmental Protection Plan: is prepared by Contractor and describes in writing all the environmental protection and mitigation measures that will be applied throughout the life of the Project by the Contractor to avoid or minimize the potential effects on the environment associated with the Project.

- .4 Wetted Perimeter: area of stream where water is currently running or pooled.
 - .5 In-stream Work: any work performed below the high water mark, either within or above the Wetted Perimeter of any Fisheries Sensitive Zone.
 - .6 Fisheries Sensitive Zone: in-stream aquatic habitats and out of stream habitat features such as side channels, wetlands, and riparian areas.
 - .7 Invasive plants: 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 undisturbed sites, and can cause widespread negative economic, social and environmental impacts.
 - .8 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. See www.agf.gov.bc.ca/cropprot/noxious.htm.
 - .9 Riparian area – for a stream, the 30 m strip on both sides of the stream, measured from the high water mark, (b) for a ravine less than 60 m wide, a strip on both sides of the stream measured from the high water mark to a point that is 30 m beyond the top of the ravine bank, and for a ravine 60 m wide or greater, a strip on both sides of the stream measured from the high water mark to a point that is 10 m beyond the top of the ravine bank (Riparian Areas Regulation).
 - .10 Species at risk: a species that has been defined as “at risk” [of extirpation] by either the federal or provincial government.
 - .11 Timing windows: periods when human activities are least likely to cause damage to species and ecosystems.
 - .12 Culturally Modified Trees (CMTs): a CMT is a tree that has been altered by aboriginal people as part of their traditional use of the forest. For more information please see *the Handbook for the Identification and Recording of Culturally Modified Trees* prepared by the Archaeology Branch B.C. Ministry of Business, Tourism and Culture
- 1.4 Measurement Procedures
- .1 Preparation and implementation of the Environmental Protection Plan (EPP) in accordance with this Section 01 35 43 – Environmental Procedures will not be measured separately for payment and will be considered incidental to work

1.5 Regulatory Overview

- .1 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.
- .2 Comply with and be subject to those permits and approvals obtained from Departmental Representative to conduct the Work.
- .3 Pay specific attention to the provincial BC Land Use Permit, Water License and Quarry Permit.
- .4 Pay specific attention to the Migratory Birds Convention Act, as amended in 1994.
- .5 Pay specific attention to the provincial BC guidelines under Peace Region Least Risk Timing Windows: Biological Rational (2009).
- .6 Pay specific attention to provincial BC MOE guidelines in Standards and Best Practices for Instream Works (2004).
- .7 Pay specific attention to MOE Develop With Care NE Region 2014

- .8 Where inwater work is conducted, pay specific attention to the B.C. Water Quality Guidelines.

1.6 Submittals

- .1 The Contractor is required to prepare an Environmental Protection Plan (EPP) in accordance with Section 01 33 00 – Submittal Procedures. The EPP should include all relevant environmental impacts/issues at the site as indicated by the completion of the EPP Checklist. Review of the PWGSC Environmental Effects Evaluation (EEE) will assist in completing this document. Prior to commencing construction activities or delivery of materials to site, submit the EPP (See Appendices for Checklist) for review and approval by the Departmental Representative. The EPP will require the Contractor to carefully think through the entire project, including identifying what activities as works will be occurring, both generally and at specific sites, and by what methods. The Environmental Protection Plan shall be completed by a P.Biol or RPBio, or other qualified professional, and shall, at a minimum include the following:
- .1 The specifics of a detailed monitoring program. This includes details and rationale concerning sampling locations, timing, duration, and methods, and identification of the person(s) who will be carrying out the monitoring program.
 - .2 The process and protocol for ensuring that supervisors and individual staff employed by the Contractor are very clear on which environmental standards need to be achieved, how they will be achieved, and establishing how the Contractor will ensure that this is successfully occurring.
 - .3 Erosion, drainage, and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with the requirements of the applicable MOE Approval or Notification for instream work or under MOE guidelines, and all other applicable regulations including the requirements of these specifications.
 - .4 Drawings should show 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.
 - .5 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features to be preserved within authorized work areas.
 - .6 Spill Control Plan: including procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
 - .7 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
 - .8 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and

handling of these materials.

- .9 Outline the avoidance and mitigate measures which the Contractor will undertake and implement to ensure compliance with the environmental regulations applicable to the project (which may include requirements provided in MOE Approval or Notifications for Instream Work, NWPA Approval for Instream Work etc.) and these contract specifications.
- .10 The procedures for stopping the work and implementing changes to the construction methods should the Contractor not be achieving the environmental requirements as outlined in these specifications.
- .11 The procedures for stopping work should the Contractor encounter archaeological anomalies or human remains.
- .2 All submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.7 Environmental Effects Evaluation

- .1 Execution of the work is subject to the provisions within the Environmental Effects Evaluation (EEE) completed by a PWGSC Environmental Services Representative for the project. See appendices for a copy of the EEE. NOTE: not all projects are subject to an EEE.
- .2 Pursuant to the expectations of the EEE, EPPs are the next step to achieve the desired results of minimal adverse environmental effect, as the project is constructed.
- .3 Failure to comply with or observe environmental protection measures as identified in these specifications may result in the work being suspended by the Departmental Representative pending rectification of the problems.

1.8 Site Access and Parking

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

1.9 Protection of Work Limits

- .1 The Contractor shall include in the Environmental Protection Plan (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.

1.10 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 All applicable 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 replaced. 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. Contractors should be referencing the provincial MOE Standards and Best Practices for Instream Works (2004).

1.11 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 re-fuelling, 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 clean up and all other work shall be stopped, where appropriate, and personnel devoted to spill containment and clean up.
- .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 and all relevant inspection agencies (MOE/DFO authorities).

1.12 Equipment Maintenance, Fuelling and Operation

- .1 The Contractor shall ensure that all soil, seeds and any debris attached to construction equipment to be used on the project site shall be removed (e.g. power washing) before delivery to the work site.
- .2 Equipment fuelling sites will be identified by the Contractor to the satisfaction of the Departmental Representative. Except for chain saws, any fuelling closer than 100 metres to any surface water (streams, wetlands, water bodies or watercourses) shall require discussion and prior agreement with the Departmental Representative.
- .3 Diesel and gasoline delivery vehicles, including bulk tankers shall be parked more than 30 metres from any surface water. Gravity fed fuel systems are not allowed. Manual or electric pump delivery systems shall be used. Fuelling personnel shall maintain a presence at with immediate attention to the fuelling operations.
- .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 1.11.4 of Pollution Control.
- .5 Equipment use on the project shall be fuelled 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.
- .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.

1.13 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, water bodies or watercourse, nor damage aquatic and riparian habitat or trees and plant communities. Where construction activities require working close to surface 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.

- .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 PWGSC, 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.

1.14 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.

1.15 Fire Prevention and Control

- .1 A fire extinguisher shall be carried and available for use on each machine and at locations within the quarry in the event of fire. Basic firefighting equipment recommended (e.g. a water truck; minimum 2276 litres with 150m of fire hose and a pump capable of producing 172.3 kPa water pressure at the nozzle, three shovels, two Pulaski’s, and two five gallon backpack pumps) shall be maintained at the construction site at a location known and easily accessible to all Contractors’ staff. Contactor’s staff shall receive basic training in early response to wildfire events during the “environmental briefing”.
- .2 Construction equipment shall be operated in a manner and with all original manufacturers’ safety devices to prevent ignition of flammable materials in the area.
- .3 Care shall be taken while smoking on the construction site to ensure that the accidental ignition of any flammable material is prevented.
- .4 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 start-up meeting.

- .5 Fires or burning of waste materials is not permitted.
- .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.
- .8 Obtain all required permits from the province.

1.16 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, buffalo or moose 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.

1.18 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 on the Project site are protected under Federal and Provincial Acts and regulations. The Contractor and workers shall protect any articles found and request direction from the Departmental Representative.
- .3 Human remains must be reported immediately to the local RCMP.

1.19 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.
- .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.

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- 1.20 Wastewater Discharge Criteria
- .1 Wash water, melt water 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.
- 1.21 Camp Wastewater Discharge Criteria
- .1 Camp wastewater 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 conform to the discharge requirements set out in the provincial Water Act Permit.
 - .2 If unable to meet the discharge criteria, provide additional storage and/or treatment necessary to meet criteria prior to discharge.
 - .3 Treat all camp wastewater to conform to the discharge requirements set out in the Water Act Permit.
 - .4 If unable to meet the discharge criteria, provide additional storage and/or treatment necessary to meet criteria prior to discharge.
 - .5 No direct discharge is allowed to wetland or surface waters.
 - .6 Contractor must obtain approval from the Water Act Officer prior to discharging treated wastewater.
- 1.22 Drainage
- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water. Management of drainage should 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 Where required, water quality should be tested for potential contaminants (turbidity) and the results compared to the B.C. Water quality Guidelines for aquatic life.
 - .5 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.
 - .6 Submit an Erosion, Sediment and Drainage Control Plan 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.
- .7 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.
- .8 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.

