

Parks Canada Agency

Prince Albert National Park

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Drawings:

None

Reference Documents:

1. Basic (Environmental) Impact Assessment
2. Drawing 17 – Milling Transition

Part 1 General**1.1 SECTION INCLUDES**

- .1 Precedence
- .2 Definitions
- .3 Related Sections
- .4 Work Covered by the Contract Documents
- .5 Project Location
- .6 Contract Method
- .7 Work by others
- .8 Work sequence
- .9 Contractor use of premises
- .10 Owner Furnished Items
- .11 Owner occupancy
- .12 Construction Signage
- .13 Setting Out of Work

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 Saskatchewan Government Ministry of Highways and Infrastructure is referred to as “MHI”.
 - .1 **<http://www.highways.gov.sk.ca/business>**
- .2 Changes in Definition, - The following changes in definitions have been made to the MHI Specifications:
 - .1 Engineer – The word “Engineer” shall mean the Parks Canada Departmental Representative or his duly appointed representative unless noted otherwise.
 - .2 Deputy Minister – The word “Deputy Minister” shall mean Parks Canada Agency unless noted otherwise.
- .3 Prince Albert National Park is referred to as “PANP” or “The Park”.
- .4 Any reference to “Parks Canada Agency”, “Parks Canada”, “PCA” or “The Owner”, shall refer to Parks Canada Agency and shall include any affiliate or sub group of Parks 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 MHI Type 3 Asphalt Concrete Pavement using Asphalt Cement 150-200A penetration grade. Mix design is subject to acceptance by the Departmental Representative.
 - .2 Purchase asphalt binder and aggregate, mix, haul and place MHI Type 3 mix asphalt concrete pavement as directed by the Departmental Representative.
 - .3 ACP Thickness at overlay locations to be 85mm comprising of 35mm leveling course and 50mm top lift. Full depth paving section depths shall be in accordance with MHI EPS specifications and depths shall be approved by the Departmental Representative prior to the start of paving.
 - .4 ACP leveling course as directed by the Departmental Representative
 - .5 Milling at tie in locations.
 - .6 Pulverizing existing ACP into the base, and compacting and conditioning of pulverized material in sections as directed by the Departmental Representative.
 - .7 The use of Recycled Asphalt Pavement (RAP) is not permitted for this project.
 - .8 Removing and reinstalling existing concrete barriers or guardrails.
 - .9 Installation of milled rumble strips as directed by the Departmental Representative.
 - .10 Supply and installation of traffic control including temporary traffic markings, signage, and other temporary construction facilities required for completion of the Work of the Project.
 - .11 Supply and install permanent line markings at the completion of the work.
 - .12 Install permanent signage, posts, hardware and concrete bases, as directed by Departmental Representative.
 - .13 Supply site(s) outside of the Park for disposal of waste materials.
 - .14 Miscellaneous Additional Work as directed by the Departmental Representative.
 - .15 The Contractor will be permitted to set up an Asphalt plant in Prince Albert NP at the South Gate Warden office (Km 3.4).
 - .1 The asphalt plant to be used on this project, regardless of location, shall be a minimum of 200 tonnes per hour production, 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.
 - .16 Shouldering with contractor supplied aggregate material.

- .17 Where specifications for work covered under this Contract including any Change Orders are not available, the most recent version of the MHI – Standard Specifications shall apply unless directed by the Departmental Representative.

1.6 PROJECT LOCATION

- .1 The project is located in Prince Alberta National Park, north of Prince Albert, Saskatchewan. The following are key locations relative to the project:
 - .1 South Park Gate: Hwy 263 - Km 0
 - .2 South Gate Warden's Compound Entrance: Hwy 263 – Km 3.4
 - .3 Sandy Lake General Use Area: Hwy 263 - Km 10.3
 - .4 Kinowa Lake: Hwy 263 - Km 13.9
 - .5 Hwy 263 / Lakeview Drive Intersection: Hwy 263 - Km 41.6
 - .6 Hwy 264 / Lakeview Drive Intersection: Km 48.1
- .2 The kilometer stationing continues North along Lakeview Drive after the Hwy 263 / Lakeview Drive Intersection.

1.7 CONTRACT METHOD

- .1 Construct Work under combined price contract.

1.8 WORK BY OTHERS

- .1 The Contractor is advised that the following Work in the vicinity has been or will be contracted by Parks Canada:
 - .1 Road Drainage Improvement – B&B Asphalt Limited – Construction expected to be completed Summer 2015.
 - .2 Hwy 240 West of Hwy 263 at km 4.1 culvert replacement and road rehabilitation of Hwy 240. Construction is anticipated to be completed Summer 2015.
 - .3 Ongoing facility maintenance and wildlife management by Parks Canada staff within PANP.
- .2 The Contractor shall coordinate his operations with other contractors in the area as well as any Stakeholders in the area. No claims for any delays, lost profit or inconvenience will be entertained as a result of this coordination.

1.9 WORK SEQUENCE

- .1 The Contractor shall schedule work progress to allow Owner / Departmental Representative unrestricted access to inspect all phases of the Work.
- .2 The Contractor shall 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 Work within PANP shall not start prior to July 6th, 2015 and shall only be allowed to start once all required submittals have been approved.
 - .2 The Contractor shall be permitted to close segments of Hwy 263 to the general visiting public between the North and South boundaries of the project site during paving operations as agreed with the Departmental Representative.

- .3 The Contractor shall limit road closures along Hwy 263 to the segment(s) of roadway where active road rehabilitation is taking place. The remainder of Hwy 263 shall remain open for shared use of the Contractor, Parks Canada Agency staff and the general visiting public.
- .4 The Contractor shall complete all work and cleanup of the area before October 16, 2015 (Contract Completion Date).

1.10 CONTRACTOR USE OF PREMISES

- .1 The Contractor is not permitted to extract and process native material for the production of granular aggregate anywhere inside PANP unless specifically directed by the Departmental Representative.
- .2 The Contractor has use of site subject to above, Section 01 14 00 and Section 01 29 01 until Contract Completion date.
- .3 The Contractor shall limit use of premises for Work, for storage, and for access, to allow:
 - .1 Owner occupancy.
 - .2 Work by other Contractors.
- .4 The Contractor shall coordinate the use of the premises under direction of the Departmental Representative.
- .5 The Contractor shall obtain and pay for use of additional storage, disposal or work areas needed for operations under this Contract.
- .6 The Contractor and any Subcontractors shall obtain a business license from the Prince Albert National Park office in Waskesiu, prior to commencement of the contract. Contact Information is Gregg Rutten at (306) 663-4519.
- .7 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 PCA Environmental Surveillance Officer or as directed by the Departmental Representative.

1.11 OWNER FURNISHED ITEMS

- .1 The Owner may supply supplemental RAP for the purpose of shouldering as required.

1.12 OWNER OCCUPANCY

- .1 The Owner will occupy premises during entire construction period for execution of normal operations.
- .2 The Contractor shall cooperate with the Owner in scheduling operations to minimize conflict and to facilitate the Owner's usage.

1.13 CONSTRUCTION SIGNAGE

- .1 No signs or advertisements, other than warning signs and alternate traffic movement 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 The Contractor shall supply, install and maintain two (2) portable Changeable Message Signs with a minimum of three (3) lines with eight (8) characters per line, for the duration

of the project. The signs shall be located at the South Gate (Hwy 263 - Km 0) and the Hwy 236 / Lakeview Drive Intersection (Hwy 263 Km 41.6).

- .4 The Contractor shall maintain approved signs and notices in good condition for duration of project, and remove or dispose the signs off-site upon completion of project or earlier as directed by the Departmental Representative. The Changeable Message Signs shall become the property of PCA at the completion of construction.
- .5 All temporary traffic control signs that are used for longer than one day shall be mounted on wood posts other than changeable message signs that shall be secured at all times.
- .6 Signage shall be coordinated with other Contractors where necessary.

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 concrete barriers and 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 and at regular intervals (spaced 15 metres on center in tangent sections and 7.5m apart on curves), the location of the existing centreline.
- .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, including layout and removal 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 will be paid under **“Unit Price Item 3 – Pavement Marking”**.

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 Related Sections
- .3 Access and Egress
- .4 Use of the Site and Facilities
- .5 Work Conducted Over or Adjacent to Waterways
- .6 Access to Adjacent Properties
- .7 Utilities
- .8 Survey of existing property conditions
- .9 Protection of persons and property
- .10 Use of public areas
- .11 Supervisory personnel
- .12 Meetings
- .13 Waste disposal
- .14 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 ACCESS AND EGRESS

- .1 Contractor vehicular access to the site shall be restricted to construction, emergency and maintenance vehicles for the duration of the contract.

1.5 USE OF THE SITE AND FACILITIES

- .1 The Work Sites specified in these specifications shall only be used for the purposes of the Work. The Work Site will be made available by the Owner 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 may establish a construction camp in the Sandy Lake Campground at km 10.3. This campground is normally used by the Public between May until after the long weekend in September. To allow for construction of this project the Campground will be

closed for the season after August 4th, 2015. An area 50 m by 50 m will be available for the construction camp. Should more area be required, the Contractor shall request additional area, which will be reviewed and will be subject to the Departmental Representatives approval. Contractor's Camp shall be limited to accommodation of Contractor's personnel only. The Campground area may be required to be shared by other Contractors, and the Contractor shall be required to coordinate accordingly. The area for a camp will be determined by the Departmental Representative. See Section 01 35 43, Environmental Procedures. Parks Canada regulations prohibit anyone working within the Park from using public campground facilities except as specifically identified herein.

- .3 Water is available at the PANP Sandy Lake Campground. The contractor must obtain a Restricted Activity Permit (RAP) prior to extraction of water from within the National Park.
- .4 Office-tool trailer(s) may also be set up at the South Gate Warden's Compound (Km 3.4) in an area designated by the Departmental Representative. See Section 01 35 43 - Environmental Procedures.
- .5 Contractor shall maintain adequate drainage and siltation control at the Worksite.
- .6 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 or her cost for the performance and inspection of the Work.
- .7 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.
- .8 Any damage to the Work Site or campground caused by the Contractor shall be repaired by the Contractor at their expense prior to contract completion date or construction completion.
- .9 The Contractor will be permitted to set up an Asphalt plant in Prince Albert NP at the South Gate Wardens Compound (Km 3.4). Plant setup will be subject to Section 01 35 43 Environmental Procedures and Parks Canada Best Management Procedures (BMP).
- .10 **The Contractor may work during daylight hours, from 7:00am to 10:00pm, seven days per week subject to the following restrictions:**
 - .1 **Blasting restricted to between 10:00 a.m. and 8:00 p.m.**
 - .2 **No hauling of material during inclement weather, or as directed by the Departmental Representative.**
 - .3 **The Contractor will not be permitted to work on Civic Holidays or long weekends unless prior written approval is granted by the Departmental Representative.**
 - .4 **The following is a list of Statutory and Civic Holidays:**
 - .1 **Civic Holiday long weekend: From 7:00 AM Friday, July 31, 2015 to 7:00 AM Tuesday, August 4, 2015.**
 - .2 **Labour Day long weekend – From 7:00 AM Friday, September 4, 2015 to 7:00 AM Tuesday, September 8, 2015.**

.3 Thanksgiving Long Weekend – From 7:00 AM Friday, October 9, 2015 to 7:00 AM Tuesday, October 13, 2015.

- .5 The Contractor will not be permitted to adversely impact wildlife during critical life stages (breeding, nesting, rearing, and migration) unless prior written approval is granted by the Departmental Representative. **The Contractor shall consult with the Departmental Representative to discuss any localized wildlife concerns. A Bird survey shall be conducted by the Departmental Representative prior to the start of construction, and as needed during the project. Work will be restricted if critical life stages are observed adjacent to the project. The Contractor shall make no claim for costs, lost time or profit should delays occur due to this item.**

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 and the Environmental Protection Plan prepared for the project.
- .2 All components of the Work shall be conducted without equipment entering into wetlands, water bodies, or streams. 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. One "Bear Proof" garbage container will be provided by PCA at Sandy Lake Campground. The Contractor shall be responsible to provide any additional containers as needed.
- .4 The Contractor is responsible for the development and supply of all construction access to the Work as approved by the Departmental Representative.

