Public Works and Government Services Canada

Requisition No. E0276-152050

SPECIFICATIONS
For: **Micro surfacing Km151.2 to 206,Km251 to 258, Km 413.5 to Km451.4,Alaska Highway,B.C.**

Project No.
R.017174.014 **Jan 2015**

APPROVED BY:

Program Manager, Alaska Highway — Date: Jan-20-2015

Construction Safety Coordinator — Date: 2015.01.05

TENDER:

Project Manager — Date: Jan/26/2015

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Specification Divisions	Sections		Number of Pages
Division 1	01 11 00	Summary of Work	3
	01 25 20	Mobilization & Demobilization	1
	01 31 00	Project Management & Co-Ordinating	4
	01 32 18	Construction Progress Schedules –Bar (GANTT) Chart	3
	01 33 00	Submittal Procedures	6
	01 35 14	Traffic Regulations	3
	01 35 33	Health and Safety	7
	01 35 43	Environmental Protection	12
	01 52 00	Construction Facilities	2
	01 59 10	Construction Camp	1
	01 77 00	Close Out Procedures	2
Division 2	02 61 33	Hazardous Materials	4
Division 31	31 05 17	Aggregates General	5
	31 05 18	Micro Surfacing	8
Drawing	R.017174.014-01	Micro Surface Areas-Line Diagram	1

Environmental Protection Plan (EPP) - Checklist

PART 1 - GENERAL

1.0 Description of Work

.1 Work under this Contract covers supplying traffic control, placing a single application of Micro Surfacing. The work will be carried out on the Alaska Highway in British Columbia. The Micro Surfacing shall comprise a total length of approximately 99.7kms.

.2 The work consists of the following:

.1 Supply traffic control signs, traffic control personnel, and pilot vehicle.

.2 Prior to the Micro Surfacing operation supply and stockpile blotting sand, aggregate, and storage of polymer modified asphalt at:

- km 161Wonowon Maintenance Camp
- km 202 Old Alignment
- km 256 Sikanni Maintenance Camp
- km 445 Fort Nelson Pit

.3 Supply and apply Micro Surfacing with a continuous paver, and roll where necessary.

.4 The Contractors are strongly advised to familiarize themselves with the site conditions prior to submitting a bid. There are number of side roads and intersections with various levels of truck activities. On wet days the trucks using the side roads leave behind undesirable mud on the road surface that need to removed prior to the installation of micro surfacing.

Deleterious material such as clay, dust, silt and even patches of old micro surfacing can cause poor cohesion and adversely affect the final product and must be removed prior to application of micro surfacing. Surface preparation's and furnishing of a clean and sound surface on which the new micro surfacing is installed and to which the micro surfacing will bond in the responsibility of the contractor and all associated costs are incidental to item 2 in the price table.

.5 Micro surfacing shall not be installed over the length of the two Bridge decks in this contract.

2.0	Location of Work	.1	Work is located between km 151.2 and km 451.4, Alaska Highway, B.C. Wonowon, B.C. is located at km 162. Fort Nelson, B.C. is located at km 456.
		.2	Drawing R.017174.014-01 shows line diagram and limits of work.
3.0	Work Schedule	.1	Provide to the Departmental Representative in writing and within 5 working days after Contract award, a detailed construction schedule and traffic plan. The schedule shall show proposed work to be undertaken and anticipated completion dates for each category of work in the Unit Price Table.
		.2	After receiving the Contractor's plan and prior to start of construction, a meeting involving Contractor and Departmental Representative will be held at a place and time to be determined by the Departmental Representative. This meeting will review implications of contract, design, schedule of work, methods of construction, environmental protection methods and traffic control.
4.0	Work Schedule – (Con'	.3	Complete all stockpiling of aggregate to the storage areas prior to commencing the Micro Surfacing operation.
		.4	Submit Contract Schedule within 7 days of contract amendment. Indicate anticipated program stages within date of completion shown in tender documents.
		.5	Complete all work by August 15, 2015. No extensions will be given. Contractor will only receive payment for the amount of Micro Surfacing placed up to this date.
		.6	Interim reviews of work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.
		.7	No work will begin until the pre-construction meeting is held.
		.8	Following the pre-construction meeting and approval of the design, construction and traffic control plan, the work will be so scheduled to meet the time restraints and have the project completed on time.
5.0	Layout of Work	.1	Departmental Representative will indicate areas of work.
		.2	Contractor will provide offset centerline.