1.23 Site Clearing and Plant Protection

- .1 Protect trees and plants on site and adjacent properties where indicated.
- .2 Wrap in burlap, trees and shrubs adjacent to construction Work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Minimize stripping of topsoil and vegetation.
- .5 Restrict tree removal to areas indicated or designated by Departmental Representative.
- .6 The Contractor should be aware that B.C. has culturally modified trees (CMTs) that are protected under the Heritage Act. If a CMT is encountered, stop work immediately and contact the Departmental Representative.

1.24 Blasting

- .1 The Departmental Representative will identify a magazine location for explosives should a factory site or `ready to use` explosive site be required.
- .2 The sweep of the blast area shall include looking for wildlife that may be in the area. If any are found, they shall be hazed out of the area by the Environmental Monitoring personnel.
- .3 The Contractor shall ensure that all work activities meet or exceed the standards outlined in DFO's ``Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters``; Canadian Technical Report of Fisheries and Aquatic Sciences 2107, 1998.
- .4 The Contractor shall, whenever explosives are used, use the Provincial and Workers`` Compensation Laws and Regulations, and all respective Agencies Having Jurisdiction over them, such as DFO.
- .5 Steps shall be taken to minimize fly-rock and dust. Vegetation outside of the designated area shall not be damaged or destroyed.
- .6 In order to stabilize slopes of the cut, these shall be scaled of all loose material. Ditches shall be formed and cleaned upon the completion of the blasting, and the

natural drainage shall be restored as specified by the Contract or as directed by the Departmental Representative.

- .7 The Contractor shall describe the proposed type and quantities of explosives to be used on the project, to the satisfaction of the Departmental Representative. Some blasting products – such as those very high in nitrogen, may have some limitations imposed for environmental protection purposes.

1.25 Environmental 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, dispose of used silt fence off-site as non-Hazardous Waste. Dispose of used absorbent boom in accordance with Section 02 61 33 - Hazardous Waste Material.
- .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.

1.26 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 granted or equitable adjustments allowed to Contractor for such suspensions.

1.27 Environmental Monitoring

- .1 At a minimum the environmental monitoring shall be completed by P.Biol, RPBio, or Qualified Environmental Professional (QEP). If a QEP completes the monitoring, the QEP must work under the direction of the P.Biol or RPBio who completes the Environmental Protection Plan.
- .2 The monitoring program must be anticipatory and responsive to construction practices or environmental changes, reflecting the site specific conditions, level of sensitivity of the receiving environment, potential adverse effects, and level of

- environmental risk. Submitted documents regarding the proposed monitoring program should clearly identify how monitoring will adhere to this approach.
- .3 The monitoring program shall satisfy all regulatory requirements and terms of these specifications. The onus is on the Contractor to monitor and ensure compliance, to identify arising problems, and to subsequently take responsibility and all necessary measures in response.

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

END OF SECTION

PART 1 - GENERAL

- 1.1 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 Measurement Procedures .1 No separate payment under Construction Facilities.
- 1.4 Hoisting .1 Provide, operate and maintain hoists and cranes required for moving of workers, materials and equipment. Make financial arrangements with subcontractors for use thereof.
.2 Hoists and cranes shall be operated by qualified operator.
- 1.5 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.
- 1.6 Equipment, Tool and Materials Storage .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
.2 Locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.
- 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.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not used.

END OF SECTION

PART 1 - GENERAL

- 1.1 Description .1 This section specifies requirements of regulatory agencies related to establishment and removal of construction camps.
- 1.2 Requirements of Regulatory Agencies .1 Camp and service area locations are subject to approval of Departmental Representative and are to be established and operated in accordance with local regulations governing operations of field camps.
- .2 Prior to installation of camp and services, submit plan of layout to Departmental Representative for approval.
- .3 Apply to authority having jurisdiction for authorization for use of water and disposal of domestic sewage wastes. Obtain authorization prior to establishing camp.
- .4 Comply with Environment Regulations.
- 1.3 Measurement for Payment .1 No separate payment for construction camp.
- .2 Unit price to include all costs for all camps in this contract.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

PART 3 - EXECUTION

- 3.1 Mobilization .1 Mobilize equipment, camp, personnel and material. Establish temporary buildings, shops, offices and facilities. Obtain necessary license and approvals.
- .2 Upon vacating camp and services area sites, clean up and leave in condition satisfactory to Departmental Representative.
- 3.2 Maintenance .1 Maintain camps in neat and tidy condition.
- .2 No separate payment for camp clean-up.

END OF SECTION

PART 1 - GENERAL

- 1.1 Section Includes .1 Administrative procedures preceding preliminary and final inspections of work.
- 1.2 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 Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
- .2 Request Departmental Representative's Inspection.
- .2 Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of work to identify obvious defects or deficiencies. Contractor shall correct work accordingly.
- .3 Completion: submit written certificate that 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 Equipment and systems have been tested, adjusted and balanced and are fully operational.
- .4 Operation of systems have been demonstrated to Owner's personnel.
- .5 Work is complete and ready for Final Inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of work by Owner, Departmental Representative and Contractor. If work is deemed incomplete by Owner and Departmental Representative, complete outstanding items and request reinspection.
- 1.3 Measurement for Payment .1 No separate payment for Closeout Procedures.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not used.

END OF SECTION

PART 1 – GENERAL

- 1.1 Related Sections
- .1 Section 01 33 00 – Submittal Procedures
 - .2 Section 01 35 43 – Environmental Procedures
- 1.3 References
- .1 Export and Import of Hazardous Waste Regulations (EIHWR Regulations), SOR/92637.
 - .2 National Fire Code of Canada 1995
 - .3 Transportation of Dangerous Goods Act (TDG Act) 1992, (T19.01).
 - .4 Transportation of Dangerous Goods Regulations (TDGR), (SOR/8577, SOR/85585, SOR/85609, SOR/86526).
- 1.4 Definitions
- .1 Dangerous Goods: Product, substance, or organism that 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.
- 1.5 Submittals
- .1 Submit product data in accordance with Section 01 33 00 – Submittal Procedures.
 - .2 Submit to Departmental Representative current Material Safety Data Sheet (MSDS) for each hazardous material required prior to bringing hazardous material on site.
 - .3 Submit hazardous materials management plan to Departmental Representative that identifies all hazardous materials, their use, their location, personal protective equipment requirements, and disposal arrangements.
- 1.6 Storage and Handling
- .1 Coordinate storage of hazardous materials with Departmental Representative and abide by internal requirements for labeling and storage of materials and wastes.
 - .2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
 - .3 Store and handle flammable and combustible materials in accordance with current National Fire Code of Canada requirements.

- .4 Observe smoking regulations at all times. Smoking is prohibited in any area where hazardous materials are stored, used, or handled.
- .5 Abide by the following storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:
 - .1 Store hazardous materials and wastes in closed and sealed containers 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 that shall 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.
- .6 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .7 Report spills or accidents immediately to Departmental Representative and the ESO. Submit a written spill report to Departmental Representative within 24 hours of incident.

1.7 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.
- .3 If hazardous waste is generated on site:
 - .1 Coordinate transportation and disposal with Departmental Representative.
 - .2 Ensure compliance with applicable provincial laws and regulations for generators of hazardous waste.
 - .3 Use only a licensed carrier authorized by provincial authorities to accept subject material.
 - .4 Prior to shipping material, obtain written notice from intended hazardous waste treatment or disposal facility that it will accept material and that it is licensed to accept this material.

- .5 Label containers with legible, visible safety marks as prescribed by federal and provincial regulations.
- .6 Ensure that only trained personnel handle, offer for transport, or transport dangerous goods.
- .7 Provide a photocopy of all shipping documents and waste manifests to Departmental Representative.
- .8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide a photocopy of completed manifest to Departmental Representative.
- .9 Report any discharge, emission, or escape of hazardous materials immediately to the Departmental Representative and appropriate provincial authority. Take reasonable measures to control release.

