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Drawings: Drawing 17: Milling to tie from existing to new overlay

Reference Documents: Environmental Impact Assessment (2015)

Part 1 General**1.1 SECTION INCLUDES**

- .1 Title and description of Work.
- .2 Contract Method.
- .3 Work by others.
- .4 Work sequence.
- .5 Contractor use of premises.
- .6 Owner occupancy.
- .7 Owner available materials.

1.2 PRECEDENCE

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

1.3 DEFINITIONS

- .1 British Columbia Ministry of Transportation and Infrastructure is referred to as “BC MoTI”.
 - .1 http://www.th.gov.bc.ca/publications/const_maint/contract_serv/standardspecs.htm
- .2 Changes in Definition, - The following changes in definitions have been made to the “BC MoTI Specifications”:
 - .1 Ministry Representative – The word “Ministry Representative” shall mean Parks Canada Departmental Representative or his duly appointed representative.
 - .2 Ministry – The word “Ministry” shall mean Parks Canada.
- .3 GNP means Glacier National Park of Canada

1.4 RELATED SECTIONS

- .1 Section 01 29 01 - Site Occupancy.
- .2 Section 01 33 00 - Submittal Procedures.

1.5 WORK COVERED BY CONTRACT DOCUMENTS

- .1 In preparation for and during construction of this project, the Contractor shall review the requirements of Section 01 35 43 – Environmental Procedures to ensure the desired minimal adverse effects are achieved. The Departmental Representative and Parks Canada’s environmental surveillance officer (ESO) will refer to Section 01 35 43 – Environmental Procedures in determining compliance.
- .2 Without limiting the scope of work, the work of this Contract generally comprises the following:

- .1 Perform mix design for BC MoTI 19mm Medium Mix Class 1 Asphalt Concrete Pavement using 150-200A asphalt binder for review and approval by the Departmental Representative.
- .2 Produce outside of Glacier National Park a 19mm Medium Mix Class 1 Asphalt Concrete Pavement as per BC MoTI 2012 Standard Specifications for Highway Construction Section 502 – Asphalt Pavement Construction (EPS), Purchase asphalt binder 150-200A.
- .3 Mix, load, haul and place a BC MoTI 19mm Medium Mix Class 1 Asphalt Concrete Pavement, as directed by the Departmental Representative.
- .4 Asphalt milling as directed by the Departmental Representative. Millings shall be stockpiled at Beaver River Pit, approximately 32 km east of the west Park boundary in Glacier NP. Other locations may be available within GNP for stockpiling as determined by the Departmental Representative.
- .5 ACP thickness to be 85mm comprising 35mm bottom lift and 50mm top lift.
- .6 ACP thickness to be 50mm for mill and fill areas as directed by the Departmental Representative.
- .7 ACP leveling course as directed by the Departmental Representative.
- .8 The use of a Recycled Asphalt Mix (RAM) is not permitted for this project.
- .9 Shouldering with supplied mixed rap material.
- .10 Relocating existing concrete barriers.
- .11 Disposal of deficient concrete barriers to a location(s) outside of National Park. Contractor to seek approval of disposal site from Departmental Representative prior to barrier disposal.
- .12 Supply and installation of traffic control and other temporary construction facilities required for completion of the Work of the Project.
- .13 Installation of rumble strips in Glacier NP, as directed by the Departmental Representative.
- .14 Miscellaneous Additional Work as directed by the Departmental Representative.

1.6 PROJECT LOCATION

- .1 The project is located in Glacier National Park, British Columbia. The following are key locations relative to the project:
 - .1 East Boundary Glacier National Park: TCH – km 0
 - .2 Beaver Pit: TCH – km 11.8
 - .3 Tupper Timber Snow Shed East Portal: TCH – km 16.8
 - .4 Single Bench Snow Shed East Portal: TCH – km 19.8
 - .5 Glacier Maintenance Compound: TCH – km 22.7
 - .6 CPR Bridge: TCH – km 29.7
 - .7 Illecillewaet Bridge #3: TCH – km 30.0
 - .8 West Boundary Glacier National Park: TCH – km 43.8

1.7 CONTRACT METHOD

- .1 Construct Work under combined price contract.

1.8 WORK BY OTHERS

- .1 Other Contractors shall be working in Glacier National Parks. The Contractor shall coordinate his operations with others. No claims for any delays or inconvenience will be entertained.
 - .1 Illecillewaet Bridges #1 and #2 Rehabilitation TCH Km 44 and 42.8. Contractor is Innovative Civil Constructors Inc. Anticipated contract completion Fall 2015.
 - .2 Illecillewaet Bridge #3 Rehabilitation TCH Km 30.3. Contractor is Copcan Contracting Ltd. Anticipated contract completion Fall 2015.
 - .3 Line painting at various locations. Contractor is AAA Striping and Seal Coating Service. Anticipated contract completion Fall 2015.
 - .4 Advance warning system, variable message boards and LED chevron signs are planned to be installed on the approach to the Illecillewaet Campground entrance curve. Anticipated contract completion Fall 2015.
 - .5 Installation of LED lighting in Single Bench snowshed. Anticipated contract completion Summer 2015.
 - .6 Installation of LED lighting in Tupper 1 snowshed. Anticipated contract completion Fall 2015.
 - .7 Installation of high voltage service substation on the TCH eastbound shoulder adjacent to the Parks Canada Roger's Pass compound. Anticipated contract completion Fall 2015.
 - .8 Installation of buried high voltage feeder cable along the eastbound TCH shoulder from above mentioned substation to the Single Bench substation. Anticipated contract completion Fall 2015.
 - .9 Other maintenance and project work may occur along TCH in 2015.
- .2 Coordinate work of this contract with the work done by other contractors on or near the work area as required.

1.9 WORK SEQUENCE

- .1 Schedule work progress to allow Owner/Departmental Representative unrestricted access to inspect all phases of the Work.
- .2 Maintain fire and emergency access on the roadways at all times.
- .3 The Contractor shall prepare a meaningful bar chart or network diagram showing the proposed schedules of major work, which shall be submitted to the Departmental Representative one (1) week prior to commencement of any work
 - .1 **Commence paving operation after June 8, 2015.**
 - .2 **Complete all Work by July 17, 2015. (Contract Completion Date).**

1.10 CONTRACTOR USE OF PREMISES

- .1 Contractor has unrestricted use of site, subject to Section 01 14 00 and Section 01 29 01, until Contract Completion date.

- .2 Contractor shall limit use of premises for Work, for storage, and for access, to allow:
 - .1 Owner occupancy.
 - .2 Work by other Contractors.
- .3 Coordinate use of premises with the acceptance of the Departmental Representative.
- .4 Obtain additional storage or work areas needed for operations under this Contract with the acceptance of the Departmental Representative.
- .5 The Contractor and each sub-contractor shall purchase a business license from the Parks Canada office in Revelstoke Visitor Information Centre, prior to commencement of the contract.
- .6 All Contractor's business and private vehicles are required to display a vehicle work pass from Parks Canada. These permits may be obtained free of charge from Parks Canada Environmental Surveillance Officer or as directed by the Departmental Representative.

1.11 OWNER FURNISHED ITEMS

- .1 The following granular materials are available to the Contractor:
 - .1 RAP mixed with gravel for shouldering available in stockpiles at Beaver Pit.
- .2 The Contractor is made aware that any or all Owner furnished items may be frozen or similarly require effort on their part before they are able to be effectively utilized. The Contractor shall carry out this effort incidentally to any items incorporating Owner furnished materials into the Works. No additional payment will be made to the Contractor for this effort.

1.12 OWNER OCCUPANCY

- .1 Owner will occupy premises during entire construction period for execution of normal operations.
- .2 Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.
- .3 Contractor must allow access to Beaver Pit for other Contractors and Parks Canada. It is up to the Contractor to plan their work accordingly.

1.13 CONSTRUCTION SIGNAGE

- .1 No signs or advertisements, other than warning signs, are permitted on site.
- .2 Signs and notices for safety and instruction shall be in both official languages. Signs shall be diamond grade and shall conform to CAN3-Z321.
- .3 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or earlier if directed by the Departmental Representative.
- .4 All temporary traffic control signs that are used for longer than one day shall be mounted on wood posts.
- .5 Signage shall be coordinated with other Contractors.

1.14 SETTING OUT OF WORK

- .1 The Departmental Representative will identify location of all work sites. The Contractor shall be responsible for all other layout of work.
- .2 At all work sites, the Contractor shall mark accurately, at regular intervals, the location and type of existing painted lines, including start and ends of passing lanes and intersections, with a stake at the side of the roadway and make a written record of markings in a book, in order that painted lines can be accurately re-established after work is completed. If no lines are present, the Contractor shall mark accurately (+ or – 20 mm) and at regular intervals in accordance with Section 2.2.1 of the 2010 “BC MoTI Traffic Control Manual for Work on Roadways”.
- .3 The Contractor is responsible for the accurate layout of all temporary and final lines at all work sites in this contract.
- .4 Temporary Pavement Marking and layout shall be considered incidental to “**Lump Sum Price Item 2 – Traffic Accommodation**”. The Contractor will not be permitted to remove the temporary pavement marking until the final pavement markings have been installed to the satisfaction of the Contract and Departmental Representative
- .5 Final Pavement Marking, if requested by the Departmental Representative, will be paid under “**Lump Sum Item 3 – Prime Cost Sum**”.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Existing services.
- .2 Use of the work site.
- .3 Work conducted over or adjacent to waterways.
- .4 Access to adjacent properties.
- .5 Utilities.
- .6 Survey of existing property conditions.
- .7 Protection of persons and property.
- .8 Use of public areas.
- .9 Supervisory personnel.
- .10 Meetings.
- .11 Waste disposal.
- .12 Work stoppage.

1.2 PRECEDENCE

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

1.3 RELATED SECTIONS

- .1 Section 01 32 16.07 - Construction Progress Schedules - Bar (Gantt) Chart.
- .2 Section 01 35 31 - Special Procedures for Traffic Control.
- .3 Section 01 35 43 - Environmental Procedures.

1.4 EXISTING SERVICES

- .1 Provide for pedestrian, bicycle, railway and vehicular traffic for the duration of the construction.

1.5 USE OF THE WORK SITE

- .1 The Work Sites specified in these specifications shall only be used for the purposes of the Work. The Work Sites will be made available by Parks Canada to the Contractor for its Non-exclusive use for the duration of the Work, unless otherwise provided in the Contract Documents. The Contractor shall include in the tender, payment to taxes properly levied by law (Federal, Provincial and Municipal) including the cost of any collection of permits and business licenses.
- .2 The Contractor will not be permitted to set up a camp in the National Parks. Parks Canada regulations prohibit anyone working within the Park from using public campground facilities.

- .3 Office-tool trailer can be set up at the Glacier Maintenance compound in Glacier National Park. Water is available from a fire hydrant at the compound. See Section 01 35 43 - Environmental Procedures.
- .4 **The Contractor will be not allowed to set up an asphalt plant in the park.**
- .5 The Contractor shall keep the Work Site clean and free from accumulation of waste materials and rubbish regardless of source. Snow shall be removed by the Contractor as necessary and at his cost for the performance and inspection of the Work.
- .6 The Contractor shall provide sanitary facilities for work force in accordance with governing regulations and the Environmental Procedures for this project. The Contractor shall post notices and take such precautions as required by local health authorities and keep area and premises in sanitary condition.
- .7 Any damage to the Work Site caused by the Contractor shall be repaired by the Contractor at its expense.
- .8 **Work on Trans Canada Highway in Glacier National Parks is restricted to daylight hours, between 07:00am to 10:00pm, 7 days a week. The Contractor will not be permitted to work on Civic Holidays or long weekends.**
- .9 The Contractor will not be permitted to work on the following Civic Holidays or long weekends unless prior written approval is granted by the Departmental Representative:
Statutory and Civic Holidays:
 - .1 Victoria Day long weekend: From 07:00 AM. Friday, May 15, 2015 to 07:00 AM Tuesday, May 19, 2015.
 - .2 Canada Day long weekend: From 07:00 AM. Tuesday, June 30, 2015 to 07:00 AM Thursday, July 2, 2015.
 - .3 Civic Holiday long weekend: From 07:00 AM. Friday, July 31, 2015 to 07:00 AM Tuesday, August 4, 2015.
 - .4 Labour Day long weekend: From 07:00 AM. Friday, September 4, 2015 to 07:00 AM Tuesday, September 8, 2015.
 - .5 Thanksgiving Day weekend: From 07:00 AM Friday, October 9, 2015 to 07:00 Tuesday, October 13, 2015.

1.6 WORK CONDUCTED OVER OR ADJACENT TO WATERWAYS

- .1 All components of the Work shall be conducted in accordance with Section 01 35 43 - Environmental Procedures.
- .2 All components of the Work shall be conducted without equipment entering into wetlands, water bodies, streams and rivers. Refer to Section 01 35 43 - Environmental Procedures for details.
- .3 All waste materials from the Work shall be contained and collected in a manner to prevent any contact with the river valleys and waterways. All collected waste materials shall be disposed of in accordance with Section 01 35 43 - Environmental Procedures and the Environmental Protection Plan prepared for the project.

1.7 ACCESS TO ADJACENT PROPERTIES

- .1 Construction operations shall be conducted so as to cause minimal inconvenience to the public and to owners of adjoining property. Existing access to property shall be maintained as far as possible and if new access must be provided, every effort shall be taken to provide the new access before the existing access is removed.

1.8 UTILITIES

- .1 **The Contractor shall become familiar with all utilities and services adjacent to the Work and shall be responsible for cost of repair of any damage resulting from his operations.**
- .2 The Contractor shall establish and maintain direct and continuous contact with the owners or operators of any Utilities which may interfere with the Work. The Contractor shall co-operate with them at all times and in all places of Work. The Contractor shall keep the Departmental Representative informed of all communications with the Utility companies and authorities.
- .3 The Contractor shall notify the Departmental Representative and the Utility companies at least seven days in advance of any activities which may interfere with the operation of such Utilities.
- .4 Whenever working in the vicinity of Utilities, the Contractor shall locate such Utilities and expose those that may be affected by the Work, using hand labour as required.
- .5 The Contractor shall assess the possible impact of its operations on all Utilities that may be affected by its operations, and shall, in consultation with Utility owner(s), protect, divert, temporarily support or relocate, or otherwise appropriately treat such Utilities to ensure that they are preserved.
- .6 The Contractor shall immediately report any damage to Utilities to the Departmental Representative and to the Utility company or authority affected, and shall promptly undertake such remedial measures as are necessary at no additional cost to the Owner.

1.9 SURVEY OF EXISTING PROPERTY CONDITIONS

- .1 Submission of tender is deemed to be confirmation that the Contractor has inspected the site and is conversant with all conditions affecting execution and completion of work.
- .2 The Contractor shall regularly monitor the condition of the Work Sites and of properties on and adjoining the Work Sites throughout the construction period, and shall immediately notify the Owner if any deterioration in condition is detected. Such monitoring shall cover all pertinent features and properties including, but not limited to, buildings, structures, roads, walls, fences, slopes, sewers, culverts and landscaped areas.
- .3 The Departmental Representative may, but shall not be obligated to survey and record the condition of the Work Sites and of properties on or adjoining the Work Sites prior to the commencement of construction by the Contractor. If requested, the Departmental Representative will provide a copy of the survey records to the Contractor for reference.
- .4 Whenever supplied with survey records, the Contractor shall satisfy itself as to the accuracy and completeness of the survey records provided by the Departmental Representative for any area before commencing construction in that area. Commencement of construction in any area shall be interpreted to signify that the Contractor has accepted such survey records as being a true record of the existing conditions prior to construction.