		.3	Contractor will reference passing barriers.
		.4	Contractor to layout all other work on ground to satisfaction of Departmental Representative.
		.5	No separate payment for layout of work.
6.0	Maintenance of Work During Construction	.1	Maintain work during construction. Undertake continuous and effective maintenance work day by day, with adequate equipment and forces so that the roadway or structures are continuously kept in a condition satisfactory to Departmental Representative.
		.2	Contractor shall apply Micro Surfacing at a width of 3.75m on both sides of center line. For a width of 7.5m total. Km 151.2 to km 152 is 15m wide. Sikanni (km 251-258) is 11.25m wide.
7.	Highway Regulation	.1	Observe and obey all regulations concerning hauling and traffic.
		.2	Restrict hauling equipment to legal loads.
8.	Traffic Accommodation	.1	Regulate traffic as specified in Section 01 35 31 "Traffic Control".
9.	Asphalt & Aggregate Supply and Delivery	.1	Supply cationic polymer modified emulsified asphalt and aggregate as specified in Section 31 05 18.
		.2	Provide all storage for emulsified asphalt as required.
		.3	Store materials in pits located at km 162 or km 202, km 256, and km 445.
10.	Cutting & Patching	.1	Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
11.	Aggregates	.1	Leave any unused aggregates in neat compact stockpiles as directed.
12.	Standard Test Procedures	.1	Contractor is advised that all referenced standard tests in these specifications refer to revisions current at time of tendering.
13.	Requirements of Regulatory Agencies	.1	Federal, Provincial & Municipal laws and regulations apply to all work under this contract.

END OF SECTION

PART 1 - GENERAL

1.1	Section Includes	.1	Mobilization and Demobilization
1.2	Related Sections	.1	Construction Facilities – Section 01 52 00
1.3	Description	.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	Measurement Procedures	.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 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

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 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 September 15, 2014.

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 date, 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 al 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 Description .1 This section specifies requirements for traffic control on work site.

1.2 Reference Standard .1 Do traffic regulations in accordance with Traffic Control manual for Work on Roadways, distributed by Province of British Columbia, Ministry of Transportation and Highways. Ensure that current copy of manual is available on site at all times.

.2 Nothing in this section limits the Contractor's responsibility to safely accommodate traffic through unique or varied construction situations.

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

1.4 Measurement of Payment .1 Measurement for payment will be included in the contract amount and no separate payment for Traffic Control will be issued.

PART 2 - PRODUCTS

2.1 Information and Warning Devices .1 Supply new signs, delineators, barricades, traffic cones and miscellaneous warning devices as specified in Traffic Control Manual for Work on Roadways.

.2 Supply all signs except those shown on plan as supplied by others.

2.2 Traffic Markers .1 Have minimum of 100 Type D traffic markers and all necessary traffic signs on site and in place before interfering with traffic.

PART 3 – EXECUTION

3.1 Protection of Public Traffic .1 When working on traveling way:

.1 Place equipment in position to present minimum of interference and hazard to traveling public.

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

.3 Do not leave equipment on traveled way overnight.

3.1 Protection of Public Traffic (Cont'd)

.2 Do not close any lanes of road or highway without approval of Departmental Representative. Before rerouting traffic, erect suitable signs and devices in accordance with instructions contained in Traffic Control Manual for Work on Roadways.

.3 .1 Provide minimum 7 m wide roadway exclusively for traffic in two-way sections through work and on detours. Widen roadway as necessary in curves to provide room for transport trucks to meet safely.

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

.4 Provide well graded detours or temporary roads to facilitate passage of traffic around restricted construction area. Provide and maintain signs and maintain roadway.

.5 Provide and maintain reasonable road access and egress to property fronting along or in vicinity of work under contract unless other reasonable means of road access exist.

3.2 Information and Warning Devices

.1 Erect and maintain sign and other devices required to indicate construction activities and other temporary and unusual conditions resulting from project work which may require road user response as specified in Traffic Control Manual for Work on Roadways.

.2 Continually maintain traffic devices in use by:

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

.2 Removing or covering signs which do not apply to existing conditions.