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 required and if new access must be provided, coordination with the landowner shall be required 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 safeguard all infrastructure. The Contractor 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 in a manner that is acceptable to the utility owner, using hand labour if 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 Site and of property on / and adjoining the Work Site throughout the construction period, and shall immediately notify the Owner if any deterioration in condition is detected. Such monitoring shall cover all pertinent features and property including, but not limited to, buildings, structures, roads, walls, fences, slopes, sewers, culverts and landscaped areas.
- .3 The Departmental Representative may, but shall not be obligated to, survey and record the condition of the Work Site and of property on or adjoining the Work Site prior to the commencement of construction by the Contractor. If requested, the Departmental Representative will provide a copy of the survey records to the Contractor for reference.
- .4 Whenever supplied with survey records, the Contractor shall satisfy itself as to the accuracy and completeness of the survey records provided by the Departmental Representative for any area before commencing construction in that area.
- .5 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.
- .6 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 property within or adjacent to the Work Site, whether all such property is covered by the survey or not.

1.10 PROTECTION OF PERSONS AND PROPERTY

- .1 The Contractor shall comply with all applicable safety regulations of the Workers' Compensation Board of Saskatchewan (WCB) including, but not limited to, WCB's Industrial Health and Safety Regulations, Industrial First Aid Regulations, and Workplace Hazardous Materials Information System Regulations.
- .2 The Contractor shall 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 Site.
- .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 Off-road construction equipment will not be allowed on the existing Hwy 263 roadway. 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 Certified Flag persons shall be provided during mobilization and demobilization of construction site and when work vehicles are entering or exiting the work site or at any time when the existing access gate is not closed. Additional barricades shall be required to prevent public vehicles from entering the closed sections of the Hwy 263 Roadway.
- .3 The Contractor shall ensure that its vehicles and equipment do not cause nuisance in public areas. All vehicles and equipment leaving the Work Site and entering public roadways shall be cleaned of mud and dirt clinging to the body and wheels of the vehicle. All vehicles arriving at or leaving the Work Site and transporting materials shall be loaded in a manner which will prevent dropping of materials or debris on the roadways, and where contents may otherwise be blown off during transit such loads shall be covered by tarpaulins or other suitable covers. Spills of 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 Quality Control 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 or Project Coordinator who shall have the authority of the Project Superintendent during the Project Superintendents 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.
 - .4 The Quality Control Representative shall be responsible for implementation and record keeping for all aspects of project quality control. The Quality Control

Representative shall be the Departmental Representative's single point of contact for project quality control.

1.13 MEETINGS

- .1 The Work includes attending regularly scheduled meetings between the Contractor and the Departmental Representative. All project meetings will be called and facilitated 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 project kick off meeting to be held at a location to be determined by the Departmental Representative after award and subsequent notification. Senior representatives of the Owner, Departmental Representative, Contractor, major Subcontractors, field inspectors, supervisors and Utility Companies (if required) are to be in attendance.
- .3 The Contractor shall assemble his site staff and sub-contractors for an environmental briefing to be conducted by the Owner. The duration of the briefing shall reflect the information to be shared by the Owner's staff to adequately convey the importance of the information and shall be held at initial project start-up. **The Contractor shall ensure that all current project staff are 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, additional briefings will be arranged for new project staff and sub-contractors within 2 hours of reporting for duty 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 work site to approved sites outside Prince Albert NP.
- .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 The Contractor shall give precedence to safety and health of public and site personnel and protection of the environment over cost and schedule considerations for Work, as shall be included in the Contractor's Health and Safety Plan.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

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

1.2 REFERENCES

- .1 General Conditions.

1.3 PRIME COST SUM

- .1 Include in Contract Price a total **Prime Cost Sum of \$565,000.00.**
- .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 Price Table is not a sum due to the Contractor. Payment to the Contractor shall be made from the Prime Cost Sum 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 Excavate, load, haul, crush, and stockpile aggregate materials
 - .2 Relocation, repair or removal and disposal of existing guardrail and other miscellaneous items;
 - .3 Shoulder gravelling (outside asphalt paving areas)
 - .4 Crack filling
 - .5 Supply and use of stripping agents
 - .6 Ditching
 - .7 Pot hole patching
 - .8 Additional road structure repairs
 - .9 Removing and Re-installing existing and/or new barriers or guardrails
 - .10 Earthwork and/or slope stabilization
 - .11 Supply and installation of culverts and additional drainage
 - .12 Removing or Repairing of culverts
 - .13 Installation of milled rumble strips
 - .14 Supply and installation of geotextiles
 - .15 Supply and installation of Rip Rap
 - .16 Supply and installation of permanent signs (not construction signs)
 - .17 Supply and installation of raised reflective road markers and barrier reflectors
 - .18 Supply and installation of guide posts

- .19 Supply and installation of additional pavement markings
- .20 Additional survey resulting from changes made by the Departmental Representative
- .21 Additional stripping, excavation and disposal of waste materials as directed by the Departmental Representative
- .22 Remediation or removal and replacement of unsuitable or contaminated soils not described in the contract documents
- .23 Grass seeding of reshaped ditch areas as directed by the Departmental Representative.
- .24 Test pitting of gravel pits (including clearing, grubbing and brushing)
- .25 Additional Aggregate crushing
- .26 Supply and installation of landscaping as directed by the Departmental Representative.
- .27 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 Saskatchewan Heavy Construction Association (SHCA) Rental Rate schedule, and will be all inclusive and fully operated.
 - .2 Hourly rental of equipment will be measured in actual working time and necessary travel time within project limits.
 - .3 Transportation time to and from site will be reimbursed only for equipment used exclusively for additional work.
 - .4 PST should be added to any material invoices or Subcontractor invoices.

Part 2 Products

- .1 Materials and products shall be in accordance with the most current version of the Saskatchewan Government Ministry of Highways and Infrastructure Standard Specifications, or as directed by the Departmental Representative.

Part 3 Execution

- .1 Work shall be in accordance with the most current version of the Saskatchewan Government Ministry of Highways and Infrastructure Standard Specifications, or as directed by the Departmental Representative.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Related Sections
- .2 Description
- .3 Measurement Procedures

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 Mobilization and Demobilization does not include work or operations outside of the Park in Private Pits or disposal sites.
- .3 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 Precedence
- .2 Related Sections
- .3 Definition of Occupancy

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 use and occupy sites where he will be working in Prince Albert National Park, free of charge from **July 6, 2015** up to and including the completion date of **October 16, 2015**.
- .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.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Related Sections
- .2 Measurement Procedures
- .3 Coordination
- .4 Project Meetings
- .5 Construction Organization and Start-up
- .6 On-site Documents
- .7 Submittal Schedule
- .8 Project Schedules
- .9 Construction Progress Meetings
- .10 Submittals.
- .11 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 The Contractor shall coordinate progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work, with progress of Work of other Contractors, and Work by the Owner, under instructions of the Departmental Representative.

1.5 PROJECT MEETINGS

- .1 The Contractor shall attend weekly project meetings chaired by the Departmental Representative, throughout progress of Work and provide information as determined by the Departmental Representative.

- .2 The Contractor shall 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 The Contractor shall provide physical space and make arrangements for meetings.

1.6 CONSTRUCTION ORGANIZATION AND START-UP

- .1 Within seven (7) days after award of Contract, the Contractor shall request a meeting of Contract Representatives to discuss and resolve administrative procedures and responsibilities. The meeting is to be chaired by the Departmental Representative who will record the minutes of the meeting.
- .2 Senior representatives of the Owner, Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors shall 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 Monthly progress claims, administrative procedures, photographs, and holdbacks.
 - .9 Close out procedures and submittals in accordance with Sections 01 77 00 and 01 78 00.
 - .10 Insurances and transcript of policies.
 - .11 Other business.
- .4 The Contractor shall comply with the Departmental Representative's allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- .5 During construction, the Contractor shall coordinate use of site and facilities through the Departmental Representative's procedures for intra-project communications: Submittals, reports and records, schedules, coordination of Drawings, recommendations, and resolution of ambiguities and conflicts.
- .6 The Contractor shall comply with the instructions of the Departmental Representative for use of temporary utilities and construction facilities.
- .7 The Contractor shall coordinate field layout work with the Departmental Representative.

1.7 ON-SITE DOCUMENTS

- .1 The Contractor shall maintain at job site, one copy each of the following:
 - .1 Contract Drawings if part of tender.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed 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.
 - .15 A set of Red Line / marked up drawings - to form the basis of As – Built drawings to be developed at construction completion.

1.8 SUBMITTAL SCHEDULE

- .1 The Contractor shall 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 The Contractor shall 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, the Contractor shall revise and resubmit the schedule to comply with revised project schedule.
- .3 During progress of Work, the Contractor shall revise and resubmit the schedule as directed by the Departmental Representative.
- .4 In addition to the project schedule, , the Contractor shall submit weekly schedules during the weekly meeting to the Departmental Representative showing the 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, the Contractor shall schedule progress meetings weekly.
- .2 The Contractor, major Subcontractors involved in the Work, and the 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 The Contractor shall submit product data to Section 01 33 00 for review for compliance with the Contract Documents.
- .2 The Contractor shall submit requests for payment for review, and for transmittal to the Departmental Representative. Payment request shall be on last day of the month.
- .3 The Contractor shall submit requests for interpretation of the Contract Documents, and obtain instructions through the Departmental Representative.
- .4 The Contractor shall process substitutions through the Departmental Representative.
- .5 The Contractor shall process change orders through the Departmental Representative.
- .6 The Contractor shall deliver closeout submittals for review and preliminary inspections, for transmittal to the Departmental Representative.

1.12 CLOSEOUT PROCEDURES

- .1 The Contractor shall notify the Departmental Representative when the Work is considered ready for Substantial Performance.

- .2 The Contractor shall accompany the Departmental Representative on a preliminary inspection to determine items listed for completion or correction (deficiencies).
- .3 The Contractor shall comply with the Departmental Representative's instructions for correction of items of Work listed in executed certificate of Substantial Performance.
- .4 The Contractor shall notify the Departmental Representative of completion of the deficiencies list when the work as determined in the Departmental Representative's final inspection 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 Related Sections
- .2 Measurement Procedures
- .3 Precedence
- .4 Definitions
- .5 Requirements
- .6 Submittals
- .7 Project Milestones
- .8 Master Plan
- .9 Project Schedule
- .10 Project Schedule Reporting
- .11 Project Meetings

1.2 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work
- .2 Section 01 14 00 – Work Restrictions
- .3 Section 01 21 00 – Allowances
- .4 Section 01 35 43 – Environmental procedures

1.3 MEASUREMENT PROCEDURES

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

1.4 PRECEDENCE

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

1.5 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.

1.6 REQUIREMENTS

- .1 The Contractor shall ensure the Project Schedule is practical and remains within specified Contract duration.
- .2 The Contractor shall 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 The Contractor shall 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 The Contractor shall plan to complete Work in accordance with prescribed Project Schedule.
- .5 The Contractor shall limit activity durations to maximum of approximately 14 working days, to allow for progress reporting.
- .6 The Contractor shall 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 The Contractor shall include the requirements of Section 01 14 00 - Work Restrictions and Section 01 35 43 – Environmental procedures.

1.7 SUBMITTALS

- .1 The Contractor shall submit to the Departmental Representative within 10 working days of Award of Contract, Bar (GANTT) Chart as a Master Plan for planning, monitoring and reporting of project progress.
- .2 The Contractor shall submit a Project Schedule to the Departmental Representative within 10 working days of receipt of acceptance of the Master Plan.

1.8 PROJECT MILESTONES

- .1 Project milestones form interim targets for Project Schedule. Completion of each Stage of Construction:

- .1 Complete all work by October 16, 2015 (Contract Completion Date).**

1.9 MASTER PLAN

- .1 The Contractor shall structure the schedule to allow orderly planning, organizing and execution of the Work as a Bar Chart (GANTT).
- .2 The Departmental Representative will review and return revised schedules within 5 working days.
- .3 The Contractor shall revise impractical schedule and resubmit within 5 working days.
- .4 The accepted revised schedule will become Master Plan and be used as baseline for updates.