- .5 The provision of the records of a survey of existing conditions by the Departmental Representative shall in no way limit or restrict the Contractor's responsibility to exercise proper care to prevent damage to all properties within or adjacent to the Work Sites, whether all such properties are covered by the survey or not.

1.10 PROTECTION OF PERSONS AND PROPERTY

- .1 Comply with Occupational Health and Safety Act, General Safety Regulation, British Columbia when working in that province
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.
- .3 The Contractor shall take all necessary precautions and measures to prevent injury or damage to persons and property on or near the Work Sites.
- .4 The Contractor shall promptly take such measures as are required to repair, replace or compensate for any loss or damage caused by the Contractor to any property or, if Parks Canada so directs, shall promptly reimburse to Parks Canada the costs resulting from such loss or damage.

1.11 USE OF PUBLIC AREAS

- .1 Steel tracked equipment with cleats will not be allowed on pavement designated for future use. Asphalt, granular, embankment and excavation materials may be hauled on existing highway but this shall be by standard highway trucks not exceeding legal highway load limits.
- .2 The Contractor shall ensure that its vehicles and equipment do not cause nuisance in public areas. All vehicles and equipment leaving the Work Sites and entering public roadways shall be cleaned of mud and dirt clinging to the body and wheels of the vehicle. All vehicles arriving at or leaving the Work Sites and transporting materials shall be loaded in a manner which will prevent dropping of materials or debris on the roadways, and where contents may otherwise be blown off during transit such loads shall be covered by tarpaulins or other suitable covers. Spills of materials in public areas shall be removed or cleaned immediately by the Contractor at no cost to the Owner. All activities shall be in accordance with Section 01 35 43 - Environmental Procedures and the Environmental Protection Plan prepared for the project.

1.12 SUPERVISORY PERSONNEL

- .1 Within five Days after award notification, the Contractor shall submit to the Departmental Representative confirmation of the names of the supervisory personnel and other key staff designated for assignment on the Contract.
- .2 The following personnel shall be included in the list:
 - .1 Project Superintendent;
 - .2 Safety Representative.
- .3 The above personnel shall perform the following duties:
 - .1 The Project Superintendent shall be employed full time and shall be present on the Work Site each and every workday that Work is being performed, from the commencement of Work to Total Performance of the Work;
 - .2 The Project Superintendent shall nominate a Deputy Project Superintendent who shall have the authority of the Project Superintendent during the latter's absence;

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

1.13 MEETINGS

- .1 The Work includes attending meetings between the Contractor and the Departmental Representative. The meetings will be called and chaired by the Departmental Representative as required. The Contractor shall be represented at such meetings to the satisfaction of the Departmental Representative.
- .2 The Departmental Representative will schedule an initial meeting to be held on site after award notification. Senior representatives of the Owner, Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors are to be in attendance.
- .3 The Contractor will be requested to assemble his site staff and sub-contractors for an environmental briefing to be conducted by Parks Canada. The briefing shall be of approximately half hour in duration and held at initial project start-up. The Contractor shall ensure that all his current project staff is in attendance. The Departmental Representative and the Contractor will co-operate in setting the most appropriate time and place for the briefing. Subsequent to the initial environmental briefing, briefings will be arranged for new staff and sub-contractors showing up on the project.
- .4 Cost of attending the above meetings shall be considered incidental to the Unit Price items and no additional payment will be made.

1.14 WASTE DISPOSAL

- .1 All surplus, unsuitable and waste materials shall be removed from the job site to approved sites outside National Parks. Refer to Section 01 35 43 - Environmental Procedures.
- .2 Deposit of any construction debris into any waterway is strictly forbidden.
- .3 Cost for Waste Disposal described above shall be considered incidental to the Unit Price items and no additional payment will be made.
- .4 Waste Disposal shall be completed in accordance with Section 01 35 43 - Environmental Procedures.

1.15 WORK STOPPAGE

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

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Prime Cost Sum.
- .2 Measurement procedures.

1.2 REFERENCES

- .1 General Conditions.

1.3 PRIME COST SUM

- .1 Include in Contract Price a total Prime Cost Sum of **\$150,000.00** for items as listed below.
- .2 Do not include in the Contract Price, additional contingency allowances for products, installation, overhead or profit.
- .3 Prime Cost Sum provided for in the lump sum table is not a sum due the Contractor. Rather, payment will be made against it for miscellaneous work not included in the unit price table under the General Conditions of the Contract.
- .4 Such work may include, but not be limited to:
 - .1 Supply and install Integral Asphalt Curbs
 - .2 Additional supply and install Rumble Strips
 - .3 Excavate, load, haul, crush, and stockpile aggregate materials
 - .4 Shoulder gravelling at overlay locations
 - .5 Additional line painting
 - .6 Crack filling
 - .7 Pot hole patching
 - .8 Mill and fill pavement failures
 - .9 Road structure repairs
 - .10 Additional Removal and Re-installation of existing and/or new barriers or guardrails
 - .11 Drainage repairs, earthwork, slope stabilization, and grass seeding
 - .12 Removal and disposal/unplugging of existing culverts
 - .13 Supply and installation of permanent signs (not construction signs)
 - .14 Supply and installation of raised reflective road markers and barrier reflectors
 - .15 Supply and installation of guide posts
 - .16 Supply and installation of pavement marking treatments
 - .17 Additional survey resulting from changes made by the Departmental Representative

- .18 Stripping, excavation and disposal of waste materials as directed by the Departmental Representative
- .19 Remediation or removal and replacement of unsuitable or contaminated soils not described in the contract documents
- .20 Rehabilitation work in the pits
- .21 Providing facilities for Owner (Office or Lab Trailer)
- .22 Providing additional Traffic Control equipment
- .23 Miscellaneous work as directed by the Departmental Representative
- .5 The Contract Price, and not Prime Cost Sum, includes Contractor's overhead and profit in connection with the Work.

1.4 MEASUREMENT PROCEDURES

- .1 Payment for Work under the “**Lump Sum Price Item 3 - Prime Cost Sum**” will be made using negotiated rates or by material, labour and equipment rates as per the following:
 - .1 Rental rates will be in accordance with current BC Roadbuilders rate schedule, and will be all inclusive and fully operated. Hourly rental of equipment will be measured in actual working time and necessary travel time within project limits. Transportation time to and from site to be reimbursed only if equipment is used exclusively for additional work.
 - .2 PST should be added to any material invoices or Subcontractor invoices.

Part 2 Products

- .1 Materials shall be in accordance with BC MoTI – 2012 Standard Specifications for Highway Construction, or as directed by the Departmental Representative.

Part 3 Execution

- .1 Work shall be in accordance with BC MoTI – 2012 Standard Specifications for Highway Construction, or as directed by the Departmental Representative.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Mobilization and Demobilization.

1.2 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work

1.3 DESCRIPTION

- .1 Mobilization and Demobilization consists of preparatory work and operations including but not limited to, those necessary for the movement of personnel, equipment, buildings, shops, offices, supplies and incidentals to and from the project sites.
- .2 Any protective measures or movement of Contractor trailers necessitated by animal interactions and required by Parks Canada will be paid by the Departmental Representative, and are not to be anticipated in the Lump Sum Contract Price for Mobilization and Demobilization.

1.4 MEASUREMENT PROCEDURES

- .1 Mobilization and Demobilization:
 - .1 Payment will be made under “**Lump Sum Price Item 1 – Mobilization / Demobilization**”.
 - .2 50% of Lump Sum Contract Price for Mobilization and Demobilization to be paid when mobilization to site is complete.
 - .3 The remainder of the Lump Sum Price for Mobilization and Demobilization to be paid when work is complete and all materials, equipment, 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.
 - .4 Payment of only **5%** of the total price tendered will be scheduled as outlined above. If the amount bid for mobilization and demobilization is greater than **5%** of the total price tendered, payment of the remainder of the amount will be authorized when the contract has been completed.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Definition of Site Occupancy and Bidding Method.

1.2 PRECEDENCE

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

1.3 RELATED SECTIONS

- .1 SACC R2850D GC 5.10
- .2 Section 01 11 00 – Summary of Work Section 1.9 - WORK SEQUENCE
- .3 Section 01 14 00 – Work Restrictions Section 1.5 - USE OF THE WORK SITE

1.4 DEFINITION OF OCCUPANCY

- .1 The Contractor shall be permitted to lease and occupy sites where working in Glacier National Park, free of charge from the date of award of the contract up to and including the Contract Completion Date.
- .2 The Contractor's occupancy of the sites identified in Contract will be deemed to have ended, when both of the following conditions are met to the satisfaction of Parks Canada:
 - .1 All the work identified under this Contract, has been completed.
 - .2 All sites clean up and any outstanding deficiencies for the work identified under this Contract have been addressed to the satisfaction of the Departmental Representative.
 - .3 Contractor has removed from the park all trailers and equipment and sites have been cleaned-up to the satisfaction of the Departmental Representative

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Coordination of the Work.
- .2 Progress meetings.
- .3 Construction organization and start-up.
- .4 Submittal schedule.
- .5 Construction progress meetings.
- .6 On-site documents.
- .7 Schedules.
- .8 Submittals.
- .9 Close out procedures.

1.2 RELATED SECTIONS

- .1 Section 01 11 00 - Summary of Work.
- .2 Section 01 14 00 – Work Restrictions.
- .3 Section 01 32 16.07 - Construction Progress Schedules – Bar (Gantt) Chart.
- .4 Section 01 33 00 - Submittal Procedures.
- .5 Section 01 35 43 - Environmental Procedures.
- .6 Section 01 45 00 – Quality Control.
- .7 Section 01 52 00 - Construction Facilities.
- .8 Section 01 77 00 – Close out Procedures.
- .9 Section 01 78 00 – Close out Submittals.

1.3 MEASUREMENT PROCEDURES

- .1 This Work shall be incidental to the contract and will not be measured for payment.

1.4 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.

1.5 PROJECT MEETINGS

- .1 Attend weekly project meetings chaired by the Departmental Representative, throughout progress of Work and provide information as determined by the Departmental Representative.
- .2 Attend pre-installation meetings, when specified in specifications and when required to coordinate related or affected Work and provide information, as determined by the Departmental Representative.

- .3 Provide physical space and make arrangements for meetings.

1.6 CONSTRUCTION ORGANIZATION AND START-UP

- .1 Within seven (7) days after award of Contract, request a meeting of Contract Representatives to discuss and resolve administrative procedures and responsibilities. Meeting to be chaired by the Departmental Representative who will also record the minutes of the meeting.
- .2 Senior representatives of the Owner, Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors are to be in attendance.
- .3 Agenda to include following:
 - .1 Appointment of official representative of participants in Work.
 - .2 Schedule of Work, progress scheduling in accordance with Section 01 32 16.07.
 - .3 Schedule of submittals in accordance with Section 01 33 00.
 - .4 Requirements for temporary facilities, offices, storage sheds, utilities, fences in accordance with Section 01 52 00.
 - .5 Site safety and security in accordance with Sections 01 14 00, 01 52 00 and 01 35 43.
 - .6 Quality Control in accordance with Section 01 45 00.
 - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
 - .8 Owner-furnished materials.
 - .9 Monthly progress claims, administrative procedures, photographs, and holdbacks.
 - .10 Close out procedures and submittals in accordance with Sections 01 77 00 and 01 78 00.
 - .11 Insurances and transcript of policies.
 - .12 Other business.
- .4 Comply with Departmental Representative's allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- .5 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.
- .6 Comply with instructions of the Departmental Representative for use of temporary utilities and construction facilities.
- .7 Coordinate field engineering and layout work with the Departmental Representative.

1.7 ON-SITE DOCUMENTS

- .1 Maintain at job site, one copy of each of the following:
 - .1 Contract Drawings if park of tender

- .2 Specifications
- .3 Addenda
- .4 Review Shop Drawings and mix designs
- .5 Change Orders
- .6 Other modifications to Contract
- .7 Traffic Management Plan
- .8 Safety Plan
- .9 WHMIS
- .10 Environmental Protection Plan
- .11 Field test reports
- .12 Copy of approved Work schedule and most recent updated schedule
- .13 Labour conditions and wage schedules
- .14 Applicable current editions of municipal regulations and by-laws

1.8 SUBMITTAL SCHEDULE

- .1 Prepare a schedule of the required submissions and the date the submissions will be made. Include columns for Actual Date of Submission, Review Comments Received, Final Submission and Final Acceptance Received.
- .2 The Owner will not be responsible for any construction delays resulting from delays in submission acceptance if the submittal dates shown in the Submittal Schedule are not achieved.

1.9 PROJECT SCHEDULES

- .1 Submit preliminary construction progress schedule in accordance with Section 01 32 16.07 to Departmental Representative coordinated with Owner's project schedule.
- .2 After review by the Departmental Representative, revise and resubmit schedule to comply with revised project schedule.
- .3 During progress of Work revise and resubmit as directed by the Departmental Representative.
- .4 In addition to the project schedule, submit weekly schedules to the Departmental Representative showing Work planned for the following week on a day by day basis.

1.10 CONSTRUCTION PROGRESS MEETINGS

- .1 During course of Work prior to project completion, schedule progress meetings weekly.
- .2 Contractor, major Subcontractors involved in Work and Departmental Representative are to be in attendance. Meeting to be chaired by the Departmental Representative who will record the minutes of the meeting.
- .3 Agenda to include following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review environmental issues.

- .3 Review Traffic Control and Emergency response Protocol issues.
- .4 Review site safety and security issues.
- .5 Review issues as Prime Contractor and co-ordination with other contractors.
- .6 Review of Work progress since previous meeting.
- .7 Discuss field observations, problems, and conflicts.
- .8 Review off-site fabrication delivery schedules.
- .9 Review submittal schedules: expedite as required.
- .10 Corrective measures and procedures to regain projected schedule.
- .11 Revisions to construction schedule.
- .12 Review Weekly Progress schedule, during succeeding work period.
- .13 Review of quality reports since previous meeting.
- .14 Review construction budget: Progress payments, variances from contract.
- .15 Other business.

1.11 SUBMITTALS

- .1 Submit product data to Section 01 33 00 for review for compliance with Contract Documents.
- .2 Submit requests for payment for review, and for transmittal to Departmental Representative. Payment request on last day of the month.
- .3 Submit requests for interpretation of Contract Documents, and obtain instructions through Departmental Representative.
- .4 Process substitutions through Departmental Representative.
- .5 Process change orders through Departmental Representative.
- .6 Deliver closeout submittals for review and preliminary inspections, for transmittal to Departmental Representative.

1.12 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

- .1 Not used.

Project No. 201439

Asphalt Paving
Trans Canada Highway

Section 01 31 00
PROJECT MANAGING
AND COORDINATION

Parks Canada Agency

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Part 3 Execution

.1 Not used.

END OF SECTION

Part 1 General**1.1 RELATED SECTIONS**

- .1 Section 01 11 00 – Summary of Work
- .2 Section 01 14 00 – Work Restrictions
- .3 Section 01 21 00 - Allowances

1.2 MEASUREMENT PROCEDURES

- .1 This Work shall be incidental to contract and will not be measured for payment.

1.3 PRECEDENCE

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

1.4 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. Generally Bar Chart should be derived from commercially available computerized project management system.
- .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 work weeks.
- .6 Master Plan: A summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: A significant event in Project, usually completion of a 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.