3.3 Traffic Control Persons

.1 Provide traffic control persons who have been instructed in, and have demonstrated adequate knowledge of WCB Regulations, and the relevant procedures from the Traffic Control manual.

.2 Employers of traffic control persons must train and instruct those workers in a course acceptable to the board which covers:

.1 Environmental factors such as heat, cold and sun.

.2 Personal protective clothing and safety equipment

.3 Communication with traveling public.

.4 Working around heavy equipment.

.5 Setting up traffic control devices at a work site.

.6 Applicable requirements of the Transportation of Dangerous Goods Act, 1992 (Canada) and the regulations made under it.

3.3 Traffic Control Persons (Cont'd)

.7 Proper positioning of traffic control persons.

.8 Proper hand signals.

.3 Provide traffic control persons in the following situations:

.1 At each end of restricted sections where pilot vehicles are required.

.2 Where traffic is required to pass working vehicles or equipment which may block all or part of roadway.

.3 Where construction equipment is crossing roadway.

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

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

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

3.4 Pilot Vehicles

.1 Provide pilot vehicles where it is necessary to institute one-way traffic (except for short distances in good visibility), where driving lanes are not well defined or where access through the work would be otherwise dangerous. Equip pilot vehicles with orange flashing lights and signs clearly designating vehicle as a pilot vehicle.

.2 Do not delay traffic more than necessary and in no case longer than 15 minutes.

3.5 Approval

.1 Do not change traffic control operation without Departmental Representatives approval.

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.

1.7 General- (Cont'd)

.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.

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

1.9 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

1.1 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 un-disturbed 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 steam, 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 steam 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 rational 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.

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.
1.8	Construction Signage	.1	Provide and erect, within two weeks of signing contract, a project identification site sign in a location designated by Departmental Representative. Supply, installation, maintenance, removal and all other incidental costs associated with the project identification site sign are included in the mobilization and demobilization lump sum items in the Schedule of Quantities and unit Prices.
		.2	Provide project identification site sign comprising foundation, framing, and one 1200 x 2400 mm signboard as detailed and as described below. Framework and battens: SPF, pressure treated minimum 89 x 89 mm.
			.1 Signboard: 19 mm Medium Density Overlaid Douglas Fir

Plywood to CSA 0121.

1.8 Construction Signage (Cont'd)

.2 Paint: alkyd enamel to CAN/CGSB-1.59 over exterior alkyd primer to CGSB 1-GP-189.

.3 Fasteners: hot-dip galvanized steel nails and carriage bolts.

.4 Vinyl sign face: printed project identification, self adhesive, vinyl film overlay supplied by Departmental Representative.

.3 Locate project identification sign as directed by Departmental Representative.

.4 Direct requests for approval to erect a Consultant/Contractor signboard to Departmental Representative. For consideration, general appearance of Consultant/Contractor signboard must conform to project identification site sign. Wording shall be in both official languages.

.5 Signs and notices for safety and instruction shall be in both official languages. Graphic symbols shall conform to CAN3-Z321.

.6 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Departmental Representative.

PART 1 - 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
1.2 References	.1	Export and Import of Hazardous Waste Regulations (EIHW 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).
1.3 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 Canadawide 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.
1.4 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.

1.5 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.

1.6 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 31 05 18 Micro Surfacing.
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 any Clearing and Grubbing, Stripping, Hauling and Excavating Aggregate to be incidental to Contract Bid Items.
		.2	Cost for quality control testing should be incidental to unit price of measurement item in section for which aggregate is being produced and include all wages, accommodations, transportation, lab trailer, testing equipment, and all other associated costs.
		.3	Aggregate can be produced in Pit at Km 366 (Adsette) or supplied by Contractor from another source.
1.3	References	.1	ASTM C131-89, Test Method for Resistance to Degradation of Small- Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
		.2	ASTM C136-92, Method for Sieve Analysis of Fine and Coarse Aggregates.
		.3	ASTM D2419-79, Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
		.4	ASTM D3910-90, Practice for Design, Testing and Construction of Slurry seal.
		.5	ASTM D4318-84, Test Method for Liquid Limit, Plastic Limit and Plasticity Index Soils.
		.6	CAN/CGSB-8.2-M88, (R10/3 Series), Sieves Testing, Woven Wire, Metric.
		.7	CAN/CGSB-16.2-M89, Emulsified Asphalts, Anionic Type, for Road Purposes.
		.8	CAN/CGSB-16.4-M89, Emulsified Asphalts, Cationic Type, road Purposes.
		.9	ASTM D6997-04, Standard Test Methods for Emulsified Asphalt (Residue y Distillation).
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.
		.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.