1.10 PROJECT SCHEDULE

- .1 The Contractor shall develop a detailed Project Schedule derived from Master Plan.
- .2 The Contractor shall ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award.
 - .2 Permits.
 - .3 Submittals:
 - .4 Project Schedule
 - .5 List of subcontractors, suppliers and Departmental Representative
 - .6 Contractor Chain of Command including Sub-Contractors and Departmental Representatives
 - .7 Prime Contractor / co-ordination with other Contractors Plan
 - .8 Work Plan
 - .9 Environmental Protection Plan
 - .10 Traffic Management Plan
 - .11 Site access / Detour Plan
 - .12 Emergency Response Protocol
 - .13 Site Specific Health and Safety Plan, incl. MSDS sheets
 - .14 On site Contingency and Emergency Response Plan
 - .15 Management of Owner-supplied material Plan
 - .16 Survey Plan
 - .17 Quality Control Plan
 - .18 Shop Drawings
 - .19 Concrete / asphalt mix Designs

Parks Canada Agency

Prince Albert National Park

- .20 Mobilization
- .21 Work Activities by road segments / locations:
- .22 Detours / Site Access
- .23 Asphalt Concrete Pavement placement
- .24 Shouldering
- .25 Concrete barrier removal and installation
- .26 Line painting
- .27 Additional Work as and when requested
- .28 Quality Control Report
- .29 Interim Inspection
- .30 Site Clean-up / De-mobilization

1.11 PROJECT SCHEDULE REPORTING

- .1 The Contractor shall update the Project Schedule on monthly basis reflecting activity changes and completions, as well as activities in progress. The Contractor shall provide weekly Progress Reports to the Departmental Representative.
- .2 The Contractor shall include as part of Project Schedule, narrative reports identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.12 PROJECT MEETINGS

- .1 The Contractor shall discuss the 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 Related Sections
- .2 Measurement Procedures
- .3 Administrative
- .4 Asphalt Concrete Mix Designs
- .5 Certificates and Transcripts
- .6 Required Contractor 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 considered incidental to contract and no payment shall be made for this item.

1.4 ADMINISTRATIVE

- .1 The Contractor shall submit to the Departmental Representative all submittals listed for review. The submissions shall be prompt and in orderly sequence so as to not cause a 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 submittals shall not proceed until review is complete and approval has been given by the Departmental Representative.
- .3 The Contractor shall 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 The Contractor shall 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 co-ordinated with requirements of the 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 The Contractor shall notify the Departmental Representative in writing at the time of submission, identifying any deviations from requirements of the Contract Documents stating reasons for deviations.
- .7 The Contractor shall verify the field measurements and affected adjacent Work is consistent.
- .8 The Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 The Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 The Contractor shall keep one reviewed copy of each submission on site.

1.5 ASPHALT CONCRETE MIX DESIGNS

- .1 The Contractor shall submit the asphalt concrete mix design to the Departmental Representative. The Contractor shall allow for fourteen (14) calendar days for the Departmental Representative's review of each submission.
- .2 The term "mix design" means engineered design for proportioning materials in concrete or asphalt concrete pavement including all supporting test results and materials properties. Asphalt mix design to be performed by a qualified test laboratory licensed to practice in Saskatchewan.
- .3 The Contractor shall submit letter(s) of certification with all asphalt concrete mix designs.
- .4 The review of asphalt concrete mix designs by the Departmental Representative is for the sole purpose of ascertaining general conformance with the design concept. This review shall not mean that the Departmental Representative approves of the detailed design and will therefore not relieve the contractor of responsibility for errors in the asphalt mix design.
- .5 The Contractor shall 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 mix design, product and sample.
 - .5 Other pertinent data.
- .6 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor,
 - .2 Supplier,
 - .3 Manufacturer.

- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with the Contract Documents.
- .4 Details of appropriate portions of the Work as applicable:
 - .1 Performance characteristics,
 - .2 Standards.
- .7 The Contractor shall revise the mix design as required following the Departmental Representative's review.
- .8 The Contractor shall submit one (1) electronic copy of the mix design for each requirement requested in the Specification Sections and as requested by the Departmental Representative.
- .9 The Contractor shall 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.
- .10 The Contractor shall delete information not applicable to project.
- .11 The Contractor shall supplement standard information to provide details applicable to project.

1.6 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, The Contractor shall submit their Workers' Compensation Board status.
- .2 The Contractor shall submit transcription of insurance immediately after award of Contract.

1.7 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 The Contractor shall 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 Campsite Plan, showing layout of the site and how it will be administered in accordance with Section 01 35 43 – Environmental Procedures.
- .9 The 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.
- .10 Site Access and Detour Plans. It shall include but not be limited to, Engineered Drawings and procedures for accessing all areas of the Work or for any proposed detours or lane closures.
- .11 Survey Plan describing the Contractor's intended methods of surveying during this project.
- .12 Health And Safety Plan - The Contractor shall have a Certificate of Recognition (COR) 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.
- .13 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 Site specific hazard assessment.
 - .5 General safety rules for project.
 - .6 Job specific safe work procedures.
 - .7 Inspection policy and procedures.
 - .8 Incident reporting and investigation policy and procedures.
 - .9 Occupational Health and Safety meetings.

- .10 Occupational Health and Safety communications and record keeping procedures.
 - .11 Results of safety and health risk or hazard analysis for site tasks and operation.
 - .14 Copies of Material Safety Data Sheets (MSDS).
 - .15 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.
 - .16 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
 - .17 The Contractor shall not begin any site Work until the Departmental Representative has authorized acceptance of the submittals in writing.
 - .18 A copy of the filed Notice of Project with Provincial authorities.
 - .19 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 The Contractor shall submit the following documents on an ongoing basis during the project as required:
 - .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.
- .7 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.

- .2 The Contractor shall submit copies of reports or directions issued by Federal and Provincial health and safety inspectors to the Departmental Representative.
- .3 The Contractor shall submit copies of incident and accident reports to the Departmental Representative.

.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.
- .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 Related Sections
- .2 Measurement Procedures
- .3 References
- .4 Submittals
- .5 Filing of Notice
- .6 Safety Assessment
- .7 Meetings
- .8 Regulatory Requirements
- .9 Project / Site Conditions
- .10 General Requirements
- .11 Responsibility
- .12 Compliance Requirements
- .13 Unforeseen Hazards
- .14 Health and Safety Coordinator
- .15 Posting of Documents
- .16 Correction of Non-compliance
- .17 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 Saskatchewan, Occupational Health and Safety Regulations

1.5 SUBMITTALS

- .1 The Contractor shall make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 The Contractor shall 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.
- .3 The Contractor shall submit copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative and authority having jurisdiction, weekly.
- .4 The Contractor shall submit copies of reports or directions issued by Federal and Provincial health and safety inspectors.
- .5 The Contractor shall submit copies of incident and accident reports.
- .6 The Contractor shall submit copies of Material Safety Data Sheets (MSDS) to Departmental Representative.
- .7 The Departmental Representative will review the Contractor's site-specific Health and Safety Plan and provide comments to Contractor within ten (10) days after receipt of plan. The Contractor shall revise the plan as appropriate and resubmit the plan to the Departmental Representative within five (5) days after receipt of comments from the Departmental Representative.
- .8 The Departmental Representative's review of the 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.
- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, the Contractor shall submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to the Departmental Representative.
- .10 The Contractor shall address standard operating procedures to be implemented during emergency situations through an on-site Contingency and Emergency Response Plan.

1.6 FILING OF NOTICE

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

1.7 SAFETY ASSESSMENT

- .1 The Contractor shall perform a site specific safety hazard assessment related to project.

1.8 MEETINGS

- .1 The Contractor shall 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 The Contractor shall do Work in accordance with National Parks Act.

1.10 PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with WorkSafe Saskatchewan (Occupational Health and Safety).

1.11 GENERAL REQUIREMENTS

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

1.12 RESPONSIBILITY

- .1 The Contractor shall 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 The Contractor shall 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 the site-specific Health and Safety Plan.

1.13 COMPLIANCE REQUIREMENTS

- .1 The Contractor shall comply with the Saskatchewan Employment Act and all General Safety Regulations required in the Province of Saskatchewan.
- .2 The Contractor shall comply with Canada Labour Code, and 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 The Contractor shall employ and assign to the Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Co-ordinator 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 The Contractor shall 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 The Contractor shall immediately address health and safety non-compliance issues identified by any party or by the Departmental Representative.
- .2 The Contractor shall provide the Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 The Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.18 WORK STOPPAGE

- .1 The Contractor shall give precedence to safety and health of public and site personnel and protection of the environment over cost and schedule considerations for Work, as shall be included in the Contractor's Health and Safety Plan.

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 Related Sections
- .3 Measurement Procedures
- .4 References
- .5 Quality Control
- .6 General Protection of Public Traffic
- .7 Informational and Warning Devices
- .8 Control of Public Traffic
- .9 Operational Requirements

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, layout, and removal, 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. 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.
- .2 The Contractor shall receive payment for traffic management on a monthly basis prorated by the number of months working on site, not to exceed the total lump sum bid price for Traffic Management.
- .3 Cost of keeping existing roadway, clean, free of pot holes while Contractor is on site 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.
- .4 Cost of snow removal for Contractor to do the work identified in the Contract while Contractor is on site 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. This excludes initial snow removal on Public roads.

1.5 REFERENCES

- .1 The Contractor shall provide traffic control in accordance with current edition of:
 - .1 Saskatchewan Ministry of Highways and Infrastructure (MHI) - Traffic Control Devices Manual for Work Zones.

- .2 Manual of Uniform Traffic Control Devices for Canada, (MUTCD) distributed by Transportation Association of Canada.

1.6 QUALITY CONTROL

- .1 All Quality Control shall be performed by the Contractor.

1.7 GENERAL

- .1 The Contractor shall be permitted to close segments of Hwy 263 to the general visiting public between the North and South boundaries of the project site during operations as agreed with the Departmental Representative.
- .2 The Contractor shall limit road closures along Hwy 263 to the segment(s) of roadway where active road rehabilitation is taking place. The remainder of Hwy 263 shall remain open for shared use of the Contractor, Parks Canada Agency staff and the general visiting public.
- .3 The Contractor shall develop and implement a Traffic Management Plan in accordance with the requirements of the current edition of the Saskatchewan Ministry of Highways and Infrastructure Standard – Traffic Control Devices Manual For Work Zones, except where specified otherwise.
- .4 The Contractor shall design, supply, erect, move and maintain all traffic control devices, signs, temporary pavement marking, and 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.
- .5 Roadway shall be maintained during construction and left in good condition at the end of all construction phases to the satisfaction of the Departmental Representative.
- .6 All temporary signs that are used for longer than one day shall be mounted on wood posts.
- .7 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.
- .8 Temporary pavement marking used shall be acceptable to the Departmental Representative. These temporary pavement markings shall be in accordance with the current Ministry of Highways and Infrastructure Standard – Traffic Control Devices Manual For Work Zones.
- .9 All temporary pavement markings will be removed at the Contractor's expense prior to the completion of the Contract. 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.
- .10 Contractor shall have appropriate traffic control measures in place so that one lane of highway traffic are maintained through the work zone at all times when the roadway is open to the public.
- .11 The Contractor shall coordinate traffic management procedures with other Contractors working in the area.

1.8 PROTECTION OF PUBLIC TRAFFIC

- .1 The Contractor shall 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 The Contractor shall develop a Traffic Control Plan taking into account all hazards associated with reclamation and paving operations on a busy highway and minimize risks to motorists. The Contractor shall provide the Traffic Control Plan to the Departmental Representative two weeks prior to the start of construction for review.
- .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 The Contractor shall submit a Traffic Management Plan prior to commencement of work. Roadway closures lasting more than one day will be allowed where active work is being conducted, but must be planned for prior to the closure of the roadway. The Contractor shall coordinate roadway closures with the Departmental Representative to ensure that areas that are not being worked on remain open to the public. Emergency vehicles (i.e., ambulance, RCMP, Park Warden) shall be granted immediate passage at all times, even through closed sections of roadway.
- .5 Regardless of type of traffic control being used, when the roadway has not been closed, the maximum period of delay to public traffic shall be 20 minutes. Emergency vehicles (i.e., ambulance, RCMP, Park Warden) shall 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 trained satisfying Saskatchewan Regulations.
- .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.