PART 2 - PRODUCTS

2.1 Materials

- .1 Only bring on site the quantity of hazardous materials required to perform work.
- .2 Maintain MSDSs 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.
- .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 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

- 1.1 Related Sections .1 Section 32 11 23 - B.S.T. Aggregate
- 1.2 Measurement for payment .1 Cost of processing aggregate is included in unit price of measurement item in section for which aggregate is being produced. Cost of Hauling and Excavating Aggregate to be incidental to Contract Bid Items.
- .2 Cost for final quantity measurement shall be m³ and include the cost of survey of original ground prior to placing material in stockpile and final survey of completed stockpile. The volume measured for payment will not include the 300mm of material required for base of stockpile. No payment will be made for surplus material over and above the Contract Estimated Quantity. The cost for surveying will include all wages, accommodations, transportation, and all other associated costs.
- .3 Cost for quality control testing shall be Lump Sum and include all wages, accommodations, transportation, lab trailer, testing equipment, and all other associated costs.
- 1.3 References .1 ASTM D4791-99, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.
- .2 ASTM C117-95, Standard Test Method for Materials Finer than 75mm (No. 200) Sieve in Mineral Aggregates by Washing.
- .3 ASTM C136-01, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- .4 CAN/CGSB-8.2-M88, Sieves Testing, Woven Wire, Metric.
- .5 ASTM D4318-00, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- .6 ASTM C131-01, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- 1.4 Testing Procedures .1 All references to CSA, ASTM, AASHTO and other contained in this specification are the latest published editions or revisions to the quoted standard.
- 1.5 Quality Control .1 Contractor shall be responsible for quality control on all materials produced.
- .2 A Certified Engineering Technician from a professional testing firm, equipped for aggregate testing, shall be on site at all times during aggregate production.
- .3 A program for aggregate testing and test results shall be developed on site with Departmental Representative.

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- .4 In addition to the testing done by the contractor the Departmental Representative may take aggregate samples at random and have them tested by an outside testing firm.
- 1.6 Aggregate Testing by Lot System
- .1 The rate of sampling shall be based on Lots. The maximum Lot size shall be one shift production. The Departmental Representative may reduce the Lot size to a half shift if in his opinion it is warranted to ensure compliance with the specification.
- .2 The Lot shall be divided into four approximately equal sub-lots and one sample shall be selected and tested on a random basis from each sub-lot.
- .3 In the event that operational conditions cause work to be interrupted before the Lot has been completed, the Departmental Representative may determine the acceptability of the incomplete Lot on the basis of the test results available.
- 1.7 Sampling Procedures
- .1 The technician will perform all necessary sampling and testing for acceptance purposes. Sampling will be carried out at the source during production.
- .2 Obtain samples by stopping the production discharge belt, sectioning the belt and removing all material from the sectioned area or obtained from a sampling device provided by the Contractor. Obtain samples from the production stockpile by combining sub-samples from at least four locations.
- 1.8 Testing
- .1 Perform gradation testing according to ASTM C117 and ASTM C136.
- .2 Samples for belt testing and stockpile testing will not be mixed in considering the acceptance of any Lot.
- 1.9 Acceptance Criteria
- .1 A lot of aggregate will be deemed to meet specification requirements for gradation if the mean of four test results from the Lot fall within gradation limits specified in the contract and the range if the test results is no greater when considering any one sieve designation than the numerical difference between the maximum allowable percent for that sieve designation as shown in the contract.
- .2 In the event the Departmental Representative decides that acceptance will be determined on the basis of an incomplete Lot, the incomplete Lot will be deemed to meet specification in the same manner as outlined above, except that the number of test results available in the incomplete Lot will be used rather than the four tests.
- .3 In the event that a Lot does not meet specification, the Lot will be removed from the stockpile as directed by the Departmental Representative. No payment will be made for the material not meeting the specification of the Lot system.
- .4 Leveling of the material of each Lot into the stockpile shall not commence until

the lot has been accepted.

- .5 In cases where Lots are being rejected, the Departmental Representative may require indeterminate stockpiling, in which case costs for the indeterminate stockpiling are included in test procedures.

1.1 Pit Supervisor
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- .1 The Contractor, when operating in a pit or quarry, will comply with all provisions of the Mines Act and the Health Safety and Reclamation Code for Mines in British Columbia.
- .2 The Contractor shall provide a qualified pit/quarry supervisor or shift boss to supervise work undertaken therein. The Contractor shall ensure that the pit/quarry supervisor or shift boss is duly certified in accordance with the Section 1.12 and 1.13 of the Health Safety and Reclamation Code for Mines in British Columbia.

PART 2 - PRODUCTS

2.1 Materials

- .1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, or other substances that would act in deleterious manner for use intended.
- .2 Flat and elongated particles of coarse aggregate: to ASTM D4791-99.
- .1 Greatest dimension to exceed five times least dimension.
- .3 Fine aggregates satisfying requirements of applicable section to be one or blend of following:
- .1 Natural sand.
- .2 Manufactured sand.
- .3 Screenings produced in crushing of quarried rock, boulders, gravel or slag.
- .4 Coarse aggregates satisfying requirements of applicable section to be one or blend of following:
- .1 Crushed rock.
- .2 Gravel composed of naturally formed particles of stone.
- .3 Light weight aggregate, including slag and expanded shale.

PART – 3 EXECUTION

3.1 Topsoil Stripping

- .1 Commence topsoil stripping of areas directed by Departmental Representative after area has been cleared and grubbed and debris has been removed from site.
- .2 Strip topsoil to depths directed by Departmental Representative.
- .3 Stockpile topsoil in locations directed by Departmental Representative.

3.2 Aggregate Source

- .1 Prepare, excavate, and finish pit as directed by Departmental Representative.
- .2 Prior to excavating materials for aggregate production, clear and grub area to be worked, and strip unsuitable surface materials. Dispose of cleared, grubbed and unsuitable materials as directed by Departmental Representative.
- .3 Where clearing is required, leave screen of trees between cleared area and

roadways as directed by Departmental Representative.

- .4 Clear, grub and strip area ahead of quarrying or excavating operation sufficient to prevent contamination of aggregate by deleterious materials.
- .5 When excavation is completed dress sides of excavation to nominal 3:1 slope, and provide drains or ditches as required to prevent surface standing water.
- .6 Trim off and dress slopes of waste material piles and leave site in neat condition.

3.3 Processing

- .1 Process aggregate uniformly using methods that prevent contamination, segregation, and degradation.
- .2 Blend aggregates, if required, to obtain gradation requirements, percentage of crushed particles, or particular shapes, as specified. Use methods and equipment as approved by Departmental Representative.
- .3 Wash aggregates, if required to meet specifications. Use only equipment approved by Departmental Representative.
- .4 When operating in stratified deposits use excavation equipment and methods that produce uniform, homogenous aggregate.

3.4 Handling

- .1 Avoid segregation, contamination and degradation of aggregate during handling and transporting.

3.5 Stockpiling

- .1 Stockpile aggregates in locations directed by Departmental Representative. Do not stockpile on completed pavement surfaces.
- .2 Stockpile aggregates in sufficient quantities to meet project schedules.
- .3 Stockpile sites to be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.
- .4 Except where stockpiled on acceptably stabilized areas, provide compacted sand or crushed gravel base not less than 300mm in depth to prevent contamination of aggregate. Do not incorporate compacted base of pile into work.
- .5 Separate different aggregates by strong, full depth bulkheads, or stockpile far enough apart to prevent intermixing.
- .6 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by Departmental Representative.
- .7 Stockpile aggregates in uniform layers 1m thick.
- .8 Uniformly spot-dump aggregates delivered to stockpile as specified.
- .9 Do not use piles or spill material over edges of piles.
- .1 Do not use conveying stackers that cause segregation of aggregates.
- 0
- .1 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.
- 1

3.6 Cleaning

- .1 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.
- .2 Leave any unused aggregates in neat compact stockpile in locations directed by Departmental Representative.
- .3 For temporary or permanent abandonment of aggregate source, restore source to conditions directed by Departmental Representative.

Project # R.017173.241

Aggregates General
Barrier Installations at Various Locations,
Km 509 to Km 834
Alaska Highway, B.C.

Section 31 05 17

PSPC – Pacific Region

Page 5 of 5

END OF SECTION

To
Watson Lake, Yukon

KM 554 Mill Creek Pit:
Precast Barrier Stockpile Area

To pit +/-
0.8 km

km 554

Alaska Highway

+/- 15.8 km to Stockpile Area at
Mill Creek Pit from km 536.