1.9 Acceptance Criteria Cont'd

.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.

1.10 Pit Supervisor

.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.

2.1 Materials Cont'd

.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.

.10 Do not use conveying stackers that cause segregation of aggregates.

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

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.

END OF SECTION

PART 1 - GENERAL

1.0 Description

.1 This section specifies requirements for preparing a mix of aggregate, filler, water and other additives and applying a properly proportioned micro surfacing treatment to the driving lanes on existing pavement to restore surface.

.2 Micro Surfacing must be capable of being spread in variable thickness cross sections which, after curing and initial traffic consolidations, resists compaction throughout the entire design tolerance range of asphalt cement content and variable thickness to be encountered.

.3 Micro Surfacing is to be a quick set, quick traffic system, meaning that it will be able to accept traffic after 60 minutes.

.4 Micro Surfacing shall be free of lumping, balling or mixed aggregate. It shall be free of streaks caused by oversized aggregate.

.5 Testing and Construction practices to be in accordance with ISSA's manuals entitled "Micro Surfacing (Quality control): A guide to quality construction" & "Recommended Performance Guidelines For Micro-Surfacing".

2.0 Related Work

Traffic Regulations	01 35 14
Summary of Work	01 11 00
Aggregates General	31 05 17

3.0 References

.1 ASTM C131-89, Test Method for Resistance to Degradation of Small- Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.2 ASTM C136-92, Method for Sieve Analysis of Fine and Coarse Aggregates.

.3 ASTM D2419-79, Test Method for Sand Equivalent Value of Soils and Fine Aggregate.

.4 ASTM D3910-90, Practice for Design, Testing and Construction of Slurry seal.

.5 ASTM D4318-84, Test Method for Liquid Limit, Plastic Limit and Plasticity Index Soils.

3.0 References Cont.

.6 CAN/CGSB-8.2-M88, (R10/3 Series), Sieves Testing, Woven Wire, Metric.

.7 CAN/CGSB-16.2-M89, Emulsified Asphalts, Anionic Type, for Road Purposes.

.8 CAN/CGSB-16.4-M89, Emulsified Asphalts, Cationic Type, road Purposes.

.9 ASTM D6997-04, Standard Test Methods for Emulsified Asphalt (Residue y Distillation).

4.0 Samples

.1 The Contractor shall provide and maintain equipment and qualified personnel to perform all sampling & testing necessary to determine and monitor the characteristics of the materials produced and incorporated in the micro-surfacing.

Copies of all test results will be given to the Departmental Representative.

5.0 Material Certification

.1 Upon request, submit manufacturer's test data and certification that emulsion meets requirements of this section.

6.0 Measurement for Payment

.1 Micro Surfacing will be measured in square metres of surface treated.

7.0 Materials

.1 Polymer solids, quick setting emulsifier agents, asphalt cement and water shall be milled into the emulsion by an approved emulsion manufacturer.

.2 Emulsion: to ASTM D2397, Grade CSS-1H, except for the following Table:

Test	Description	Requirements
ASTM D6997-04	by distillation; % by Mass	62 % Minimum
ASTM D36	Softening point; 0° Celsius	57 Minutes
ASTM D5	Penetration at 0.1 mm (25 °C., 100g., 5 sec)	40 to 90 dmm

7.0 Materials Cont.

.3 Aggregate: material to the following requirements:

.1 100 % crushed rock or gravel consisting of hard, durable particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.

.2 Gradation: to ASTM D3910, Table 1, or consider sieve sizes specified in ISSA A143.

Sieve, um	% Stockpile Passing	Tolerance
10 000	100	+/-5%
5 000	70-90	+/-5%
2 500	45-70	+/-5%
1 250	28-50	+/-5%
630	19-34	+/-5%
315	12-25	+/-4%
160	7-18	+/-3%
80	5-15	+/-2%

.3 Once gradation for the mix design has been submitted, the stockpile, must be within the tolerances outlined in 7.2 Table 1.