1.5 REQUIREMENTS

- .1 Ensure the Project Schedule is practical and remains within specified Contract duration.
- .2 Ensure all the Work required for the Contract is identified in the Project Schedule. Refer to Section 01 11 00 – Summary of Work for a potential list of activities.
- .3 Include an allowance in the schedule for Work performed and paid for as Prime Cost Sum. Refer to Section 01 21 00 – Allowances for a list of activities.
- .4 Plan to complete Work in accordance with prescribed Project Schedule.
- .5 Limit activity durations to maximum of approximately 14 working days, to allow for progress reporting.
- .6 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.
- .7 Include the requirements of Section 01 14 00 - Work Restrictions and Section 01 35 43 – Environmental procedures.

1.6 SUBMITTALS

- .1 Submit to Departmental Representative within 10 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 10 working days of receipt of acceptance of Master Plan.

1.7 PROJECT MILESTONES

- .1 Project milestones form interim targets for Project Schedule. Completion of each Stage of Construction:
 - .1 **Commence paving operation after June 8, 2015.**
 - .2 **Complete all Work by July 17, 2015. (Contract Completion Date).**

1.8 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 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.

1.9 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 Permits.
- .3 Submittals:
 - .1 Project Schedule
 - .2 List of subcontractors, suppliers and Departmental Representative
 - .3 Contractor Chain of Command including Sub-Contractors and Departmental Representatives
 - .4 Prime Contractor / co-ordination with other Contractors Plan
 - .5 Work Plan
 - .6 Environmental Protection Plan
 - .7 Traffic Management Plan
 - .8 Site access / Detour Plan
 - .9 Emergency Response Protocol
 - .10 Site Specific Health and Safety Plan, incl. MSDS sheets
 - .11 On site Contingency and Emergency Response Plan
 - .12 Management of Owner-supplied material Plan
 - .13 Survey Plan
 - .14 Quality Control Plan
 - .15 Shop Drawings
 - .16 Asphalt mix Designs
- .4 Mobilization
- .5 Work Activities by road segments / locations:
 - .6 Detours / Site Access
 - .7 Asphalt Concrete Pavement placement
 - .8 Shouldering
 - .9 Concrete barrier removal and installation
 - .10 Line painting
 - .11 Additional Work as and when requested
 - .12 Quality Control
 - .13 Interim Inspection
 - .14 Site Clean-up / De-mobilization

1.10 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule on monthly basis reflecting activity changes and completions, as well as activities in progress. Provide weekly Progress Reports.

- .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.

1.11 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.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Administrative.
- .2 Shop drawings and product data.
- .3 Certificates and transcripts.
- .4 Required Contractor Submittals.
 - .1 Pre-mobilization Submittals
 - .2 Construction Phase Submittals
 - .3 Project Completion Submittals

1.2 RELATED SECTIONS

- .1 Section 01 14 00 - Work Restrictions.
- .2 Section 01 32 16.07 - Construction Progress Schedules - Bar (Gantt) Chart.
- .3 Section 01 35 29.06 – Health and Safety Requirements.
- .4 Section 01 35 31 - Special Procedures for Traffic Control.
- .5 Section 01 35 43 - Environmental Procedures.
- .6 Section 01 45 00 – Quality Control.
- .7 Section 01 78 00 - Closeout Submittals.

1.3 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.4 REFERENCES

- .1 Not used.

1.5 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.

- .6 Notify Departmental Representative in writing at time of submission, identifying any deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work is consistent.
- .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.

1.6 "DESIGN – BUILD", SHOP DRAWINGS, PRODUCT DATA AND MIX DESIGNS

- .1 "Design – Build": The term "Design" refers to all detailed design activities (survey, investigation, drawings, specifications) based on general requirements contained in these specifications and shown on the drawings. "Build" refers to construction of Contractor's detailed design after design has been reviewed by the Departmental Representative. Contractor's responsibility for error and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .2 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of Work.
- .3 The term "mix design" means engineered design for proportioning materials in concrete or asphalt concrete pavement including all supporting test results, materials properties and Departmental Representative's letter of recommendation. Asphalt mix design to be performed by a qualified test laboratory licensed to practice in British Columbia.
- .4 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 supplied and installed. Indicate cross-references to design drawings and specifications.
- .5 Allow fourteen (14) calendar days for Departmental Representative's review of each submission.
- .6 Adjustments made on shop drawings by the Departmental Representative are not intended to change the Contract Price. If adjustments affect the value of Work, state such in writing to the Departmental Representative prior to proceeding with the Work.
- .7 Make changes in shop drawings as the Departmental Representative may require, consistent with the Contract Documents. When resubmitting, notify the Departmental Representative in writing of any revisions other than those requested.
- .8 Submit letter(s) of certification with all mix designs.
- .9 Accompany submissions with a transmittal letter containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.

- .4 Identification and quantity of each shop drawing, mix design, product and sample.
- .5 Other pertinent data.
- .10 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .4 Subcontractor,
 - .5 Supplier,
 - .6 Manufacturer.
- .11 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with the Contract Documents.
- .12 Details of appropriate portions of the Work as applicable:
 - .1 Fabrication,
 - .2 Performance characteristics,
 - .3 Standards.
- .13 After the Departmental Representative's review, distribute copies.
- .14 Submit one (1) electronic copy of the shop drawings or mix design for each requirement requested in the Specification Sections and as requested by the Departmental Representative.
- .15 Submit one (1) electronic copy of the product data sheets or brochures for requirements requested in the Specification Sections and as requested by the Departmental Representative where shop drawings will not be prepared due to standardized manufacture of the product.
- .16 Delete information not applicable to project.
- .17 Supplement standard information to provide details applicable to project.
- .18 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.
- .19 The review of shop drawings and mix designs by Departmental Representative is for the sole purpose of ascertaining conformance with general concept. This review shall not mean that Departmental Representative 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 co-ordination of Work of all sub-trades.

1.7 SAMPLES

- .1 Not used.

1.8 MOCK-UPS

- .1 Not used.

1.9 CERTIFICATES AND TRANSCRIPTS

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

1.10 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 Submit the following plans and programs to the Departmental Representative for review a minimum of twenty (20) days prior to mobilization to the project site:
 - .1 Project schedule, detailing the schedule of the workdays required from Contractor, subcontractors, suppliers and consultants to complete each activity of the project by road segment or location in order to meet stages specified in Section 01 11 00. In addition, for each activity critical elements that could impact on the schedule are to be identified. Submission shall include both a paper copy of the schedule and an electronic copy in Microsoft Projects format.
 - .2 List of subcontractors, suppliers and consultants, their role and their key personnel, including names and positions, addresses, telephone, cellular telephone and/or pager numbers.
 - .3 Contractor Chain of Command, listing key Contractor personnel, including for each name, position, qualification, experience, 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.
 - .4 Work Plan, describing in detail for each activity by road segment and location, the Contractor's intended methods of construction, and materials, equipment and manpower use to meet stages specified in Section 01 11 00. The Work Plan has to be linked to the Project Schedule.
 - .5 Quality Control Plan in accordance with Section 01 45 00 – Quality Control.
 - .6 Traffic Management Plan, in accordance with the requirements of Section 01 35 31 - Special Procedures for Traffic Control.
 - .7 Materials Purchase Plan describing the Contractor's intended methods of getting materials required for this project in a timely fashion in order to meet stages specified in Section 01 11 00.

- .8 Contractor shall develop an “Emergency Procedures Protocol” in consultation with Parks Canada. Parks Canada will supply the Contractor with a template with contact names and numbers to be used for this purpose.
- .9 Health And Safety Plan - 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.
- .10 Health and Safety Plan must include:
 - .0 Contractor’s safety policy.
 - .1 Identification of applicable compliance obligations.
 - .2 Definition of responsibilities for project safety/organization chart for project.
 - .3 Site specific hazard assessment.
 - .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 meetings.
 - .9 Occupational Health and Safety communications and record keeping procedures.
 - .10 Results of safety and health risk or hazard analysis for site tasks and operation.
- .11 Submit copies of Material Safety Data Sheets (MSDS).
- .12 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.
- .13 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
- .14 Submit a copy of the filed Notice of Project with Provincial authorities.
- .15 The Contractor shall not begin any site Work until the Departmental Representative has authorized acceptance of the submittals in writing.
- .16 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.

.3 Construction Phase Submittals

- .1 Monthly Progress Reports in accordance with Section 01 32 16.07.
- .2 Weekly Progress Reports that outline the detailed Work (Contractor, subcontractors, suppliers, consultants) completed to date as well as the anticipated Work to be performed for the following week on a day-by-day basis. Work to be linked to activities by road segment or location identified in project schedule and to provide information on materials, equipment and manpower. Also, alternate Work to be identified if Work or a portion of, proposed cannot be done due to weather, equipment breakdown, delays in delivery, etc.
- .3 Quality Control Inspection Reports - The Contractor shall maintain a daily inspection report that itemizes the results of all Quality Control inspections conducted by the Contractor. The reports shall be made available for review by the Departmental Representative upon request. A summary of all Quality Control inspections conducted to date shall be submitted by the Contractor with each request for payment.
- .4 "Design and Build" documents, Shop Drawings and Mix Designs - The Contractor shall submit all design drawings, shop drawings and mix designs required to fabricate and / or conduct the work a minimum 30 days prior to fabrication / production.
- .5 Progress Photographs:
 - .1 Format: Electronic: jpg files, minimum three (3) mega pixels.
 - .2 Submission requirements: one (1) set of electronic files.
 - .3 Identification: Name and number of project, description of photograph and date.
 - .4 Viewpoints: viewpoints determined by Construction Manager or Departmental Representative.
 - .5 Submission Frequency: prior to commencement of Work and weekly thereafter with progress statement, or as directed by Construction Manager or Departmental Representative.
 - .6 Submit CD with all electronic pictures as part of closeout package.
- .6 Submit an electronic copy of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative and authority having jurisdiction, weekly.
- .7 Submit copies of reports or directions issued by Federal and Provincial health and safety inspectors as a matter of urgency.
- .8 Submit copies of incident and accident reports within two calendar of the incident/accident occurring.

.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 documentation.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Submittals.
- .2 Filing of notice.
- .3 Safety assessment.
- .4 Meetings.
- .5 Regulatory requirements.
- .6 Project / site conditions.
- .7 General requirements.
- .8 Responsibility.
- .9 Compliance requirements.
- .10 Unforeseen hazards.
- .11 Health and safety coordinator.
- .12 Posting of documents.
- .13 Correction of non-compliance.
- .14 Blasting.
- .15 Powder actuated devices.
- .16 Work stoppage.

1.2 RELATED SECTIONS

- .1 Section 01 14 00 – Work Restrictions
- .2 Section 01 33 00 – Submittal Procedures
- .3 Section 01 35 43 - Environmental Procedures
- .4 Section 02 81 01 - Hazardous Materials: Submission Requirements for WHMIS MSDS.

1.3 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.4 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .2 Health Canada/Workplace Hazardous Materials Information System.
- .3 (WHMIS).Material Safety Data Sheets (MSDS).
- .4 Province of British Columbia - Occupational Health and Safety Regulations
- .5 Province of Alberta - Occupational Health and Safety Act

1.5 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within seven (7) days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Contractor's safety policy.
 - .2 Identification of applicable compliance obligations.
 - .3 Definition of responsibilities for project safety/organization chart for project.
 - .4 General safety rules for project.
 - .5 Job specific safe work procedures.
 - .6 Inspection policy and procedures.
 - .7 Incident reporting and investigation policy and procedures.
 - .8 Occupational Health and Safety meetings.
 - .9 Occupational Health and Safety communications and record keeping procedures.
 - .10 Results of site specific safety hazard assessment.
 - .11 Results of safety and health risk or hazard analysis for site tasks and operation.
 - .12 Submit copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative and authority having jurisdiction, weekly.
 - .13 Submit copies of reports or directions issued by Federal and Provincial health and safety inspectors.
 - .14 Submit copies of incident and accident reports.
 - .15 Submit copies of Material Safety Data Sheets (MSDS) to Departmental Representative.
 - .16 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within ten (10) days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within five (5) days after receipt of comments from Departmental Representative.
 - .17 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
 - .18 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.
 - .19 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.6 FILING OF NOTICE

- .1 **Contractor shall file a Notice of Project with Provincial authorities prior to beginning Work.**

1.7 SAFETY ASSESSMENT

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

1.8 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.
- .2 Parks Canada recognizes that federal Occupational Health and Safety legislation places specific responsibilities upon Parks Canada as owner of the work place. In order to meet those requirements, Parks Canada has implemented a contractor safety regime to ensure roles and responsibilities assigned under Part II of the Canada Labour Code and the Canada Occupational Health and Safety Regulations are implemented and observed when involving contractor(s) to undertake work in Parks Canada work places, including on Parks Canada property.
- .3 After contract award and prior to commencement of any work under the contract, the Project Manager will hold a health and safety meeting with the Contractor. At this meeting, the Contractor is required to complete and sign an Attestation to certify the Contractor will comply with the requirements set out in the Attestation and the terms and conditions of the contract.
- .4 A copy of the "Attestation and Proof of Compliance with Occupational Health and Safety (OHS)" form is attached as Appendix A.

1.9 REGULATORY REQUIREMENTS

- .1 Do Work in accordance with National Parks Act.

1.10 PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with British Columbia Occupational Health and Safety.

1.11 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.12 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.13 COMPLIANCE REQUIREMENTS

- .1 Comply with Occupational Health and Safety Act, General Safety Regulation, Alberta and British Columbia when working in that province.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.14 UNFORESEEN HAZARDS

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

1.15 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 roadway 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.

1.16 POSTING OF DOCUMENTS

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

1.17 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.18 WORK STOPPAGE

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

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Measurement Procedures for Traffic Management.
- .2 Informational and Warning Devices.
- .3 Protection and Control of Public Traffic.

1.2 PRECEDENCE

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

1.3 RELATED SECTIONS

- .1 All sections in Divisions 01, 02 and 32.

1.4 MEASUREMENT PROCEDURES

- .1 Cost of Traffic Control, including temporary pavement marking and layout, described in this Section 01 35 31 and Section 01 74 11, shall be considered incidental to **“Lump Sum Price Item 2 – Traffic Accommodation”**, and no additional payment will be made for the duration of the Contract.

1.5 REFERENCES

- .1 The Contractor shall provide traffic control in accordance with current edition of:
 - .1 British Columbia Ministry of Transportation – Traffic Control Manual for Work on Roadways
 - .2 British Columbia Ministry of Transportation – 2012 Standard Specifications for Highway Construction, Section 194 – Traffic Management for Work Zones.
 - .3 Manual of Uniform Traffic Control Devices for Canada, (MUTCD) distributed by Transportation Association of Canada.

1.6 QUALITY CONTROL

- .1 All Quality Control by the Contractor.

1.7 GENERAL

- .1 The Contractor shall develop and implement a Traffic Management Plan in accordance with the **BC MoTI 2012 Standard Specifications for Highway Construction, Section 194 – Traffic Management for Work Zones** except where specified otherwise in these specifications. The Traffic Management Plan will include plans specific to each roadway for this project.
- .2 The Contractor shall design, supply, erect, move and maintain all traffic control devices, signs, temporary pavement marking, other safety measures, and provide staff to ensure safe passage of all traffic from commencement of site work to date of acceptance by the Departmental Representative.
- .3 All traffic and warning signs shall be either bilingual or of a symbolic or pictorial type. If bilingual signs are used, the English and French message shall be of equal letter size and

at same elevation, with English on left and French on right. Assistance in translation of construction and warning signs to French may be obtained from Parks Canada.