1.9 INFORMATIONAL AND WARNING DEVICES

- .1 The Contractor shall 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 The Contractor shall 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.
- .3 The Contractor shall supply, install and maintain two (2) portable Changeable Message Signs with a minimum of three (3) lines with eight (8) characters per line, for the duration

of the project. The signs shall be located at the South Gate (Hwy 263 - Km 0) and the Hwy 236 / Lakeview Drive Intersection (Hwy 263 Km 41.6). The Changeable Message Signs shall become the property of PCA at the completion of construction.

- .4 Place signs and other devices to standards and in locations recommended in the MHI Standard Traffic Control Devices Manual For Work Zones. Provide intermittent signage if work zones exceed 2.0 km in length.
- .5 Signs shall be wind resistant.
- .6 As situations on site changes, the Contractor shall update the Traffic Management Plan outlining signs and other devices required for the project and submit for the approval of the Departmental Representative.
- .7 The Contractor shall continually inspect and maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location and shall record this information on a sign log.
 - .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, trained in accordance with, and properly dressed and equipped as specified in, MHI Standard Traffic Control Devices Manual For Work Zones:
 - .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 where traffic volumes are heavy, approach speeds are high 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 shall be a maximum of 20 minutes where the roadway has not been closed.
- .3 No stoppage of traffic will be allowed on Hwy 263 for the periods listed in Section 01 14 00 – Work Restrictions.

- .4 During hours of darkness, the 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.

1.11 OPERATIONAL REQUIREMENTS

- .1 The Contractor shall maintain existing conditions for traffic on Hwy 263 throughout period of contract except that, when required for construction under contract and when measures have been taken as specified herein and approved by Departmental Representative to protect and control public traffic, existing conditions for traffic to be restricted as follows:
 - .1 Speed limit reduced to 50 km/h in work zones in non-work periods.
 - .2 Speed limit reduced to 30 km/h in work zones in work periods.
- .2 The Contractor shall maintain existing conditions for traffic or pedestrians crossing right-of-way.
- .3 No stoppage of traffic shall be allowed during inclement weather conditions unless previously approved by the 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 Related Sections
- .2 Precedence
- .3 Measurement Procedures
- .4 Submittals
- .5 National Park Regulations
- .6 Canadian Environmental Assessment Act (CEAA)
- .7 Start-up and Environmental Briefing
- .8 Construction Access and Parking
- .9 Protection of Work Limits
- .10 Erosion Control
- .11 Pollution Control
- .12 Equipment Maintenance, Fuelling and Operation
- .13 Operation of Equipment
- .14 Fire Prevention and Control
- .15 Wildlife
- .16 Relics and Antiquities
- .17 Waste Materials Storage and Removal
- .18 Miscellaneous Site Management Contingencies
- .19 Asphalt Plant Operation
- .20 Material Loading, Hauling, Placement and Grade Building.
- .21 Pavement Marking and Guardrail Placement
- .22 Specific Concerns Relative to Erosion Control & Sedimentation
- .23 Excavating and Placement
- .24 Culvert Installation
- .25 Fine Grading, Topsoil Placement and Seeding
- .26 Crushing and Asphalt Plant Operation and Paving
- .27 Specific Concerns Relative to Sensitive Sites and Activities

1.2 RELATED SECTIONS

- .1 All Divisions 01, 02, 10 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 Preparation and implementation of an Environmental Protection Plan 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 The Contractor and any Subcontractors shall obtain a business license from the Prince Albert National Park office in Waskesiu, prior to commencement of the contract. Contact Information is Michael Caswell at (306) 975-6469.
- .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, PCA Environmental Officer or at the Park Gate.

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. The Contractor shall comply with the environmental protection measures as identified in the EA.
- .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 Basic Impact Analysis (BIA) for the Work on Hwy 263 in Prince Albert National Park included with this tender. The Contractor's EPP is to include all environmental protection procedures and recommendations from this BIA.

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 do not arise from their activities and personal choices. Employees must attend this briefing before beginning their work at the site. Each employee, having received the briefing, will be issued a certification sticker to be displayed on their hard hat. All Employees must attend this briefing before beginning 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 the EPP. 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 not 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 Contractor shall ensure that the site 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. Hazardous or toxic products shall be stored no closer than 100 metres from watercourses.
- .2 A Spill Response Plan will be prepared as part of the EPP and shall detail the containment and storage, security, handling, use and disposal of empty containers, surplus product or waste generated in the application of these products, to the satisfaction of the Departmental Representative and the ESO and in accordance with all applicable federal and provincial legislation. The EPP shall include a list of products and materials to be used or brought to the construction site that are considered or defined as hazardous

or toxic to the environment. Such products include, but are not limited to, fuel, lubricants, waterproofing agents, grout, cement, concrete finishing agents, hot poured rubber membrane materials, asphalt cement and sand blasting agents.

- .3 The containment, storage, security, handling, use, unique spill response requirements and disposal of empty containers, surplus product or waste generated in the use of any hazardous or toxic products shall be in accordance with all applicable federal and provincial legislation. Hazardous products shall be stored no closer than 100 metres from watercourses.
- .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. If not available, Waskasieu Dispatch will be contacted at 306-663-4550. Spill response cards will be distributed during the initial Environmental Briefing with basic instructions and phone numbers. 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 outside Prince Albert National Park and that all equipment is clean and in good working order 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 any 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 any streams, wetlands, water bodies or watercourses. 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 sulfur 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 Prince Albert National Park.
 - .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 (including those on equipment) or other potentially deleterious substance containers shall be secured to ensure they are tamperproof and cannot be drained by vandals when left overnight in Prince Albert National Park. Alternatively, the Contractor may hire a security person employed to prevent vandalism. The south access gate to Hwy 263 shall be locked at the end of each working day and during extended periods when the site is not being used. The Contractor is to ensure that workers are briefed on proper 'daisy-chain' use of locks to ensure no other contractor or Parks Canada 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 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 the Contractor's expense, for complete restoration including the replacement of trees, shrubs, topsoil, grass, etc. to the satisfaction of the Departmental Representative and ESO.
- .4 The Contractor shall 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 Sandy Lake near km 9.3 along Hwy 263 from the South Warden Station. A Restricted Access Permit will be required to access water for use by the Contractor.
- .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. If not available, Waskesieu Dispatch shall be contacted at 1-877-852-3100 or the Waskesieu Duty officer at (306) 960-9315.
- .7 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 The Contractor shall 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 The Contractor shall 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. If the ESO or Departmental Representative are not available, Waskesieu Dispatch shall be contacted at (306) 663-4550.
- .4 If an active bird nesting colony or a migration staging area is located within the construction area, no work shall be permitted in that area without the presence of the Environmental Site officer (ESO) and the Departmental Representative.

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 Prince Albert National Park. 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 which has been approved by the Departmental Representative. 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 Prince Albert National Park. 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, such as the Overflow Campground, 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. If neither can be reached, the Contractor/worker shall immediately contact Waterton Dispatch at (306) 663-4550 or Waskesieu Duty Officer at (306) 960-9315 and report the details.
- .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 prepare an EPP which details how the work limits will be marked and what procedures will be employed to ensure trespass outside these limits does not occur, to the satisfaction of the Departmental Representative and the ESO.
- .2 A Contractor's office and work headquarters material laydown, equipment parking and storage area will be permitted at Sandy Lake Campground.
- .3 A workers accommodation camp location will be established at Sandy Lake Campground. The location of this area will be designated by the Departmental Representative. No equipment, materials lay-down area or fuel storage is permitted at this location.
- .4 The Contractor shall prepare a Workers Accommodation Camp Plan regarding structures, layout, vehicles, operations, etc. required at this location, to the satisfaction of the Departmental Representative. Particular attention shall be given to management of foods and waste products attractive to wild animals. An electric surround fence may be required in the event of bear attraction problems. The site may be shared with other Contractors.
- .5 The Contractor shall provide toilets and maintain them in a clean and sanitary condition at the camp. These facilities shall not be used for the disposal of anything but human body wastes. One outhouse will be assigned to the Contractor at Sandy Lake Campground for their use.
- .6 The National Park Act regulations prohibit anyone working within Prince Albert National Park from using public campground facilities.
- .7 Removal and storage of snow shall be arranged with the ESO and the Departmental Representative.
- .8 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.
- .9 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.
- .10 Pets shall not be brought to or maintained at the construction site or worker's camp.
- .11 Should the Contractor require/request a water source other than Sandy Lake, 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 OPERATIONS 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 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 The asphalt plant must be equipped with pollution control devices in addition to, or in replacement of standard cyclone dust collectors, to effectively eliminate the emission of dust and smoke pollutants into the atmosphere. Use of secondary dust collection systems which require discharge of dust polluted water into natural drainage system will not be allowed. Regardless of requirements stated in above, 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 Prince Albert National Park for proper recycling or disposal.
- .4 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.
- .5 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.
- .6 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. 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 Prince Albert National Park for control of paint products, both in transport and handling. The Contractor will 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.

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 EXCAVATING AND PLACEMENT

- .1 Excavation will be undertaken according to the approved Grading Plan for the Right of Way.
- .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 water bodies, watercourses, and wetlands.
- .4 Special precautions may have to be taken during excavation in the vicinity of intermittent or active drainage channels. See "Specific Concerns".
- .5 If sediments enter watercourses 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. See "Specific Concerns".
- .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 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 is to prepare an EPP which details how the dewatering shall be undertaken, to the satisfaction of the Departmental Representative and the E.S.O. 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 E.S.O.

3.6 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 watercourses.
- .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.

3.7 FINE GRADING, TOPSOIL PLACEMENT, AND SEEDING

- .1 The Contractor shall be required to perform final shaping of cut slopes, fills and landscapes disturbed in the construction of the Works. These slopes shall be covered by stripped soil and chip compost materials and seeded, other procedures may be used if approved by the Departmental Representative. Environmental concerns related to these activities largely focus on erosion prevention and sediment control. The Contractor shall 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 E.S.O.
- .2 The Contractors shall present a seed mix to the Departmental Representative for review and approval prior to use. A typical native seed mix that PCA has indicated would be a good growing mix for the reclamation of bare soil in PANP is as follows:

Content by weight:

0% Slender Wheatgrass (*Elymus trachycaulus*)

34% Western Wheatgrass (*Pascopyrum smithii*)

24% Northern Wheatgrass (*Elymus lanceolatus*)

10% Canada Wild rye (*Elymus canadensis*)

2% June Grass (*Koeleria macrantha*)

- .3 A full list of grasses and forbs that are acceptable for use in PANP is available from the Departmental Representative. A list Suppliers for these products are also available.

3.8 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. 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 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.

3.9 SPECIFIC CONCERNS RELATIVE TO SENSITIVE SITES AND ACTIVITIES

- .1 Grade construction and paving activity near streams, rivers, wetlands, water bodies or watercourses must be undertaken with care to prevent damage to aquatic and riparian habitat or associated tree and plant communities. A mobile spill kit, sized according to the equipment in the Contractor's operation, shall be kept at hand during construction at these sensitive sites in proximity to watercourses.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Precedence
- .2 Related Sections
- .3 Measurement Procedures
- .4 Testing by the Contractor
- .5 Contractor's Quality Control Program
- .6 Independent Inspection Agencies
- .7 Access to Work
- .8 Procedures
- .9 Rejected Work
- .10 Reports
- .11 Tests and Mix Designs
- .12 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 Saskatchewan Ministry of Highways and Infrastructure Standard Specifications Manual
- .2 Saskatchewan Ministry of Highways and Infrastructure Standard Test Procedures Manual
- .3 Canadian Standards Association (CSA) CAN/CSA-A23.2-04, Methods of Test and Standard Practices for Concrete

1.6 TESTING BY THE CONTRACTOR

- .1 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.
- .2 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.
- .3 Approval of tested samples will be for characteristics or use named in such approval and shall not change or modify any Contract requirements.
- .4 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 The Contractor shall allow the Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, the Contractor shall allow access to such Work whenever it is in progress.
- .2 The Contractor shall give timely notice requesting inspection if the Work is designated for special tests, inspections or approvals by the Departmental Representative's instructions, or by law.
- .3 If the Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, the Contractor shall uncover such Work, have inspections or tests satisfactorily completed and make good such Work at the cost of the Contractor.
- .4 The Departmental Representative will order any part of the Work to be examined if the Work is suspected to be not in accordance with the Contract Documents. If upon examination, such work is found not in accordance with the Contract Documents, the Contractor shall correct such Work and pay cost of examination and correction.