.4 Screen aggregates before delivery to lay down machine to remove oversized material.

.5 Plasticity index: to ASTM D4318, maximum 0.

.6 Los Angeles Degradation tests: to ASTM C131, maximum 35%.

.7 Petro Graphic Analysis: maximum 120.

.8 Soundness: 25% maximum Mg S04.

.4 Filler Type 10: Portland cement, non-air entrained to ASTM D3910.

7.0 Materials Cont.

.5 Sand equivalent of combined aggregate and filler: minimum 45, to ASTM D2419.

.6 Water: potable, free of harmful salts and contaminates.

.7 Additives: added to control quick –set properties and adhesion must be compatible with other components and included as part of the design.

.8 Polymer Modifier shall be a minimum of 3% polymer solids by Mass of asphalt residue.

.9 Micro Surfacing: all materials used in the mix design shall be representation of the materials proposed by the Contractor. The design shall conform to the following requirements.

Test	ISSA Number	Requirements
Wet Cohesion @ 30 min., kg-cm	TB-139	12 minimum
Wet Cohesion @ 60 min., kg-cm	TB-139	20 minimum
Load Wheel, g/m²	Tb-109	500 maximum
Wet Stripping, %	TB-114	90 minimum
Wet Track Abrasion, 1 h soak, g/m²	TB-100	538 maximum
Wet Track Abrasion, 6 day soak, g/m²	TB-100	807 maximum
Lateral Replacement, %	TB-147A	5 maximum
Specific Gravity	TB-147A	2.1 maximum
Mix Time @ 25 degrees, s	TB-113	120 minimum

8.0 Job Mix Formula

.1 Job mix formula will be provided by the Contractor. A construction material laboratory equipped to carry out Micro Surfacing mix designs shall design the mix proportions and prepare the job mix formula. The compatibility of the aggregate and the polymer modified emulsified asphalt shall be confirmed by the laboratory designing the mix. The mix design must contain ;

.1 Minimum emulsion content of 15 % by Mass of dry aggregate.

8.0 Job Mix Formula Cont.

.2 At least one week prior to commencing work provide Departmental Representative with report giving detailed data and test results on trial mixes and design selected.

.3 Wet track abrasion loss of field samples not to exceed 538 g/m² for one hour soak or 807 g/m² for 6 day soak when tested to ASTM D3910.

.4 The Contractor shall arrange for and have all testing to ensure that the materials placed are in conformance with the mix design. The extent, schedule and frequency of testing shall be approved by the Departmental Representative. Provide Departmental Representative with copies of all testing.

.5 The Contractor must demonstrate the ability to produce and place an acceptable Micro Surfacing product by the placement of a trial area 150 m in length and two lanes in width within the project limits.

9.0 Equipment

Do Micro Surfacing work in accordance with ASTM D390 and ISSA requirements except where specified otherwise.

.1 Mixing equipment:

.1 There shall be a minimum of two self-propelled mixing machines working on the project at any one time.

.2 The machine shall be specially designed and manufactured to lay Micro Surfacing.

.3 The material shall be mixed by an automatic sequenced self propelled Micro Surfacing mixing machine which shall be a continuous flow mixing unit, able to accurately deliver and proportion the aggregate, polymer modified emulsified asphalt cement, filler, control setting additive, and water to a revolving multi-blade double shaft mixer and discharge the mixed product on a continuous flow basis.

.4 The machine shall have sufficient storage capacity for all materials to maintain an adequate supply to the proportioning.

.5 Individual volume or mass controls for proportioning each material to be added shall be provided and properly marked.

9.0 Equipment Cont.

.6 Proportioning devices/revolution counters or similar devices are to be used in material calibration and determining the material output at any time. These devices shall be calibrated in the presence of the Departmental Representative prior to commencing work and all calibration factors established to accurately monitor mix proportion applied by each load

.2 Spreading Equipment:

.1 The mixture shall be spread uniformly by means of a conventional augured surfacing spreader box attached to the mixer and equipped with paddles to agitate and spread the material evenly throughout the box. A front seal shall be provided to ensure no loss of the mixture at the pavement contact point. The rear seal which shall act as strike-off shall be adjustable. A secondary strike-off shall also be required. The spreader box and strike-offs shall be so designed and operated that a uniform consistency is achieved to produce a free flow of material to the rear strike-off. The spreader box shall have suitable means provided to side shaft the box to compensate for variations in the pavement cross sections.