- .4 All speed limits, traffic control and warning signs shall have an “NPC” adhesive sticker added to bottom right-hand corner. These stickers will be supplied by Parks Canada following the acceptance by the Departmental Representative of the Contractor’s traffic management plan.
- .5 **Temporary pavement marking used shall be acceptable to the Departmental Representative. These temporary pavement markings shall be in accordance with the current “BC MoTI Traffic Control Manual for Work on Roadways”.**
- .6 **All temporary markings and other associated markings will be removed at the contractor’s expense prior to completion of the Contract but not before the final pavement markings have been installed to the satisfaction of the Departmental Representative.**
- .7 Contractor shall have appropriate traffic control measures in place so that one lane of highway traffic is maintained through the work zone at all times throughout the construction.
- .8 The Contractor shall coordinate traffic management procedures with other Contractors working in the area.
- .9 The Contractor shall supply, install and maintain two portable Changeable Message Signs (CMS) to inform the traffic of construction delays. Exact installation locations of the CMS to be agreed on site with the Departmental Representative. All cost associated with the supply, installation, maintenance and removal of the two CMS will be incidental to **“Lump Sum Price Item 2 – Traffic Accommodation”**. Text for the two CMS will be directed by the Departmental Representative. Removal of the two CMS will only be permitted upon completion of the Works.

1.8 PROTECTION OF PUBLIC TRAFFIC

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 Carry out traffic regulation in accordance with BC MoTI – 2012 Standard Specifications for Highway Construction, Section 194 – Traffic Management for Work Zones, except where specified otherwise.
- .3 The Contractor shall develop and have in place a completed Traffic Control Plan taking into account all hazards associated with paving operations on a busy highway and minimize risks to motorists prior to beginning Work. This plan shall be updated regularly in response to any incidents or changes in conditions, be they weather, work, traffic, or otherwise.
- .4 **A minimum of one travelling lane 4 m wide shall be maintained by the Contractor at all times to provide for safe movement of traveling public through work area.** The Contractor shall submit a Traffic Management Plan prior to commencement of work. Short closures may be allowed by the Departmental Representative for some activities such as asphalt removal as long as the delay to motorists does not exceed **20 minutes**.
- .5 Regardless of type of traffic control being used, maximum period of delay to public traffic shall be 20 minutes. Emergency vehicles (i.e., ambulance, RCMP, Park Warden) must be granted immediate passage at all times. The Departmental Representative

reserves the right to reduce delay time for public traffic at times when specified delay results in excessive backup of public traffic.

- .6 The Contractor shall provide competent flag persons, properly equipped, and certified and registered as a Traffic Control Person (TCP) with the Alberta Construction Safety Association.
- .7 The Contractor shall also provide competent supervision and/or contract personnel as required during non-working hours to ensure that safety flares, flashing beacons, signs, lights, etc. are in proper working order.
- .8 The Departmental Representative will monitor the traffic control measures, and may require modifications of these measures from time to time to achieve satisfactory traffic flow, safety of traveling public and coordination with adjacent contracts.
- .9 The Contractor shall maintain a dust free construction zone by means of cleaning and watering when required.
- .10 Traffic control measures will be monitored by the Departmental Representative, who may require modifications of these measures from time to time to achieve satisfactory traffic flow, safety of traveling public and coordination with adjacent contracts

1.9 INFORMATIONAL AND WARNING DEVICES

- .1 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in the Traffic Management Plan submitted by the Contractor and approved by the Departmental Representative. **All temporary signs that are used for longer than one day shall be mounted on wood posts other than portable changeable message boards that shall be secured at all times.**
- .3 Place signs and other devices to standards and in locations recommended in BC MoTI – Traffic Control Manual for Work on Roadways. Provide intermittent signage if work zones exceed 2.0 km in length.
- .4 Signs shall be wind resistant.
- .5 As situation at work sites changes, Contractor to update his Traffic Management Plan outlining signs and other devices required for the project and submit for the approval of the Departmental Representative.
- .6 Continually inspect and maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location.
 - .2 Cleaning, repairing or replacing signs as required ensuring clarity and reflectance.
 - .3 Removing or covering signs which do not apply to conditions existing from day to day or time to time.

1.10 CONTROL OF PUBLIC TRAFFIC

- .1 Contractor shall provide competent flag persons, properly equipped, and certified and registered as a Traffic Control Person (TCP) with the Construction Safety Network or the Construction Safety Association of British Columbia.

- .1 When public traffic is required to pass working vehicles or equipment, which block all or part of travelled roadway.
- .2 When vehicles are entering or exiting Worksite access points.
- .3 When it is necessary to institute one-way traffic system through construction area or other blockage and traffic signal system is not in use.
- .4 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
- .5 Where temporary protection is required while other traffic control devices are being erected or taken down.
- .6 For emergency protection when other traffic control devices are not readily available.
- .7 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
- .8 At each end of restricted sections where pilot cars are required.
- .2 Delays to public traffic due to Contractor's operators: **maximum 20 minutes**
- .3 No stoppage of traffic will be allowed for the periods specified in Section 01 14 00, Work Restrictions, 1.5 pertaining to Statutory Holiday or long weekend.
- .4 During hours of darkness, if permitted under these specification, Contractor shall determine requirements but as a minimum, flag persons shall be additionally equipped with a red signal hand-light of sufficient brightness to be clearly visible to approaching traffic and flagging stations shall be illuminated by overhead lighting. Signs indicating hazardous conditions and signs requiring increased attention shall be marked with flashers.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Precedence.
- .2 Measurement procedures.
- .3 National Park regulations.
- .4 Canadian Environmental Assessment Act (CEAA).
- .5 Start-up and environmental briefing.
- .6 Site access and parking.
- .7 Protection of work limits.
- .8 Erosion control.
- .9 Pollution control.
- .10 Equipment maintenance, fuelling and operation.
- .11 Operation of equipment.
- .12 Fire prevention and control.
- .13 Wildlife.
- .14 Relics and antiquities.
- .15 Waste materials storage and removal.
- .16 Miscellaneous site management contingencies.
- .17 Clearing and grubbing.
- .18 Stripping.
- .19 Blasting.
- .20 Material loading, hauling, placement and grade building.
- .21 Excavating and placement.
- .22 Culvert installation.
- .23 Asphalt plant operation and paving.
- .24 Crushing.
- .25 Fine grading, topsoil placement and seeding.
- .26 Pavement marking and guardrail placement.
- .27 Specific concerns.

1.2 RELATED SECTIONS

- .1 All Divisions 01, 02 and 32 Sections

1.3 PRECEDENCE

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

1.4 MEASUREMENT PROCEDURES

- .1 The cost of environmental and aesthetic protection in accordance with this Section 01 35 43 – Environmental Procedures will not be measured separately for payment and will be considered incidental to the Work.

1.5 SUBMITTALS

- .1 The Contractor shall describe environmental mitigation measures to implement to ensure that all work is in compliance with this Section 01 35 43 – Environmental Procedures in his Environmental Protection Plan (EPP).

1.6 NATIONAL PARK REGULATIONS

- .1 The Contractor shall ensure that all work is performed in accordance with the ordinances, laws, rules and regulations set out in the Canada National Parks Act and Regulations.
- .2 For the Work in Glacier NP, the Contractor and any sub-Contractors shall obtain a business license from the Parks Canada Administration Office in Revelstoke prior to commencement of the contract.
- .3 All Contractor's vehicles are required to display a vehicle work pass from Parks Canada. These permits may be obtained free of charge from the Departmental Representative, or PCA Environmental Officer (ESO).

1.7 CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA)

- .1 Execution of the work is subject to the provisions within the Canadian Environmental Assessment Act (CEAA) Guidelines Order of 2003 and subsequent amendments.
- .2 Failure to comply with or observe environmental protection measures as identified in these specifications may result in the work being suspended pending rectification of the problems.
- .3 **Refer to the Environmental Impact Assessment (EIA) for the Work in Glacier NP included with this tender. The Contractor's EPP is to include the EIA as a minimum.**

1.8 START-UP AND ENVIRONMENTAL BRIEFING

- .1 All staff employed at the construction site will be subject to an approximately half hour briefing regarding their individual and collective responsibilities to ensure avoidable adverse environmental impact does not arise from their activities and personal choices. **All Employees must attend this briefing before beginning their work at the site.** It is recognized new employees may join the Contractors' work force after the initial round of "environmental briefing". In that case and as required, subsequent "environmental briefings" can be presented as numbers warrant, by arrangement with the ESO through the Departmental Representative. Also, some sub-trades may be present at the site for a short time, to perform once-only duties. In these cases, the "environmental briefing" will be replaced by the Contractor explaining the environmental sensitivity of the work location to the sub-trade worker(s), and reviewing highlights of personal conduct expected, with reference to a one-page briefing summary to be provided to the Contractor

by the ESO. A copy of this summary will be provided to each sub-trade worker joining the work force at the site.

- .2 Parks Canada will have an ESO attending the site to monitor the construction activity for conformance with these specifications. The ESO or alternate designated Parks Canada staff member will present the “environmental briefing”. The ESO’s main duties are to monitor the progress of the construction on an on-going basis to ensure compliance with environmental protection measures, and to provide guidance through the Departmental Representative, in the event of unanticipated environmental problems. Although the ESO has authority to enforce National Parks Act violations, direction to the Contractor will be the duty of the Departmental Representative.

1.9 CONSTRUCTION SITE ACCESS AND PARKING

- .1 The Contractor shall review both short and long term construction access requirements with the Departmental Representative, both at start-up and on an ongoing basis. In consultation with the Departmental Representative, the Contractor shall formulate an agreement for worker transportation to and from the work sites 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.

1.10 PROTECTION OF WORK LIMITS

- .1 The Contractor shall ensure that workers and equipment do trespass outside the project limits to the satisfaction of the Departmental Representative and the ESO.

1.11 EROSION CONTROL

- .1 Erosion control measures that prevent sediment from entering any waterway, water body or wetland in the vicinity of the construction site are a critical element of the project and shall be implemented by the Contractor.
- .2 If necessary, on-site sediment control measures shall be constructed and functional prior to initiating activities associated with the asphalt plant and the paving. The Contractor shall prepare an Erosion Control Plan to the satisfaction of the Departmental Representative and the ESO.
- .3 The regular monitoring and maintenance of all erosion control measures shall be the responsibility of the Contractor. If the design of the control measures is not functioning effectively they are to be repaired. The Departmental Representative and ESO also will monitor erosion control performance.
- .4 The site will be secured against erosion during any periods of construction inactivity or shutdown.

1.12 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. Generally, hazardous or toxic products shall be stored no closer than 100 metres from water.

- .2 A Spill Response Plan will be prepared by the Contractor 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 the ESO and in accordance with all applicable federal and provincial legislation. The Plan 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. Generally, hazardous or toxic products shall be stored no closer than 100 metres from streams, wetlands, water bodies or waterways.
- .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 and the ESO before start-up. 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 by methods that are approved by the Departmental Representative or ESO.
- .6 The Contractor shall provide spill kits 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 ESO and Departmental Representative prior to project start-up must approve these spill kits. 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 action shall be taken to stop, contain and clean-up all spills as long as the site is safe to enter. The Departmental Representative and the ESO shall be notified immediately of any spill. In the event of a major spill, all other work shall be stopped and all personnel devoted to spill containment and clean-up.
- .8 The costs involved in a spill incident (the 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 expected standard and to the satisfaction of the Departmental Representative and ESO.

1.13 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) outside the National Parks before delivery to the work site.
- .2 Equipment fuelling sites will be identified by the Contractor and approved by the Departmental Representative and the ESO. Except for chain saws, any fuelling closer than 100 metres from streams, wetlands, water bodies or waterways shall require the authorization and oversight of the Departmental Representative.

- .3 Diesel and gasoline delivery vehicles, including bulk tankers shall be parked more than 100 metres from streams, wetlands, water bodies or waterways. Gravity fed fuel systems are not allowed. Manual or electric pump delivery systems shall be used. Fuelling personnel shall maintain presence at and immediate attention to the fuelling operation.
- .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 1.12.4 of Pollution Control above.
- .5 Equipment used on the project shall be fuelled with E10, and low sulphur diesel fuels and shall conform to local emission requirements. The Contractor is to ensure that unnecessary idling of vehicles is avoided.
- .6 Oil changes, lubricant changes, greasing and machinery repairs shall be performed at locations approved by the ESO or the Departmental Representative. Waste lubrication products (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 anywhere within National Parks.
- .7 The Contractor shall ensure that all equipment is inspected daily for fluid/fuel leaks and maintained in good working order.
- .8 Fuel containers and lubricant products shall be stored only in secure locations specified by the Departmental Representative. Fuel tanks or other potentially deleterious substance containers shall be secured to ensure they are tamperproof and cannot be drained by vandals when left overnight in National Parks. Alternatively, the Contractor may hire a security person employed to prevent vandalism. The Contractor is to ensure that workers are briefed on proper 'daisy-chain' use of locks to ensure no other contractor or Parks Canada Highways Dept. staff are locked out.

1.14 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 approved by the Departmental Representative. Unless authorized by the Departmental Representative, activities beyond the work limits are not permitted. No machinery will enter, work in or cross over streams, rivers, wetlands, water bodies or watercourses, nor damage aquatic and riparian habitat or trees and plant communities. Some of the construction shall require working close to creeks and other watercourses or water bodies. In these instances, the Contractor is to describe measures to be employed to ensure fugitive materials (e.g. rocks, soil, branches) and especially deleterious substances (e.g. chemicals) do not enter any watercourses, to the satisfaction of the Departmental Representative and ESO.
- .2 The Contractor shall instruct workers to prevent pushing, placement, raveling, storage or stockpiling of any materials (e.g. slash, rock, fill or topsoil) in the trees bordering the right-of-way or into watercourses or water bodies.
- .3 When, in the opinion of Parks Canada, 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 and ESO.
- .4 Restrict vehicle movements to work limits.

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

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 plant in the event of fire. Basic firefighting equipment recommended (e.g. a water truck; minimum 500 Imperial gallons with 500 feet of fire hose and a pump capable of producing 45 psi water pressure at the nozzle, three shovels, two pulaskis, and two five gallon backpack pumps) shall be maintained at the construction site at a location known and easily accessible to all the Contractors' staff. Contractor's staff shall receive basic training in early response to wildfire events during the "environmental briefing".
- .2 Water can be obtained from the Glacier Maintenance Compound, Glacier NP.
- .3 A water truck may be necessary and will depend on the timing of the contract (e.g. – not required during winter or snow covered conditions).
- .4 Construction equipment shall be operated in a manner and with all original manufacturer's safety devices to prevent ignition of flammable materials in the area.
- .5 Care shall be taken while smoking on the construction site to ensure that the accidental ignition of any flammable material is prevented. Fires or burning of waste materials is not permitted.
- .6 In case of fire, the Contractor or worker shall take immediate action to extinguish the fire provided it is safe to do so. The ESO and the Departmental Representative shall be notified of any fire immediately. Fires or burning of waste materials is not permitted.