KM 537.9 Steamboat Creek
Maintenance Camp
400m from 536

+/-
0.3 km

km 536

Five Barrier Locations
In-Contract Area

km 526

km 455 Town: Fort Nelson

To
Fort St. John

project title

titre du projet

drawing title

titre du dessin

ALASKA HIGHWAY
British Columbia

Line Diagram
Barrier Installations



Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

REAL PROPERTY SERVICES
Pacific Region

designed by
A.H.G.

conçu par
A.H.G.

drawn by
dessiné par
N.T.S.

scale
échelle
date
July 2017

approved by

approuvé par

project no.

projet no.

R.017173.241

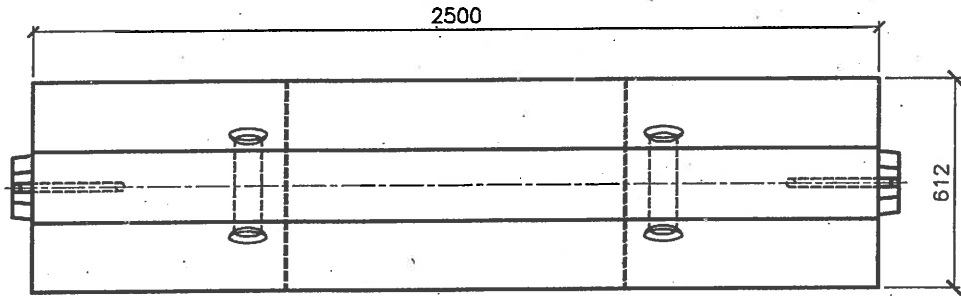
PWSC Project
Manager

Administrateur de Projets
George Smith

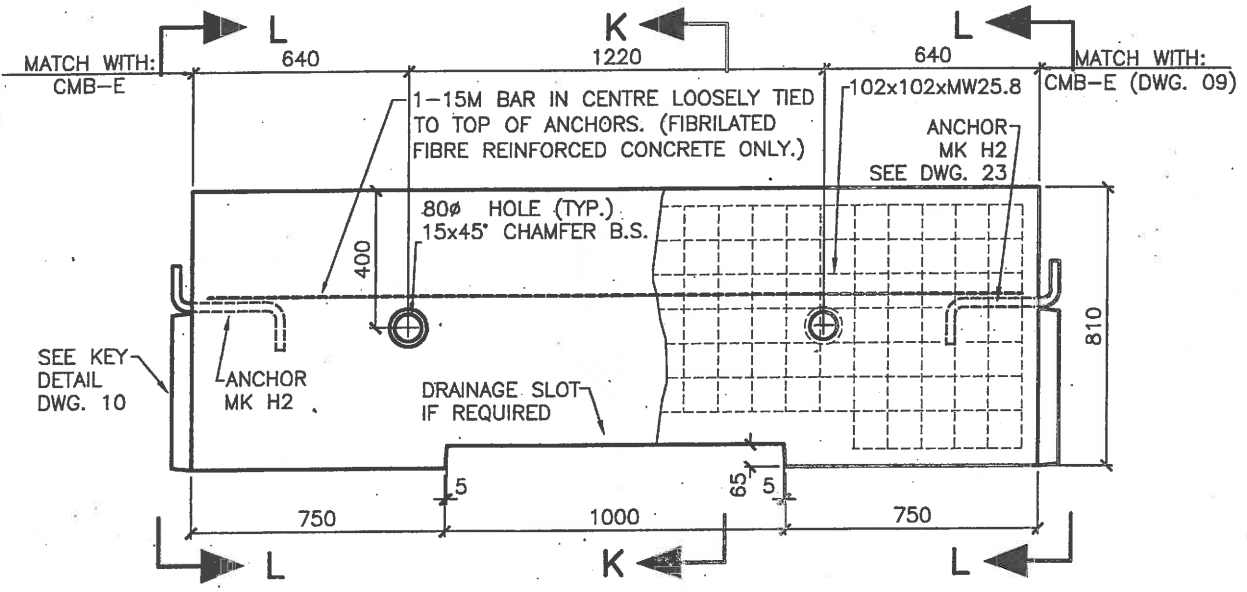
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R.017173.241-01

feuille




PLAN

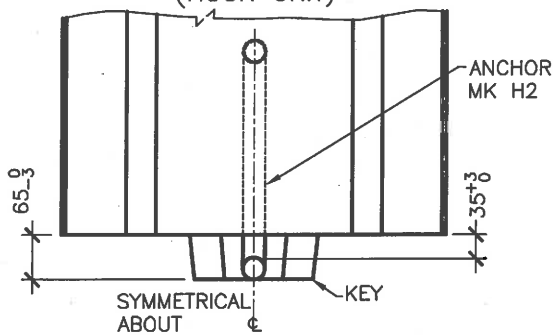
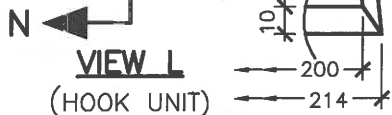
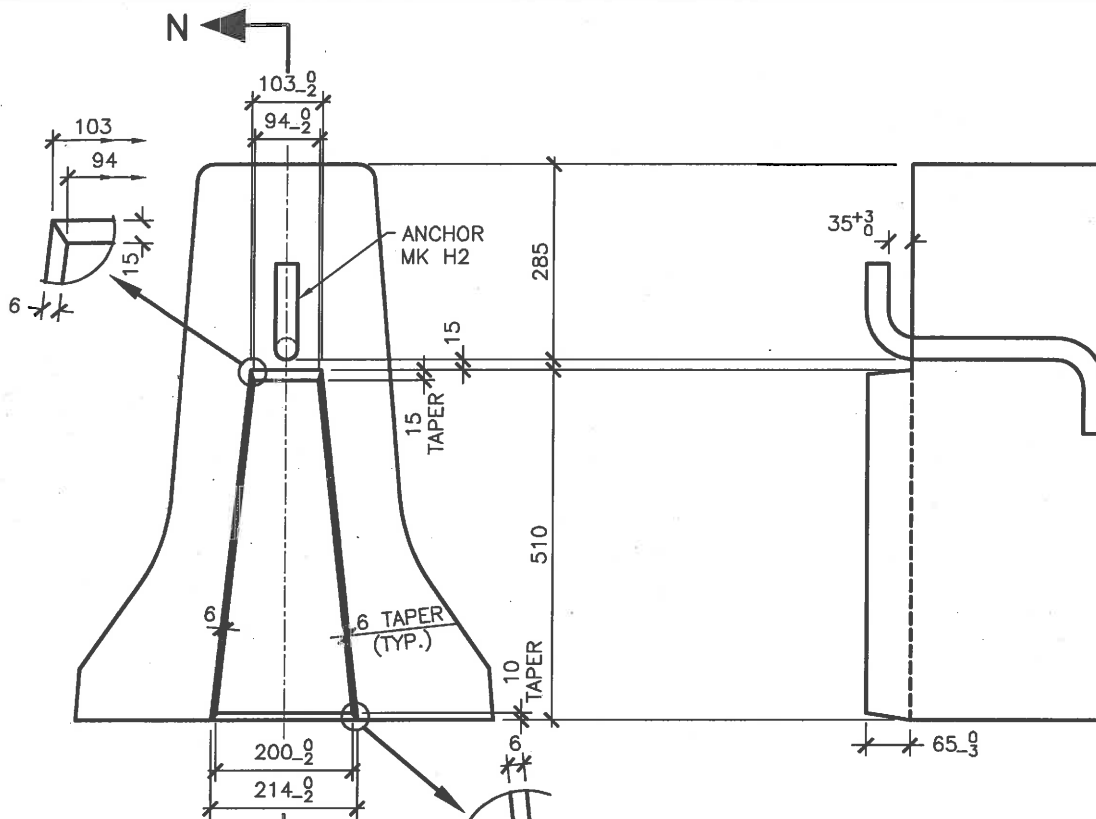


ELEVATION

NOTES:

1. FOR SECTION K SEE DWG. 09. FOR VIEW L SEE DWG. 10.
2. FOR GENERAL NOTES SEE DWG. 03.
3. SEE DWG. 09 FOR DETAILS OF EYE UNIT.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

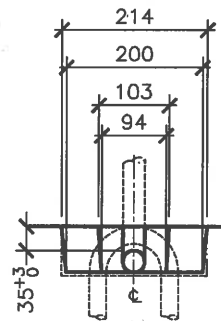
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ALASKA HIGHWAY BRITISH COLUMBIA				PRECAST CONCRETE ROADSIDE BARRIER 810 mm - CMB-H						
 Public Works and Government Services Canada REAL PROPERTY SERVICES Western Region	Travaux publics et Services gouvernementaux Canada		designed by	conçu par	drawn by	dessiné par	scale	échelle	date	date
			approved by	G.Smith		approuvé par	R.017173.241		proj. no.	
			PWGSC Project Manager	G.Smith		Administrateur de Projets TPSGC	sheet		feuille	
							R.017173.241-02			