.3 Rolling Equipment:

.1 Smooth pneumatic-tired, self-propelled typ. Wobble-wheel types will not be permitted. Rollers to exert force of at least 3t/m of rolling width. Minimum contact pressure to be 300 kPa. Rollers to be equipped a water sprinkling apparatus to keep wheels damp to prevent adherence to Micro Surfacing.

10.0 Preparation of Surface

.1 The surface area shall be thoroughly cleaned of all mud, vegetation, and loose debris using a rotary power broom. Water shall be applied immediately to pre-wet the surface and shall be applied immediately ahead of spreader at a rate to dampen the surface without allowing any free-standing or free flowing water. This work is incidental to Micro Surfacing.

11.0 Application

.1 Obtain Departmental Representative's approval of existing surface prior to applying Micro Surfacing.

.2 The minimum application rate will be 13 km/m^2 based on dry aggregate.

11.0 Application Cont.

.3 Spread mixture to fill minor cracks and potholes and leave a uniform surface.

.4 The spreader box must be loaded so that all parts remain charged with mixture.

.5 Water may be sprayed into the spreader box to facilitate spreading without harming the mixture.

.6 No lumping, balling, or unmixed aggregate shall be permitted in the finished surface.

.7 Any oversized aggregate or foreign materials shall be screened from the aggregate prior to delivery to the mixture machine.

.8 The Micro Surfacing shall be spread in such a manner that a slight crown of 4mm will be constructed into each wheel path to allow for compaction by traffic.

.9 Do not place Micro Surfacing when air temperature is less than 10 °C and the weather is not foggy or rainy and there is no forecast of air temperature below 0° within 24 h from time of application.

.10 Spreader box and strike-offs are to be thoroughly cleaned each time the lay down machine stops.

12.0 Handwork

.1 In restricted areas where hand spreading is necessary, slight adjustments to the mix formula may be used to retard the setting time.

.2 The mixture shall be poured into a small windrow along one edge of the surface to the covered.

.3 The mixture shall be spread uniformly with squeegees or other suitable tools.

13.0 Curing

.1 Keep traffic off Micro Surfacing until it has cured to a firm condition that will prevent pick-up of mix.

.2 The Contractor shall be responsible for ensuring that the mixture is not damaged by traffic.

.3 Traffic, including construction traffic, shall be kept off the mixture is damaged to the surface.

14.0 Rolling

.1 Rolling will be required where Micro Surfacing is placed over extensively scaled areas and in areas subject to turning, braking or acceleration forces.

.1 Where indicated, roll each application with minimum 5 passes of pneumatic tired roller when slurry has cured sufficiently that clear water can be squeezed from mix. Increase operating contact pressure if directed by Departmental Representative.

15.0 Acceptance

.1 Initial acceptance will occur with the issue of an interim certificate of completion and a one year warranty period beginning when the following requirements have been met:
- .1 100% coverage of treated surfaces.
- .2 No streaking.
- .3 No flushing or bleeding.
- .4 The finished Micro Surfacing shall have a uniform texture, free of scratch marks, tears or other surface irregularities.