1.16 WILDLIFE

- .1 During the Environmental Briefing all personnel shall be instructed by the ESO on procedures to follow in the event of wildlife appearance near or within the work site and any other wildlife concerns.
- .2 Avoid or terminate activities on site that attract or disturb wildlife and vacate the area and stay away from the immediate location if bears, cougars, wolves, elk or moose display aggressive behaviour or persistent intrusion. Extra care to control materials that might attract wildlife (e.g. lunches and food scraps) must be exercised at all times.
- .3 Notify the ESO and Departmental Representative immediately about dens, litters, nests, carcasses (road kills), bear activity or encounters on or around the site or crew accommodation. Other wildlife-related encounters are to be reported within 24 hours.

1.17 RELICS AND ANTIQUITIES

- .1 Artifacts, relics, antiquities and items of historical interest such as cornerstones, commemorative plaques, inscribed tablets and similar objects found on the work site shall be reported to the ESO or the Departmental Representative immediately. The Contractor and workers shall wait for instructions before proceeding with their work.
- .2 All historical or archaeological objects found in National Parks are protected under the National Parks Act and Regulations and are the property of Parks Canada. The Contractor and workers shall protect any articles found and request direction from the ESO or the Departmental Representative.

1.18 WASTE MATERIALS STORAGE AND REMOVAL

- .1 The Contractor and workers shall dispose of hazardous wastes in conformance with the Environmental Contaminants Act and applicable provincial regulations while observing the Code of Good Practice for Management of Hazardous and Toxic Wastes at Federal Establishments.
- .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 or elsewhere in National Parks. 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 park. Construction waste storage containers, provided by the Contractor, shall be emptied by the Contractor when 90% full. Waste containers will have lids, and waste loads shall be covered while being transported.
- .4 A concerted effort shall be made by the Contractor and workers to reduce, reuse and recycle materials.
- .5 All efforts to prevent wildlife from obtaining food, garbage or other domestic wastes shall be made by the Contractor and contract staff while undertaking their work in National Parks. Such wildlife attractants shall not be stored at the work site overnight. Lunches, coolers and food products, including waste food products, shall be securely stored away from access by animals. Daily removal of food scraps, food wrappers, pop cans or other attractive products to bear proof containers is mandatory. It is incumbent on the Contractor to notify Parks Canada and make specific arrangements to have garbage collected by Parks Canada when using existing Parks Canada receptacles.
- .6 The Contractor and workers shall immediately report any circumstances related to food/garbage (e.g. overflowing container or strong smell) and wildlife to the ESO or the Departmental Representative.
- .7 Sanitary facilities, such as a portable container toilet, shall be provided by the Contractor and maintained in a clean condition.

1.19 MISCELLANEOUS SITE MANAGEMENT CONTINGENCIES

- .1 The Contractor shall ensure trespass outside the project limits does not occur, to the satisfaction of the Departmental Representative and the ESO.
- .2 A Contractor's office, equipment parking, and storage area will be permitted at the Glacier Maintenance Compound, Glacier NP. Other locations may be considered by the Departmental Representative.
- .3 No Work Camp will be allowed within the National Parks.
- .4 The Contractor shall provide toilets and maintain them in a clean and sanitary condition at the work sites. These facilities shall not be used for the disposal of anything but human wastes.
- .5 The National Park Act regulations prohibit anyone working within National Parks from using public campground facilities.
- .6 Removal and storage of snow shall be arranged with the ESO and the Departmental Representative.

- .7 The Contractor shall control blowing dust and debris generated from the construction site by means such as covering or wetting down dry materials and rubbish. Dust control measures for temporary access roads may also have to be initiated.
- .8 Security services at the construction site may be desirable or necessary during the contract, especially during quiet times. Fuel tanks or other potentially deleterious substance containers must be secured by the Contractor to ensure they are tamperproof and cannot be drained by vandals at his own cost.
- .9 Pets shall not be brought to or maintained at the construction site.
- .10 Should the Contractor require/request a water source other than at the Glacier Maintenance Compound, Glacier NP, the Departmental Representative, in consultation with the ESO may give direction as to an alternative location to be used. Specific intake measures are required when water is approved to be withdrawn from open watercourses.

Part 2 Products

- .1 Not used.

Part 3 Execution**3.1 ASPHALT PLANT OPERATION AND PAVING**

- .1 Trucks for hauling asphalt mixture shall have tight, clean, smooth metal beds that have been sprayed with a minimum amount of thin fuel oil to prevent the mixture from adhering and causing waste asphalt. The vehicle covers shall be securely fastened. Excess truck box lubricants such as light oil, detergent or lime solutions shall not be allowed to contaminate the mix, and shall be disposed of in an environmentally acceptable manner. Truck box lubricant application shall be carried out in a containment berm.
- .2 Asphalt plant operation must comply with all environmental pollution control regulations applicable in the plant area.
- .3 The Contractor shall be responsible for the purchase and the safe delivery/storage/handling of asphalt cement and emulsions to the asphalt plant site. Excess hot mix or reject asphalt shall be temporarily stored as directed by the Departmental Representative, and removed from the Park, prior to completion of the contract a later date. All costs for removal and disposal shall be the responsibility of the Contractor and no separate payment shall be made.
- .4 Ground asphalt material shall be removed, recycled, or stored in Beaver Pit, unless specified otherwise by the Departmental Representative.
- .5 The Contractor shall ensure that there is enough room between the stockpiles and the asphalt plant for a loader in the event of a spill at the asphalt plant. A containment berm with an associated liner made of occlusive material (e.g. plastic of a thickness approved by the Departmental Representative) and covered with absorbent sand or clay shall be installed under the asphalt storage tank to ensure containment of 110% of the tank's capacity.
- .6 The Contractor may wish to protect containment/catchment areas and drip trays at the asphalt plant from rainfall since, if contaminated, all of the collected water will have to be disposed of at the expense of the Contractor at an approved disposal facility.

- .7 Sites from which materials have been removed shall be restored to a neat and presentable condition upon the completion of the work.

3.2 MATERIAL LOADING, HAULING, PLACEMENT AND GRADE BUILDING

- .1 During grade construction conducted close to any watercourse, water body or wetland methods shall be employed to ensure materials are not pushed, fall or are eroded into the water or wetlands. Generally, work within a 30 metre buffer of waterways or wetlands requires the close oversight of the ESO and the Departmental Representative.
- .2 No grade building shall occur outside of the designated area or within 1 metre of the drip line of existing forest. Any material inadvertently falling outside the work limits is to be removed promptly in a manner that does not damage trees or vegetation at that location. Materials shall be placed at storage sites or on the grade without spillage outside the working limits. Any material inadvertently falling outside the work limits is to be removed promptly in a manner that does not damage trees or vegetation at that location.

3.3 PAVEMENT MARKING AND GUARDRAIL PLACEMENT

- .1 Pavement marking shall be undertaken pursuant to standard methods applied in National Parks for control of paint products, both in transport and handling. The Contractor shall present a description of methods to be employed for transporting and controlling paint and hazardous products, application of paint, cleaning of equipment, containment and disposal of waste paint and cleaning products, etc. the satisfaction of the Departmental Representative. Where concrete barriers or guard rails are temporarily removed, for highway improvements, temporary glow posts shall be installed, at 20 m intervals on straight sections and at 10.0 m intervals on curves and shall remain in place until permanent barrier system has been installed. Payment for removal, installation and temporary glow posts shall be incidental to **“Lump Sum Price Item 2 – Traffic Accommodation”**.

3.4 SPECIFIC CONCERNS RELATIVE TO EROSION CONTROL AND SEDIMENTATION

- .1 The Contractor shall prepare an Erosion and Sedimentation Management Plan for the components of this contract that are undertaken in proximity to watercourses, wetlands or riparian environments. This plan shall be to the satisfaction of the Departmental Representative and ESO. If sediment ponds are required, they shall be designed to settle all sediment particles 0.02 mm or larger. The ponds shall also be designed to handle 1:5 year storm events, with overflow spill capacity for 1:10 year storm events and emergency spillway capacity for 1:100 year storm events.
- .2 An important desired end result is to allow no release into watercourses of sediments in levels that are deleterious to fish or that would harmfully alter, disrupt, or destroy fish habitat. Similarly there is to be no sediment release into areas of vegetation growth or sensitive areas of sediments in levels that would adversely alter growing or hydraulic conditions. The target is 0 mg/L of TSS over background levels. The threshold is a maximum instantaneous increase of 25 mg/L over background levels when background levels are <250 mg/L, or a maximum instantaneous increase of 10% over background levels when background levels are >250 mg/L. This threshold shall not be exceeded.

3.5 CLEARING AND GRUBBING

- .1 The Contractor shall ensure that the substrate or riparian area of streams, rivers or watercourses, whether open water or frozen over shall not be disturbed by tracked,

wheeled or self-propelled equipment, (e.g. a skidder or truck). The ESO or Departmental Representative will provide direction in the case of work occurring near any wetland area or watercourses.

- .2 The Contractor shall take all measures to ensure that trees do not fall into streams, rivers, wetlands or water bodies or outside the clearing limits as marked by colored flagging. Generally, work within a 30 metre buffer of watercourses, water bodies or wetlands requires the close oversight of the ESO or the Departmental Representative.
- .3 Trees inadvertently felled into streams, rivers, watercourses or outside the clearing limits shall be removed by means (e.g. winch) so as not to damage the substrate or any standing trees left outside the clearing limits. Machinery shall not go outside the clearing limits, or into streams, rivers, watercourses or water bodies to remove felled trees.
- .4 Logs and other salvage materials are to be conveyed to and placed at the storage site without spread of debris or damage to other standing trees or landscape resources outside the marked clearing or storage limits. They shall not be skidded through wetlands, waterways or water bodies.
- .5 During the grubbing component, stumps, roots, imbedded logs and other non-soil debris shall be pulled and shaken free of loose soil and rocks before transport to designated pit
- .6 No slash clearing, pickup or grubbing shall occur outside of the designated area or within 1 metre of the drip line of existing forest.
- .7 Existing areas of vegetation disturbed as a result of this contract shall be rehabilitated using approved topsoil from the park and a native grass seed mix as specified in Section 32 92 22 – Seeding.

3.6 STRIPPING

- .1 A contingency plan for control of dust generated from the construction site shall be prepared, with materials availability arranged in the event of their need. In the event of a work program shutdown during inclement weather (e.g. winter conditions unfavourable for construction) erosion control of bared soils or excavated materials stockpiles will be required.
- .2 Stripping close to the any watercourse, water body or wetland shall employ methods to ensure materials are not pushed, fall or are eroded into the water or wetlands. Generally, work within a 30 metre buffer of waterways or wetlands requires the close oversight of the ESO and the Departmental Representative.
- .3 No stripping shall occur outside of the designated area or within 1 metre of the drip line of existing forest.
- .4 Stripped soil (including fine forest litter) materials shall be placed and stored at locations and in amounts and form as instructed by the Departmental Representative, for later reclamation use on graded slopes. Stripping piles may require erosion control, sedimentation protection or stabilization, depending on the location and anticipated duration of storage. At the Departmental Representatives direction, the Contractor shall prepare a plan for management of each stripping pile.

3.7 BLASTING

- .1 The Departmental Representative will identify a magazine location for explosives should a factory site or “ready-to-use” explosives storage 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 ESO or a Park Warden.
- .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 and the ESO. Some blasting products – such as those very high in nitrogen, may have some limitations imposed for environmental protection purposes.

3.8 EXCAVATING AND PLACEMENT

- .1 Excavation will be undertaken according to the approved Grading Plan for the ROW, and approved Development Plans for the designated pits.
- .2 Materials shall be placed at storage sites or on the grade without spillage outside the working limits. Any material inadvertently falling outside the work limits is to be removed promptly in a manner that does not damage trees or vegetation at that location.
- .3 All sediment control measures shall be implemented by the Contractor prior to the commencement of the work in the vicinity of rivers, water bodies, watercourses, and wetlands.
- .4 Special precautions may have to be taken during excavation in the vicinity of intermittent or active drainage channels.
- .5 If sediments enter a river / stream during any excavation nearby or at its banks, the Contractor shall ensure that sediment levels in the waters of the river or creeks do not exceed specified limits and meet the "desired end result" limits outlined.
- .6 Placement of rip rap and backfill at creeks shall be undertaken without contacting the watercourse or wetted margins of the stream, unless approved by the Departmental Representative.
- .7 Fisheries protection windows shall be observed for the fish creeks, and any other watercourse in this contract and will guide the timing of the work so that stream disturbance is prevented.
- .8 If a pump-out sump to dewater excavation sites will be required, the Contractor shall detail how the dewatering shall be undertaken, to the satisfaction of the Departmental Representative and the ESO. Special attention is to be given to the environmental sensitivity of the discharge area, freezing conditions operation, overflow avoidance, decanting and settlement pond reclamation. Water containing suspended materials shall

not be pumped into watercourses, drainage systems or on to land, except with the permission of the Departmental Representative and the ESO.

3.9 CULVERT INSTALLATION

- .1 All culverts shall be installed using best management practices for working in or near water that will result in a minimum amount of sedimentation and damage to the riparian area of the watercourse. The Contractor shall prepare a plan for the installation of each culvert, a minimum one (1) week prior to doing the work for approval by the Departmental Representative and ESO.
- .2 The culverts shall be installed using best management practices for placement, including consideration of aquatic ecology.
- .3 It is preferable to install the culvert during periods of low discharge (e.g. during the fall). The use of sediment control measures may be necessary to ensure that excessive amounts of sediments do not enter creeks.
- .4 It may be necessary to exclude fish from the immediate construction site while the culvert is being installed. If this practice is necessary, fish shall be salvaged from within the exclusion area, and construction should be carried out expediently to minimize the time spent working in the drainage.

3.10 CRUSHING

- .1 The Contractor shall be prepared for potential spills of fuels, lubricants or hydraulic fluid from the crusher using containment berms with associated occlusive liner of adequate thickness to ensure that these materials do not penetrate underlying soil materials down to the water table and into streams, running water or wetlands. In the event of a spill, the Contractor shall ensure timely and effective spill response.
- .2 The Contractor shall provide drip and spill containment for the crusher, cone, generators and other components where spills may occur (e.g. plastic lined dirt berms, collection/drip trays, double-walled fuel tanks). Spill response in a timely and effective manner in the event of a spill is mandatory. The measure chosen by the Contractor shall ensure containment of 110% of the capacity of the fuel tank, crankcase, etc.
- .3 Excavation, hauling and placing materials associated with a crushing operation shall be conducted within the approved footprint of the total crushing operation. Crushed materials shall be placed at the designated storage site located within the Gravel Pit as identified by the Departmental Representative without spillage or ravelling outside the limits of this location. Any material inadvertently falling outside the work limits is to be moved promptly to within the storage limits. Repair of damage outside the work limits will be at the complete expense of the Contractor.

3.11 FINE GRADING, TOPSOIL PLACEMENT, AND SEEDING

- .1 This contract involves the final shaping of cut slopes, fills and landscapes disturbed in the construction of the Works. These slopes will be covered by stripped soil and chip compost materials and seeded. Environmental concerns related to these activities largely focus on erosion prevention and sediment control. The Contractor is to present a plan for placement, spreading, and stabilization of reclamation materials that controls erosion and prevents sedimentation, to the satisfaction of the Departmental Representative and ESO.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Measurement procedures.
- .2 Testing by the Contractor.
- .3 Contractor' Quality Control Program.
- .4 Inspection.
- .5 Independent Inspection Agencies.
- .6 Access to Work.
- .7 Reports.
- .8 Tests and mix designs.
- .9 Mill tests.

1.2 PRECEDENCE

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

1.3 RELATED SECTIONS

- .1 All sections in Divisions 01, 02 and 32.