NOTE:

SECTION N

1. FOR DIMENSIONS NOT SHOWN SEE SECTION K DWG. 09.

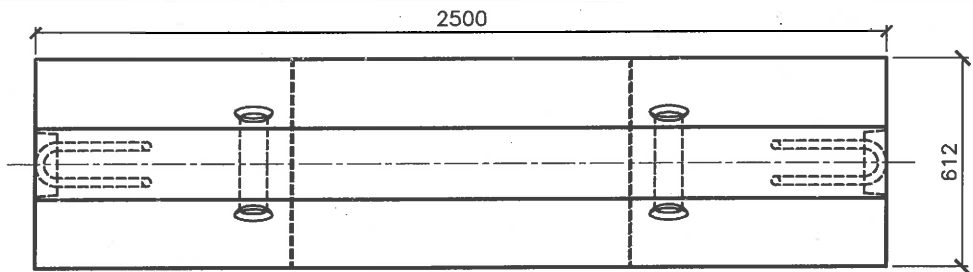


CONNECTION DETAIL

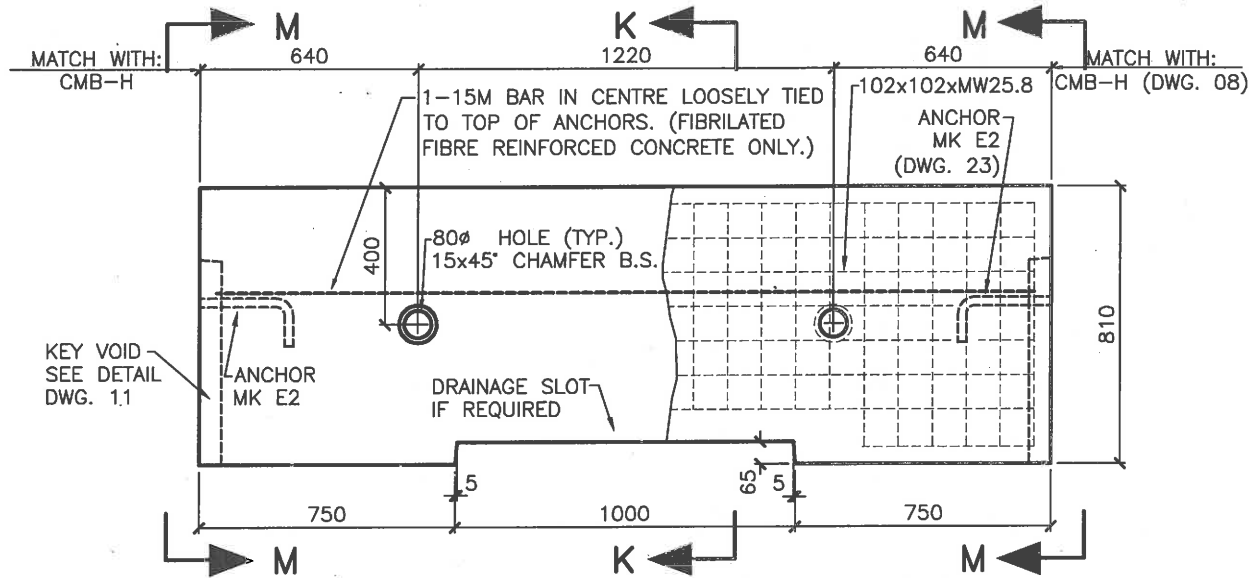
NOTES:

1. FOR LOCATION OF VIEW L, SEE DWG's. 08 & 16.
2. FOR GENERAL NOTES, SEE DWG. 03.
3. FOR DETAILS OF ANCHORS SEE DWG. 23.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

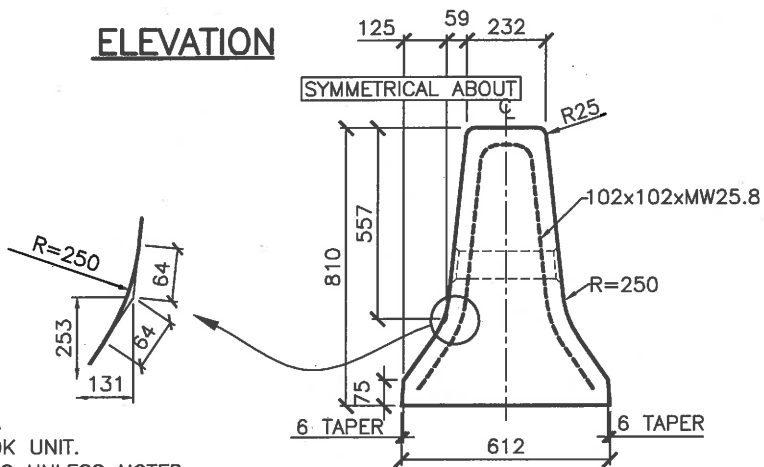
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 Public Works and Government Services Canada REAL PROPERTY SERVICES Western Region	Travaux publics et Services gouvernementaux Canada		designed by	conçu par	drawn by	dessiné par	scale	échelle	date	date
							N.T.S.		Aug. 2017	
				approved by	G.Smith	approved by	G.Smith	project no.		projet no.
			PWGC Project Manager	G.Smith	Administrateur de Projets TPSGC		sheet		feuille	R.017173.241-03



PLAN



ELEVATION

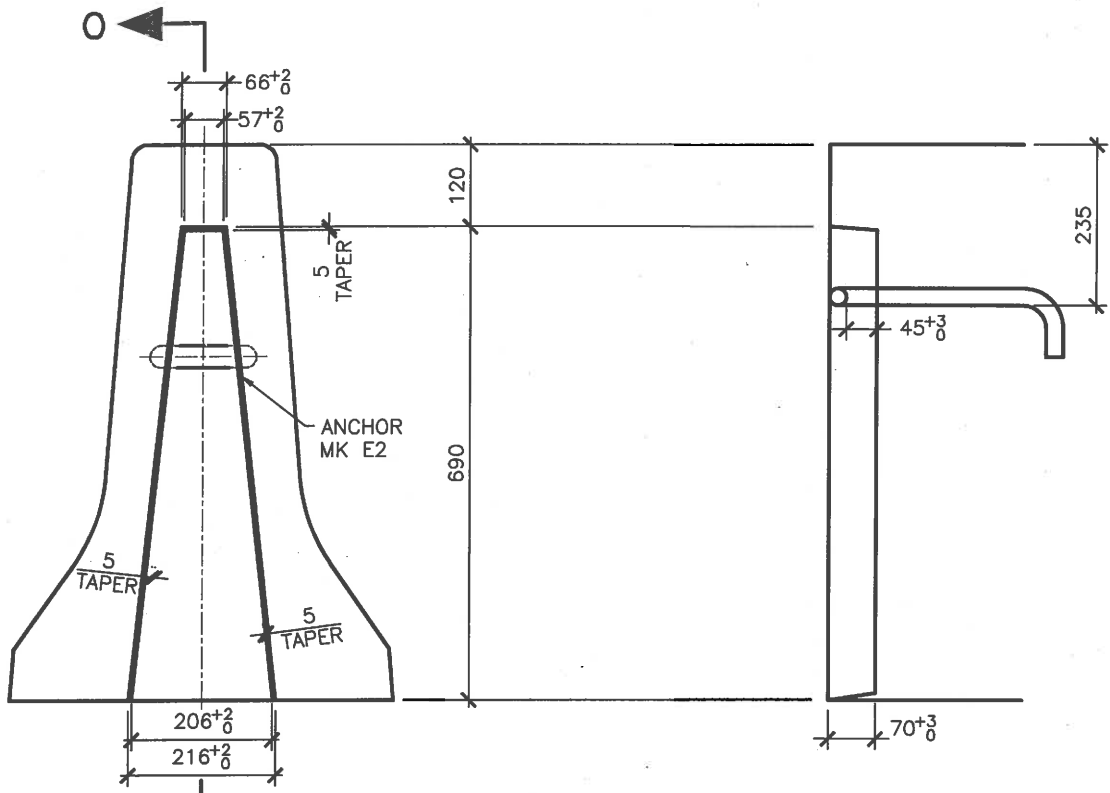


SECTION K

NOTES:

1. FOR VIEW M SEE DWG. 11.
2. FOR GENERAL NOTES SEE DWG. 03.
3. SEE DWG. 08 FOR DETAILS OF HOOK UNIT.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

project title		titre du projet		drawing title		titre du dessin	
ALASKA HIGHWAY BRITISH COLUMBIA				PRECAST CONCRETE ROADSIDE BARRIER 810 mm - CMB-E			
Public Works and Government Services Canada REAL PROPERTY SERVICES Western Region	Travaux publics et Services gouvernementaux Canada	designed by conçu par	drawn by dessiné par	scale N.T.S.	echelle	date Aug. 2017	date
		approved by	approuvé par	project no.		projet no.	
	PWSC Project Manager	Administrateur de Projets TPSGC	sheet R.017173.241-04		feuille		

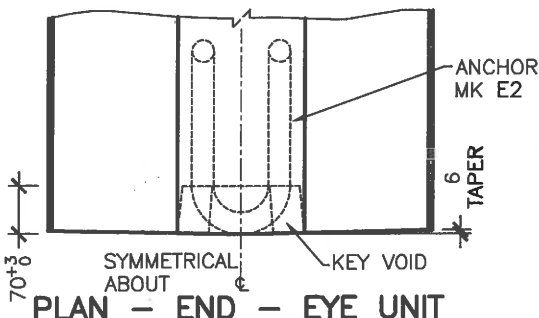


SECTION O

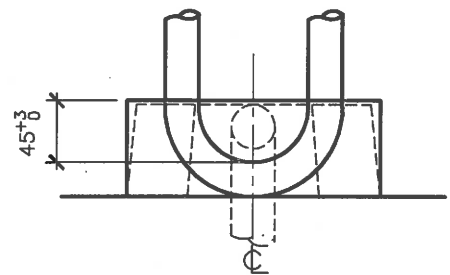
VIEW M
(EYE UNIT)

NOTE:

- 1. FOR DIMENSIONS NOT SHOWN SEE SECTION K DWG. 09.



PLAN - END - EYE UNIT

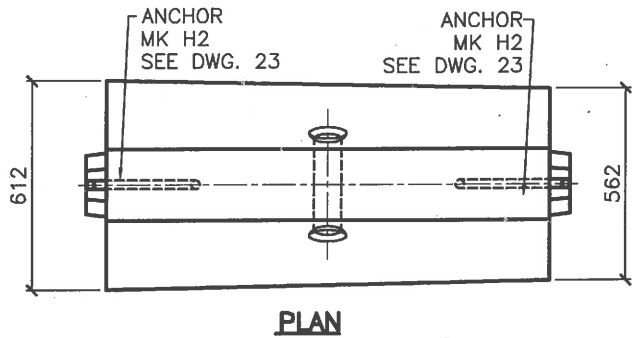


CONNECTION DETAIL

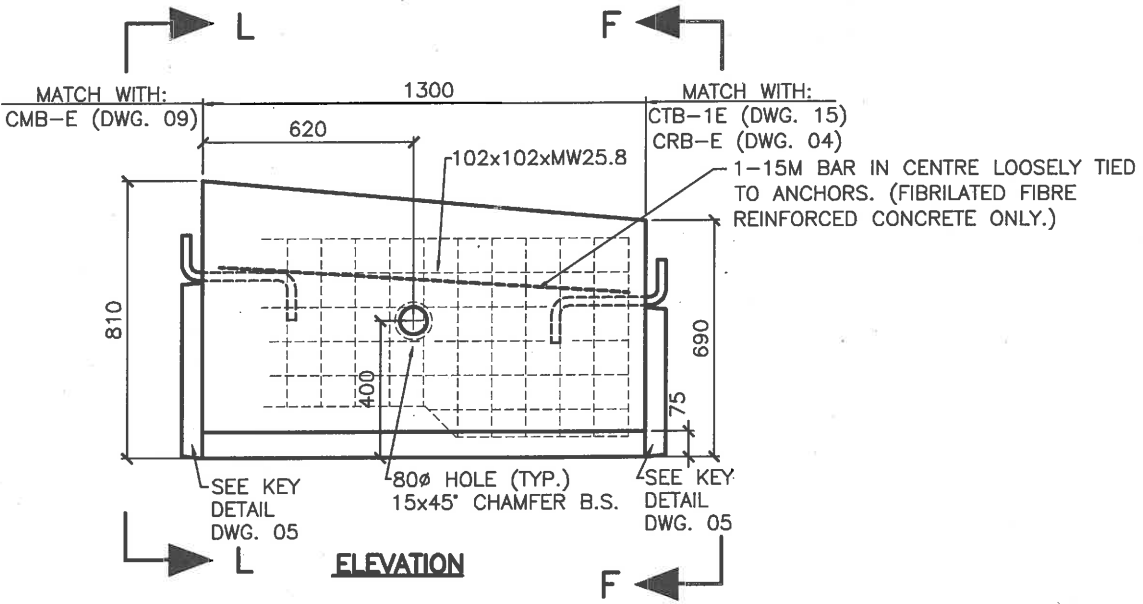
NOTES:

- 1. FOR LOCATION OF VIEW M, SEE DWG. 09.
- 2. FOR GENERAL NOTES, SEE DWG. 03.
- 3. FOR DETAILS OF ANCHORS SEE DWG. 23.
- 4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

project title		titre du projet		drawing title		titre du dessin		
ALASKA HIGHWAY BRITISH COLUMBIA				PRECAST CONCRETE ROADSIDE BARRIER 810 mm - CRB-E DETAILS				
 REAL PROPERTY SERVICES Western Region	designed by		conçu par		drawn by		dessiné par	
	approved by		approuvé par		scale		échelle	
	PWGSC Project Manager		Administrateur de Projets TPSGC		sheet		feuille	
				date		date		
				N.T.S.		Aug. 2017		
				project no.		projet no.		
				R.017173.241		R.017173.241-05		




PLAN

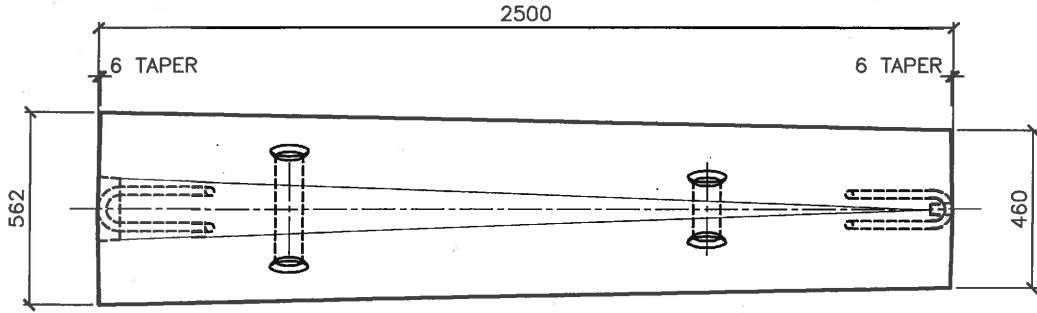


ELEVATION

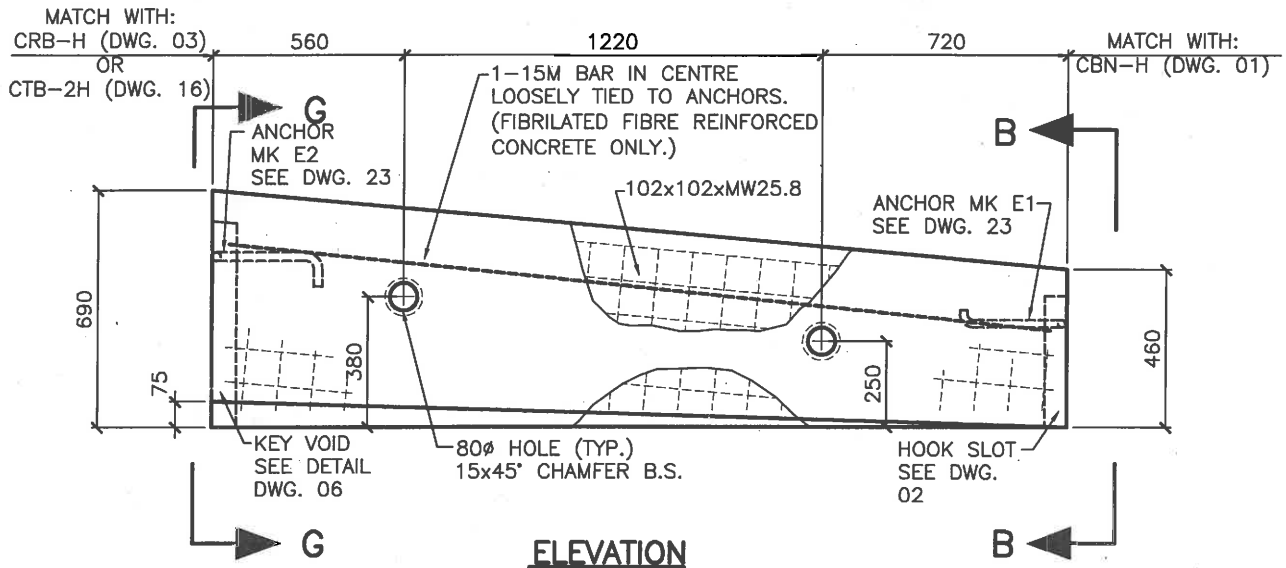
NOTES:

1. FOR VIEW F SEE DWG. 05.
FOR VIEW L SEE DWG. 10.
2. FOR GENERAL NOTES SEE DWG. 03.
3. SEE DWG. 09 FOR DETAILS OF 810 EYE UNIT.
SEE DWG. 04 FOR DETAILS OF 690 EYE UNIT.
SEE DWG. 15 FOR DETAILS OF 690 TO 460 TRANSITION UNIT.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

project title		titre du projet		drawing title		titre du dessin				
ALASKA HIGHWAY BRITISH COLUMBIA				PRECAST CONCRETE TRANSITION BARRIER 810 mm TO 690 mm - CTB-2H						
 Public Works and Government Services Canada REAL PROPERTY SERVICES Western Region	Travaux publics et Services gouvernementaux Canada		designed by	conçu par	drawn by	dessiné par	scale	échelle	date	date
							N.T.S.		Aug. 2017	
					approved by		approuvé par		project no.	
								R.017173.241		
				PWSC Project Manager		Administrateur de Projets TPSC		sheet		feuille
								R.017173.241-06		




PLAN

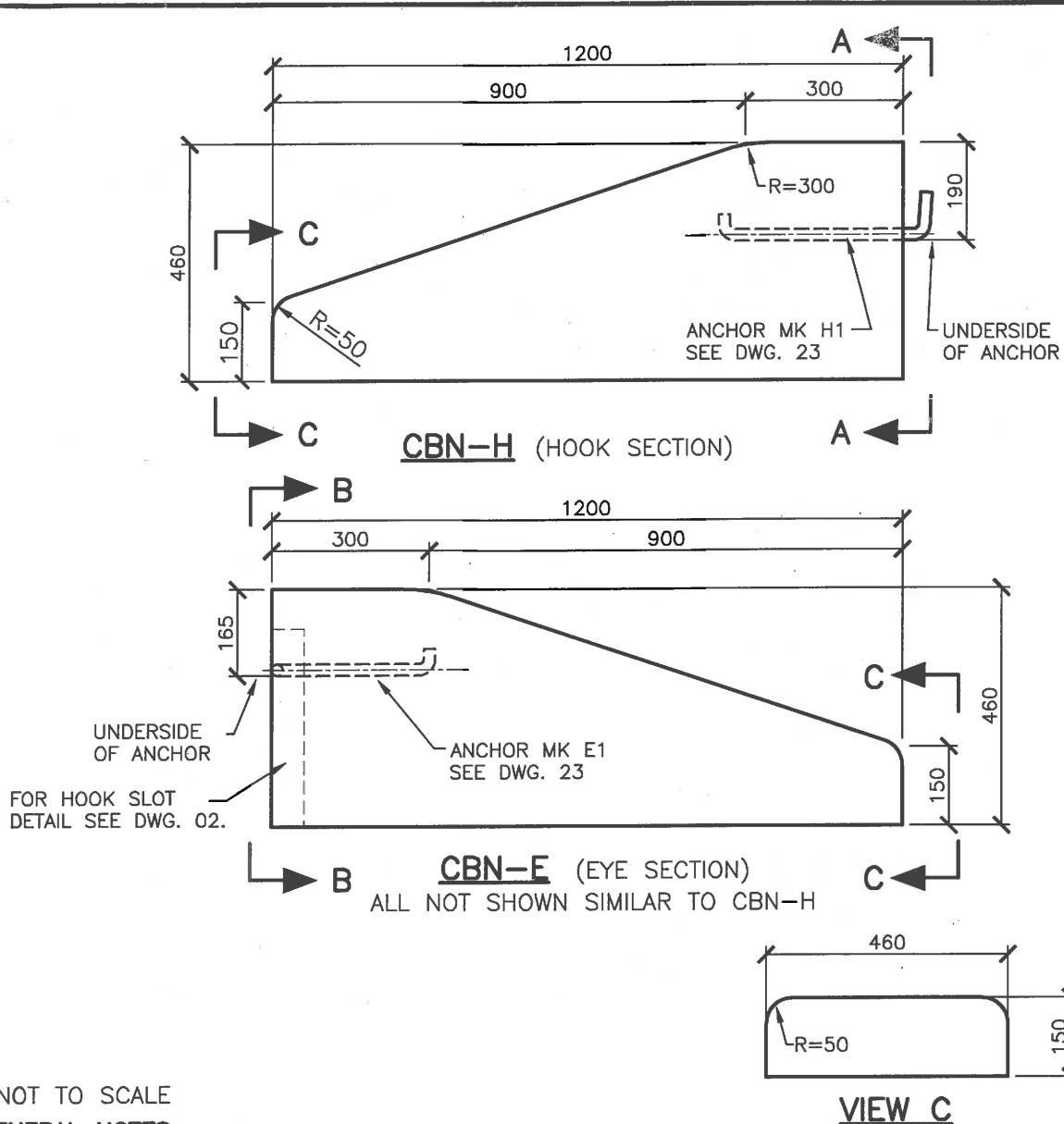


ELEVATION

NOTES:

1. FOR VIEW B SEE 02. FOR VIEW G SEE DWG. 06.
2. FOR GENERAL NOTES SEE DWG. 03.
3. SEE DWG.'S 01 AND 02 FOR DETAILS OF 460 UNIT AND BULLNOSE. SEE DWG. 03 FOR DETAILS OF 690 HOOK UNIT OR DWG. 16 FOR DETAILS OF 810 TO 690 TRANSITION UNIT.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

project title		titre du projet		drawing title		titre du dessin				
ALASKA HIGHWAY BRITISH COLUMBIA				PRECAST CONCRETE TRANSITION BARRIER 690 mm TO 460 mm - CTB-1E						
 Public Works and Government Services Canada REAL PROPERTY SERVICES Western Region	Travaux publics et Services gouvernementaux Canada		designed by	conçu par	drawn by	dessiné par	scale	échelle	date	date
			approved by			approuvé par	project no.		projet no.	
	PWGSC Project Manager		Administrateur de Projets TPSGC		sheet		feuille		R.017173.241-07	

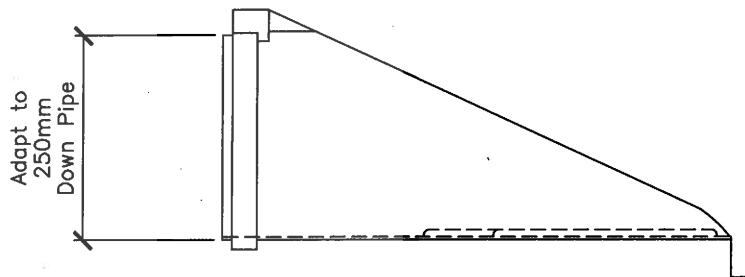
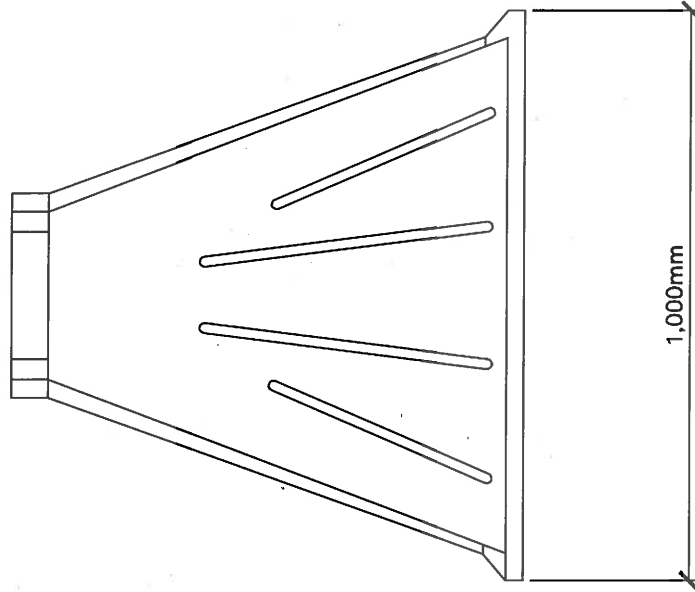