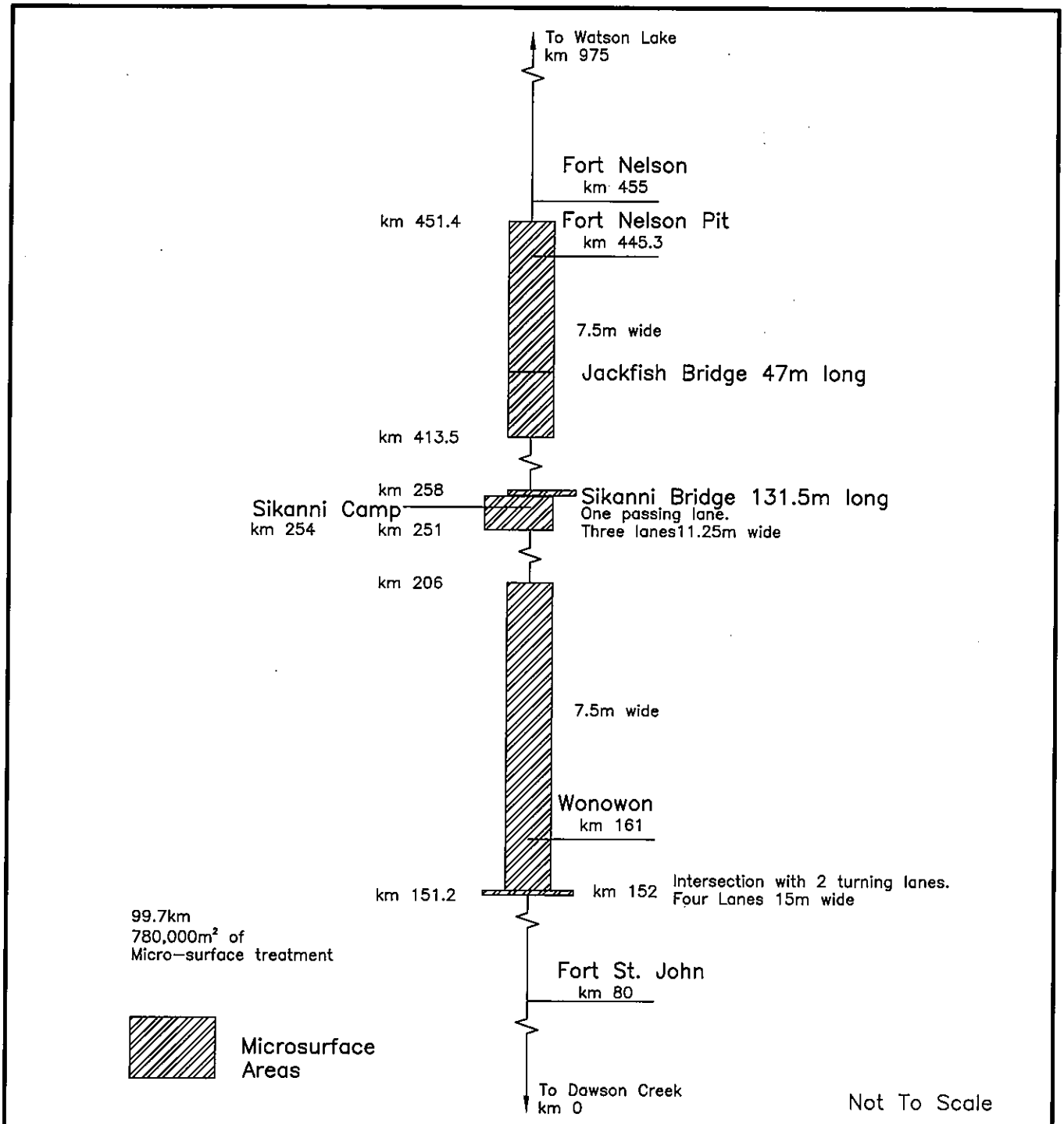
.2 Final acceptance will be met when Departmental Representative and Contractor meet one year after the completion of the work and inspect the work and agree that it has not failed.
- .1 Failure is deemed to occur when:
  - .1 There are many bare areas.
  - .2 There are flushed or bleeding areas greater that 1 m in length in the wheel paths.
- .2 Contract security shall not be released prior to final acceptance.

.3 All areas deemed by the Departmental Representative to have failed within the one year warranty term will be repaired at the Contractor's expense.

.4 Failed areas repaired by the Contractor after the one year warranty term will also have a one year warranty term.

16.0 Liability

The Contractor shall be responsible for administrating, resolving and processing any and all claims resulting in property and/or bodily injury as a result of work carried out under this contract until final acceptance in such a manner as to save and hold harmless the crown in such matters.



project title / titre du projet	drawing title / titre du dessin
ALASKA HIGHWAY **BRITISH COLUMBIA**	**LINE DIAGRAM** **MICRO SURFACE AREAS**

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Pacific Region

designed by / conçu par	drawn by / dessiné par	scale / échelle	date / date
A.H.G.	A.H.G.	N.T.S.	Dec. 2014

approved by / approuvé par	project no. / projet no.
	R.017174.014

PWGSC Project Manager / Administrateur de Projets TPSGC	sheet / feuille
GEORGE SMITH	**R.017174.014-01**

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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 NWPA 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, agrology, 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.