1.4 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.5 REFERENCES

- .1 BC MoTI – 2012 Standard Specifications for Highway Construction Manual

1.6 TESTING BY THE CONTRACTOR

- .1 Testing required to provide quality control to assure that the Work strictly complies with the Contract requirements shall include, but not be limited to:
 - .1 All testing specified in the Contract Documents; and
 - .2 Any other testing required as a condition for deviation from the specified Contract procedures.
- .2 Testing proposed shall be in accordance with the BC MoTI – 2012 Standard Specifications for Highway Construction.
- .3 The Contractor shall be fully responsible and bear all costs for all quality control testing and shall conduct such testing in the following manner:
 - .1 Provide testing facilities and personnel for the tests and inform the Departmental Representative in advance to enable the Departmental Representative to witness the tests if it so desired;
 - .2 Notify the Departmental Representative when sampling will be conducted;

- .3 Within one Day after completion of testing, submit test results to the Departmental Representative; and
- .4 Identify test reports with the name and address of the organization performing all tests, and the date of the tests.
- .4 Approval of tested samples will be for characteristics or use named in such approval and shall not change or modify any Contract requirements.
- .5 Testing agencies, their inspectors, and their representatives are not authorized to revoke, alter, relax, enlarge or release any requirement of the Contract Documents, nor to approve or accept any part of the Work.

1.7 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction.

1.8 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies will be engaged by the Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative.
- .2 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .3 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by the Departmental Representative at no cost to the Departmental Representative.

1.9 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.10 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Provide labour and facilities to obtain and handle samples and materials on site.

1.11 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Departmental Representative.

1.12 REPORTS

- .1 Submit one (1) electronic copy of all inspection and test reports to Departmental Representative in accordance with Section 01 33 00 Submittals Procedures.

1.13 TESTS AND MIX DESIGNS

- .1 Furnish test results and designs as may be requested.

1.14 MILL TESTS

- .1 Submit mill test certificates as required of specification sections.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Installation and removal.
- .2 Site storage/loading.
- .3 Construction parking.
- .4 Security.
- .5 Offices.
- .6 Equipment, tools and material storage.
- .7 Sanitary facilities.
- .8 Construction signage.

1.2 RELATED SECTIONS

- .1 Section 01 35 31 - Special Procedures for Traffic Control.

1.3 PRECEDENCE

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

1.4 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.5 INSTALLATION AND REMOVAL

- .1 Provide construction facilities in order to execute work expeditiously.
- .2 Remove from site all such work after use.

1.6 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.

1.7 CONSTRUCTION PARKING

- .1 Provide and maintain adequate access and parking at the project site in areas approved by the Departmental Representative.
- .2 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.

1.8 SECURITY

- .1 If required by the Contractor, provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays. For extended shut-downs, the Contractor shall provide the level of security as required to protect the Work.

The Contractor is advised that some random acts of vandalism to equipment have occurred within the Park.

1.9 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.

1.10 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations, ordinances and these specifications.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.11 CONSTRUCTION SIGNAGE

- .1 No other signs or advertisements, other than warning and traffic control signs, are permitted on site.
- .2 Signs and notices for safety and instruction shall be in both official languages. Graphic symbols shall conform to CAN3-Z321.
- .3 Maintain approved signs and notices in good condition for duration of project, and dispose of offsite on completion of project or earlier if directed by Departmental Representative.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Installation and removal.
- .2 Fencing.
- .3 Guardrails and barricades.
- .4 Access to site.
- .5 Public traffic flow.
- .6 Fire Routes.
- .7 Protection for off-site and public property.

1.2 PRECEDENCE

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

1.3 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.4 RELATED SECTIONS

- .1 Section 01 35 31 - Special Procedures for Traffic Control.
- .2 Section 01 52 00 - Construction Facilities.

1.5 INSTALLATION AND REMOVAL

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

1.6 HOARDING

- .1 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.

1.7 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around deep excavations.

1.8 WEATHER ENCLOSURES

- .1 Not used.

1.9 DUST TIGHT SCREENS

- .1 Not used.

1.10 ACCESS TO SITE

- .1 Provide and maintain access roads, as may be required for access to Work.

1.11 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect the public.

1.12 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- .1 Protect surrounding public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

1.13 PROTECTION OF BUILDING FINISHES

- .1 Not used.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Quality.
- .2 Availability.
- .3 Storage, handling and protection.
- .4 Transportation.
- .5 Manufacturer's instructions.
- .6 Quality of work.
- .7 Coordination.
- .8 Concealment.
- .9 Remedial work.
- .10 Fastenings.
- .11 Protection of work in progress.

1.2 RELATED SECTIONS

- .1 Section 01 45 00 - Quality Control.

1.3 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.4 REFERENCE STANDARDS

- .1 Within text of each specifications section, reference may be made to reference standards.
- .2 Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .3 If there is question as to whether any product or system is in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4 Cost for such testing will be borne by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.
- .5 Conform to latest date of issue of referenced standards in effect on date of submission of Tenders, except where specific date or issue is specifically noted.

1.5 QUALITY

- .1 Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is

precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

- .3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

1.6 AVAILABILITY

- .1 Immediately after signing contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work
- .2 In the event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.7 STORAGE, HANDLING AND PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials, lumber and misc. metals on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.8 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.

1.9 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative may establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.10 QUALITY OF WORK

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative whose decision is final.

1.11 CO-ORDINATION

- .1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.12 CONCEALMENT

- .1 The Departmental Representative will inspect all work prior to any concrete pours. The Contractor shall notify the Departmental Representative 24 hours before any pour for inspection.

1.13 REMEDIAL WORK

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.14 FASTENINGS

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification Section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.

- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.15 PROTECTION OF WORK IN PROGRESS

- .1 Do not cut, drill or sleeve any load bearing structural member without written approval of Departmental Representative, unless specifically indicated.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Layout requirements.
- .2 Survey accuracy.
- .3 Notification.
- .4 Records Submittals.

1.2 PRECEDENCE

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

1.3 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.4 RELATED SECTIONS

- .1 Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.

1.5 REFERENCES

- .1 Owner's identification of existing survey control points and property limits.

1.6 LAYOUT REQUIREMENTS

- .1 The Departmental Representative shall identify location of all work sites. The Contractor shall be responsible for all other layout work.
- .2 At all work sites, the Contractor shall mark **accurately**, at regular intervals, the location and type of existing painted lines with a stake at the side of the roadway and make a written record of markings in a book, in order that painted lines can be accurately re-established after work is completed.
- .3 The Contractor is responsible for the **accurate layout of all painted lines** at all work sites in this contract.
- .4 Final Line painting if requested by the Owner's Representative, shall be performed under **"Unit Price Item 3a) Lane Marking - Line Painting"**.
- .5 Layout for interim and final lane markings, including those for intersection treatments shall be considered incidental to **"Lump Sum Price Item 2 – Traffic Accommodation"**, and no additional payment will be made for the duration of the Contract.
- .6 The Contractor shall provide at his own cost, any survey activities as required and including, but not limited to, the following:
 - .1 Layout for interim and final lane markings, including those for intersection treatments
 - .2 Re-establishing the start and finish of "No Passing Zones", Passing Lanes or at new limits as directed by the Departmental Representative

- .3 String line or other markings for the alignment or grade control of construction equipment

1.7 RECORDS

- .1 Maintain a complete, accurate log of control and survey work as it progresses.
- .2 Record locations of maintained, re-routed and abandoned service lines.

1.8 SUBMITTALS

- .1 On request of Departmental Representative, submit documentation to verify accuracy of layout work.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Progressive cleaning.
- .2 Final cleaning.

1.2 PRECEDENCE

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

1.3 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.4 RELATED SECTION

- .1 Section 01 35 31 - Special Procedures for Traffic Control.
- .2 Section 01 35 43 - Environmental Procedures.
- .3 Section 01 77 00 - Closeout Procedures.

1.5 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
- .2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Clear snow and ice from access to work areas during active construction periods and when access to environmental protection facilities required outside active construction times.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 One bear proof container will be provided by Parks Canada if available. Contractor to provide any additional on-site bear proof containers required for collection of waste materials and debris.
- .6 Remove waste material and debris from site at end of each working day.
- .7 Dispose of waste materials and debris off site.
- .8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .9 Provide adequate ventilation during use of volatile or noxious substances.
- .10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

1.6 FINAL CLEANING

- .1 When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

- .2 Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .3 Remove waste products and debris including that caused by Owner or other Contractors.
- .4 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .6 Inspect finishes, and ensure specified workmanship and operation.
- .7 Remove dirt and other disfiguration from exterior surfaces.
- .8 Sweep and wash clean paved areas.
- .9 Clean drainage systems.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Inspection and declaration.

1.2 PRECEDENCE

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

1.3 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.4 RELATED SECTIONS

- .1 Section 01 74 11 - Cleaning.
- .2 Section 01 78 00 - Closeout Submittals.

1.5 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 Work is complete and ready for Final Inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of Work by Departmental Representative, and Contractor. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 As-built, samples, and specifications.
- .2 Warranties and bonds.
- .3 Final site survey.

1.2 PRECEDENCE

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

1.3 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.4 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 45 00 - Quality Control.
- .3 Section 01 71 00 - Examination and Preparation.
- .4 Section 01 77 00 - Closeout Procedures.

1.5 AS-BUILTS AND SAMPLES

- .1 In addition to requirements in General Conditions, maintain at the site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to the Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Specification. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

1.6 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of black line opaque Drawings and in copy of the Specification.
- .2 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .3 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by change orders.
 - .3 Details not on original Contract Drawings.
 - .4 References to related shop drawings and modifications.
- .4 Specifications: legibly mark each item to record actual construction, including:
 - .1 Changes made by Addenda and change orders.

1.7 FINAL SURVEY

- .1 Submit final site survey certificate in accordance with Section 01 71 00 - Examination and Preparation, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

1.8 WARRANTIES AND BONDS

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.
- .4 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Measurement procedures.
- .2 Waste management and disposal.
- .3 Equipment.
- .4 Preparation.
- .5 Protection.
- .6 Removal.
- .7 Stockpiling of material.
- .8 Finish tolerances.
- .9 Sweeping.

1.2 RELATED SECTIONS

- .1 Section 01 35 31 – Special Procedures for Traffic Control
- .2 Section 01 35 43 - Environmental Procedures

1.3 MEASUREMENT PROCEDURES

- .1 Payment under this **“Unit Price Item 1 – Asphalt Pavement Removal by Milling”** will include operations involved in milling, brooming, loading, hauling and stockpiling at Beaver Pit, Glacier NP, designated asphalt pavement and cleaning of remaining pavement surface. Payment shall be made as follows:
 - .1 **“Unit Price Item 1 - Asphalt Pavement Removal by Milling”** will be measured for payment in square metres of an approximately 50 mm depth of asphalt pavement of existing roadway actually removed according to these specifications, Drawing 17, or as directed by the Departmental Representative, and shall include all labour, equipment and material to satisfactorily complete this item of work.
 - .2 No overhaul will be paid for **“Unit Price Item 1 - Asphalt Pavement Removal by Milling”**.
 - .3 Traffic Control required for this Work shall be incidental to **“Lump Sum Price Item 2 - Traffic Accommodation”** and no separate payment will be made to the Contractor.
 - .4 Mobilization and demobilization required for this Work shall be incidental to **“Lump Sum Price Item 1 – Mobilization / Demobilization”** and no additional payment will be made.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse in accordance with Section 01 35 43 - Environmental Procedures.
- .2 Place milled asphalt material in stockpile at Beaver Pit, Glacier NP, or at locations designated by the Departmental Representative.

Part 2 Products**2.1 EQUIPMENT**

- .1 Use cold milling, planning or grinding self-powered equipment with automatic grade controls capable of operating from string line, and capable of removing part of pavement surface to depths or grades indicated. Maximum particle size of milled materials shall be 50 mm.

Part 3 Execution**3.1 PREPARATION**

- .1 Environmental mitigations required in accordance with Section 01 35 43 –Environmental Procedures, for the Work in this Section shall be incidental to the contract and no separate payment shall be made to the Contractor.
- .2 Prior to beginning removal operation, inspect and verify with Departmental Representative areas, depths and lines of asphalt pavement to be removed.
- .3 Have appropriate Traffic Control measures in place for this work.

3.2 PROTECTION

- .1 Protect existing pavement not designated for removal, concrete deck, concrete curb and barriers, light units and structures from damage. In event of damage, immediately replace or make repairs to approval of Departmental Representative at no additional cost.

3.3 REMOVAL

- .1 To tie from existing pavement to new overlay, remove existing asphalt pavement by milling to lines and grades established by Departmental Representative in field or as per Drawing 17. At mill and fill locations, remove existing asphalt to the depths, lengths and width specified and as established by Departmental Representative in field.
- .2 Use self-powered equipment and methods of removal and hauling which do not damage or disturb underlying roadway structure.
- .3 Prevent contamination of removed asphalt pavement by topsoil, underlying gravel or other materials.
- .4 Provide for suppression of dust generated by removal process.

3.4 STOCKPILING OF MATERIAL

- .1 The stockpile site shall be firm.

3.5 FINISH TOLERANCES

- .1 Finished surfaces in areas where asphalt pavement has been removed to be within +/-5 mm of grade specified but not uniformly high or low.

3.6 SWEEPING

- .1 Sweep remaining asphalt pavement surfaces clean of debris resulting from removal operations using rotary power brooms and hand brooming as required.

END OF SECTION

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Parks Canada Agency

Glacier NP, British Columbia

Part 1 General**1.1 SECTION INCLUDES**

- .1 Definitions.
- .2 Submittals.
- .3 Storage and handling.
- .4 Transportation.
- .5 Materials.
- .6 Disposal.

1.2 PRECEDENCE

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

1.3 MEASUREMENT PROCEDURES

- .1 This work shall be incidental to contract and will not be measured for payment.

1.4 RELATED SECTIONS

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 35 43 – Environmental Procedures.

1.5 REFERENCES

- .1 Export and Import of Hazardous Waste Regulations (EIHWR Regulations), SOR/92-637.
- .2 National Fire Code of Canada 1995.
- .3 Transportation of Dangerous Goods Act (TDG Act) 1992, (T-19.01).
- .4 Transportation of Dangerous Goods Regulations (TDGR), (SOR/85-77, SOR/85-585, SOR/85-609, SOR/86-526).

1.6 DEFINITIONS

- .1 Dangerous Goods: Product, substance, or organism that is specifically listed or meets the hazard criteria established in Transportation of Dangerous Goods Regulations.
- .2 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .3 Hazardous Waste: Any hazardous material that is no longer used for its original purpose and that is intended for recycling, treatment or disposal.
- .4 Workplace Hazardous Materials Information System (WHMIS): A Canada-wide system designed to give employers and workers information about hazardous materials used in the workplace. Under WHMIS, information on hazardous materials is to be provided on container labels, material safety data sheets (MSDS), and worker education programs. WHMIS is put into effect by a combination of federal and provincial laws.

1.7 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.