1.8 CONTRACTOR'S QUALITY CONTROL PROGRAM

- .1 The Contractor shall prepare a Quality Control Program. The purpose of the program shall be to ensure the performance of the Work in accordance with Contract requirements.
- .2 The Quality Control Program shall be described in a Quality Control Plan. The Contractor shall submit this Plan to the Departmental Representative for review in accordance with Section 01 33 00, Submittal Procedures. The Manual shall develop a logical system for tracking and documenting the Quality Control of the Work. A systematic format and a set of procedures patterned on a recognized Quality Control Standard will be acceptable, subject to review by the Departmental Representative.
- .3 The Quality Control Plan shall include the following information:
 - .1 Distribution list, providing a list of names to whom the Manual shall be distributed;
 - .2 Title page, identifying the Contract, Contractor and copy number;
 - .3 Revision page, identifying the revision number and date of the Manual;

- .4 Table of contents;
 - .5 Revision control, tabulating the revision number, date of revision, description of revisions and authorized signature;
 - .6 Details of measuring and testing equipment including methods and frequency of calibration;
 - .7 Purchasing details of all materials and equipment including procurement documents and vendor's Quality Control Program standards;
 - .8 Procedures for inspection of incoming items, in-process inspection and final inspection and tagging of all supply items;
 - .9 Details of special processes as identified by the Departmental Representative, including qualifications of personnel and certification;
 - .10 Procedures for shipping, packaging and storage of materials;
 - .11 Procedures for maintaining quality records and Statements of Compliance, including filing and storage of documents for a period of one year after Completion of the Works;
 - .12 Details of any non-conformance, including identification and recording of deficiencies, tagging procedures for "HOLD" or "REJECT" items, and final disposition of non-conformance forms by the Quality Control Manager;
 - .13 Inspection and test checklists, including tabulated checklists describing all manufacturing and delivery activities such as Inspection or Test, frequency of tests, description of tests, acceptance criteria of tests, such as verification, witnessing or holding tests and sign-off by the Quality Control Manager and the Departmental Representative, if the Departmental Representative witnesses the tests; and
 - .14 Forms used to ensure the application of the inspection and test checklist requirements. These forms shall be identified in the checklists and describe all testing requirements for Specification compliance.
-
- .4 The Contractor shall appoint a full time qualified and experienced Quality Control Manager, 100% of his or her time dedicated to quality matters and who will report regularly to the Contractor's management at a level which shall ensure that Quality Control requirements are not subordinated to manufacturing, construction or delivery. The Quality Control Manager shall be empowered by the Contractor to resolve quality matters.
 - .5 The Quality Control Plan shall include samples of all forms to be filled in by the Quality Control Inspectors. All forms shall be signed by the Quality Control Manager and submitted promptly to the Departmental Representative who will add its review signature.
 - .6 An independent check of all Work shall be performed by the Contractor. The Contractor shall appoint Quality Control Inspectors to ensure compliance of products and workmanship with Contract requirements. The same personnel may not be used to perform a given task and to check the quality and accuracy of the task.
 - .7 At completion of the Work a bound and itemized copy of all Quality Control documents and reports shall be prepared by the Contractor's Quality Manager and submitted to the Departmental Representative.

1.9 INDEPENDENT INSPECTION AGENCIES

- .1 Independent inspection / testing agencies may be engaged by the Departmental Representative for the 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 the Contractor's responsibility to perform Quality Control or the Work in accordance with Contract Documents.
- .3 If defects are revealed during inspection and / or testing, the appointed agency will request additional inspection and / or testing to ascertain full degree of defect. The Contractor shall correct defect and irregularities as advised by the Departmental Representative at the cost of the Contractor if the results indicate that the specifications have not been met in accordance with the Contract Documents.

1.10 ACCESS TO WORK

- .1 The Contractor shall allow inspection / testing agencies access to the Work, as well as any off site manufacturing and fabrication plants.
- .2 The Contractor shall co-operate to provide reasonable facilities for such access.

1.11 PROCEDURES

- .1 The Contractor shall notify the Departmental Representative in advance of the requirement for tests, in order that attendance arrangements can be made.
- .2 The Contractor shall provide labour and facilities to obtain and handle samples and materials on site if required.

1.12 REJECTED WORK

- .1 The Contractor shall 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 the Departmental Representative as failing to conform to Contract Documents. The Contractor shall replace or re-execute the Work in accordance with Contract Documents at the Contractor's cost.
- .2 The Contractor shall 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, the Owner may deduct from the Contract Price the difference in value between Work performed and that called for by Contract Documents, and the amount of which shall be determined by Departmental Representative.

1.13 REPORTS

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

1.14 TESTS AND MIX DESIGNS

- .1 The Contractor shall furnish test results and designs as requested.

1.15 MILL TESTS

- .1 The Contractor shall 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 Related Sections
- .2 Precedence
- .3 Measurement Procedures
- .4 Installation and Removal
- .5 Site Storage / Loading
- .6 Construction Parking
- .7 Security
- .8 Site Office – Department Representative
- .9 Equipment, Tools and Material Storage
- .10 Sanitary Facilities
- .11 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 The Contractor shall provide construction facilities in order to execute work expeditiously.
- .2 The Contractor shall remove from site all such work after use.

1.6 SITE STORAGE / LOADING

- .1 The Contractor shall restrict work and operations of employees to those necessitated by the Contract Documents. The Contractor shall not unreasonably encumber the premises with products.
- .2 The Contractor shall 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 The Contractor shall 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, the Contractor shall maintain such roads for duration of Contract and make good damage resulting from the Contractors' use of roads.

1.8 SECURITY

- .1 If required by the Contractor, the Contractor shall 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 SITE OFFICE – DEPARTMENTAL REPRESENTATIVE

- .1 The Contractor shall provide the Departmental Representative with a private site office trailer with the following minimum attributes:
 - .1 Uninterrupted power supply and heat for office;
 - .2 Inside dimensions minimum 7.3 m long x 3 m wide x 2.4 m high, with floor 0.3 m above grade, complete with three 50% opening windows and one lockable door;
 - .3 One closed office and one meeting room;
 - .4 Insulate building and provide heating system to maintain 22°C inside temperature at -20° outside temperature;
 - .5 Finish inside walls and ceiling with plywood, hardboard or wallboard and paint in selected colours. Finish the floor with 19 mm thick plywood;
 - .6 Install electrical lighting system to provide min. 750 lx using surface mounted, shielded commercial fixtures with 10% upward light component;
 - .7 Provide private washroom facilities adjacent to office complete with flush or chemical type toilet, lavatory and mirror and maintain supply of paper towels and toilet tissue;
 - .8 Equip the office with 1 x 2 m table, 1.2 x 2.4 m Drafting table and stool, four chairs, 6 m of shelving 300 mm wide, one three-drawer filing cabinet, fire extinguisher, #1 first aid kit, one plan rack, one coat rack and shelf.
- .2 The site trailer to be setup at location determined by the Departmental Representative.

1.10 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 The Contractor shall provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 The Contractor shall locate materials not required to be stored in weatherproof sheds on site in a manner to cause least interference with work activities.

1.11 SANITARY FACILITIES

- .1 The Contractor shall provide sanitary facilities for work force in accordance with governing regulations, ordinances and the EPP.

- .2 PCA will allocate one outhouse to the Contractor at Sandy Lake Campground for use. The Contractor shall be responsible for cleaning and maintenance of this outhouse during construction.
- .3 The Contractor shall post notices and take such precautions as required by local health authorities. The Contractor shall keep the area and premises in sanitary condition.

1.12 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 The Contractor shall 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 Precedence
- .2 Measurement Procedures
- .3 Related Sections
- .4 Installation and Removal
- .5 Hoarding
- .6 Guardrails and Barricades
- .7 Access to Site
- .8 Public Traffic Flow
- .9 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 The work concerning temporary barriers and enclosures 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 The Contractor shall provide temporary controls in order to execute the Work expeditiously.
- .2 The Contractor shall remove from site all such work after use.

1.6 HOARDING

- .1 The Contractor shall provide barriers around trees and plants designated to remain. The Contractor shall protect these items from damage by equipment and construction procedures.

1.7 GUARD RAILS AND BARRICADES

- .1 The Contractor shall provide secure, rigid guard rails and barricades around deep excavations as required.

1.8 ACCESS TO SITE

- .1 The Contractor shall provide and maintain access roads, as may be required for access to, or around the Work.

1.9 PUBLIC TRAFFIC FLOW

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

1.10 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- .1 The Contractor shall protect surrounding public property from any damage during performance of Work. The Contractor shall be responsible for the cost of repairing any damage incurred.

Part 2 Products

- .1 Not used.

Part 3 Execution

- .1 Not used

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Related Sections
- .2 Measurement Procedures
- .3 Reference Standards
- .4 Quality
- .5 Availability
- .6 Storage, Handling and Protection
- .7 Transportation
- .8 Manufacturer's Instructions
- .9 Quality of Work
- .10 Co-ordination
- .11 Concealment
- .12 Remedial Work
- .13 Fastenings
- .14 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 the 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 The Contractor shall 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, the Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4 The 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 The Contractor shall 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 the Work shall be new, not damaged or defective, and of the best quality (compatible with specifications) for the purpose intended. If requested, the Contractor shall 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. The Contractor shall 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 the Contract Documents.
- .4 Unless otherwise indicated in specifications, the Contractor shall maintain uniformity of manufacture for any particular or like item throughout building.

1.6 AVAILABILITY

- .1 Immediately after signing contract, the Contractor shall review the product delivery requirements and anticipate any foreseeable supply delays for any items. If delays in supply of products are foreseeable, the Contractor shall notify the Departmental Representative, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of the Work
- .2 In the event of failure to notify the Departmental Representative at commencement of the Work, and should it subsequently appear that the Work may be delayed for such lack of notification, the 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 The Contractor shall handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 The Contractor shall store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. The Contractor shall not remove items from packaging or bundling until required in the Work.
- .3 The Contractor shall store products subject to damage from weather in weatherproof enclosures.
- .4 The Contractor shall store cementitious products clear of earth or concrete floors, and away from walls.
- .5 The Contractor shall keep sand, when used for grout or mortar materials, clean and dry. The Contractor shall store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 The Contractor shall store sheet materials, lumber and miscellaneous metals on flat, solid supports and keep clear of ground. Sheet materials shall be sloped to shed moisture.
- .7 The Contractor shall store and mix paints in heated and ventilated room. The Contractor shall remove oily rags and other combustible debris from site daily. The Contractor shall take every precaution necessary to prevent spontaneous combustion.
- .8 The Contractor shall remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .9 The Contractor shall touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. The Contractor shall use touch-up materials to match original. The Contractor shall not paint over name plates.

1.8 TRANSPORTATION

- .1 The Contractor shall pay costs for transportation of products required in the performance of the Work.

1.9 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, the Contractor shall install or erect products in accordance with manufacturer's instructions. The Contractor shall not rely on labels or enclosures provided with products, but shall obtain written instructions directly from manufacturers.
- .2 The Contractor shall notify the Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that the Departmental Representative may establish a course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes the Departmental Representative to require the removal and re-installation at no increase in Contract Price or Contract Time.

1.10 QUALITY OF WORK

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

1.11 CO-ORDINATION

- .1 The Contractor shall ensure cooperation of workers in laying out the Work. The Contractor shall maintain efficient and continuous supervision.
- .2 The Contractor shall 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 a minimum of 24 hours before any pour for inspection.

1.13 REMEDIAL WORK

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

1.14 FASTENINGS

- .1 The Contractor shall provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 The Contractor shall prevent electrolytic action between dissimilar metals and materials.
- .3 The Contractor shall 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.
- .4 The Contractor shall 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 The Contractor shall 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 The Contractor shall 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 Precedence
- .2 Measurement Procedures
- .3 Related Sections
- .4 References
- .5 Layout Requirements
- .6 Records
- .7 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 and concrete barriers 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 and concrete barriers at all work sites in this contract.
- .4 Final Line painting shall be performed under **“Unit Price Sum Item 3a) Pavement Marking”**.
- .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 The Contractor shall maintain a complete, accurate log of control and survey work as it progresses.
- .2 The Contractor shall record locations of maintained, re-routed and abandoned service lines.

1.8 SUBMITTALS

- .1 On request of Departmental Representative, the Contractor shall 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 Precedence
- .2 Measurement Procedures
- .3 Related Sections
- .4 Project Cleanliness
- .5 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 SECTIONS

- .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 The Contractor shall maintain the Work in tidy condition, free from accumulation of waste products and debris, including that caused by the Owner, Departmental Representative, or other Contractors.
- .2 The Contractor shall remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. No burning of waste materials on site is permitted.
- .3 The Contractor shall 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 The Contractor shall 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. The Contractor shall provide any additional on-site bear proof containers required for collection of waste materials and debris.
- .6 The Contractor shall remove waste material and debris from site at end of each working day.
- .7 The Contractor shall dispose of waste materials and debris off site. Any landfill or waste disposal location or company must be approved by the Departmental Representative prior to the disposal of material.
- .8 The Contractor shall store volatile waste in covered metal containers, and remove from premises at end of each working day.

- .9 The Contractor shall provide adequate ventilation during use of volatile or noxious substances.
- .10 The Contractor shall 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, the Contractor shall remove surplus products, tools, construction machinery and equipment not required for performance of the remaining Work.
- .2 Prior to final review, the Contractor shall remove surplus products, tools, construction machinery and equipment.
- .3 Remove waste products and debris including that caused by the Owner, Departmental Representative, or other Contractors.
- .4 The Contractor shall remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative.
- .5 The Contractor shall make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .6 The Contractor shall dispose of waste materials and debris off site. Any landfill or waste disposal location or company must be approved by the Departmental Representative prior to the disposal of material.
- .7 The Contractor shall inspect finishes, and ensure specified workmanship and operation.
- .8 The Contractor shall remove dirt and other disfiguration from exterior surfaces.
- .9 The Contractor shall sweep and wash clean paved areas.
- .10 The Contractor shall 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 Precedence
- .2 Measurement Procedures
- .3 Related Sections
- .4 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 78 00 - Closeout Submittals.

1.5 INSPECTION AND DECLARATION

- .1 Contractor's Inspection: The Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 The Contractor shall notify the Departmental Representative in writing of the satisfactory completion of the Contractor's Inspection and that required corrections have been made.
 - .2 The Contractor shall then request the Departmental Representative's Inspection.
- .2 Departmental Representative's Inspection: The Departmental Representative and the Contractor will perform inspection of the Work to identify obvious defects or deficiencies. The Contractor shall correct the Work accordingly.
- .3 Completion: The Contractor shall submit a written certificate that the following has 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, The Contractor shall 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 Precedence
- .2 Measurement Procedures
- .3 Related Sections
- .4 As-built and Samples
- .5 Recording Actual Site Conditions
- .6 Final Survey
- .7 Warranties and Bonds

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, the Contractor shall maintain at the site for Departmental Representative one record copy of each of the following:
 - .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 The Contractor shall store record documents and samples in field office apart from documents used for construction.

- .3 The Contractor shall label record documents and file in accordance with Section number listings in List of Contents of this Specification. Each document shall be labeled with "PROJECT RECORD" in neat, large, printed letters.
- .4 The Contractor shall maintain record documents in clean, dry and legible condition. Record documents shall not be used for construction purposes.
- .5 The Contractor shall keep record documents and samples available for inspection by the Departmental Representative.

1.6 RECORDING ACTUAL SITE CONDITIONS

- .1 The Contractor shall record information on set of black line opaque drawings, or in a set of the Specifications depending what the information may be.
- .2 The Contractor shall record information concurrently with construction progress. The Contractor shall not cover or conceal Work until the required information is recorded.
- .3 The Contractor shall legibly mark each item to record actual construction on the Contract Drawings and shop drawings including but not limited to:
 - .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 The Contractor shall legibly mark each item to record actual construction in the Specifications including but not limited to:
 - .1 Changes made by Addenda and change orders.

1.7 FINAL SURVEY

- .1 The Contractor shall submit a final site survey report 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 The Contractor shall separate each warranty or bond with index tab sheets keyed to a Table of Contents listing.
- .2 The Contractor shall list subcontractors, suppliers, and manufacturers, with name, address, and telephone number of the responsible principal.
- .3 The Contractor shall 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 the Owner's permission, The Contractor shall leave the date of the beginning of the warranty until the Date of Substantial Performance is determined by the Departmental Representative.
- .5 The Contractor shall verify that documents are in proper form, contain full information, and are notarized.
- .6 The Contractor shall co-execute or seal submittals when required.

- .7 The Contractor shall 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 Related Sections
- .2 Measurement Procedures
- .3 Waste Management and Disposal
- .4 Equipment
- .5 Preparation
- .6 Protection
- .7 Removal
- .8 Stockpiling of Material
- .9 Finish Tolerances
- .10 Sweeping

1.2 RELATED SECTIONS

- .1 Section 01 35 31 – Special Procedures for Traffic Control
- .2 Section 01 35 43 - Environmental Procedures
- .3 Section 32 01 16.8 Full Depth Reclamation

1.3 MEASUREMENT PROCEDURES

- .1 Payment under **“Unit Price Item 1a) – Asphalt Concrete Pavement Removal - Partial Depth (Milling)”** shall be the total compensation for all operations involved in milling including but not limited to, cold milling, sweeping, loading, hauling, and stockpiling at the South Gate Warden’s Compound, and cleaning of remaining pavement surface. The Contractor shall refer to section 32 01 16.8 for Pulverizing specifications. Payment shall be made as follows:
 - .1 **“Unit Price Item 1a) - Asphalt Concrete Pavement Removal - Partial Depth (Milling)”** will be measured for payment in square metres of 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 Asphalt Pavement Removal.
 - .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.
 - .5 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 Measurement and payment for Pulverizing shall be in accordance with Section 32 01 16.8 Full Depth Reclamation.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 The Contractor shall separate waste materials for reuse in accordance with Section 01 35 43 - Environmental Procedures.
- .2 The Contractor shall place milled asphalt material in a stockpile at the South Gate Wardens Compound, or at other locations designated by the Departmental Representative.

Part 2 Products

2.1 EQUIPMENT

- .1 The Contractor shall use cold milling, planning or grinding self-powered equipment with automatic grade controls capable of operating from string line, and capable of removing part or all of pavement surface to depths or grades indicated. Maximum particle size of milled materials shall be 50 mm. The Unit used for pulverizing shall be capable of pulverizing and mixing to a maximum depth of 400mm.

Part 3 Execution

3.1 PREPARATION

- .1 Prior to beginning removal operation, the Contractor shall inspect and verify with the Departmental Representative, all areas, depths and lines of asphalt pavement to be removed.
- .2 The Contractor shall have appropriate Traffic Control measures in place for this work.

3.2 PROTECTION

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

3.3 REMOVAL

- .1 To tie from existing pavement to new overlay, the Contractor shall remove existing asphalt pavement by milling to lines and grades established by the Departmental Representative in the field or as per Drawing 17. At mill and fill locations, the Contractor shall remove existing asphalt to the depths, lengths and width specified and as established by the Departmental Representative in the field.
- .2 The Contractor shall use self-powered equipment and methods of removal and hauling which do not damage or disturb underlying roadway structure.
- .3 The Contractor shall prevent contamination of removed asphalt pavement by topsoil, underlying gravel or other materials during partial depth milling.
- .4 The Contractor shall adjust the depth of pulverization to avoid the contamination of the pulverized material by topsoil or clay or other subgrade.
- .5 The Contractor shall provide for suppression of dust generated by removal process.

3.4 STOCKPILING OF MATERIAL

- .1 The Contractor shall place milled asphalt material in a stockpile at the South Gate Wardens Compound, or at other locations designated by the Departmental Representative.

3.5 FINISH TOLERANCES

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

3.6 SWEEPING

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

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Precedence
- .2 Measurement Procedures
- .3 Related Sections
- .4 References
- .5 Definitions
- .6 Submittals
- .7 Storage and Handling
- .8 Transportation
- .9 Materials
- .10 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 The Contractor shall submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 The Contractor shall submit to the Departmental Representative all current Material Safety Data Sheet (MSDS) for each hazardous material required prior to bringing any hazardous material on site.
- .3 The Contractor shall submit a hazardous materials management plan to the Departmental Representative that identifies all hazardous materials, their use, their location, personal protective equipment requirements, and disposal arrangements.

1.8 STORAGE AND HANDLING

- .1 The Contractor shall coordinate the storage of hazardous materials with the Departmental Representative and abide by requirements for labelling and storage of materials and wastes.
- .2 The Contractor shall store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
- .3 The Contractor shall store and handle flammable and combustible materials in accordance with current National Fire Code of Canada requirements.
- .4 All explosives shall be mixed outside of the Park and delivered to the site. No storage of explosives shall be allowed within the National Parks.
- .5 The Contractor shall observe smoking regulations at all times. Smoking is prohibited in any area where hazardous materials are stored, used, or handled.
- .6 The Contractor shall 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 The Contractor shall ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .8 The Contractor shall 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 The Contractor shall 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, the Contractor shall ensure compliance with federal Export and Import of Hazardous Waste Regulations.
- .3 If hazardous waste is generated on site the Contractor shall:
 - .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 The Contractor shall only bring on site the quantity of hazardous materials required to perform Work.

- .2 The Contractor shall 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 The Contractor shall dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines at a location approved by the Departmental Representative.
- .2 The Contractor shall 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. The Contractor shall dispose of hazardous wastes in timely fashion in accordance with applicable provincial regulations.
- .6 The Contractor shall minimize generation of hazardous waste to maximum extent practicable and shall take necessary precautions to avoid mixing clean and contaminated wastes.
- .7 The Contractor shall identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
 - .1 Hazardous wastes recycled in manner constituting disposal.
 - .2 Hazardous waste burned for energy recovery.
 - .3 Lead-acid battery recycling.
 - .4 Hazardous wastes with economically recoverable precious metals.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Related Sections
- .2 References
- .3 Measurement Procedures
- .4 Waste Management and Disposal
- .5 Materials
- .6 Installation
- .7 Removal and Salvage
- .8 Cleaning

1.2 RELATED SECTIONS

- .1 Section 01 35 00.06 - Special Procedures for Traffic Control.
- .2 Section 01 35 43 - Environmental Procedures.

1.3 REFERENCES

- .1 ASTM A276-91a, Specification for Stainless and Heat-Resisting Steel Bars and Shapes.
- .2 ASTM B209M-92a, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .3 ASTM B210M-92a, Specification for Aluminum-Alloy Drawn Seamless Tubes.
- .4 ASTM B211M-92a, Specification for Aluminum and Aluminum-Alloy Bar, Rods and Wire.
- .5 ASTM D4956-13, Specification for Retroreflective Sheeting for Traffic Control.
- .6 CAN/CSA-G40.21-M92, Structural Quality Steels.
- .7 CAN/CSA-G164-M92, Hot Dip Galvanizing of Irregularly Shaped Articles.
- .8 CAN/CSA-O80 Series-M89, Wood Preservation.
- .9 CSA O121-M1978, Douglas Fir Plywood.
- .10 CSA W47.2-M1987, Certification of Companies for Fusion Welding of Aluminum.
- .11 CGSB1-GP-12c-65, Standard Paint Colours:
- .12 CAN/CGSB-1.28-M89, Alkyd, Exterior House Paint.
- .13 CAN/CGSB-1.59-M89, Alkyd, Exterior Gloss Enamel.
- .14 CAN/CGSB-1.94-M89, Xylene Thinner (Xylol).
- .15 CAN/CGSB-1.99-92, Exterior and Marine Phenolic Resin Varnish.
- .16 CAN/CGSB-1.104-M91, Semigloss Alkyd Air Drying and Baking Enamel.
- .17 CAN/CGSB-1.132-M90, Zinc Chromate Primer, Low Moisture Sensitivity.
- .18 CGSB 1-GP-189M-78, Primer, Alkyd, Wood, Exterior.
- .19 CGSB 31-GP-3M-88, Corrosion Preventive Compound, Cold Application, Soft Film.
- .20 CGSB 62-GP-9M-80, Prefabricated Markings, Positionable, Exterior, for Aircraft Ground Equipment and Facilities.
- .21 CGSB 62-GP-11M-78, Marking Material, Retroreflective, Enclosed Lens, Adhesive Backing.

1.4 MEASUREMENT PROCEDURES

- .1 Measurement for payment for unloading, storing, installing, or relocating Hazard Markers, signs and bases will be based on each complete unit installed according to these specifications, and shall include all labour, equipment and material to satisfactorily complete this item of work. Payment will be made under **“Lump Sum Price Item 3 - Prime Cost Sum”**.
- .2 Removal and disposal of existing signs and posts being replaced, and filling the holes, will be incidental to the Work.
- .3 Temporary 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.
- .5 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.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 The Contractor shall separate and recycle waste materials in accordance with Section 01 35 43 - Environmental Procedures and Section 02 61 33 Hazardous Materials where applicable.
- .2 The Contractor shall divert unused metal and/or plastic materials to a recycling facility approved by the Departmental Representative.
- .3 Damaged signs and posts from any removals to be transported to a recycling facility approved by the Departmental Representative.

Part 2 Products**2.1 MATERIALS**

- .1 Aluminum signs, galvanized V-flanged steel posts and hardware required are provided by the Departmental Representative F.O.B. job site.
- .2 Concrete bases required are provided by the Departmental Representative F.O.B. at the job site.

Part 3 Execution**3.1 INSTALLATION**

- .1 The Contractor shall load, haul and install supplied single post and aluminum signs and bases in the following manner:
 - .1 The Contractor is responsible for locating power / telephone / gas lines / services / utilities at all proposed sign locations.
 - .2 The Contractor is responsible for layout and measurements to ensure signs are installed as per drawings and as directed by the Departmental Representative.
 - .3 Concrete bases: Excavate one hole for the concrete base at the location and depth provided by the Departmental Representative. Using some of the excavated material, level and compact bottom of hole. Place base with one side

parallel to the edge of asphalt and level. The top of the base is to be flush or 1" above finished grade.

- .4 Adjust the post height by using a pipe cutter or cut off saw. All post cuts will be determined in the field by the Departmental Representative. The Departmental Representative will measure existing elevations at each site and calculate the cuts needed. The Contractor is required to provide the Departmental Representative with a minimum of 48 hours notice in order to perform the calculations.
- .5 Assemble the signs on the forks on the ground. Slide forks onto posts and place the cap.
- .6 Drill 1 hole in base sleeves and posts for ½ " bolts, as shown in the detail sheet and as verified by the Departmental Representative, and shim to plumb if necessary.
- .7 Bases must be perfectly plumbed. Vertical and horizontal tolerances for the base are 0.075m. Tolerance for the plumb of the posts is 0.01 m per 1.0 m or 1/4" on a two foot carpenters level. Tolerances for the signs are 0.075 m for distance from asphalt and 0.075 m for height above white line.
- .8 The Contractor is responsible for hauling all materials to and from each work site.
- .9 Landscape so the top of the base is flush or 25 mm above finished grade.
- .10 Remove all excess material from site, including boulders larger than 100 mm.
- .11 All signs are to be covered until the Departmental Representative advises to uncover.
- .12 Payment for this item shall be based on the number of signs installed and shall include all material, labour and equipment required to satisfactorily complete this item of work.

3.2 REMOVAL AND SALVAGE

- .1 The Contractor shall carefully dismantle and salvage the post, aluminum and steel materials.
- .2 The Contractor shall deliver salvaged materials to a site determined by the Departmental Representative. All damaged signs and posts shall be hauled to a recycling facility as determined by the Departmental Representative.
- .3 The Contractor shall fill holes with gravel and compact the gravel until the hole is full.

3.3 CLEANING

- .1 Upon completion of installation, the Contractor shall remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Parks Canada Agency

Prince Albert National Park

Part 1 General**1.1 SECTION INCLUDES**

- .1 Related Sections
- .2 Measurement Procedures
- .3 References
- .4 Submittals
- .5 Quality Control
- .6 Delivery, Storage and Handling
- .7 Waste Management and Disposal
- .8 Materials
- .9 Equipment
- .10 Application

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 The supply, delivery and application of tack coat will be will not be measured separately and will be considered to be incidental to **“Unit Price Item 2 – Asphalt Concrete Pavement (EPS)”**.
- .2 Preparation of asphalt surface for tack application will be considered incidental to **“Unit Price Item 2 – Asphalt Concrete Pavement (EPS)”**.
- .3 Temporary 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 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.
- .3 Saskatchewan Ministry of Highways and Infrastructure (MHI)
 - .1 Specification #4000 Specifications for Asphalt Prime, Tack and Flush Coat.
 - .2 For information related to the MHI specifications please see the following website; <http://www.highways.gov.sk.ca/business> - Standards and Specifications Manual

1.5 SUBMITTALS

- .1 The Contractor shall submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 The Contractor shall 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 The Contractor shall sample asphalt tack coat material to ASTM D140 and the Saskatchewan Standard Test Procedures Manual.
- .4 The Contractor shall provide access on the tank truck for the Departmental Representative to sample the asphalt material to be incorporated into Work, in accordance with ASTM D140.

1.6 QUALITY CONTROL

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

1.7 DELIVERY, STORAGE AND HANDLING

- .1 The Contractor shall deliver, store and handle materials in accordance with ASTM D140.
- .2 The Contractor shall maintain and restore asphalt storage area after the project.

1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 The Contractor shall separate waste materials for reuse and recycling in accordance with Section 01 35 43 - Environmental Procedures and with the Waste Reduction Work Plan.
- .2 The Contractor shall divert unused asphalt materials to a facility capable of recycling such materials.

Part 2 Products**2.1 MATERIALS**

- .1 The Contractor shall use SS-1 anionic emulsified asphalt.
- .2 Water shall be clean, potable, and free from foreign matter.

2.2 EQUIPMENT

- .1 The pressure distributor shall be designed, equipped, maintained and operated so that all requirements of the MHI Standard Specification 4000 are met, and asphalt material can be:
 - .1 Maintained at even temperature.
 - .2 Applied uniformly on variable widths of surface up to 5 m.
 - .3 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.
 - .4 Distributed in uniform spray without atomization at temperature required.

- .5 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.
- .6 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.
- .7 Equipped with an easily read, accurate and sensitive device which registers temperature of liquid in reservoir.
- .8 Equipped with accurate volume measuring device or calibrated tank.
- .9 Equipped with nozzles of same make and dimensions, adjustable for fan width and orientation.
- .10 Equipped with nozzle spray bar, with operational height adjustment.
- .11 Cleaned if previously used with incompatible asphalt material.

Part 3 Execution**3.1 APPLICATION**

- .1 The contractor shall adhere to all requirements of the MHI Standard Specification 4000.
- .2 The Contractor shall obtain the Departmental Representative's approval before applying asphalt tack coat.
- .3 The Contractor shall apply asphalt tack coat only on clean and dry surface.
- .4 The Contractor shall dilute the asphalt emulsion with water at 1:1 ratio for application.
- .5 The Contractor shall mix thoroughly by pumping or other method accepted by Departmental Representative.
- .6 The Contractor shall apply the 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.
- .7 The Contractor shall paint contact surfaces of curbs, gutters, headers, manholes and like structures with thin, uniform coat of asphalt tack coat material.
- .8 The Contractor shall apply asphalt tack coat only on unfrozen surface, where the surface temperature is greater than 2 degrees Celsius.
- .9 The Contractor shall evenly distribute localized excessive deposits of tack coat by brooming as directed by Departmental Representative.
- .10 Where traffic is to be maintained, the Contractor shall treat no more than one half of width of surface in one application.
- .11 The Contractor shall keep traffic off tacked areas until asphalt tack coat has set.
- .12 The Contractor shall re-tack contaminated or disturbed areas as directed by the Departmental Representative.
- .13 The Contractor shall permit the asphalt tack coat to set before placing asphalt pavement.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Related Sections
- .2 General Description
- .3 Demonstration
- .4 Samples
- .5 Measurement and Payment
- .6 Inspection and Testing

1.2 RELATED SECTIONS

- .1 Section 02 41 13.14 Asphalt Pavement Removal
- .2 Section 32 12 16 – Asphalt Concrete Pavement

1.3 GENERAL DESCRIPTION

- .1 Section 32 01 16.8 refers to those portions of the work that are unique to full depth reclamation of existing road structure. This section must be referenced to and interpreted simultaneously with all other sections pertinent to the works described herein.
- .2 Full depth reclamation is an in-place reclamation procedure in which the full flexible pavement section and a predetermined portion of the underlying granular materials are uniformly pulverized, blended and incorporated into a base or subbase course; further stabilization may be obtain through the use of additives if approved by the Departmental Representative.

1.4 DEMONSTRATION

- .1 Prior to the start of work, the Contractor shall demonstrate effectiveness of proposed reclamation operation by reclaiming test section of minimum 15m long.

1.5 SAMPLES

- .1 The Contractor shall collect samples and testing for the demonstration section, as directed by Departmental Representative.

1.6 MEASUREMENT AND PAYMENT

- .1 Payment for Full Depth Reclamation shall be made under **“Unit Price Item 1b) – Asphalt Concrete Pavement Removal - Full Depth (Pulverizing)”** and shall be the total compensation for all operations involved in pulverizing including but not limited to, pulverizing, cold milling, sweeping, grading, conditioning, compacting, testing, and preparation of the surface for paving. Payment shall be made as follows:
 - .1 **“Unit Price Item 1b) - Asphalt Concrete Pavement Removal - Full Depth (Pulverizing)”** will be measured for payment in square metres at an estimated 200mm depth of pulverizing of existing roadway according to these specifications, or as directed by the Departmental Representative, and shall include all labour, equipment and material to satisfactorily complete this item of work.

- .2 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.
 - .3 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.
 - .4 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 Payment for additional base material, if requested by the Departmental Representative, will be paid under **“Lump Sum Item 3 – Prime Cost Sum”**.
 - .3 Payment of additives, if requested by the Departmental Representative, will be paid under **“Lump Sum Item 3 – Prime Cost Sum”**.

1.7 INSPECTION AND TESTING

- .1 The Contractor shall complete proctor testing of samples of reclaimed demonstration section material to establish optimum moisture content and compaction requirements in accordance with ASTM D1557 test procedures for modified proctor density.
- .2 The Contractor shall prepare additional demonstration sections and lab testing as directed by the Departmental Representative if it is determined that the pulverized material has substantially changed characteristics due to differing in situ pavement and subgrade conditions from initial demonstration section.
- .3 The Contractor shall complete one (1) ASTM D1557 test procedures for modified proctor density per 25,000 m³ of reclaimed material or whenever the composition of the material changes.

Part 2 Products

2.1 MATERIALS

- .1 Material produced from this procedure to be well graded with a maximum particle size of 38mm.

2.2 ADDITIVES

- .1 Liquid additives do not include water.
- .2 The Contractor shall store, transport, handle and apply in a manner so as to ensure no spillage or discharge into adjacent ditches or streams.
- .3 The Contractor shall protect all surfaces treated with additives from inclement weather.

Part 3 Execution

3.1 EQUIPMENT

- .1 The Contractor shall maintain equipment at all times in first class working condition. The Contractor shall use skilled and experienced operators.
- .2 The Contractor shall have capability to effectively pulverize and blend existing pavement and underlying subbase and/or base materials. To have capability to handle various types and thicknesses of pavement surface, from 25mm to 150mm of asphalt concrete, to a maximum depth including subbase and/or base material of 400mm.

- .3 To be complete with integral metered liquid additive system to introduce liquid additives uniformly and accurately to blended materials concurrent with pulverizing and placement and only when equipment is moving.
- .4 Metering system to include a totalizer, so amount of liquid addition used during any given period can be read directly, and a litre per minute gauge to indicate instantaneous flow rate during blending operation.

3.2 PREPARATION

- .1 The Contractor shall schedule reclamation operations to minimize traffic disruption.
- .2 The Contractor shall neatly cut existing asphaltic concrete pavement at limits of reclamation operation, or mill as directed by the Departmental Representative.
- .3 The Contractor shall protect adjacent pavement, curb and gutter, appurtenances (manhole castings, valve covers) from damage.

3.3 CONSTRUCTION PROCEDURES

- .1 The Contractor shall pulverize existing pavement and a minimum of 100mm of base materials and blend so entire mass of material is uniformly graded. Disperse liquid additive, if required, uniformly throughout processed material during pulverizing and blending operation.
- .2 Remove by hand all material with any dimension greater than 38mm.
- .3 After material has been processed, the Contractor shall shape, grade and compact to lines, grades and depth as shown on Drawings or as directed by the Departmental Representative.
- .4 Water shall be applied to ensure optimum moisture content at time of blending and compaction. The Contractor shall uniformly compact restored cross section to density not less than 98% Modified Proctor density. The Contractor shall be responsible for any double handling, excavating, loading, hauling, placing, conditioning as required to meet the required density and moisture, and no additional payment shall be made.
- .5 Compaction testing to ASTM D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods. Minimum testing frequency is 3 tests every 50 lineal metres each lift at centerline, fog line right and left.
- .6 Where additional granular material is required, the Contractor shall place material on the road surface prior to reclaiming or spread the material on the surface of reclaimed material and blend with reclaimed material.
- .7 The Contractor shall complete the reclamation procedures in continuous segments. The Contractor shall complete each segment, compact, and pave bottom course asphalt by end of each day and open to traffic. The Contractor shall not be permitted to leave reclaimed sections of highway unpaved (bottom lift only required) at end of work day.

3.4 DISPOSAL

- .1 The Contractor shall dispose waste material to an approved off-site disposal area unless specified otherwise in Contract Documents.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Related Sections
- .2 References
- .3 Measurement Procedures and Unit Price Adjustments
- .4 Materials
- .5 Work Methodology
- .6 Equipment, Plant and Mixing Requirements

1.2 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.

1.3 REFERENCES

- .1 Saskatchewan Ministry of Highways and Infrastructure (MHI);
 - .1 Specification #4112 – End Product Specification for Asphalt Concrete.
 - .2 Standard Test Procedures Manual
 - .3 Specifications for Manufactured Materials
 - .4 For information related to these specifications please refer to the following website; <http://www.highways.gov.sk.ca/business> - Standard Specification Manual

1.4 DESCRIPTION

- .1 Work shall consist of supplying, hauling, and placement of a MHI Type 3 Hot Mix Asphalt Concrete Pavement leveling course and a top lift overlay at locations along Highway 263, PANP as directed by the Departmental Representative.
- .2 All quality control testing shall be completed by the contractor. Payments for Quality Control shall be considered incidental to the bid item **“Unit Price Item 2 – Asphalt Concrete Pavement (EPS)”**.
- .3 **Minimum Thickness for lower lift of Type 71 compacted Asphalt Concrete in Table 4112.4.T4 of the MHI Specification #4112 shall be changed to 35mm for this Work.**
- .4 Quality Assurance testing will be completed by the Departmental Representative.

1.5 MEASUREMENT PROCEDURES AND UNIT PRICE ADJUSTMENTS

- .1 Accepted asphalt concrete pavement will be measured in tonnes. 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 lane marking, quality control testing, safety, and maintenance. Applicable payment adjustments (additions or subtractions as applicable) shall be applied in accordance with MHI Specification #4112.8.2 Pay Adjustments. Payments shall be made accordingly under **“Unit Price Item 2 – Asphalt Concrete Pavement (EPS)”**.

- .1 Payment for MHI Type 3 Asphalt Concrete Pavement Level Course will be under **“Unit Price Item 2a) – Asphalt Concrete Pavement (EPS) - MHI Type 3 Asphalt Concrete Pavement - 35mm Level Course”**.
- .2 Payment for MHI Type 3 Asphalt Concrete Pavement Paving Top Course will be under **“Unit Price Item 2b) – Asphalt Concrete Pavement (EPS) - MHI Type 3 Asphalt Concrete Pavement - 50mm top Course”**.
- .3 Payment for MHI Type 3 Asphalt Concrete Pavement Paving Top Course will be under **“Unit Price Item 2c) – Asphalt Concrete Pavement (EPS) - MHI Type 3 Asphalt Concrete Pavement - 130mm Full Depth”**.
- .2 Supply, installation and maintenance and calibration of weight scales, scale house and scale operator at the Plant by the Contractor shall be considered incidental to **“Unit Price Item 2 – Asphalt Concrete Pavement (EPS)”** for the asphalt placed and no additional payment will be made.
- .3 Preparing asphalt mix designs (including anti-stripping test) shall be considered incidental to **“Unit Price Item 2 – Asphalt Concrete Pavement (EPS)”** for the type of asphalt placed and no additional payment will be made.
- .4 The movement of equipment and crew, shall be considered incidental to **“Unit Price Item 2 – 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 There is no Overhaul payment under this contract.
- .6 Supply of anti-stripping agents if required and accepted by the Departmental Representative, will be paid under **“Lump Sum Price Item 3 - Prime Cost Sum”**.
- .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 required for this Work shall be incidental to **“Lump Sum Item 2 -Traffic Accommodation”** and no separate payment will be made to the Contractor.
- .9 Removal and reinstallation of existing guide posts shall be considered incidental to **“Unit Price Item 2 – Asphalt Concrete Pavement (EPS)”**. Guide posts damaged by the Contractor shall be replaced by the Contractor at no cost.
- .10 Shouldering work will be paid under **“Lump Sum Price Item 3 - Prime Cost Sum”**.
- .11 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
- .12 Diesel fuel cost adjustment will not apply to this project and shall not be paid for.

Part 2 Products

2.1 MATERIALS

- .1 Materials used shall be in accordance with MHI Standard Specifications Manual for Highway Construction, Specification #4112 – End Product Specification for Asphalt Concrete.

- .2 The use of Recycled Asphalt Pavement (RAP) is not permitted for this project other than for shouldering under direction by the Departmental Representative.
- .3 Asphalt Concrete Pavement shall be MHI Type 3 using 150 – 200A asphalt cement, combined in a hot mix plant as hereinafter specified, placed and compacted to the specified density on a prepared surface in conformity to the lines, grades, dimensions and cross-sections as directed by the Departmental Representative.
- .4 The contractor shall perform mix design for MHI Type 3 Asphalt Concrete Pavement using Asphalt Cement 150 – 200A. Mix design is subject to acceptance by the Departmental Representative.

Part 3 Execution

3.1 WORK METHODOLOGY

- .1 ACP for overlay sections shall have a final thickness of 85mm comprising of a 35mm level course and 50mm top lift or as directed by the Departmental Representative. Full depth overlay section shall be paved in a minimum of two lifts, as determined by the Departmental Representative.
- .2 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.

3.2 EQUIPMENT, PLANT AND MIXING REQUIREMENTS

- .1 Execution of the Work shall be in accordance with MHI Standard Specifications Manual for Highway Construction – Specification #4112 – End Product Specification for Asphalt Concrete
- .2 The contractor will be permitted to setup an Asphalt Plant at the South Gate Wardens Compound.
- .3 The asphalt plant 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. In addition the Asphalt plant must comply with all environmental pollution control regulations applicable in the asphalt plant area. The plant operator must make daily inspections of the emission control components, to ensure proper working order and provide the most recent stack monitoring results for viewing by the Departmental Representative or his designate.

END OF SECTION

Part 1 General**1.1 SECTION INCLUDES**

- .1 Related Work
- .2 References
- .3 Samples
- .4 Measurement for Payment
- .5 Materials
- .6 Supply, Storage and Handling
- .7 Execution
- .8 Permanent Markings
- .9 Traffic Control
- .10 Quality Control Inspection Plan
- .11 Highway Operation
- .12 Protection of Completed Work

1.2 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.

1.3 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)
- .8 AT Design Bulletin #18/2003
- .9 AT Typical Drawings
 - .1 CB6-3.52M1
 - .2 CB6-3.52M3
 - .3 CB6-3.52M4

1.4 SAMPLES

- .1 The Contractor shall submit samples in accordance with Section 01 33 00 - Submittal Procedures. All samples shall be in accordance with CGSB1-GP-71.
- .2 The Contractor shall submit the following material sample quantities at least 4 weeks prior to commencing work to the Departmental Representative:

- .1 Two samples of each type of paint.
- .2 One sample of glass beads.
- .3 The Contractor shall label all samples with the name of project and its location, the paint manufacturer's name and address, the name of the paint, CGSB specification number and formulation number and batch number.

1.5 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 meters 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 as one coat of paint. Payment will be made under **“Unit Price Item 3 Pavement Marking”**.
- .3 Gore areas shall be measured in meters squared within the gore boundary. Payment shall be considered full compensation for all equipment, labour, and materials required to complete the Work. Payment will be made under **“Lump Sum Price 3- Prime Cost Sum”**.
- .4 Gore area boundary lines shall be measured and paid for under **“Unit Price Item 3 Pavement Marking”**.
- .5 Milled rumble strip locations shall be determined by the Departmental Representative in the field, and where installed shall be measured in linear meters. Payment shall be considered full compensation for all equipment, labour, and materials required to complete the Work. Payment will be made under **“Lump Sum Price 3 - Prime Cost Sum”**.
- .6 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.
- .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.

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.
 - .3 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.
- .2 Thinner: to CAN/CGSB-1.4-2000.
- .3 Glass beads:
 - .1 Overlay type: 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 Depending on the work, permanent pavement markings must be destroyed or covered by work such as paving, sealcoating, milling, crack sealing, etc. Where it is not practical to replace the permanent markings the same day, some form of temporary delineation must be provided. First priority should be given to directional dividing lines and second priority to lane lines and other markings. If work is progressing rapidly, it may be desirable to install temporary pavement markings periodically throughout the day. Temporary markings may consist of paint with glass bead, preformed adhesive backed tape, road studs, "L" shaped flexible reflectorized markers etc. A marking of a type which will necessitate pavement damage by its removal should not be used on a final pavement lift. Davidson or "L" shaped flexible markers are the only practical marking for sealcoating work and milled pavement; attaching with nails if necessary on rough surfaces. Where for any reason temporary markings cannot be installed, temporary delineation devices should be used, at a minimum to separate traffic travelling in opposite directions.
- .2 Temporary directional dividing lines, and lane lines formed with paint or plastic shall be 10 cm wide, at least 50 cm long, and separated by gaps not exceeding 8 m. Two yellow markings side by side and approximately 10 cm apart are required wherever passing is prohibited in either direction. Stop lines should be approximately 30 cm wide and pavement arrows at least one third the size of standard arrows. Temporary pavement markings and raised marking devices shall be reflectorized and display the same colour by night as by day and shall also be the same colour as the permanent markings which they replace.
- .3 Raised plastic devices such as reflective road studs or Davidson flexible reflectorized markers, etc., may be used to supplement or be used in place of temporary pavement markings. Where used with paint marks, these raised devices should be installed immediately downstream of every fourth 50 cm dash or approximately 26 m apart. When used without temporary pavement markings, they should also be installed approximately every 26 m. Regardless of the above maximum spacing, raised markers should be

installed frequently enough so that a minimum of four individual markers of four pairs of side-by-side markers are visible from any given point.

- .4 The Contractor shall supply and place temporary line markings on newly constructed hard surfaces (pavement, hot-in-place recycled pavement, sealcoat, etc.) throughout the project, re-establishing centreline 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.
- .5 Centerline of undivided highway shall be marked throughout as “no passing” unless otherwise directed by the Departmental Representative.
- .6 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 after confirming with the Departmental Representative that there are to be no changes.
 - .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.
 - .2 Operation of Companion Vehicles
 - .1 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.

- .2 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:
 - .1 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 kilometers.
- .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.

3.6 Protection of Completed Work

- .1 The Contractor shall protect all pavement markings until dry.

END OF SECTION