NOT TO SCALE

GENERAL NOTES:

1. FOR VIEWS A & B SEE DWG. 02.
2. FIBRILATED FIBRE STRAND REINFORCED CONCRETE TO BE USED FOR BULL-NOSE (CBN).
3. FIBRILATED FIBRE STRAND REINFORCED CONCRETE MAY BE SUBSTITUTED FOR STEEL REINFORCED CONCRETE IN LOW BARRIER (CLB-H & E)
4. MATERIALS AND QUALITY OF WORK TO BE IN ACCORDANCE WITH STANDARD SPECIFICATION 02845.
5. STANDARD CBN-E MAY BE MANUFACTURED ONLY WITH PRIOR WRITTEN PERMISSION FROM HIGHWAY SAFETY BRANCH.
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

project title		titre du projet		drawing title		titre du dessin	
ALASKA HIGHWAY BRITISH COLUMBIA				PRECAST CONCRETE BULL-NOSE 460mm - CBN-H & CBN-E			
Public Works and Government Services Canada REAL PROPERTY SERVICES Western Region	Travaux publics et Services gouvernementaux Canada		designed by conçu par	drawn by dessiné par	scale échelle	date	date
			approved by George Smith	approuvé par	project no. R.017173.241	projet no.	
			PWSSC Project Manager George Smith	Administrateur de Projets TPSSC	sheet R.017173.241-08	feuille	



project title		titre du projet		drawing title		titre du dessin				
ALASKA HIGHWAY BRITISH COLUMBIA				POLYETHYLENE DRAIN PAN						
 Public Works and Government Services Canada REAL PROPERTY SERVICES Western Region	Travaux publics et Services gouvernementaux Canada		designed by	conçu par	drawn by	dessiné par	scale	échelle	date	date
					A.H.G.		N.T.S.		AUG 2017	
	approved by		G.Smith		approuvé par		R.017173.241		project no.	
PWSSC Project Manager				G.Smith		Administrateur de Projets TPSSC		sheet	feuille	R.017173.241.-09



PRELIMINARY HAZARD ASSESSMENT FORM

Project Number:	
Location:	
Date:	
Name of Departmental Representative:	
Name of Client:	
Name of Client Project Co-ordinator	PH: () - -

Site Specific Orientation Provided at Project Location Yes No

Notice of Project Required Yes No

NOTE:

PWGSC 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 PWGSC 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. PWGSC 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
	PWGSC, OGD's, or tenants		General Public or other contractors		
	Yes	No	Yes	No	
<p>Examples: Chemical, Biological, Natural, Physical, and Ergonomic</p> <p>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.</p>					<p>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.</p>

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 a 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 PWGSC or client confined space inventories. Refer to PWGSC Standard on Entry into Confined Spaces. Contact the Regional Construction Safety Coordinator.
Suspended / Mobile Work Platforms					
Other:					
Biological Hazards					
Mould Proliferations					
Accumulation of Bird or Bat Guano					
Bacteria / Legionella in Cooling Towers / Process Water					
Rodent / Insect Infestation					
Poisonous Plants					
Sharp or Potentially Infectious Objects in Wastes					



Wildlife					
Chemical Hazards					
Asbestos Materials on Site					If "yes" a pre-project asbestos survey report is required. Provide Contractor with DP – 057 ELF Form 16 "Contractor Notification and Acknowledgement"
Designated Substance Present					If "yes" a pre-project designated substance survey report is required.
Chemicals Used in work					
Lead in paint					If "yes" a pre-project lead survey report is required.
Mercury in Thermostats or Switches					If "yes" a pre-project mercury survey report is required.
Application of Chemicals or Pesticides					
PCB Liquids in Electrical Equipment					
Radioactive Materials in Equipment					
Other:					
Contaminated Sites Hazards					
Hazardous Waste					
Hydrocarbons					
Metals					
Other:					

Security Hazards					Comments
Risk of Assault					
Other:					
Other Hazards					

Other Compliance and Permit Requirements ¹	YES	NO	Notes / Comments ²
Is a Building Permit required?			
Is a 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 PWGSC DEPARTMENTAL REPRESENTATIVE PRIOR TO ANY WORK COMMENCING			

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 PWGSC Environmental Effects Evaluation (EEE) and/or the Fish and Fish Habitat Report as supporting documents in the completion of the site Environmental Protection Plan (EPP). Applicable provincial and federal guidelines and regulations should be reviewed prior to submission of the EPP.

EPP Framework	Content Requirements	Yes	No	N/A
Project Setting and Site Activities				
Project Description	A brief description of the project and its location is provided.			
Environmental Sensitivities	Sensitive or protected features that could be impacted as a result of the Contractor's activities are described.			
Site Activities	A scope of work and a list of all construction or related activities to be undertaken during the project are provided.			
Project Schedule and Site Drawings				
Project Schedule	A project schedule is provided, including scheduled shut-downs and restricted work periods due to environmental requirements.			
Site Drawing	One or more site drawings(s) are provided, indicating the site location; site set-up and layout; erosion and sediment controls; in-stream work areas; and environmental sensitivities.			
Potential Environmental Impacts and Controls				
Potential Environmental Issues and Impacts	The potential environmental issues and impacts that may result from the construction activities are described. Environmental Reports (Environmental Effects Evaluation, Environmental Assessments; Fish and Fish Habitat and Compensation Reports, Aquatics Effects Evaluations 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 and potentially upstream and downstream of proposed works. It is the Contractor's responsibility to ensure the work is completed in a manner that causes the least impact on the ecosystem (see section on Mitigation).			
Permits, Approvals, and Authorizations	List required permits, approvals and authorizations. As applicable, environmental mitigation measures prescribed by regulatory agencies and included in project permits, approvals and authorizations are described. NOTE: DFO, MOE and NWPAs approvals and authorizations for in-stream works are PWGSC's responsibility however, the Contractor must be aware of the requirements of these approvals/authorizations. Permitting for water withdrawal from the water body as part of construction activities is part of the Contractor's responsibility. Scientific Collection Permits such as licences for Fish Salvage Permits are also the responsibility of the Contractor and are obtained by the Contractor's environmental monitor/consultant* who will be completing the salvage.			

Mitigation Strategies	Procedures, controls or best management practices (BMPs) to prevent or reduce adverse impacts on the environment are provided. For example, all work in BC must adhere to the BC MOE "Standards and Best Practices for Instream Works" for those works that are completed below the high water mark. DFO mitigation techniques under the Fisheries Act must also be followed. One useful document that contains information on Ministry of Environment's ecosystems, guidelines and mitigation techniques is from the MOE Ecosystems Branch – Develop With Care 2014 – Environmental Guidelines for Urban and Rural Land Development in BC.			
Erosion and Sediment Control	Erosion and sediment controls are provided, as appropriate for the jurisdiction.			
Waste Management and Hazardous Materials				
Waste Management and Hazardous Materials	Hazardous materials that will be used and/or stored on site are listed. Expected hazardous and non-hazardous waste materials along with proper handling, containment, storage, transportation and disposal methods are listed. As appropriate for the jurisdiction, estimated waste quantities and specific handling procedures are also provided. For example, re-fuelling of equipment will be conducted at least 30m 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.			

*Environmental Monitor/Qualified Professional as recognized by the province: an applied scientist or technologist specializing in a relevant applied science or technology including, but not necessarily limited to, agronomy, forestry, biology, engineering, geomorphology, geology, hydrology, hydrogeology or landscape architecture, and who is registered in British Columbia with their appropriate professional organization, and acting under that association's Code of Ethics and subject to disciplinary action by that association, and who, through demonstrated suitable education, experience, accreditation and knowledge relevant to the particular matter, may be reasonably relied on to provide advice within their area of expertise.



Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

Confirmation of Prime Contractor's Main Responsibilities Under the Worksafe B.C. Occupational Health and Safety Regulations and Worker's Compensation Act

Name of Project: _____

Owner: Crown Owned

Contractor: _____

Consulting Engineer: _____

	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 PWGSC 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: _____