1.8 STORAGE AND HANDLING

- .1 Coordinate storage of hazardous materials with Departmental Representative and abide by internal requirements for labelling 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 All explosives must be mixed outside of the Park and delivered to the site. No storage of explosives shall be allowed within the National Parks.
- .5 Observe smoking regulations at all times. Smoking is prohibited in any area where hazardous materials are stored, used, or handled.
- .6 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 which are in good condition.
 - .2 Label containers of hazardous materials and wastes in accordance with WHMIS.
 - .3 Store hazardous materials and wastes in containers compatible with that material or waste.
 - .4 Segregate incompatible materials and wastes.
 - .5 Ensure that different hazardous materials or hazardous wastes are not mixed.
 - .6 Store hazardous materials and wastes in a secure storage area with controlled access.
 - .7 Maintain a clear egress from storage area.
 - .8 Store hazardous materials and wastes in a manner and location which will prevent them from spilling into the environment.
 - .9 Have appropriate emergency spill response equipment available near the storage area, including personal protective equipment.
 - .10 Maintain an inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.
- .7 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .8 Report spills or accidents immediately to Departmental Representative. Submit a written spill report to Departmental Representative within 24 hours of incident.

1.9 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 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 or treatment facilities.
- .4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.
- .5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Materials and application of asphalt tack coat to an existing asphalt or concrete surface prior to asphalt paving.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 35 43 - Environmental Procedures.
- .3 Section 32 12 16 – Asphalt Concrete Pavement

1.3 MEASUREMENT PROCEDURES

- .1 Supply, Delivery and Application of tack coat will be will not be measured separately and shall be considered to be incidental to **“Unit Price Item 2 - Asphalt Concrete Pavement - EPS”**.

1.4 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM D140-01, Standard Practice for Sampling Bituminous Materials.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-16.2-M89, Emulsified Asphalts, Anionic Type, for Road Purposes.

1.5 SUBMITTALS

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit two - 1 L samples of asphalt tack coat material proposed for use in new, clean, airtight, sealed, wide mouth bottles made with plastic to Departmental Representative, at least 2 weeks prior to beginning Work.
- .3 Sample asphalt tack coat material to: ASTM D140.
- .4 Provide access on tank truck for Departmental Representative to sample asphalt material to be incorporated into Work, in accordance with ASTM D140.

1.6 QUALITY ASSURANCE

- .1 Upon request by Departmental Representative, submit manufacturer's test data and certification that asphalt tack coat material meets requirements of this Section.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with ASTM D140.
- .2 Provide, maintain and restore asphalt storage area.

1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 35 43 - Environmental Procedures and with the Waste Reduction Work Plan.

- .2 Divert unused asphalt materials to facility capable of recycling materials.

Part 2 Products

2.1 MATERIALS

- .1 Anionic emulsified asphalt: to CAN/CGSB-16.2, grade: SS-1.
- .2 Water: clean, potable, free from foreign matter.

2.2 EQUIPMENT

- .1 Pressure distributor to be:
 - .1 Designed, equipped, maintained and operated so that asphalt material can be:
 - .2 Maintained at even temperature.
 - .3 Applied uniformly on variable widths of surface up to 5 m.
 - .4 Applied at readily determined and controlled rates from 0.2 to 5.4 L/m² with uniform pressure, and with an allowable variation from any specified rate not exceeding 0.1 L/m².
 - .5 Distributed in uniform spray without atomization at temperature required.
 - .6 Equipped with meter, registering metres of travel per minute, visibly located to enable truck driver to maintain constant speed required for application at specified rate.
 - .7 Equipped with pump having flow meter graduated in units of 5 L or less per minute passing through nozzles and readily visible to operator. Pump power unit to be independent of truck power unit.
 - .8 Equipped with an easily read, accurate and sensitive device which registers temperature of liquid in reservoir.
 - .9 Equipped with accurate volume measuring device or calibrated tank.
 - .10 Equipped with nozzles of same make and dimensions, adjustable for fan width and orientation.
 - .11 Equipped with nozzle spray bar, with operational height adjustment.
 - .12 Cleaned if previously used with incompatible asphalt material.

Part 3 Execution

3.1 APPLICATION

- .1 Obtain Departmental Representative's approval of surface before applying asphalt tack coat.
- .2 Apply asphalt tack coat only on clean and dry surface.
- .3 Dilute asphalt emulsion with water at 1:1 ratio for application.
- .4 Mix thoroughly by pumping or other method accepted by Departmental Representative.
- .5 Apply asphalt tack coat evenly to pavement surface at rate as directed by Departmental Representative, of 0.5 L/m² plus or minus 0.2 L/m².

- .6 Paint contact surfaces of curbs, gutters, headers, manholes and like structures with thin, uniform coat of asphalt tack coat material.
- .7 Do not apply asphalt tack coat when air temperature is less than 10 degrees C or when rain is forecast within 2 hours of application.
- .8 Apply asphalt tack coat only on unfrozen surface.
- .9 Evenly distribute localized excessive deposits of tack coat by brooming as directed by Departmental Representative.
- .10 Where traffic is to be maintained, treat no more than one half of width of surface in one application.
- .11 Keep traffic off tacked areas until asphalt tack coat has set.
- .12 Re-tack contaminated or disturbed areas as directed by Departmental Representative.
- .13 Permit asphalt tack coat to set before placing asphalt pavement.

END OF SECTION

Part 1 General**1.1 RELATED SECTIONS**

- .1 Section 01 11 00 – Summary of Work.
- .2 Section 01 33 00 - Submittal Procedures.
- .3 Section 01 35 31 – Special Procedures for Traffic Control.
- .4 Section 01 35 43 - Environmental Procedures.
- .5 Section 02 41 13.14 - Asphalt Pavement Removal.
- .6 Section 32 12 13.16 - Asphalt Tack Coat.

1.2 REFERENCES

- .1 BC MoTI specifications specified for the work can be found at the following website address:
 - .1 http://www.th.gov.bc.ca/Publications/const_maint/contract_serv_standard_specs_Volume_1_SS2012.pdf
- .2 Changes in Definition - The following changes in definitions have been made to the specifications:
 - .1 Consultant – The word “Consultant” shall mean Departmental Representative or his duly appointed representative.
 - .2 Department – “Department” shall mean Parks Canada Agency (PCA).

1.3 DESCRIPTION

- .1 Work shall consist of supplying, hauling and placing BC MoTI Medium Mix Class 1 ACP using 150-200A asphalt cement at locations on the Trans Canada Highway in Glacier NP as directed by the Departmental Representative.
- .2 Class 1 mix asphalt aggregate shall consist of a 19mm Medium Mix Asphalt Aggregate in accordance with BC MoTI – 2012 Standard Specifications for Highway Construction Section 502 – Asphalt Pavement Construction (EPS). Asphalt Cement shall be 150-200A penetration grade in accordance with BC MoTI – 2012 Standard Specifications for Highway Construction Section 502 – Asphalt Pavement Construction (EPS).
- .3 Applicable payment adjustments (additions or subtractions as applicable) will be applied in accordance with Part F – Payment Adjustments of BC MoTI – 2012 Standard Specifications for Highway Construction Section 502 – Asphalt Pavement Construction (EPS).
- .4 Perform mix designs for BC MoTI Class 1 Asphalt Concrete Pavement using Asphalt Cement 150-200A penetration grade and 19mm Asphalt Aggregate. Mix design is subject to acceptance by the Departmental Representative.
- .5 Milled Rumble Strips shall be installed in accordance with BC MoTI – Supplement to TAC Geometric Design Guide Section 650 – Rumble Strips. The Milled Shoulder Rumble Strips shall be Continuous SRS.” The Milled Rumble Strips are to be installed at various locations along the Trans Canada Highway as directed by the Departmental Representative.

1.4 MEASUREMENT PROCEDURES AND UNIT PRICE ADJUSTMENTS

- .1 Accepted asphalt concrete pavement will be measured in tonnes and will be paid for at the unit price for “Asphalt Concrete Pavement”. Payment shall be compensation in full for supply of asphalt concrete mix including all materials, supply and application of tack coat, processing, plant mixing, loading, hauling, paver laying, compacting, finishing surface, raking, interim and marking, quality control testing, safety, and maintenance. Applicable payment adjustments (additions or subtractions as applicable) will be applied in accordance with Part F – Payment Adjustments of BC MoTI – 2012 Standard Specifications for Highway Construction Section 502 – Asphalt Pavement Construction (EPS). Payments shall be made accordingly under **“Unit Price Item 2a) – Asphalt Concrete Pavement - EPS”**.
- .2 Supply, installation, maintenance, calibration of weight scales and a scale house, or alternately electronic calibrated silo scales, at the plant by the Contractor shall be considered incidental to **“Unit Price Item 2a) – Asphalt Concrete Pavement - EPS”** and no additional payment will be measured for payment. A scale person will be provided if required.
- .3 Preparing asphalt mix designs (including anti-stripping test), **by a qualified test laboratory licensed to practice in British Columbia** shall be considered incidental to **“Unit Price Item 2a) – Asphalt Concrete Pavement - EPS”** and no additional payment will be measured for payment.
- .4 The movement of equipment and crew, shall be considered incidental to **“Unit Price Item 2a) – Asphalt Concrete Pavement - EPS”** for the type of asphalt placed. A move is defined as the Contractor moving equipment and crew to the next section to pave after having completed, in its totality, the previous section.
- .5 **No overhaul will be considered for payment under this contract.**
- .6 Supply and delivery of tack coat, asphalt cement, and anti-stripping agent(s), if required and accepted by the Departmental Representative, shall be considered incidental to **“Unit Price Item 2a) – Asphalt Concrete Pavement - EPS”**.
- .7 Payment for the installation of the Milled Rumble Strips will be made under **“Unit Price Item 2b) – Milled Rumble Strips”**. The Milled Rumble Strips are to be installed at various locations along the Trans Canada Highway as directed by the Departmental Representative.
- .8 Traffic Control required for this Work shall be incidental to **“Lump Sum Price Item 2 - Traffic Accommodation”** and no separate payment will be made to the Contractor.
- .9 Mobilization and demobilization required for this Work shall be incidental to **“Lump Sum Price Item 1 – Mobilization / Demobilization”** and no additional payment will be made.

Part 2 Products**2.1 MATERIALS**

- .1 Materials used shall be in accordance with BC MoTI – 2012 Standard Specifications for Highway Construction Section 502 – Asphalt Pavement Construction (EPS).
- .2 Penetration grade 150-200A asphalt cement shall be used.

- .3 **The use of a Recycled Asphalt Mix (RAM) is not permitted for this project.**

Part 3 Execution

3.1 WORK METHODOLOGY

- .1 Environmental mitigations required in accordance with Section 01 35 43 – Environmental Procedures, for the Work in this Section shall be incidental to the contract and no separate payment shall be made to the Contractor.
- .2 **ACP thickness to be 85mm comprising 35mm bottom lift and 50mm top lift.**
- .3 **ACP thickness to be single 50mm lift for mill and fill areas as identified by the Departmental Representative.**
- .4 ACP leveling course may be required for specific areas as identified by the Departmental Representative.

3.2 EQUIPMENT, PLANT AND MIXING REQUIREMENTS

- .1 Execution of the Work shall be in accordance with **BC MoTI – 2012 Standard Specifications for Highway Construction Section 502 – Asphalt Pavement Construction (EPS)**.
- .2 Asphalt plant to be used on this project, regardless of location, shall be a minimum of 200 tonne per hour production plant, equipped with a dry bag system for pollution control, in addition to, or in replacement of standard cyclone dust collectors, to effectively eliminate emissions of dust and smoke pollutants into the atmosphere. Use of secondary dust collection systems, requiring discharge of dust polluted water into settling ponds or drainage system will not be permitted. Asphalt plant located outside the park must comply with all environmental pollution control regulations applicable in the asphalt plant area.

END OF SECTION

Part 1 General**1.1 RELATED WORK**

- .1 Section 01 35 00.06 – Special Procedures for Traffic Control.
- .2 Section 01 35 43 – Environmental Procedures.
- .3 Section 02 81 01 – Hazardous Materials.
- .4 Section 32 12 16 – Asphalt Concrete Pavement.

1.2 REFERENCES

- .1 CAN/CGSB-1.5-M99 Low Flash Petroleum Spirits Thinner.
- .2 CGSB1-GP-12C-83 Standard Paint Colours.
- .3 CGSB1-GP-71-83 Method, of Testing Paints and Pigments.
- .4 CAN/CGSB 1.74-01 Alkyd Traffic Paint.
- .5 U.S. FED-STD-595B, 1989 – Colours Used in Government Procurement.
- .6 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
- .7 Material Safety Data Sheets (MSDS).

1.3 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative following material sample quantities at least 4 weeks prior to commencing work.
 - .1 Two samples of each type of paint.
 - .2 One sample of glass beads.
- .3 Sampling to CGSB1-GP-71.
- .4 Mark samples with name of project and its location, paint manufacturer's name and address, name of paint, CGSB specification number and formulation number and batch number.

1.4 MEASUREMENT FOR PAYMENT

- .1 Temporary Pavement Marking including supply of paint and reflective glass beads in accordance with Section 01 35 00.06 - Special Procedures for Traffic Control shall be considered incidental to **”Lump Sum Price Item 2 – Traffic Accommodation”** and will not be measured for payment.
- .2 Final line painting shall be measured in linear metres along the centre of the paint line regardless of width or line-gap ratio and payment shall be considered full compensation for all equipment, labour, and materials required to complete the Work. Payment will be made under **“Unit Price Item 3a) – Pavement Marking - Line Painting”**.

- .3 Gore areas will be measured in metres squared within the gore boundary, regardless of the total area actually covered by painted chevrons. Payment shall be considered full compensation for all equipment, labour, and materials required to complete the Work. Payment will be made under **“Unit Price Item 3b) – Pavement Marking – Gore Marking”**. Gore area boundary lines shall be measured and paid for under **“Unit Price Item 3a) – Pavement Marking - Line Painting”**.
- .4 Payment for the supply and installation of pavement surface treatments such as arrow markings and stop bars will be made under **“Lump Sum Price Item 3 – Prime Cost Sum”**.
- .5 Traffic Control required for this Work shall be incidental to **“Lump Sum Price Item 2 – Traffic Accommodation”** and no separate payment will be made to the Contractor.

Part 2 Products

2.1 Materials

- .1 Paint:
 - .1 To CGSB 1.74-2001-CAN/CGSB, alkyd traffic paint.
 - .2 Colour: to FED-STD-595B, yellow 33538 and white 37925.
- .2 Upon request, Departmental Representative will supply a qualified product list of paints applicable to work. Qualified paints may be used but Departmental Representative reserves right to perform further tests.
- .3 Thinner:
 - .1 To CAN/CGSB-1.4-2000.
- .4 Overlay type:
 - .1 To CGSB1-GP-74M.

2.2 Supply, Storage and Handling

- .1 Storage and handling shall meet the requirements of Section 01 35 43 - Environmental Procedures and Section 02 81 01 - Hazardous Materials.
- .2 The Contractor shall make all arrangements for the supply and delivery of paint and glass beads and shall provide the Departmental Representative with records of all materials received and/or returned, on a daily basis.
- .3 The Contractor shall provide, maintain and reclaim all material storage sites.
- .4 No paint formulation shall be diluted or mixed with a different formulation or with any other material, without the specific approval of the Departmental Representative.
- .5 The Contractor shall take all necessary steps to prevent contamination of the materials. Paint shall be protected from freezing.
- .6 The Contractor shall be responsible for the proper clean up of waste or spilled material, and the proper disposition of containers.

Part 3 Execution**3.1 Temporary Markings**

- .1 The Contractor shall supply and place temporary line markings on newly constructed hard surfaces throughout the project, **re-establishing centerline and all lane-dividing lines prior to being opened to traffic**, and shall maintain such markings until the earlier of the Actual Completion Date or the date permanent markings have been placed. Temporary line markings are not required for lane edge lines (fog lines) unless otherwise directed.
- .2 Centerline of undivided highway shall be marked throughout as “no passing” unless otherwise directed by the Departmental Representative.
- .3 Painted temporary lines are not permitted on the final surface.

3.2 Permanent Markings

- .1 Prior to any work affecting existing pavement markings, the Contractor shall pick-up survey all key control points of existing markings at intersections, turn slots, exit tapers and similar features and, upon completion of the final hard surfacing, re-establish those points.
- .2 Further to the key control point pick-up, the Contractor shall also pick-up survey all Transverse and Chevron and Crosshatch Pavement Markings, upon completion of the final hard surfacing, re-establish those points.
- .3 All layout markings shall be done with white or yellow centreline paint which will be clearly visible after exposure to all Site conditions for a minimum period of two (2) months past the Actual Completion Date.
- .4 Key control points shall be marked at their design location within tolerances of ± 50 mm transversely and ± 100 mm longitudinally. Longitudinal tolerances for intermediate points, when required, are ± 10 m.
- .5 Equipment Requirements:
 - .1 Paint applicator to be an approved pressure type mobile distributor capable of applying paint in single, double and dashed lines. Applicator to be capable of applying marking components uniformly, at rates specified, and to dimensions as indicated, and to have positive shut-off.
 - .2 Distributor to be capable of applying reflective glass beads as an overlay on freshly applied paint.
- .6 Condition of Surfaces:
 - .1 Pavement surface to be dry, free from ponded water, frost, ice, dust, oil, grease and other foreign materials.
- .7 Application:
 - .1 Pavement markings to be laid out by Contractor.
 - .2 Apply paint only when air temperature is above 10°C , wind speed is less than 60 km/h and no rain is forecast within next 4 h.
 - .3 Apply traffic paint evenly at rate of 3 m²/L.
 - .4 Do not thin paint.

- .5 Paint lines to be of uniform colour and density with sharp edges.
- .6 Thoroughly clean distributor tank before refilling with paint of different colour.
- .7 Apply glass beads at rate of 200 g/m² of painted area immediately after application of paint.
- .8 Tolerance:
 - .1 Paint markings to be within plus or minus 12 mm of dimensions indicated.
 - .2 Remove incorrect markings as directed by the Departmental Representative.

3.3 Traffic Control

- .1 In accordance with Section 01 35 00.06 and Contractor's Traffic Management Plan.

3.4 Quality Control Inspection Plan

- .1 The Contractor is responsible for quality control inspection throughout every stage of the work to ensure that materials and workmanship comply with the requirements of this specification.
- .2 The Contractor shall develop and submit a Quality Control Inspection Program (QCIP) that addresses all the elements that affect the quality of the line painting including, but not limited to:
 - .1 Paint Application Rates.
 - .2 Glass Bead Application Rates.
 - .3 Pavement Surface and Atmospheric Conditions.
 - .4 Line Widths, Line Lengths and Space Lengths.
- .3 The Contractor shall maintain records of QCIP data, complaints from the public, and other details relevant to the Work and shall provide these records to the Departmental Representative daily.

3.5 Highway Operation

- .1 Highway operation shall be in accordance with the Contractor's **approved** Traffic Management Plan and shall meet the following requirements:
 - .1 General:
 - .1 Painting shall be carried out during hours of daylight between ½ hour after sunrise and ½ hour before sunset. Generally, the Contractor may paint lines during any day of the week but is cautioned that traffic volumes are usually higher on all highways on Friday, Saturday and Sunday.
 - .2 Operation of the painting truck against the flow of traffic will not be permitted.
 - .3 Loading glass beads or paint onto the painting truck is not permitted on a roadway surface.
 - .4 Operation of Companion Vehicles:
 - .0 When the roadway to be painted is open to public traffic, the Contractor shall operate a crash attenuator vehicle and a pilot

vehicle in conjunction with the painting truck during the painting of all longitudinal lines. Companion vehicle operators shall not attempt to control traffic from inside the vehicle.

- .1 The actual operating parameters of the companion vehicles will be determined by the Contractor to safely accommodate traffic and will be based on site specific conditions such as sight distances, highway geometrics and traffic patterns and volumes. Typical operating parameters are as follows:
- .2 The crash attenuator vehicle shall be equipped with a crash attenuator that meets National Cooperative Highway Research Program, Report 350 Test Criterion. Test Level 3 for 100 km/hr. The vehicle shall follow behind the painting truck at a distance of 50 to 400 m.
- .3 The pilot vehicle shall be driven in the same travel lane as the paint machine, following it at a constant distance of approximately two kilometres.
- .4 The crash attenuator vehicle, pilot truck and the painting truck are to display the same message at all times. The painting truck and the companion vehicles shall be equipped with a two-way radio for communication and overhead revolving beacon with an amber lens of a minimum 180 mm high and 180 mm wide.

END OF SECTION

Part 1 General**1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 35 00.06 – Special Procedures for Traffic Control.
- .3 Section 01 35 43 – Environmental Procedures.
- .4 Section 32 12 16 – Asphalt Concrete Pavement - EPS.
- .5 Section 33 42 13 – Pipe Culverts.

1.2 DESCRIPTION

- .1 Work includes the installation of precast concrete barriers in accordance to this section and as per drawings. Precast Concrete barrier supplied shall be as per British Columbia 2012 Standard Specifications for Highway Construction, Section 941 – Precast Reinforced Concrete Barriers. In addition, all end faces to have 25 mm chamfered edges.
- .2 Barriers used for Traffic Accommodation may be incorporated into the permanent barrier installation. Payment under this section shall only be made for barriers incorporated into permanent installation.

1.3 MEASUREMENT PROCEDURES

- .1 Remove and Stockpile Precast Concrete Barriers:
 - .1 Removal of Precast Concrete Barriers measured for payment will be the number of linear metres of existing precast concrete barrier removed from the roadside at designated locations and stockpiled at location(s) as directed by the Departmental Representative, regardless of the type of barrier, and shall be inclusive of all costs of labour, materials, equipment to satisfactorily complete this item as specified and in accordance with this Section. Payment will be made under **“Unit Price Item 4a) – Remove and Stockpile Concrete Barriers”**.
- .2 Remove, Haul and Dispose of Concrete Barriers:
 - .1 Removal, haul and disposal of Concrete Barriers measured for payment will be the number of linear metres of existing precast concrete barrier removed from the roadside at designated locations and disposed of outside of the National Park at an approved location, regardless of the type of barrier, and accepted by the Departmental Representative, and shall be inclusive of all costs of labour, materials, equipment to satisfactorily complete this item as specified and in accordance with this Section. Payment will be made under **“Unit Price Item 4b) – Remove, Haul and Dispose of Concrete Barrier”**.
 - .2 No overhaul will be paid for this item.
- .3 Installation of Concrete Barriers:
 - .1 Installation of Concrete Barriers measured for payment will be the number of linear metres assembled, regardless of the type of barrier, and accepted by the Departmental Representative, and shall be inclusive of all costs of labour, materials, equipment to satisfactorily complete this item as specified and in

accordance with this Section. Payment will be made under **“Unit Price Item 4c) – Install Concrete Barrier”**.

- .4 Supply of Concrete Barriers:
 - .1 If the supply of new precast concrete barrier is required to replace deficient barrier sections payment will be made under **“Lump Sum Price Item 3 – Prime Cost Sum”** and shall be inclusive of all costs of labour, materials, equipment to satisfactorily complete this item as specified and in accordance with this Section.
 - .2 New concrete barriers are to be installed in their final location during delivery or stockpiled in a location designated by the Departmental Representative.
- .5 The survey and layout of the Precast Concrete Barriers as per requirements identified in this Section and the plans, will not be measured directly for payment but shall be considered incidental to **“Unit Price Item 4 – Precast Concrete Barriers”**.
- .6 Concrete barriers used for Traffic Accommodation and not incorporated into the permanent installation shall not be measured and paid for separately but shall be included in payment under **“Lump Sum Price Item 2 – Traffic Accommodation”**.
- .7 Mobilization and demobilization required for this Work shall be incidental to **“Lump Sum Price Item 1 – Mobilization / Demobilization”**, and no additional payment will be made.
- .8 Traffic Control for survey, installation or relocation of Precast Concrete Barriers shall be incidental to **“Lump Sum Price Item 2 – Traffic Accommodation”** and no separate payment will be made to the Contractor.

1.4 REFERENCES

- .1 CAN/CSA-A23.1, Concrete Materials and Methods of Concrete Construction.
- .2 CAN/CSA-A23.4, Precast Concrete – Materials and Construction.
- .3 CAN/CSA-G40.21-98, Structural Quality Steel.
- .4 CAN/CGSB-1-GP-181M, Coating, Zinc-Rich,

1.5 DEFINITIONS

- .1 Compressive Strength Test Result: Average of strengths of three 28 day compressive test cylinder breaks with standard cylinders of 150 mm diameter and 300 mm high size.
- .2 Curing Period: 28 days if test cylinders reach specified 28 day compressive strength not later than 28 days after casting.
- .3 Laitance: soupy mixture of cement, fine sand and water that accumulates on concrete surface when wet concrete mixes that bleed excessively are used.

1.6 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures
- .2 Product Data:
- .3 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

- .4 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 81 01 - Hazardous Materials.
- .5 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
- .6 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .7 Manufacturer's Instructions: submit manufacturer's storage and installation instructions and special handling criteria, installation sequence, and cleaning procedures.

1.7 QUALITY CONTROL

- .1 Concrete test for every pour shall be performed by the contractor. Concrete testing procedures shall
- .2 Provide certification by Engineer licensed to practice in the province of the contractor, that precast concrete barrier meets specifications prior to delivery of materials. Certification to include results of concrete testing performed by independent laboratory retained by the Contractor

1.8 DELIVERY, STORAGE AND HANDLING

- .1 Packing, shipping, handling and unloading:
- .2 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .3 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .4 Storage and Protection:
- .5 Store materials in accordance with manufacturer's recommendations
- .6 Replace defective or damaged materials with new.
- .7 Waste Management and Disposal:
- .8 Separate waste materials in accordance with Section 01 35 43 – Environmental Procedures.

Part 2 Products

2.1 MATERIAL

- .1 Supply Precast Concrete barrier as per BC MoTI 2012 Standard Specifications for Highway Construction, Section 941 – Precast Reinforced Concrete Barriers. **In addition all end faces to have 25 mm chamfered edges.**

2.2 PRECAST CONCRETE BARRIER

- .1 Concrete Quality:
 - .1 To CAN/CSA-A23.1 except where amended below.

- .2 Compressive Strength: Compressive strength test result is equal to or exceeds 30MPa and no individual cylinder strength is less than 27 MPa.
- .3 Calcium chloride or admixtures containing calcium chloride are not to be used in concrete.
- .4 Cement Content: minimum of 320 kg/m³.
- .5 Water/Cement Ratio: maximum of 0.45.
- .6 Coarse Aggregate: nominal maximum size not exceeding 28 mm.
- .7 Slump: 50 mm plus or minus 20 mm.
- .8 Entrained Air: 5 to 8%.
- .9 Reinforcement: 50 mm fibrillated polypropylene fibres to be added at the rate of 0.9 kg/m³
- .2 Concrete Placing and Consolidation:
 - .1 To CAN/CSA-A23.4, Clause 19.
- .3 Concrete Curing and Protection:
 - .1 Strictly to CAN/CSA-A23.4, Clause 21.
 - .2 During curing period temperature differential between concrete surface and ambient air not to exceed 20°C.
- .4 Exposed Concrete Surfaces:
 - .1 Uniform in texture and colour as produced from well-maintained steel form surfaces and proper vibration methods without excessive surface fines or laitance.
 - .2 Surface defects will normally be cause for rejection of any unit except where such are within following permissible limits or are subject to making good within following permissible limits:
 - .3 Unobtrusive defects of any kind where their total area is not in excess of 2% of exposed surface area of unit.
 - .4 Air holes not greater than 3 mm in diameter and not more than 20 in any isolated 300 mm x 300 mm area.
 - .5 Sharp ridges at edges of exposed concrete surfaces softened where necessary by careful rubbing or grinding.
 - .6 Patching of isolated small holes, cavities and similar self-confining defects may be permitted when authorized by Departmental Representative.
- .5 Patching, if authorized, to be completed as follows:
 - .1 Defective area saturated with water and defect prepared with cement paste and filled with mortar.
 - .2 Mortar to be properly proportioned to same sand and cement as original concrete and reasonably colour-matched to cured dry unit with addition of white cement where necessary, to be pre-shrunk for about one hour before retempering and use.

- .3 Patching mortar to be well tooled in, finished flush and smooth and area covered to cure adequately.
- .4 Surface tolerance to be ± 3 mm unless otherwise indicated on drawings.
- .6 Finished Product:
 - .1 Contractor to notify Departmental Representative in advance of manufacturing of schedule so that inspection can be carried out. All processes are subject to inspection by Departmental Representative. Inspection or release of units by Departmental Representative is required prior to shipping.
 - .2 Identification indicated by embedding manufacturer's name or trademark, year of manufacture and form number on end of each unit in manner, size and depth that will be permanently legible.
 - .3 Authorized patching or making good to be inspected by Departmental Representative before shipment or upon delivery and rejected units replaced at no cost.
- .7 Welded Steel Wire Mesh Reinforcement:
 - .1 Welded wire mesh reinforcement not to be used.
 - .2 Fibrillated fibre strand reinforced concrete to be used for production of barriers.
 - .3 Reinforcing Steel for Bent and Hooked Connections:
 - .4 To CAN/CSA-G40.21-M, Grade 260W.
- .8 Bending:
 - .1 Carefully bend reinforcing steel to radii detailed and install as shown on drawings.
 - .2 Inspect reinforcing steel after bending for evidence of fracture. Fractured pieces to be replaced.
 - .3 Surface Treatment: Treatment of exposed surfaces not required.
- .9 Pick-up Points:
 - .1 Form with accurately placed rigid P.V.C. pipe recessed 15 mm from both finished surfaces as shown on drawings.
- .10 Drainage Slots: Cast-in as shown on drawings.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 DELIVERY

- .1 Storage of Precast Concrete Barriers on site to be in single layer, for first seven days.

- .2 Stacking of three layers high, with wood blocking between lifts, permitted with Departmental Representative approval, after seven days.
- .3 Barriers to be stacked three layers high, with wood blocking between lifts, at delivery location. Cost of supply and installation of wood blocking shall be incidental to the contract and no separate payment will be made.

3.3 PREPARATION

- .1 Environmental mitigations required in accordance with Section 01 35 43 – Environmental Procedures, for the Work in this Section shall be incidental to the contract and no separate payment will be made to the Contractor.

3.4 INSTALLATION

- .1 Precast Concrete Barriers shall be installed permanently on asphalt concrete pavement in accordance with Drawings and these Specifications.
- .2 Precast Concrete Barriers will also be installed temporarily for traffic protection as verified by the Departmental Representative. When no longer needed the barriers will be re-installed elsewhere or removed from site.
- .3 Contractor shall do the layout of the barriers.
- .4 The Departmental Representative will determine location of barriers with drainage openings for drainage and for small animal crossings.

3.5 FIELD QUALITY CONTROL

- .1 Contractor shall carry out all the necessary quality control to ensure barrier are supplied and installed as per these specifications.

3.6 CLEANING

- .1 Proceed in accordance with Section 01 74 11 – Cleaning. On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION