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END OF DOCUMENT

1.0 GENERAL

- .1 The Work covered by this Contract shall include, but shall not be limited to the furnishing of all materials, equipment, tools, machinery, supplies, temporary lighting, water, heating, transportation, labour and superintendence necessary for the construction of the work as herein specified and shown on the Drawings.
- .2 The Contractor shall read and be governed by the Bid Form, Instructions to Bidders, Addenda, Consent of Surety, Bid Security, Agreement, Definitions, Supplementary General Conditions, General Conditions, General Requirements, and complete Specifications and Drawings of this project.
- .3 The complete Work under this Contract shall be governed by the dictates of good practice and shall be complete in all details of materials and methods even if not minutely specified. The Work shall be properly coordinated with the requirements of all work specified in other sections.

1.1 Scope of Work

- .1 The work covered by this Contract shall include mobilization and demobilization, the furnishing of all materials, labour, equipment, tools, supplies, temporary lighting and heating, transportation, quality control, Division 1 requirements, labour and superintendence necessary for the construction of the work as herein specified and shown on the Drawings.
- .2 Work under this Contract covers supply and installation of all materials and construction.

1.2 Site Scope of Work

- .1 Mobilization and demobilization of all personnel, equipment, support facilities and materials, and acquiring all necessary permits and licenses required to complete the Work.
- .2 Supply, load, haul, place and compact all classes of materials for construction of asphalt overlays.
- .3 Disposal of all unusable materials, such as removed asphalt offsite or onsite pending client approval.
- .4 Traffic accommodation during all construction activities.
- .5 General site rehabilitation and clean-up.

1.3 Interpretation

- .1 If a Contractor finds discrepancies in or omissions from the Drawings, specifications or other documents or has any doubt as to the meaning or intent of any part thereof, the contractor shall at once inform Parks Canada, who may

send a written instruction or explanation. Every request for an interpretation shall be made in writing.

- .2 Discussions at Bid briefings or other oral discussions shall not become part of the Bid Documents unless confirmed by Amendment.

1.4 Location of Work

- .1 The Work is located in Jasper National Park, approximately 5 kilometres north of the Jasper Town site along Pyramid Lake road and approximately 16 km south of the Jasper town site along Highway 93A and Marmot Basin Road.

1.5 Material Supply

- .1 The Contractor shall supply all new materials necessary for the construction of the work as herein specified or shown on the Drawings.

1.6 Contract Schedule and Completion

- .1 Provide within five working days after Contract award, a construction bar chart schedule in weekly increments showing anticipated progress stages, significant milestones, inspections by outside parties and final completion of Work within time period required by Contract and Bid documents.
- .2 The Contractor shall commence the Work and proceed with diligence to perform the Work in accordance with the agreed upon schedule in sufficient time to complete the Work on or before the completion date specified in the contract.
- .3 Interim reviews of work progress based on work schedule will be conducted as decided by Parks Canada and schedule updated by the Contractor in conjunction with and to approval of Parks Canada.
- .4 Scheduling shall be in accordance with the General Conditions, Supplementary Conditions and General Requirements.
- .5 The time period specified for the Contractor to complete all paving related activities is on or before **November 7, 2016**. Clearing and brushing related activities shall be completed on or before **March 15, 2017**.

1.7 Documents Required

- .1 Maintain at job site, once copy each of following:
 - .1 Latest version of Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed shop Drawings.

- .5 Change orders.
- .6 Other modifications to Contract.
- .7 Field test reports.
- .8 Copy of latest approved Work Schedule.
- .9 Manufacturers' installation and application instructions.
- .10 Permits, licenses and land use regulations.

1.8 Site Conditions

- .1 The Contractor shall thoroughly examine the site of the work before submitting the Bid, to satisfy himself as to the local conditions and nature of work. The Contractor shall not seek nor receive any compensation for failing to thoroughly investigate the site conditions and their effect on the tendered unit rates.
- .2 Prior to commencing actual construction, check field conditions to obtain actual dimensions required to ensure correct execution of the Work, and notify Parks Canada, in writing, of all matters which could prejudice proper execution of the Work.
- .3 Commencement of construction shall constitute acceptance of existing conditions and verification of dimensions.
- .4 No extra charges will be allowed for Work resulting from conditions which would have been evident upon a thorough examination of the site.

1.9 Construction Layout

- .1 All Work is to be laid out by the Contractor. This shall include, but not be limited to, stakes and marks, and bench marks as required.

1.10 Responsibility for Work

- .1 Parks Canada will not be responsible for the Contractor's means, methods, techniques, sequences or procedures of construction, or for the supervision of the Contractor's performance of this Contract, or for the Contractor's failure to perform the work in accordance with the Contract. However, if at any time Parks Canada is of the opinion that the number of workers, pieces of equipment or quality of machinery, tools, plant and equipment or articles is insufficient to meet the schedule, he may so advise the Contractor in writing. The Contractor shall promptly make the necessary changes to ensure that the schedule is adhered to.
- .2 Pursuant to the provisions of the General Conditions of the Contract, while it is intended that the Contractor shall be allowed in general to carry out the Contract in such manner that may appear to be the most desirable, Parks Canada may with discretion direct the order in which and points at which the work shall be undertaken. This control shall be exercised in the interest of Parks Canada and it is intended that an agreement be reached between all parties prior to the commencement of the Contract. A schedule of work shall be drawn up for this purpose by the Contractor.
- .3 Whenever in the Contract the terms "as ordered", "as directed", "as required", "as allowed" or terms of the like, effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of the like effect or import are used to describe requirement, direction, review or judgement of Parks Canada as to the work, it is intended that such requirement, direction, review or judgement will be solely to evaluate the work for compliance with the Contract unless there is a specific statement indicating otherwise. The use of any such term or adjective shall not be construed to indicate that Parks Canada shall have authority to supervise or direct performance of the work.

1.11 Mobilization / Demobilization

- .1 Mobilization shall include the necessary work and operation including, but not limited to, the movement of personnel, equipment, supplies and incidentals to the Work, the establishment of facilities necessary to undertake the Work and for expenses incurred for other work and operations which must be performed prior to the commencement of the Work.
- .2 Demobilization shall include the dismantling and removal from the site of all of the Contractor's equipment and materials, clean-up of the site, and transportation of labour from the site.
- .3 There will be no separate payment made for mobilization and demobilization. The cost is to be included in Lump sum.

1.12 Contractor's Use of Site

- .1 Use of site: Contractor to be provided access for execution of work in accordance with General Conditions and Special Provisions, except as follows.
 - .1 The Contractor and stored materials shall not interfere with Parks Canada access to the site for operation, maintenance and repair of existing facilities. Provide temporary access to existing facilities as may be required and move materials as requested by Parks Canada.
 - .2 At all times cooperate with Parks Canada.
- .2 Contractor shall be responsible for site security for the duration of the Contract. Where security is reduced by work of Contract, provide temporary means to maintain security.
- .3 Obtain and pay for use of additional storage or work areas as required.

1.13 Project Meetings

- .1 Parks Canada will arrange and set times for project meetings and will record and distribute minutes.
- .2 The Contractor's site superintendent and representatives of the subcontractors shall attend the meetings at the request of Parks Canada.

1.14 Permits, Licenses, Certificates and Fees

- .1 Contractor shall pay for all permits, licenses, certificates and all fees required for performance of the Work in accordance with General Conditions and Supplementary Conditions.

1.15 Water Supply

- .1 Supply all water necessary for the work and obtain written permission from Parks Canada prior to using any Park Facility.
- .2 The Contractor shall be held responsible for any damage done to the Park Facility or surrounding area.
- .3 Make an Agreement with Parks Canada for the payment of water used.

1.16 Contractor Submission Requirements

- .1 A list of the documents and information to be submitted by the Contractor is presented in the table at the end of this Section. Please note that this list does not necessarily include all required submissions.
- .2 Submit all information and documents by the dates indicated, unless otherwise directed by Parks Canada.

1.17 Haul Roads

- .1 The Contractor shall be responsible for damage and/or spillage on all roads used for hauling materials and equipment to and from the site subject to Parks Canada being satisfied such damage or spillage was a direct result of the actions of the Contractor or one of the Contractor's agents in the performance of the work required under this Contract.
- .2 Upon notification by Parks Canada that the remedial work is necessary, immediately clean and/or restore the affected areas designated by Parks Canada.
- .3 Obtain approval from Parks Canada prior to using any road as a haul road.

1.18 Construction Signage and Safety

- .1 The Contractor shall supply and maintain, at their own expense, all barriers, fences, warning signs and other precautions to protect the workers and general public against accident or injury. All excavations or obstructions shall be clearly marked between sunset and sunrise with proper warning flares or lights. Local or Municipal bylaws governing warning flares or lights shall be strictly observed.
- .2 Signage shall be erected indicating an open excavation and to adequately protect the general public against accident or injury. Signs and notices for safety and instruction shall be in both official languages.
- .3 All signs, barricades, and warning devices shall meet local and/or Regional Transportation Advisory Committee (RTAC) requirements and satisfaction of Parks Canada. The Contractor shall obtain any permits required by Parks Canada with respect to this work.
- .4 Upon notification by Parks Canada, the Contractor shall remove the construction sign to a location designated by Parks Canada.

1.19 Working Hours, Night Work and Holidays

- .1 The acceptable working hours for the Contractor shall be from 700hrs to 1900hrs, 7 days per week.
- .2 Night work will only be allowed if written permission is given beforehand by Parks Canada. When work is carried out at night, the Contractor shall supply, at their own cost, a sufficient number of electric or other approved lights to enable the work to be done in a safe and satisfactory manner.
- .3 The Contractor shall not work on any other day normally observed as a holiday, without the approval of Parks Canada.

1.20 Remove and Dispose of Materials

- .1 Materials to be removed and disposed shall be removed, hauled and disposed of at the Contractor's expense.

- .2 All materials in excess of that needed for completion of the project shall be removed from site upon excavation.
- .3 All the necessary approvals and/or permits shall be obtained from Parks Canada and any governing authority prior to dumping any material.

1.21 Emergency Situations

- .1 In emergency situations, endangering life or public property, Parks Canada shall proceed with repairs and thereupon advise the Contractor of the failure, and resulting costs shall be paid by the Contractor.

1.22 Clearing of Site

- .1 All refuse shall be disposed of in a manner satisfactory to Parks Canada.
- .2 The Contractor shall become fully aware of the conditions in the work area prior to submitting their Bid.

1.23 Traffic Accommodation

- .1 Prior to construction, provide a Traffic Accommodation strategy and Work Safety Plan indicating all proposed detour routes and schedules. The plan must be approved by the governing authority and Parks Canada prior to construction.
- .2 Traffic control shall be in accordance with the provisions of the Manual of Uniform Traffic Control Devices of Canada.
- .3 Supply and maintain all barriers, fences, warning signs and other precautions to protect the workers and general public against accident or injury.
- .4 All excavations or obstructions shall be clearly marked between sunset and sunrise with proper warning flares or lights.
- .5 Local or Municipal Bylaws governing warning flares or lights shall be strictly observed.
- .6 Should any of the Contractor's work cause interference with any existing public roads or pedestrian accesses, the Contractor shall provide and maintain detour roads and shall post such signs, lights, barriers, etc., as may be required for public convenience in accordance with governing local or municipal standards.
- .7 Where construction occurs within the right-of-way of Provincial Highways, provide and maintain warning and/or detour signs as required by Parks Canada.
- .8 As construction proceeds, clean up all lanes and ditches and make them passable and useable.

1.24 Noise and Dust Control

- .1 The Contractor shall be responsible for controlling objectionable dust conditions in areas of construction as a result of traffic, construction equipment, or wind.
- .2 All equipment shall be equipped with suitable muffling systems.
- .3 The Contractor shall be cognizant of and abide by Noise Bylaws which affect any work in the area.

1.25 Existing Fences, Trees and Buildings

- .1 No trees whatsoever shall be cut down without the written permission of Parks Canada.
- .2 Trees, shrubbery, fences, poles and all other private property and surface structures shall be protected unless their removal is shown on the Drawings or authorized by Parks Canada.

1.26 Relics and Antiquities

- .1 Give immediate notice to Parks Canada if evidence of historical or archaeological finds are encountered during construction, and await Parks Canada written instructions before proceeding with the Work in this area.

1.27 Easements

- .1 This project is located in the National Park. There will be less temporary workspace due to trees immediately beyond the project site. The Contractor shall manage the construction with limited workspace.

1.28 Existing Utilities and Pipelines

- .1 The Contractor shall assume full responsibility for safeguarding all existing and relocated utility installations during the progress of the Work. While Parks Canada has made every effort to collect and present details concerning utility installations, no responsibility will be assumed by Parks Canada for the correctness and completeness of the information, and the Contractor shall have no claim on that account. The existence, location, elevation, and condition of existing underground utilities or pipelines is not guaranteed, and notwithstanding any other provisions in the Contract, the Contractor shall be responsible for determining the location and elevation of all sewer, water and gas mains or lines, electric light, power or telephone conduits, or other structures or utilities or pipelines, by non-destructive means acceptable to Parks Canada.
- .2 There will be no separate payment made for all incidental work related to utility or pipeline coordination or temporary protection or protection required during the course of the contract (including warranty period) or repair of existing services damaged in the course of the Works.

1.29 Dewatering and Drainage

- .1 Keep all portions of the Work properly drained during the construction and until completion.
- .2 The Contractor will be held responsible for all damage, directly resultant from their operations, which may be caused by or which may result from water backing up or overflowing through, from or along any part of the work.
- .3 The Contractor shall bear all costs related to the effective dewatering of excavations and all other pumping and drainage necessary for the proper construction of the Works, including keeping the pipes, structures and trenches free of undesirable accumulations of seepage, subsoil water, surface water or rainwater.
- .4 Dispose of all water drained or pumped as above by discharging it to drainage ditches or natural water course approved by Parks Canada, but in compliance with all Municipal, Provincial and Federal regulations, ordinances, bylaws, etc., and provide documentation indicating that authority has been granted to discharge effluent water into any drainage ditch, brook, creek or river.
- .5 Keep all drainage channels and culverts free of silt, sand, debris and gravel and remove such deposits as required by Parks Canada or any other authority having jurisdiction.
- .6 Accept responsibility for any actionable damage, inconvenience or interference caused by the dewatering operations to the roads, utilities, services or other improvements which may be affected by a lowering of the water table and bear all costs of repair, replacement, reinstatement or alteration of same.

1.30 Subsurface Investigation Data

- .1 Geotechnical information documents is available for the project.

1.31 As-Built Drawings

- .1 Parks Canada will provide one (1) additional set of construction Drawings for As-Built drawing purposes after Award of Contract.
- .2 Identify each Drawing as "Project As-Built Copy". Maintain Drawings in good condition and make available for inspection on site by Parks Canada at all times.
- .3 Maintain project As-Built Drawings and record accurately significant deviations from Contract documents caused by site conditions and change orders by Parks Canada. The Contractor shall keep the "As-Built" Drawings current as the job progresses.
- .4 Mark changes in red.
- .5 Record following information:
 - .1 Field changes of dimension and detail.

- .2 Changes made by Change Order or Field Instruction.
- .3 Horizontal and vertical locations of all reconstructed drainage and structures.
- .6 At completion of project and prior to Issuance of Completion Certificate, sign and date prints as Certification of Accuracy and submit As-Built Drawings.

1.32 Final Clean-Up

- .1 At the completion of the construction work, all areas on which work has been done shall be left in a neat and presentable condition.
- .2 All drainage ditches which have been blocked as a result of the work shall be repaired or restored to their original condition or better.
- .3 The Contractor, at their own expense, shall dispose of all surplus excavated material, trees, brush, rock, boulders, including those less than 0.5 m³ in volume, at a location approved by Parks Canada.

1.33 Backfill

- .1 Backfilling of trenches or fill areas will not be permitted unless Parks Canada is onsite. The Contractor will notify Parks Canada 24 hours in advance of backfilling scheduled for weekends or holidays.

1.34 Surface Restoration

- .1 All existing roadways, landscaping and other surface structures shall be restored. No separate payment will be made for any restoration and the costs are to be included in unit prices.

2.0 PRODUCTS

- .1 Not applicable.

3.0 EXECUTION

- .1

CONTRACTOR SUBMITTAL SCHEDULE		
Specification Section	Description	Date Required
01 10 00	Copies of Permits/Licenses	Upon Parks Canada's request
01 33 00	Material and Shop Drawing Schedule	15 days from Notice of Acceptance
01 35 30	Safety Meeting Minutes	Upon Parks Canada's request
01 35 30	Accident Reports	Promptly after incident
01 35 30	WHMIS Data Sheets	Upon delivery of materials to site
01 77 00	Record Drawings (1 set)	At project completion/prior to final inspection.

END OF SECTION

1.0 GENERAL

1.1 Parks Canada to Administer

- .1 Parks Canada will schedule and administer preconstruction meeting and progress meetings as required.
- .2 Parks Canada will:
 - .1 Prepare agenda for meetings.
 - .2 Make arrangements for meeting locations.
 - .3 Preside at meetings.
 - .4 Record meeting minutes, identifying significant proceedings and decisions, and noting action by the parties.
 - .5 Reproduce and distribute copies of the minutes to participants and affected parties not in attendance.
- .3 Contractor's superintendent and senior representatives of major Subcontractors, to attend all meetings.
- .4 Representatives of Contractor, Subcontractor and suppliers attending meetings shall be qualified and authorized to act on behalf of the party each represents.

1.2 Preconstruction Meeting

- .1 Within 5 days after award of Contract, Parks Canada will arrange a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Senior representatives of Parks Canada and major Subcontractors will be in attendance.
- .3 Agenda to include the following:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work and progress scheduling.
 - .3 Requirements for temporary facilities.
 - .4 Site security.
 - .5 Contemplated changes, change procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
 - .6 Force account work procedures.

- .7 Record drawings.
- .8 Acceptance and warranties.
- .9 Monthly progress claims, administrative procedures, photographs and holdbacks.
- .10 Insurances.
- .11 Safety Program.

1.3 Progress Meetings

- .1 Progress meetings will be held at least once a month, up to and including start-up and commissioning.
- .2 Contractor, major Subcontractors involved in Work, and Parks Canada are to be in attendance.
- .3 Agenda to include the following:
 - .1 Review and approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule.
 - .7 Revisions to construction schedule.
 - .8 Progress, schedule, during succeeding work period.
 - .9 Review submittal schedules: expedite as required.
 - .10 Maintenance of quality standards.
 - .11 Review of pending and proposed changes for effect on construction schedule and on completion date.
 - .12 Safety issues.
 - .13 Environmental Issues (including, but not limited to a summary of locations where temporary erosion and sedimentation control measures are in place and success of measures.
 - .14 Issues.
 - .15 Other business.

2.0 PRODUCTS

.1 Not used.

3.0 EXECUTION

.1 Not used.

END OF SECTION

1.0 GENERAL

1.1 Requirements Included

- .1 Construction schedule.
- .2 Shop drawings and product data.
- .3 Samples.
- .4 As-Built drawings and all pertaining reports.
- .5 Certificates.

1.2 Administrative

- .1 Provide submittals to Parks Canada for review with reasonable promptness and in an orderly sequence so as to not cause delay in the Work. Parks Canada shall be provided with a minimum of 7 days to review submittals. 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 At Parks Canada's request, prepare and submit schedule fixing dates for submission and return of shop drawings, product data or samples.
- .3 Work affected by the submittal shall not proceed until review is complete.
- .4 Contractor's responsibility for errors and omissions in submission is not relieved by Parks Canada review of submittals.
- .5 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Parks Canada review.
- .6 Keep one reviewed copy of each submission on Site.
- .7 Contractor shall submit a dust control plan for the transport of materials to and from the construction site. The plan shall be submitted prior to the start of construction.
- .8 If Parks Canada deems the dust control measures undertaken to be inadequate, he/she retains the right to instruct the Contractor to undertake appropriate dust control measures. The cost of such measures will be billed to the Contractor.

1.3 Construction Schedule

- .1 Refer to Section 01 10 00 - General Instructions.

1.4 Samples

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples as to origin and intended use in the Work.
- .2 Deliver samples prepaid to Parks Canada business address.
- .3 Notify Parks Canada in writing, at the time of submission, of deviations in samples from requirements of Contract Documents.
- .4 Adjustments made on samples by Parks Canada are not intended to change the Contract Amount. If adjustments affect the value of Work, state such in writing to Parks Canada prior to proceeding with the Work.
- .5 Make changes in samples which Parks Canada may require, consistent with Contract Documents.

2.0 PRODUCTS

- .1 Not used.

3.0 EXECUTION

- .1 Not used.

END OF SECTION

1.0 GENERAL

1.1 Reference Standard

- .1 Traffic regulations to be in accordance with Parks Canada requirements.

1.2 Protection of Public Traffic

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out work or haul materials or equipment.
- .2 When working on travelled way:
 - .1 Place equipment in position to present minimum interference and hazard to travelling public.
 - .2 Keep equipment units as close together as working conditions will permit and preferably on the same side of travelled way.
 - .3 Do not leave equipment on travelled way overnight.
- .3 Do not close any lanes or any road without approval of Parks Canada. Before re-routing traffic, erect suitable signs and devices in accordance with a manner acceptable to Parks Canada. Provide sufficient crushed gravel to ensure a smooth riding surface during work.
- .4 Load trucks in a manner that will prevent spillage and tracking of soil or debris on roadways. Clean up immediately to the satisfaction of Parks Canada if spillage or tracking does occur. Clean haul routes as directed by Parks Canada. Failure to clean up haul routes may result in Parks Canada crews doing the cleaning without notice to the Contractor and the costs will be deducted from moneys due to the Contractor.

1.3 Informational and Warning Devices

- .1 Provide and maintain signs and other devices required to indicate construction activities or other temporary and unusual conditions resulting from project work which may require road user response. Signs and notices for safety and instruction shall be in both official languages.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Part D, Temporary Conditions, of the Manual of Uniform Traffic Control Devices for Canada.
- .3 Place signs and other devices in locations recommended in said manual.
- .4 Meet with Parks Canada prior to commencement of work to prepare list of signs and other devices required for project.
- .5 Continually maintain traffic control devices in use by:

- .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
- .2 Removing or covering signs which do not apply to conditions existing from day-to-day.

1.4 Control of Public Traffic

- .1 The Contractor is responsible for all traffic control. Ten (10) days prior to undertaking any construction, the Contractor shall submit in writing, the intended system of routing traffic during construction, to Parks Canada. The Contractor's system of routing traffic will be reviewed by Parks Canada with the Contractor and any modifications requested, at any time, by Parks Canada, shall be immediately implemented.
 - .1 Restricted Activity on Roads
 - .1 Lane closure in Jasper National Park is not permitted without Parks Canada consent.
 - .2 Prior to closing any lanes the contractor is to provide an alternate access with approval of Parks Canada. For all lane closures the Contractor is to obtain lane closure permits prior to closing.
 - .3 The Contractor is to maintain traffic at all times. No road closures are permitted.
 - .4 Traffic signs shall be erected and maintained to ensure safety of workers and public as required in Section 1.3.
 - .2 The desire for this project is to minimize disruption to traffic (both public and service vehicles) to the greatest extent possible. Lane closures should be limited to those sections being actively worked on and should re-open to public traffic as soon as possible.
 - .3 Provide competent flag persons, properly equipped as specified in Manual of Uniform Traffic Control Devices for Canada, in following situations:
 - .1 When public traffic is required to pass working vehicles or equipment which may block all or part of travelled roadway.
 - .2 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.
 - .3 When workers 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.

- .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
- .5 For emergency protection when other traffic control devices are not readily available.
- .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

2.0 PRODUCTS

- .1 Not used.

3.0 EXECUTION

- .1 Not used.

END OF SECTION

Classification 4-6 Roadways

1.0 GENERAL

1.1 Occupational Health and Safety Act

- .1 The Prime Contractor is responsible to ensure that all contractors working on the worksite comply with the Occupational Health & Safety Act and applicable regulations.
- .2 The Contractor shall comply and ensure that all the Subcontractors comply with all applicable legislation. The Contractor shall enforce all the applicable safety rules and regulations to all individuals who will be on the site.
- .3 The following is a list of safety information to assist the Contractor in familiarizing with the Occupational Health & Safety Requirements. The Contractor warrants that the Contractor shall comply with all requirements of the Occupational Health & Safety Act as well as the relevant legislation in conducting work under this contract.

1.2 Supervision:

- .1 The Contractor shall advise Parks Canada in writing of the person or persons who will ensure compliance with applicable safety legislation. This list should include the site superintendent plus as many representatives as the Contractor determines are required to ensure appropriate supervision and the subsequent safe performance of all jobs on the site. Provision should be made to include twenty-four (24) hour emergency telephone number(s) on this list.

1.3 Competent Workers:

- .1 The Contractor shall ensure that workers on the site be adequately qualified and sufficiently experienced to perform work in a safe manner. Those workers who do not meet these criteria shall be supervised by someone who is competent. The Contractor shall provide or arrange for the necessary training to ensure sufficient workers on site are competent.

1.4 Audit/Inspections:

- .1 The Contractor shall conduct frequent inspections to ensure compliance with legislation. Any unsafe conditions or work practice observed shall be corrected as soon as possible. In the event of an imminent danger situation, Section 27 of the Occupational Health and Safety Act shall be followed. All reports provided by outside agencies (i.e. British Columbia Government Health & Safety, etc.) shall be copied and a copy provided to Parks Canada within twenty-four (24) hours following the inspection.

1.5 Reporting Procedures:

- .1 All serious or potentially serious accidents or incidents as specified in the current Designation of Serious Injury and Accident regulation shall be reported as prescribed by Section 13 of the Occupational Health & Safety Act. Following this, Parks Canada shall be notified and a copy of the investigation report is to be

provided as soon as practicable. Severe action including fines may be imposed by the provision authorities should a Contractor be found guilty of failure to report an accident or having disturbed the scene of an accident prior to an investigation.

1.6 First Aid and Emergency Planning:

- .1 Each Contractor shall provide first aid services, equipment and supplies in accordance with the current First Aid Regulation. The Contractor shall establish an overall emergency plan (routes, equipment, emergency contracts, etc.) and inform all the workers on the worksite of the contents of the plan. If the worksite has an existing emergency plan, the Contractor shall familiarize all the workers under their control of the contents of the plan.

1.7 Codes of Practice:

- .1 The Contractor shall post at all worksites, codes of practice for confined space entry, respiratory protective equipment, designated chemicals, and others as required under the Occupational Health & Safety Legislation. Each code of practice must reflect the specific operation conduct at that particular site.

1.8 Chemical Hazards:

- .1 The Contractor shall ensure that all controlled products present at the worksite are stored, used and handled in accordance with Part 2 of the Chemical Hazards Regulations.
 - .1 Material Safety Data Sheets:
 - .1 The Contractor shall have all Material Safety Data Sheets accessible to all workers at the worksite for controlled products present at the worksite. The Contractor shall provide copies of the Material Safety Data Sheets to Parks Canada upon request.
 - .2 Labels:
 - .1 The Contractor shall ensure that all controlled products present at the worksite are identified with either supplier or worksite labels.
 - .3 Education:
 - .1 The Contractor shall ensure all workers are instructed in accordance with Sections 17 and 18, Part 1, of the Chemical Hazards Regulation.

1.9 Personal Protective Equipment:

- .1 The Contractor shall ensure that workers use appropriate personal protective equipment and are trained in its use and care in order to control or minimize hazards that cannot be controlled by engineering or administrative practices.

Classification 4-6 Roadways

1.10 Safety Meetings:

- .1 A meeting shall be held prior to the commencement of work for the purpose of review and clarification of safety procedures.

1.11 Safety Committees:

- .1 The Contractor may be required to establish worksite committees acceptable to Parks Canada for the purpose of discussing safety related issues.

1.12 Worksite Classification/Procedure Development:

- .1 The Contractor shall develop procedures for demolition, hot work, explosives; work over water, ground thawing, pesticide application, radioactive material, lasers, electrical or substance isolation (blanking, lockouts), carcinogenic material, and other hazards as required for the Work. These procedures shall be made available upon request. The Contractor shall ensure that these procedures outline safe work practices that will address health and safety concerns and the workers on the site and exposed or potentially exposed to these hazards shall be familiar with and follow the safe work practices prescribed.

1.13 Maintenance and Repair:

- .1 The Contractor shall ensure that all equipment used on the worksite is maintained in such condition that it will not compromise the health and safety of workers.

1.14 Housekeeping:

- .1 The Contractor shall ensure that the worksite is kept clean and free from hazards that may endanger workers or restrict safe access or egress.

1.15 Illumination:

- .1 The Contractor shall ensure illumination at the worksite is sufficient to enable work to be done safely. Refer to the current CSA standard for guidance.

1.16 Powered Mobile Equipment:

- .1 The Contractor shall ensure that powered mobile equipment meets the requirements of pertinent legislation. Personnel shall not be transported in a vehicle unless adequate seating is provided. Equipment fitted with roll over protective structures shall be equipped with seat belts and the seat belts shall be worn when the equipment is operated. Equipment requiring back-up alarms shall have the alarms maintained in good working order.

1.17 Traffic Hazards:

Classification 4-6 Roadways

- .1 The Contractor shall ensure that appropriate measures are taken to protect workers from the hazards created by traffic including the provision and wearing of safety vests where required.

1.18 Hoisting and Rigging:

- .1 The Contractor shall ensure that all aspects of hoisting and rigging comply with applicable legislation. Only competent workers shall operate hoists, act as signaller, or perform rigging. The Contractor shall designate workers who will operate hoisting equipment or act as signaller for hoisting work. Log books for cranes and hoist shall be provided and maintained as required. Approved rigging shall be of sufficient strength, inspected thoroughly at the beginning of each shift and used in a safe manner.

1.19 Movement of Equipment and Material:

- .1 The Contractor shall ensure that loads and materials are secured against unintentional movement that could adversely affect the safety of workers. Chemical substances regulated by the Transportation of Dangerous Goods regulation shall be handled in accordance with that regulation. The Contractor shall ensure workers are aware of the hazards associated with working around moving equipment and that appropriate measures are taken to protect the workers from injury.

1.20 Fall Protection:

- .1 The Contractor shall ensure that fall protection (i.e. guard rail, safety harnesses, fall arresting device) is provided and used when workers would fall greater than 3.0 metres from a temporary work area or 1.2 metres from a permanent work area.
- .2 Openings that create a falling hazard must have a temporary cover with warning signs or guard rails and toes boards installed by the Contractor. Similarly, where open trench work is adjacent to a frequently used public thoroughfare, guard rails shall be erected and maintained.

1.21 Ladders and Scaffold:

- .1 The Contractor shall ensure that ladders which meet the requirements of applicable legislation are provided when no other safe means of access or egress between levels is present. The Contractor shall ensure that a scaffold will be designed to support four (4) times the load it will carry and that the erection, maintenance, and dismantling is performed by a competent worker. Scaffolds shall be anchored at least every 4.6 metres vertically and 6.4 metres horizontally.
- .2 Scaffold planks shall be at least grade one 51 millimetres x 254 millimetres lumber that is inspected and load tested before installation at which time they should be secured to prevent movements. Free standing or rolling scaffolds shall be erected with a minimum of 3 to 1 height to base ratio.

Classification 4-6 Roadways

1.22 Excavations and Trenches:

- .1 The Contractor shall ensure that workers are protected from cave-ins by cutting back the walls or by installing temporary protective structures in trenches and excavations depending upon the nature of soil and the depth. Cut-backs in hard and compact solid (requiring use of rippers and heavy machinery) must be cut-back to not less than 30°. Other soils to not less than 45°. Typical utility shall NOT be considered hard and compact in native material unless stipulated by Parks Canada. The temporary protective structures shall be installed as outlined in the applicable legislation or as specified in plan designed and certified by a Professional Engineer and made available at the job site. Any additional loads (equipment, buildings, etc.) that may be imposed on the trench or excavations walls shall be taken into account when protecting workers from cave-ins.
- .2 Installation and removal of temporary protective structures shall be done in a safe manner. Workers shall install cross braces while on a ladder starting from the top and working down. Removal shall again be from a ladder starting from the bottom and working upward.

1.23 Underground and Overhead Utilities:

- .1 The Contractor shall ensure that all underground utilities are located and procedures outlined in the Pipeline Act, Electrical Utilities Regulations, and other applicable legislation are followed. The Contractor shall ensure that workers are made aware of the location of overhead utilities, the dangers of contacting these utilities are communicated to all workers and the safe limits of approach as outlined in the legislation are maintained for workers and equipment.

1.24 Hand and Power Tools:

- .1 The Contractor shall ensure that power and hand tools are properly maintained and that they are used in accordance with good industrial practices. Tools that are particularly hazardous, such as explosive actuated fastened tools, shall be operated only by workers who have received specific instruction on the safe use, limitations and maintenance of that tool.

1.25 Compressed Gases:

- .1 The Contractor shall ensure that compressed gases are transported, used and stored in accordance with the manufacture's specifications. Cylinders shall have their contents clearly labelled (WHMIS) and the cylinders shall be secured to prevent being dislodged or damaged by equipment or moving materials.

1.26 Smoking:

- .1 The Contractor shall inform their workers of any smoking restrictions that may be in place on the worksite and ensure these restrictions are followed.

Classification 4-6 Roadways

1.27 Sanitary Facilities:

- .1 The Contractor shall ensure that sanitary facilities shall be provided in accordance with applicable legislation. The provision of additional washing facilities (i.e. showers) may be required in accordance with the hazards associated with the materials on the worksite.

1.28 Hazardous Wastes:

- .1 The Contractor shall ensure that all hazardous wastes generated at the worksite are removed, transported and disposed of in accordance with applicable legislation. A copy of the necessary documentation (i.e. Hazardous Waste Manifest) must be supplied to Parks Canada upon request.

1.29 Fire Protection:

- .1 The Contractor shall ensure that an adequate number of the appropriate types and size of fire extinguishers are provided and maintained in accordance with applicable legislation. The fire extinguishers shall be clearly visible and readily accessible and the workers shall be trained in the use of the fire extinguishers provided.

1.30 Use and Storage of Flammable Substance:

- .1 The Contractor shall ensure that the hazards associated with the use of any flammable substance are clearly evaluated and procedures put in place to ensure the safety of workers, materials and equipment at the worksite. Flammables shall be stored in approved containers and rags contaminated with flammable substance shall be stored in suitable metal containers with adequate covers.

1.31 Site Security/Public Safety:

- .1 The Contractor shall ensure that access or movement at or adjacent to the worksite does not present hazards.

Classification 4-6 Roadways

- .2 This may involve the use of fencing, barricading, lighting, signing, hoarding, locked covers over openings, workers on watch, "authorized entry only" provision, or other means as appropriate. The Contractor shall ensure that authorized personnel have access to the site.
- .3 Parks Canada may request the Contractor to institute a means of identifying authorized workers on the site to assist in site security. Adverse weather conditions may require an increased awareness of public security and safety.

1.32 Key Control:

- .1 The Contractor shall adhere to any key control system established by Parks Canada to protect the worksite.

1.33 Worker's Compensations Board:

- .1 The Contractor and the Subcontractors shall have accounts in good standing with the Workers' Compensation Board. Proof of current account status shall be provided upon request.

1.34 Demolition:

- .1 The Contractor shall ensure that before demolition work commences, a meeting will be held on site with the Contractor, Parks Canada, and other interested parties to discuss the coordination, scheduling, safety, and all other aspects of the work.

1.35 Asbestos:

- .1 The Contractor shall ensure that when work requires the removal of asbestos material, procedures shall be developed and are site specific. Work to be executed by certified abatement personnel only.

1.36 Manhole and Vault Covers:

- .1 The Contractor shall ensure that when work requires the temporary removal of a manhole or vault lid, the manhole or vault lid is not left open while unattended. The manhole or vault shall be adequately protected and covered if it becomes necessary to leave it unattended without its lid in place.

END OF SECTION

1.0 GENERAL

1.1 General Site Conditions

- .1 All employees must attend a briefing with an Impact Assessment Officer (IAO) or Surveillance Officer (SO) before beginning work at the site review and explain the mitigations that are conditions of the project approvals.
- .2 Minimize vegetation-clearing activities and ground disturbance by staging on existing hardened areas wherever possible
- .3 Avoid or terminate activities on site that attract or disturb wildlife. Vacate the area and stay away from the immediate location if wildlife display aggressive behaviour or persistent intrusion
- .4 Control materials that might attract wildlife (e.g. petroleum products, human food and garbage).
- .5 Notify the SO immediately about dens, litters, nests, carcasses (road kills), wildlife activity or encounters on or around the site or crew accommodation. Other wildlife-related encounters are to be reported to SO within 24 hours.
- .6 When work involves the disturbance of soils or the use of erodible materials (e.g. sands, topsoil), prevent the transport of sediment by the installing of appropriate erosion and sediment control. All components require regular maintenance to ensure effectiveness which is the responsibility of the Contractor.
- .7 An Erosion and Sedimentation Management Plan shall be prepared for the components of the work undertaken in proximity to watercourses, wetlands or riparian environments.
- .8 All laydown areas must be approved by Parks Canada in advance of any activity or storage. Any equipment stored in the laydown area must be stored on a tarp with spill containment.

1.2 Equipment Operations, Fuel Storage, and Refueling/Emergency Plans

- .1 Equipment movements and workers' private vehicles shall be restricted to the 'footprint' of the construction area.
- .2 Ensure machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species, noxious weeds and soils from off-site.
- .3 Contractor must have spill kits appropriate to his machinery on site. Spill kits shall be provided at re-fuelling, lubrication, and repair locations that are capable of dealing with 110% of the largest potential spill and shall be maintained in good working order. Site staff shall be informed of the location of the spill response kit(s) and be trained in its use.

- .4 If potentially hazardous materials (e.g. cement-based products, sealants or paints) are used on site ensure raw material, mixed compounds and wash water are not released to any watercourse or soils. 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 Hazardous or toxic products shall be stored no closer than 100 metres from streams, wetlands, water bodies or waterways.
- .6 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 SO shall be notified immediately of any spill. In the event of a major spill, all other work shall be stopped and all personnel devoted to spill containment and clean-up.
- .7 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 proponent. The site will be inspected to ensure completion to the expected standard and to the satisfaction of Parks Canada.
- .8 Any refuelling activity must take place in a contained area such as a tarped stall or with spill trays, and much occur in a controlled manner with preventative spill measures in place, such as funnels, drip trays, and absorbent pads.
- .9 A Spill Response Plan will be prepared and detail the containment and storage, security, handling, use and disposal of empty containers, surplus product or waste generated in the application of these products in accordance with all applicable federal and provincial legislation. The Plan shall include a list of products and materials to be used or brought to the construction site that are considered or defined as hazardous or toxic to the environment. Such products include, but are not limited to, waterproofing agents, grout, cement, concrete finishing agents, hot poured rubber membrane materials, asphalt cement and sand blasting agents
- .10 No vehicle (passenger or machinery) idling is permitted

1.3 Fires

- .1 Fires and burning of rubbish on site not permitted.

1.4 Disposal of Wastes

- .1 Clean tools and equipment off-site to prevent the release of wash water that may contain deleterious substances.
- .2 Where possible, sweep up loose material or debris. Any material thought to pose a risk of contamination to soils, surface water or groundwater should be disposed of appropriately off-site.
- .3 Construction, trade, hazardous waste and domestic waste materials shall not be burned, buried or discarded at the construction site or elsewhere in Parks

Canada protected heritage places. These wastes shall be contained and removed in a timely and approved manner and disposed at an appropriate waste landfill site located outside the Parks Canada protected heritage place. Construction waste storage containers, shall be emptied when 90% full. Waste containers will have lids, be wildlife proof if there attractants and waste loads shall be covered while being transported.

- .4 Sanitary facilities, such as a portable container toilet, shall be provided and maintained in a clean condition.
- .5 Do not bury rubbish and waste materials on site.
- .6 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .7 Remove from site wastes and materials specified or designated by Parks Canada to be disposed of. Arrange for disposal sites.

1.5 Drainage

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.
- .4 Maintain existing drainage facilities affected by the Work in good operating condition at all times during construction.

1.6 Site Clearing and Plant Protection, Vegetation Removal Mitigations

- .1 Roadside vegetation management activities include mowing, brushing, and landscape maintenance activities undertaken to maintain clear sight lines for highway users, control noxious weeds, facilitate effective drainage, and reduce possible fire hazards. Mature timber may need to be removed for improving road alignments, improving sight lines or replacing or repairing associated infrastructure. Grubbing (stump and root removal) may be required to prepare the ground surface for other activities.
- .2 Vegetation clearing can negatively impact nesting birds and/or bats in spring and summer. Avoid all vegetation removal during this time
- .3 Vegetation removal should be limited to the minimum Clear Zone Distance dependent on type and size of road and maximum height needed to meet the road safety objectives.
- .4 Minimize full removal and retain vegetation when possible to reduce erosion.

- .5 Minimize stripping of topsoil and vegetation.
- .6 Clearing activities shall be avoided during nesting seasons for birds, reptiles and amphibian species in the project area
- .7 If wildlife is observed during work, if possible, give animals the opportunity to escape the work area to the surrounding forest or elsewhere to seek new shelter.
- .8 Avoid ground vegetation removal during dry, windy periods to prevent erosion of topsoil and reduction of air quality with dirt/dust.
- .9 Retain 30 metre vegetated buffer around water bodies, where disturbance is necessary and unavoidable restoration is required.
- .10 Debris will not be deposited in water bodies.
- .11 Ensure tree limbs/stumps are flush cut as close to the ground or stem as possible.
- .12 Logs and other salvage materials are to be conveyed to and placed at a storage site without spread of debris or damage to other standing trees or landscape resources outside the marked clearing or storage limits. They shall not be skidded through wetlands, waterways or water bodies.
- .13 During the grubbing component, stumps, roots, imbedded logs and other non-soil debris shall be pulled and shaken free of loose soil and rocks before transport to a designated pit.
- .14 Protect trees and plants on site and adjacent properties where indicated.
- .15 Wrap trees and shrubs adjacent to construction work, storage areas and trucking lanes in burlap, and encase with protective wood framework from grade level to height of 2 m.
- .16 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .17 All vegetation debris must be removed as soon as possible from the right-of-way, by transporting off-site for disposal.
- .18 All vegetation containing non-native species will be bagged and removed off site to disposal facility
- .19 Where fire fuel loading is not a concern vegetation debris of limited amounts will be dragged in the forest to mimic natural tree fall.
- .20 If removal is not feasible a chipper may be used for less than 50 boles per hectare. Chip depth is to be a maximum of 5 cm (2 inches), spread over area no greater of 5m x 5m per hectare so as to not cover underlying vegetation, prevent new native seedlings from sprouting, and cause soil/seed

bank sterilization. Spreading of chips may extend beyond these parameters with permission from Parks Canada.

- .21 To facilitate chipping of woody debris, all trees/shrubs/vines can be left temporarily along the road shoulders and laid facing the same direction.
- .22 Store removed vegetation on already disturbed areas to minimize disturbance area.

1.7 Pollution Control

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment to local authority's emission requirements.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- .4 Provide dust control during all truck transport activities.
- .5 Address releases of harmful and/or hazardous substances as required by the Environmental Enhancement and Protection Act, Water Act or any other applicable legislation or municipal bylaw.

1.8 Asphalt and Gravel Production and Handling

- .1 Asphalt works are preferably undertaken during periods of dry weather as this allows easier control of contaminated runoff and sediment.
- .2 If the work schedule requires working in the rain, the area of work must be isolated and appropriate sediment controls must be installed to prevent the release of sediment-laden water or any other deleterious substances into surface waters, particularly for surface repair works requiring the application of patching and sealing compounds, tar, asphalt, and chemical surface sealants.
- .3 Asphalt plant operation must comply with all environmental pollution control regulations, including provincial regulations, and the plant operational plan.
- .4 Spoil piles and stock piles will be at least 30 meters from the edge of any water body.
- .5 There must be enough room between the stockpiles and the asphalt plant for a loader in the event of a spill at the asphalt plant.
- .6 A containment berm with an associated liner made of occlusive material (e.g. plastic of a thickness approved by the SO) 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.

- .7 The proponent shall be responsible for the purchase and safe delivery/storage/handling of asphalt cement and emulsions to the asphalt plant site.
- .8 Excess hot mix or reject new asphalt shall be temporarily in stored in the containment area sufficient to prevent runoff of petroleum into soils or surface waters as directed by the SO, and removed from the Parks Canada protected heritage place, prior to project completion.
- .9 Every effort will be made to recycle waste asphalt, either as a base course, or by recycling waste asphalt through the asphalt plant according to engineering specifications. Old cured ground asphalt material shall be removed, recycled, or stored for future recycling at an approved operational gravel pit or asphalt plant site. Stockpiles must be further than 30 metres from any surface waters.
- .10 Remaining stockpiles will be removed or incorporated into reclamation plans for the gravel pits or asphalt plant sites.
- .11 Asphalt to be removed must be sampled and analyzed to determine possible lead contamination. Contaminated asphalt will be transported to an approved waste disposal facility. A receipt of delivery is to be provided to the SO.
- .12 Proponent should protect containment/catchment areas and drip trays at the asphalt plant from rainfall since, if contaminated, all of the collected water will require disposal of at an approved disposal facility at the expense of the Proponent.
- .13 Dyking and ponding will be required to control the rate and quality of runoff from the plant site.
- .14 Ensure that the water in the settling ponds remains clean of petroleum products. Any contaminated water will require disposal at an approved disposal facility at the expense of the Proponent.
- .15 Where possible within engineering constraints, asphalt materials should be recycled to reduce the need for new gravel.
- .16 Gravel will be obtained from an approved operational borrow pit only. For gravel obtained from a borrow pit within a protected heritage place or borrow pit, gravel extraction within the footprint of the disturbed area of the approved operational borrow pit is permitted.
- .17 Gravel will not be crushed within 30 meters of any water body.
- .18 If water for cleaning is extracted from a watercourse, refer to water withdrawal section of this BMP.
- .19 If gravel requires washing, the water used will not be returned directly to any watercourse.

- .20 Water free from chemical contaminants will be discharged into ground where further erosion and runoff into surface water is prevented. Discharging into well vegetated ground surface, at a rate which prevents erosion can often provide increased absorption and reduction of sediment load.
- .21 Contaminated water must be treated to meet CCME guidelines or transported outside of the Parks Canada protected heritage place for disposal at an approved facility.
- .22 For waste removed from the park a detailed receipt of delivery to an approved facility will be provided to the SO.
- .23 Trucks for hauling asphalt mixture shall have tight, clean, smooth metal beds that have been sprayed with a minimum amount of thin fuel oil to prevent the mixture from adhering and causing waste asphalt.
- .24 Truck boxes may be oiled only when absolutely necessary.
- .25 Oiling will take place in a bermed area, consisting of a plastic underlay with 15 centimetres overlay of clean gravel. Oil contaminated gravel will be hand collected (so as to prevent tearing of the plastic) from the bermed area daily, and put through the asphalt plant.
- .26 Vehicle covers shall be securely fastened.
- .27 To ensure regular clean-up of waste asphalt and petroleum spills, a defined clean up schedule will be established during the preconstruction meeting.
- .28 Leaks will be collected in drip trays, the collected material will either be removed from the park, or recycled back through the Asphalt Plant. For any material removed outside the park to an approved facility, a detailed receipt will be provided to the ESO.
- .29 Used oil, filters, grease cartridges, oil cans and other waste products of plant servicing will be collected and disposed of at the nearest industrial waste facility

1.9 Paving, Resurfacing, Grading Mitigations

- .1 Works are preferably undertaken during periods of dry weather (e.g., summer) as this allows easier control of contaminated runoff and sediment.
- .2 If the work schedule requires working in the rain, the area of work must be isolated and appropriate sediment controls must be installed to prevent the release of sediment-laden water or any other deleterious substances into surface waters, particularly for surface repair works requiring the application of patching and sealing compounds, tar, asphalt, and chemical surface sealants.
- .3 During grade construction conducted close to any watercourse, water body or wetland ensure materials are not pushed, fall or are eroded into the water or wetlands.

- .4 No grade building shall occur outside of the delineated work area or within 1 metre of the drip line of existing forest. Any material inadvertently falling outside the work limits will be removed promptly in a manner that does not damage trees or vegetation.
- .5 Materials shall be placed at storage sites or on the grade without spillage outside the work limits. Any material inadvertently falling outside the work limits will be removed promptly in a manner that does not damage trees or vegetation.
- .6 Retain a 30 metre vegetated buffer around water bodies or install runoff management structures.
- .7 If possible grade roads early in the spring before vegetation develops seed heads or late in season after vegetation has set seed and is dormant to minimize non-native vegetation propagation.
- .8 Ensure gravel or road bed material is free of weeds and comes from an approved operational gravel source free of other contaminants.
- .9 Minimize changes to the surface that could affect infiltration and runoff characteristics and maintain effective surface drainage to limit direct runoff into surface waters.
- .10 Minimize application of seal coats in wet conditions. Attempt to apply only to dry surfaces and not prior to (within 24 hrs.) or during rainfall. If unforeseen rain arrives ensure runoff from recently seal coated surfaces are prevented from entering surface waters.

1.10 Pavement Marking

- .1 Pavement marking shall be undertaken pursuant to standard methods applied in National Parks for control of paint products, both in transport and handling. The Contractor shall present a description of methods to be employed for transporting and controlling paint and hazardous products, application of paint, cleaning of equipment, containment and disposal of waste paint and cleaning products, etc. the satisfaction of the Parks Canada Representative.

2.0 PRODUCTS

- .1 Not used.

3.0 EXECUTION

- .1 Not used.

END OF SECTION

1.0 GENERAL

1.1 Requirements Included

.1 Not used.

1.2 Compliance with Regulations

.1 Ascertain requirements and regulations of local authorities (gas/power/telephone service providers, Federal authorities, Alberta Environmental Protection, etc.).

.2 Comply with all such requirements and regulations as applicable to the Work.

.3 Requirements set out in this Section are for guidance and information and are not necessarily complete.

1.3 Permits

.1 Obtain all construction permits necessary for the Works.

.2 A Jasper National Park Business License is required for any Works within Jasper National Park.

END OF SECTION

1.0 GENERAL

1.1 Latest Editions

- .1 All references to specifications, standards, or methods of technical associations refer to the latest adopted revision, including all amendments, in effect on the date of submission of bids, except where a date or issue is specifically noted.

1.2 Abbreviations

AT	Alberta Transportation
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AFBMA	Antifriction Bearing Manufacturers Association
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AISC	American Institute of Steel Construction
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute
API	American Petroleum Institute
ARI	Air-Conditioning and Refrigeration Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWMAC	Architectural Woodworkers Manufacturers Association of Canada
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
CAN	Canadian National Standard
CBM	Certified Ballast Manufacturers
CBTIC	Clay Brick and Tile Institute of Canada
CEC	Canadian Electrical Code
CEMA	Canadian Electrical Manufacturers Association
CGA	Canadian Gas Association
CGRA	Canadian Good Roads Association
CGSB	Canadian General Standards Board
CISC	Canadian Institute of Steel Construction
CITC	Canadian Institute of Timber Construction
CLA	Canadian Lumbermen Association
CMAA	Crane Manufacturers Association of America
CMHC	Canada Mortgage and Housing Corporation
CPCA	Canadian Painting Contractors Association
CPCI	Canadian Prestressed Concrete Institute
CRCA	Canadian Roofing Contractors Association
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
CSSBI	Canadian Sheet Steel Building Institute
CUA	Canadian Underwriters Association
CWB	Canadian Welding Bureau

CWC	Canadian Wood Council
CSPI	Corrugated Steel Pipe Institute
DIN	Deutsches Institute Normung
EI	Edison Electric Institute
EIB	Electrical Inspection Branch
EEMAC	Electrical and Electronic Manufacturers of Canada
FFPC	Federal Fire Prevention Committee
FMEC	Factory Mutual Engineering Corporation
FM	Factory Mutual Engineering Corporation
IAO	Insurers' Advisory Organization
IBRM	Institute of Boiler and Radiator Manufacturers
IEC	International Electro technical Commission
IEE	Institution of Electrical Engineers (U.K.)
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IGMAC	Insulated Glass Manufacturers Association of Canada
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ISO	International Standardization Organization
LEMA	Lighting Equipment Manufacturers Association
LTIC	Laminated Timber Institute of Canada
MMA	Millwork Manufacturers Association
NACE	National Association of Corrosion Engineers
NAAMM	National Association of Architectural Metal Manufacturers
NBC	National Building Code of Canada
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NESC	National Electric Safety Code
NFPA	National Fire Protection Association
NLGA	National Lumber Grade Authority
NWTI	National Wood Tank Institute of the USA
OECI	Overhead Electrical Crane Institute
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
RLM	RLM Standards Institute
RTAC	Road and Transportation Association of Canada
SAE	Society of Automotive Engineers
SBI	Steel Boilers Institute
SJI	Steel Joist Institute
SSPC	Steel Structures Painting Council
TTMAC	Terrazzo, Tile and Marble Association of Canada
ULC	Underwriters' Laboratories of Canada
USFG	United States Federal Government
WCB	Workers' Compensation Board

1.3 Conformance

- .1 Conform to these standards, in whole or in part as specifically requested in Specifications.
- .2 If there is question as to whether any product or system is in conformance with applicable standards, Parks Canada reserves the right to have such products or systems tested to prove or disprove conformance.
- .3 The cost for such testing will be born by Parks Canada in the event of conformance with Contract Documents or by Contractor in the event of non-conformance.

2.0 PRODUCTS

- .1 Not used.

3.0 EXECUTION

- .1 Not used.

END OF SECTION

1.0 GENERAL

1.1 Inspection

- .1 All quality control testing required for this contract is the Contractor's responsibility. The Contractor shall engage a certified materials testing firm to conduct quality control testing. All costs incurred related to quality control testing are at the Contractor's expense with no additional payment being made. Parks Canada may engage an independent testing firm to conduct random quality assurance testing. Costs for quality assurance testing will be incurred by Parks Canada.
- .2 Allow Parks Canada access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .3 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Parks Canada instructions, or law of Place of Work.
- .4 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .5 Parks Canada may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such Work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Parks Canada shall pay cost of examination and replacement.

1.2 Procedures

- .1 Notify appropriate agency and Parks Canada in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site.

1.3 Rejected Work

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Parks Canada as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's Work damaged by such removals or replacements promptly.

- .3 If in opinion of Parks Canada it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Parks Canada may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Parks Canada.

1.4 Reports

- .1 Submit four (4) copies of inspection and test reports to Parks Canada.
- .2 Provide copies to subcontractor of work being inspected or tested.

2.0 PRODUCTS

- .1 Not Used

3.0 EXECUTION

- .1 Not Used

END OF SECTION

1.0 GENERAL

1.1 Section Includes

- .1 Temporary utilities.
- .2 Construction facilities.
- .3 Temporary controls.

1.2 Access

- .1 Prior to closing lanes, Contractor to provide alternate access. Contractor to obtain street closure permits prior to closing any lane.
- .2 Maintain existing roads used for project site access for the duration of the Contract and make good any damage resulting from Contractor's use of these roads.
- .3 Clean roadways used by Contractor's equipment.
- .4 Do not obstruct hydrants, valve or control pit covers, valve boxes, curb stop boxes, fire or police call boxes, and all other utility controls, warning systems, and appurtenances.
- .5 Prior to final inspection, obtain and submit to Parks Canada written signed releases from owners of all roads used for Site access, verifying that roads have been adequately restored and left in a satisfactory condition.
- .6 Trim loads of trucks hauling excavated material, cement, sand, stone, gravel, debris or other loose material before leaving the site, and ensure that the bodies of such vehicles are tight so that no spillage of loads occurs.

1.3 Installation/Removal

- .1 Provide temporary utilities in order to execute the work expeditiously.
- .2 Make necessary applications to Authorities having jurisdiction, obtain required permits, and pay all fees and related charges.
- .3 Remove from site all such work after use.
- .4 Restore site to clean, sanitary condition.

1.4 Storage Sheds

- .1 Provide adequate weathertight sheds with raised floors, for storage of materials, tools and equipment which are subject to damage by weather.
- .2 Maintain storage sheds in a neat, clean condition.

- .3 All storage sheds to be located within designated work zone within fenced area.

1.5 Sanitary Facilities

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
- .3 Disinfect facilities frequently.
- .4 Remove contaminated soil and material and replace with fresh, clean material.
- .5 Dispose of sanitary wastes, in accordance with the applicable regulations, and subject to approval of Parks Canada.
- .6 Provide all sanitary supplies required for use by the Contractor's work force and staff of Parks Canada.
- .7 Prohibit the committing of nuisance. Promptly discharge any employee violating such provision.
- .8 All sanitary facilities to be located within designated work zone within fenced area.

1.6 Site Enclosures

- .1 Hoarding
 - .1 Provide barricades and covered walkways required by governing authorities for public rights-of-way.
 - .2 Provide secure, rigid guard railings and barricades around deep excavations.
 - .3 All work areas shall be completely fenced off at all times using temporary fencing. Fencing shall be rigidly supported, steel grade with a minimum height of 1.8 metres. The Contractor shall maintain the fencing throughout the project duration.

1.7 Power

- .1 Arrange, pay for and maintain temporary electrical power supply in accordance with governing regulations and ordinances.
- .2 Locate temporary power at designated location, or at an acceptable location subject to approval of Parks Canada.

1.8 Water Supply

- .1 Arrange for connection with appropriate utility company, pay for and maintain temporary water supply in accordance with governing regulations and ordinances.
- .2 Locate temporary water supply at a location acceptable to Parks Canada.

1.9 Maintenance and Public Utilities

- .1 Arrange work to avoid interruption of utilities serving the public. Pay for damage.
- .2 Where interruption of public utilities is unavoidable, obtain prior approval for interruption from responsible authority.
- .3 As required by utility authority, establish and pay for temporary relocation of utility during construction.

1.10 Materials to be Salvaged

- .1 Remove, clean, deliver, unload and neatly stockpile at Parks Canada yard materials which are specified or designated by Parks Canada to be salvaged.
- .2 Repair or replace at Contractor's expense salvaged materials damaged during removal, unloading or in transit.

1.11 Equipment, Tool and Materials Storage

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Any equipment, tools, and materials must be stockpiled or situated within a fenced work zone.

1.12 Security

- .1 Provide and pay for responsible security personnel to guard the site and contents of the site after working hours and during holidays.

1.13 Construction Cleaning

- .1 Maintain the work in tidy condition, free from the accumulation of waste products and debris, other than that caused by Parks Canada or other contractors.
- .2 Remove waste material and debris from the site and deposit in waste container at the end of each working day.
- .3 Promptly clean up any spillage that occurs on site roads, access roads or public roads, or other areas where construction vehicles are travelling.

- .4 If the Contractor is negligent in maintaining cleanliness of roads, Parks Canada will arrange for cleaning to be done at Contractor's expense.
- .5 Contractor shall not dump waste products, either personal or construction related, into trenches and backfill.
- .6 Contractor to supply, maintain and empty garbage bins along construction site.
- .7 Contractor is encouraged to enforce that recyclable materials be separated and disposed of properly.

1.14 Open Excavations

- .1 All open excavations to be fenced off and/ or covered with steel plates.
- .2 Open excavations impeding on modified traffic flow must be backfilled immediately after utility repair or covered with a steel plate capable of supporting traffic loads, to ensure traffic flow is reinstated.

1.15 Site Signs and Notices

- .1 Safety and Instruction Signs and Notices:
 - .1 Signs and notices for safety and instruction shall be in both official languages. Graphic symbols shall conform to CAN3-Z321-77.
- .2 Maintenance and Disposal of Site Signs:
 - .1 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Parks Canada.

2.0 PRODUCTS

- .1 Not used.

3.0 EXECUTIONS

- .1 Not used.

END OF SECTION

1.0 GENERAL

1.1 Requirements Included

- .1 Location, protection, removal, and replacement of existing structures and utility works.
- .2 Existing structures and utility works being all existing pipes, ducts, ditches, or other works forming a part of sewerage, drainage, water, telephone, electrical, gas, or other utility systems as well as sidewalks, curbs, poles, fences, buildings, and other man-made things that may be encountered during construction.

2.0 COORDINATION

2.1 Coordination

- .1 Coordinate the protection of all utilities.

3.0 WORKMANSHIP

3.1 Location of Structures and Utility Works

- .1 Locate existing surface and underground structures that may affect the work or may be damaged during construction.
- .2 The existence, location and elevation of utilities and structures are not guaranteed. Determine the existence, location and elevation of all sewer, water, and gas mains, services or lines, electric light, power, cable T.V. or telephone conduits, or other such structures or utilities. Notify the appropriate company, department or persons on intention to carry out operations in the vicinity of any structure or utility, at least one week in advance of any such operations being carried out.
- .3 Provide Parks Canada with letters from the appropriate authority of the utility or utilities involved stating that the Contractor has made satisfactory arrangements with the utility organization for the location, protection and inspection of the utility involved.
- .4 On request from Parks Canada, excavate and uncover underground structures and utilities for the purpose of establishing line or grade for proposed installation of piping or other works.

3.2 Protection of Structures and Utilities

- .1 Protect from damage. In the event of damage resulting from the construction operation, repair to a condition which is at least the equivalent of that which existed prior to construction.

3.3 Emergency Situations

- .1 In emergency situations resulting from the construction operation, where life or property are endangered, immediately take whatever action is possible to eliminate the danger and notify the appropriate authorities of the situation.

3.4 Access Maintained

- .1 Maintain access for existing roadways, hydrants, valve or control pit covers, valve boxes, curb stop boxes, fire or police call boxes, and all other utility control, warning systems, and appurtenances thereof.

3.5 Support of Structures and Utility Works

- .1 Protect existing structures and utilities against damage from settlement by means of supports or compaction of backfill as approved by Parks Canada. Where necessary, supports shall remain in place following backfill of excavations.
- .2 Compact backfill which is placed under or adjacent to existing structures and utilities which have been undermined during excavation in a manner which will prevent damage of the structure or utility from settlement. Backfill with approved crushed granular material less than 50 mm in diameter.

3.6 Drainage Facilities

- .1 Keep clear existing culverts, enclosed drains, flumes and ditches, and other drainage structures affected by the work. When it is necessary to temporarily remove an existing drainage structure, provide suitable temporary ditches or other approved means of handling the drainage during construction.
- .2 Replace culverts and drain pipes at the time of backfilling to line and grade as directed by Parks Canada.

END OF SECTION

1.0 GENERAL

1.1 Requirements Included

- .1 Product quality, availability, storage, handling, protection, transportation.
- .2 Manufacturer's instructions.
- .3 Workmanship, co-ordination, protection of work in progress.
- .4 Quantities.
- .5 Ownership.

1.2 Products and Materials

- .1 Quality
 - .1 Products, materials, equipment and articles (referred to as Products throughout the 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, furnish evidence as to type, source and quality of Products provided.
- .2 Availability
 - .1 Immediately upon signing Contract, review Product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of Products are foreseeable, notify Parks Canada of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
 - .2 In the event of failure to notify Parks Canada at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Parks Canada reserves the right to substitute more readily available products of similar character, at no increase in Contract Amount.
- .3 Storage, Handling and Protection
 - .1 Handle and store Products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
 - .2 Store packaged or bundled Products in original and undamaged condition with manufacturer's seals and labels intact. Do not remove from packaging or bundling until required in the Work.
 - .3 Store products subject to damage from weather in weatherproof enclosures.

- .4 Remove and replace damaged Products at own expense and to the satisfaction of Parks Canada.
- .5 Contractor to identify location for stockpiles. Stockpiles must be either located offsite in designated areas approved by Parks Canada or stockpiled on site in a manner such that stockpile is fenced off from public traffic and while maintaining traffic flow under modified traffic restrictions as detailed in this contract.

.4 Transportation

- .1 Pay costs of transportation of Products required in the performance of Work.

1.3 Manufacturer's Instructions

- .1 Unless otherwise indicated in the specifications, install or erect Products in accordance with manufacturer's instructions.
- .2 Notify Parks Canada, in writing, of conflicts between the specifications and manufacturer's instructions, so that Parks Canada may establish the course of action.
- .3 Improperly installed or erected Products, shall be removed and re-installed at no increase in Contract Amount.

1.4 Workmanship

.1 General

- .1 Execute work by workers experienced and skilled in the respective duties for which they are employed. Notify Parks Canada immediately if required Work is such as to make it impractical to produce required results.
- .2 Do not employ any unfit person or anyone unskilled in their required duties. Parks Canada reserves the right to require the dismissal from the site, workers deemed incompetent, careless, insubordinate or otherwise objectionable.
- .3 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with Parks Canada, whose decision is final.

.2 Co-ordination

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

.3 Protection of Work in Progress

- .1 Adequately protect Work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by Parks Canada, at no increase in Contract Amount.

1.5 Ownership

- .1 All materials provided by the Contractor for execution of the work will vest in and become the property of Parks Canada upon delivery to the Site, but will remain in the custody and at the risk of the Contractor until Final Completion.

2.0 PRODUCTS

- .1 Not used.

3.0 EXECUTION

- .1 Not used.

END OF SECTION

1.0 GENERAL

1.1 Project Cleanliness

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of. Do not burn waste materials on site.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Dispose of waste materials and debris outside of Jasper National Park.

1.2 Final Cleaning

- .1 When Work is Substantially Complete remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Broom clean and wash surfaces; rake clean other surfaces of grounds.
- .5 Remove dirt and other disfiguration from exterior surfaces.
- .6 Sweep and wash clean paved areas.

1.3 Waste Management And Disposal

- .1 Separate waste materials for reuse and recycling.

2.0 PRODUCTS

- .1 Not Used.

3.0 EXECUTION

- .1 Not Used.

END OF SECTION

- 1.0 GENERAL
 - .1 Not Used

- 2.0 PRODUCTS

- 2.1 Equipment
 - .1 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down. Machinery and vehicle idling is not permitted.

- 3.0 EXECUTION

- 3.1 Preparation
 - .1 Inspect site with Parks Canada and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
 - .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
 - .3 Notify and obtain approval of utility companies before starting demolition.

- 3.2 Removal of Hazardous Wastes
 - .1 Remove contaminated or dangerous materials defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.

- 3.3 Removal Operations
 - .1 Remove items as indicated.
 - .2 Do not disturb items designated to remain in place.
 - .3 Removal of pavements, curbs and gutters:
 - .1 Square up adjacent surfaces to remain in place by saw cutting or other method approved by Parks Canada.
 - .2 Protect underlying and adjacent granular materials.
 - .4 Disposal of Material:
 - .1 Dispose of materials not designated for salvage to approved disposal facility outside of Jasper National Park or reuse on site as instructed by Parks Canada.
 - .5 Backfill:

- .1 Backfill in areas as indicated and in accordance with Section 31 23 33.01 - Excavating and Backfilling.

3.4 Stockpiling

- .1 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .2 Locate stockpiled materials convenient for use in new construction to eliminate double handling wherever possible.
- .3 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

3.5 Restoration

- .1 Use soil treatments and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.

3.6 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Remove debris, trim surfaces and leave work site clean, upon completion of Work
 - .3 Use cleaning solutions and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent water courses or ground water.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.7 Protection

- .1 Repair damage to adjacent materials or property caused by selective site demolition.

END OF SECTION

1.0 GENERAL

1.1 Measurement for Payment

- .1 Asphalt paving removal includes the supply of all labour, material, and equipment for asphalt paving removal within the areas identified on the drawings or as required.
- .2 Work Includes:
 - .1 Remove existing asphalt pavement to lines as indicated on the Drawings or as directed by Parks Canada
- .3 Measurement:
 - .1 Asphalt paving removal (milling) will be measured in sq.m.
- .4 Payment:
 - .1 Payment for asphalt paving removal (milling) is unit rate per sq.m

2.0 EXECUTION

2.1 Preparation

- .1 Temporary Erosion and Sedimentation Control:
 - .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
 - .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
 - .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- .2 Prior to beginning removal operation, inspect and verify with Parks Canada areas, depths and lines of asphalt pavement to be removed.
- .3 Protection: protect existing pavement not designated for removal, and structures from damage. In event of damage, immediately replace or make repairs to approval of Parks Canada at no additional cost.
- .4 Saw cutting in accordance with Section 02 41 13 - Selective Site Demolition

2.2 Removal

- .1 Remove existing asphalt pavement to lines as indicated on the Drawings.
 - .1 Use equipment and methods of removal and hauling which do not damage or disturb underlying pavement.
 - .2 Prevent contamination of removed asphalt pavement by topsoil, underlying gravel or other materials.
 - .3 Suppress dust generated by removal process.
 - .4 All removed asphalt shall be removed outside of Jasper National Park.

2.3 Finish Tolerances

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

2.4 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 -Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Sweep remaining asphalt pavement surfaces clean of debris resulting from removal operations using rotary power brooms and hand brooming as required.

END OF SECTION

1.0 GENERAL

1.1 Action and Informational Submittals

.1 Samples:

- .1 Submit 1 sample.
- .2 Allow continual sampling by Parks Canada or designate during production.
- .3 Provide Parks Canada with access to source and processed material for sampling.
- .4 Supply new or clean sample bags or containers according appropriate to aggregate materials.
- .5 Pay cost of sampling and testing of aggregates which fail to meet specified requirements.

2.0 PRODUCTS

2.1 Materials

- .1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, free from adherent coatings and injurious amounts of disintegrated pieces or other deleterious substances.
- .2 Flat and elongated particles of coarse aggregate: to ASTM D4791.
 - .1 Greatest dimension to exceed 5 times least dimension.
- .3 Fine aggregates satisfying requirements of applicable section to be one, or blend of following:
 - .1 Screenings produced in crushing of quarried rock, boulders, gravel or slag.
 - .2 Reclaimed asphalt pavement.
 - .3 Reclaimed concrete material.
- .4 Coarse aggregates satisfying requirements of applicable section to be one of or blend of following:
 - .1 Crushed rock.
 - .2 Crushed gravel composed of naturally formed particles of stone.
 - .3 Reclaimed asphalt pavement.

2.2 Source Quality Control

- .1 Inform Parks Canada of proposed source of aggregates and provide access for sampling 2 weeks minimum before starting production.
- .2 If materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate alternative source.
- .3 Advise Parks Canada 2 weeks minimum in advance of proposed change of material source.
- .4 Acceptance of material at source does not preclude future rejection if it fails to conform to requirements specified, lacks uniformity, or if its field performance is found to be unsatisfactory.

3.0 EXECUTION

3.1 Preparation

- .1 Processing:
 - .1 Process aggregate uniformly using methods that prevent contamination, segregation and degradation.
 - .1 Blend aggregates, as required, including reclaimed materials that meet physical requirements of specification is permitted in order to satisfy gradation requirements for material and, percentage of crushed particles, or particle shapes specified.
 - .1 Use methods and equipment approved in writing by Parks Canada.
 - .2 When operating in stratified deposits use excavation equipment and methods that produce uniform, homogeneous aggregate gradation.
 - .3 Where necessary, screen, crush, wash, classify and process aggregates with suitable equipment to meet requirements.
 - .1 Use only equipment approved in writing by Parks Canada.
- .4 Stockpiling:
 - .1 No stockpile aggregates permitted on site.
 - .2 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials within 48 hours of rejection.

END OF SECTION

1.0 GENERAL

1.1 Definitions

.1 Clearing:

.1 Clearing the areas within the limits of construction shall consist of cutting and disposing of trees, brush vegetative growth and logs above the ground surface.

.2 Grubbing:

.1 Grubbing shall consist of removal or close cut stumps within the clearing limits with minimum disturbance to the terrain outside the clearing limits.

1.2 Regulatory Requirements

.1 Obtain necessary permits from Authorities Having Jurisdiction and adhere to Provincial, Federal and local bylaws regarding disposal of merchantable timber in the area.

1.3 Protection

.1 Prevent damage to trees, landscape, natural features, bench marks, existing buildings, utility lines, site appurtenances, water courses and root systems of trees which are to remain. All damage incurred shall be repaired by the Contractor at their expense.

.2 Apply tree paint approved by Parks Canada, to cuts or scars suffered by vegetation designated to remain.

1.4 Measurement for Payment

.1 Clearing and grubbing includes the supply of all labour, material, and equipment for clearing and grubbing all materials within the areas identified on the drawings or as required.

.2 Work Includes:

.1 Clearing and grubbing within the clearing limits.

.2 Disposal of cleared and grubbed material.

.3 All incidental work for which payment is not specified elsewhere.

.3 Measurement:

.1 Clearing and grubbing will be measured in sq.m.

.4 Payment:

- .1 Payment for clearing and grubbing is unit rate per sq.m.
- .2 No payment will be made for clearing and grubbing of temporary roads, equipment areas, or working areas as required by the Contractor for their own use.

2.0 PRODUCTS

- .1 Supply all labour, materials and equipment required for clearing and grubbing.

3.0 EXECUTION

- .1 Undertake clearing and grubbing as required to complete the work. Coordinate extent of clearing and grubbing with Parks Canada.
- .2 All cut trees from clearing could be disposed of in adjacent bush providing that they are cut in 1.2 m length, dispersed in existing bush and in contact with the ground in a manner satisfactory to Parks Canada.
- .3 Where the Contractor fails to observe clearing and grubbing restrictions and limitations, and causes damage to property beyond areas as indicated on the Drawings or as designated by Parks Canada, such damages shall be the Contractor's liability and shall be corrected immediately at the Contractor's expense.

END OF SECTION

Classification 4-6 Roadways

1.0 GENERAL

1.1 Definitions

- .1 Excavation classes: two classes of excavation will be recognized; common excavation and rock excavation.
 - .1 Rock solid material in excess of 1.00 m³ and which cannot be removed by means of heavy duty mechanical excavating equipment with 0.95 to 1.15 m³ bucket. Frozen material not classified as rock.
 - .2 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.
- .2 Unclassified excavation: excavation of deposits of whatever character encountered in Work.
- .3 Topsoil:
 - .1 Material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.
 - .2 Material reasonably free from subsoil, clay lumps, brush, objectionable weeds, and other litter, and free from cobbles, stumps, roots, and other objectionable material larger than 25 millimeters in any dimension.
- .4 Waste material: excavated material unsuitable for use in Work or surplus to requirements.
- .5 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.
- .6 Recycled fill material: material, considered inert, obtained from alternate sources and engineered to meet requirements of fill areas.
- .7 Unsuitable materials:
 - .1 Weak, chemically unstable, and compressible materials.
 - .2 Frost susceptible materials:
 - .1 Fine grained soils with plasticity index less than 10 when tested to ASTM D 4318, and gradation within limits specified when tested to ASTM D 422 and ASTM C 136: Sieve sizes to CAN/CGSB-8.1 CAN/CGSB-8.2.

Table:

Sieve Designation	% Passing
2.00 mm	100

0.10 mm	45 - 100
0.02 mm	10 - 80
0.005 mm	0 - 45

.3 Coarse grained soils containing more than 20% by mass passing 0.075 mm sieve.

.8 Unshrinkable fill: very weak mixture of cement, concrete aggregates and water that resists settlement when placed in utility trenches, and capable of being readily excavated.

1.2 Action and Informational Submittals

.1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.3 Existing Conditions

.1 Buried services:

.1 Before commencing work verify location of buried services on and adjacent to site.

.2 Prior to beginning excavation Work, notify applicable Departmental Representative; establish location and state of use of buried utilities and structures. Authorities having jurisdiction to clearly mark such locations to prevent disturbance during Work.

.3 Record location of maintained, re-routed and abandoned underground lines.

.4 Confirm locations of recent excavations adjacent to area of excavation.

.2 Existing features:

.1 Conduct, with Parks Canada condition survey of existing trees and other plants, pavement, survey bench marks and monuments which may be affected by Work.

.2 Protect existing surface features from damage while Work is in progress. In event of damage, immediately make repair.

1.4 Measurement for Payment

.1 Excavated materials will be measured in lineal metres of ditching excavation and backfilling as directed by Parks Canada.

2.0 EXECUTION

2.1 Temporary Erosion and Sedimentation Control

Classification 4-6 Roadways

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

2.2 Site Preparation

- .1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.

2.3 Preparation/ Protection

- .1 Protect existing features.
- .2 Keep excavations clean, free of standing water, and loose soil.
- .3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to Parks Canada approval.
- .4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .5 Protect buried services that are required to remain undisturbed.

2.4 Stockpiling

- .1 Stockpile fill materials in areas designated by Parks Canada.
 - .1 Stockpile granular materials in manner to prevent segregation.
 - .2 Protect fill materials from contamination.
 - .3 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.

2.5 Dewatering and Heave Prevention

- .1 Keep excavations free of water while Work is in progress.
- .2 Provide for Parks Canada's approval details of proposed dewatering or heave prevention methods, including dikes, well points, and sheet pile cut-offs.

Classification 4-6 Roadways

- .3 Avoid excavation below groundwater table if quick condition or heave is likely to occur.
 - .1 Prevent piping or bottom heave of excavations by groundwater lowering, sheet pile cut-offs, or other means.
- .4 Protect open excavations against flooding and damage due to surface run-off.
 - .1 Dispose of water in accordance with Section 01 35 43 - Environmental Protection to approved areas and in a manner not detrimental to public and private property, or portion of Work completed or under construction.
 - .1 Provide and maintain temporary drainage ditches and other diversions outside of excavation limits.

2.6 Excavation

- .1 Advise Parks Canada at least 7 days in advance of excavation operations for initial cross sections to be taken.
- .2 Excavate to lines, grades, elevations and dimensions as shown on drawings.
- .3 Remove concrete, asphalt, walks and other obstructions encountered during excavation in accordance with Section 02 41 13 - Selective Site Demolition.
- .4 Excavation must not interfere with bearing capacity of adjacent foundations.
- .5 Dispose of surplus and unsuitable excavated material outside of Banff National Park.
- .6 Do not obstruct flow of surface drainage or natural watercourses.
- .7 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.
- .8 Notify Parks Canada when bottom of excavation is reached.
- .9 Obtain Parks Canada approval of completed excavation.
- .10 Hand trim, make firm and remove loose material and debris from excavations.
 - .1 Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.

2.7 Fill Types and Compaction

- .1 Use types of fill as indicated or specified below.

Classification 4-6 Roadways

- .1 Under road pavement, parking areas, trail and other graveled areas, use Type 3 fill material for backfill, compact to 98% of maximum dry density to ASTM D698.
- .2 Under grass and other areas not subject to vehicular traffic, use Type 3 fill for backfill. Compact to 98% of maximum dry density to ASTM D698.
- .3 Behind retaining walls fill type and compaction as required by retaining wall manufacturer.

2.8 Bedding and Surround of Underground Services

- .1 Place and compact granular material for bedding and surround of underground services as indicated and as specified in Section 33 42 13 Culverts
- .2 Place bedding and surround material in unfrozen condition.

2.9 Backfilling

- .1 Do not proceed with backfilling operations until completion of following:
 - .1 Parks Canada has inspected and approved installations.
 - .2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
 - .3 Do not use backfill material which is frozen or contains ice, snow or debris.
 - .4 Place backfill material in uniform layers not exceeding 150 mm compact thickness up to grades indicated. Compact each layer before placing succeeding layer.
 - .5 Backfilling around installations:
 - .1 Place bedding and surround material as specified elsewhere.
 - .2 Do not backfill around or over cast-in-place concrete within 24 hours after placing of concrete.
 - .3 Place layers simultaneously on both sides of installed Work to equalize loading.

2.10 Restoration

- .1 Upon completion of Work, remove waste materials and debris, trim slopes, and correct defects.
- .2 Reinstate lawns to elevation which existed before excavation.
- .3 Reinstate pavements and sidewalks disturbed by excavation to thickness, structure and elevation which existed before excavation.

Classification 4-6 Roadways

- .4 Clean and reinstate areas affected by Work.
- .5 Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

END OF SECTION

1.0 GENERAL

1.1 Measurement and Payment

- .1 Subgrade preparation will be incidental to the surfacing works, as required in Parking Areas (traditional subgrade preparation) and as required to reclaim and pulverize existing roadways as indicated on the drawings. Subgrade Preparation includes all labour, material, equipment, proof rolling as requested, and incidentals required to complete the work. No payment will be made for additional preparation, conditioning or re-working as a result of weather conditions.
- .2 Construction, maintenance and rehabilitation (including topsoil removal/replacement and any grubbing and clearing) of the Contractor's laydown area are incidental to the work.
- .3 Overhaul, over excavation and erosion and sediment control measures are considered incidental and no separate payment will be made.

2.0 PRODUCTS

2.1 Not Used

- .1 Not Used.

3.0 EXECUTION

3.1 Reservation of Material

- .1 Whenever gravel, sand topsoil, or any other material suitable for special use is encountered, it shall be deemed to be the property of the Jasper National Park.
- .2 Where layers of gravel or gravelly mixtures are encountered, suitable materials shall be excavated separately from other excavation and shall be stockpiled at Jasper National Park or incorporated into the work as base material after testing the material in a laboratory to determine the grain size distribution and CBR values.

3.2 Disposal of Material

- .1 Where excavated material is not specifically directed to be used as fill or for any other purpose, the Contractor will be required to haul the material from site to an approved disposal site. There is no separate payment for this work and is considered included in the subgrade preparation unit payment.
- .2 All materials deemed to be in excess of requirements or unsuitable shall be disposed of appropriately by the Contractor outside of Banff National Park.

3.3 Finishing and Compacting Subgrade

- .1 The excavated sections shall be ploughed to a depth of at least 150 mm below the surface of the subgrade and compacted to a minimum of ninety eight percent (98%) of Standard Proctor Density. The cut shall be left sufficiently high the after compaction so that it can be trimmed to the final grade, and any loose material resulting from this operation removed. All depressions caused by the finishing rollers shall be removed during the final blading operation.

3.4 Excavation Below Grade

- .1 **Compaction:** The compaction shall be sufficient to obtain a minimum density of 98% of maximum dry density in accordance with ASTM D698 (Method C or D), unless otherwise stated in the specifications. Where it is necessary to add or remove moisture from the soil to obtain the compaction, it shall be done as part of the requirements of this section.
- .2 **Finishing:** The fill section shall be compacted to a level slightly above the finished grade, and cut back to the final elevation. All loose material shall be removed from the surface of the subgrade.

3.5 Compaction Procedures

- .1 The following tests shall be employed to establish compaction procedures:
 - .1 The maximum dry density of the soil shall be determined by ASTM procedure D-698 (Moisture Density Relationships of soils), to be determined for each soil type. The optimum moisture content of the soil shall be determined from the laboratory compaction curve established.
 - .2 Fill material shall be placed in compacted lifts at a moisture content within $\pm 2\%$ of the optimum moisture content.
 - .3 The field density of soils shall be determined by ASTM D-2922 – Determining density of soil and soil aggregate in place by nuclear methods (shallow depth).
 - .4 The exposed subgrade should be proof rolled using a heavily loaded gravel truck or equivalent piece of equipment to identify any soft areas undetected during site grading. Proof rolling should be completed under the supervision of qualified technical personnel. Recommendations pertaining to the repair of soft areas shall be provided at the time of inspection but may include subcutting the subgrade.

END OF SECTION

1.0 GENERAL

1.1 Action and Informational Submittals

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.2 Measurement and Payment

- .1 Measurement of granular base course will be in tonnes. The payment will be for processing, hauling, preparing the surface, placing the material, compaction, and testing. Separate payment will not be made for any material required to repair failures which occur in the granular base course.

2.0 PRODUCTS

2.1 Samples

- .1 At least two (1) week prior to commencing work, provide Parks Canada of proposed source of aggregates and provide materials certification of properties below.

2.2 Materials Certification

- .1 Aggregates: At least two (1) week prior to commencing work provide:
- .1 Test data reports representing granular base and/or granular sub-base processed into stockpile. Submit one (1) complete aggregate gradation analysis report for every 1,000 tonnes of each material required for the project or one complete analysis for each production day when production is less than 1,000 tonnes.
 - .2 Include percentage of crushed coarse aggregate particles in granular base reports.
 - .3 Certification that the physical properties of the aggregates meet the requirements of this section.
 - .4 Reports and certification shall be provided by an independent testing consultant under the signature and professional seal of a qualified materials engineer.
- .2 At least two (1) week prior to contemplate change in source of aggregates, provide written notification to Parks Canada and provide new materials certification in accordance with the requirements of this section.

2.3 Granular Base

- .1 Granular Base Course shall conform to Alberta Transportation Specifications and will be a 2-25 gradation.

3.0 EXECUTION

3.1 Preparation

- .1 The Contractor shall maintain the subgrade to the specified section, free from ruts, waves and undulations until granular base course material is placed. The subgrade shall be in a firm dry condition and must be approved by Parks Canada before gravel is placed. The depositing of granular base on a soft, muddy or rutted subgrade will not be permitted.

3.2 Placing

- .1 Place material on a clean unfrozen surface, properly shaped and compacted and free from snow and ice.
- .2 Place using methods which do not lead to segregation or degradation of aggregate. Use approved methods to create uniform windrow of material along a crown line or high side of a one-way slope.
- .3 Place material to full width in layers not exceeding 150 mm in compacted thickness.
- .4 Shape each layer to a smooth contour and compact to the specified density before succeeding layer is placed.
- .5 Remove and replace any portion of a layer in which material becomes segregated during spreading.
- .6 Remove and replace any portion of a layer in which material becomes segregated during compaction.

3.3 Compacting

- .1 Moisture condition of granular base course materials to be within plus or minus 2 percent of the optimum moisture content of the material.
- .2 Compact to density not less than 98% of maximum dry density in accordance with ASTM D698 (Method C or D).
- .3 Shape and compact alternately to obtain a smooth, even and uniformly compacted base.
- .4 In areas not accessible to rolling equipment, compact to specified density with approved mechanical tampers.

3.4 Finish Tolerances

- .1 Finished base surfaces shall be within plus or minus 10 mm of established grade, but not uniformly high or low.

- .2 Correct surface irregularities by loosening and adding or removing materials until surface is within the specified tolerances.

3.5 Maintenance

- .1 Maintain finished base in a condition conforming to this section until succeeding material is applied or until acceptance.

3.6 Testing

- .1 The Contractor shall perform all quality assurance tests for acceptance in accordance with the requirements of this section.

END OF SECTION

1.0 GENERAL

1.1 Measurement for Payment

- .1 The unit prices for the following items of work will be full compensation for all labour, material, tools and equipment and incidentals necessary to complete the Work in accordance with these specifications. Accepted Asphalt pavement will be measured in tonnes. Payment shall be compensation in full for furnishing, mixing, transporting, placing and rolling, provision of a sieve analysis and asphalt concrete mix design and for all other labour and materials required to complete the work.

2.0 PRODUCTS

2.1 Materials

.1 Asphalt Cement

- .1 Asphalt Cement shall conform to Alberta Transportation Specifications, including the requirement that the asphalt cement shall be prepared by the refining of petroleum and shall not foam when heated to 177 C.

.2 Asphalt cement shall meet the following requirements:

- .1 Asphalt Concrete Pavement Binder shall be PG 52- 34 (Alberta Transportation Specifications)
.2 Aggregate gradation mix shall be M1 (Alberta Transportation Specifications)
.3 From the aggregate and asphalt cement samples, the testing laboratory shall prepare a design mix to produce the following criteria:

Max. Aggregate Size, mm	12.5
No. of Blows	75
Minimum Stability, N	6,700
Minimum Retained Stability, %	75
Flow Value, 0.254 mm Unit	6 - 12

2.2 Mix Design

- .1 An asphalt mix design must be prepared and submitted to Parks Canada for review and approval at least one week prior to the work. The Contractor shall use qualified engineering and testing services licensed to practice in the Province of Alberta. **For this project an asphalt of M1 (PG 52-34) is to be used.**
- .2 Include the following data with mix design submission:
- .1 Aggregate specific gravity and asphalt absorption.
- .2 Sand equivalent, coarse aggregate fracture, flat and elongated particles, and percent manufactured sand values.

- .3 Asphalt cement supplier/refinery, specific gravity and mixing and compaction temperatures, based on temperature-viscosity properties of asphalt cement.
- .4 Job mix formula including aggregate gradation and blending proportions, and design asphalt content.
- .5 Maximum relative density at each trial asphalt content.
- .6 Where reclaimed asphalt pavement (RAP) is to be incorporated into the mix supply, RAP gradation, RAP asphalt cement content and design recycle percentage.

2.3 Job Mix Formula (JMF)

- .1 Subject to approval by Parks Canada, the aggregate proportioning (including RAP), target gradation, asphalt content and air void content from the Mix Design will become the Job Mix Formula for the supply of hot mix asphalt.
- .2 Once established, no alterations to the Job Mix Formula will be permitted unless the Contractor submits a new Job Mix Formula and approved by Parks Canada.
- .3 Any alteration to the Job Mix Formula shall not result in properties which do not meet the requirements of this Specification.

3.0 EXECUTION

3.1 PAVING

Prior to laying mix, clean surfaces of loose and foreign material and apply primer coat at a rate of 1.5 ± 0.5 L/m².

Place asphalt concrete by means of mechanically grade controlled self-powered pavers capable of spreading mix within specified tolerances, true to line, grade and crown indicated on the drawings. Place asphalt concrete to thicknesses, grades and lines indicated on drawings or directed by Departmental Representative.

The rollers used for compaction shall be self-propelled steel-wheeled or rubber-tired rollers, providing at least 35 Newtons per millimetre width of tread. The wheels shall be kept properly moistened, but excess water or oil will not be permitted.

Each mat of hot mix placed shall be compacted to minimum 98% of Marshall Density. The allowable tolerance for finished pavement shall be ± 5 mm, and the surface shall show no depressions or bumps exceeding 3 mm under a straight-edge 3 m long placed parallel to the road centreline.

The finished surface shall have a tightly knit texture free of visible signs of poor workmanship such as, but not limited to:

- Segregation;

- Areas exhibiting excess or insufficient asphalt;
- Improper matching of longitudinal and transverse joints;
- Roller marks, cracking, or tearing;

If surface and grade tolerances are exceeded, or if surface texture is not met, grind down and resurface defective areas as required by the Departmental Representative.

3.2 Sampling and Testing

.1 Quality Control

.1 Quality control is the responsibility of the Contractor throughout every stage of the work from aggregate processing to the final accepted product. Tests performed by Parks Canada will not be considered as quality control tests.

.2 The Contractor shall be totally responsible for production of materials and construction that meets all specified requirements.

.3 All quality control shall be conducted by qualified personnel. The Contractor shall bear the cost of all quality control testing and consulting services.

.2 Acceptance Sampling Procedures:

.1 Loose mix samples may be acquired from the Work site in accordance with Albert Transportation Test (ATT) procedure ATT-37. Auger samples may be used if approved by both Parks Canada and the Contractor.

.2 The timing of mix sampling shall be stratified, with each sample representing a similar production quantity.

.3 Areas within 3 metres of transverse joints or 0.3 metres of a mat edge are excluded from compaction acceptance sampling and testing.

3.3 Hot Mix Asphalt Placing Temperature

.1 No hot mix asphalt shall be dispatched to the field unless the temperature, as issued by Environment Canada, is rising and meets the following minimum temperature requirements

.1 Thickness less than 50 mm: 7°C

.2 Thickness greater than 50 mm: 2°C

.2 A tolerance will be permitted for plant start-up.

- .1 No surface lift asphalt shall be placed regardless of temperature until the road surface is 5°C or higher.

3.4 Hours of Operation

- .1 No loads of hot mix asphalt shall be dispatched from the plant after sunset or during hours of darkness unless loads can be placed and compacted in accordance with these specifications, and suitable artificial illumination is provided, all subject to Parks Canada approval.

3.5 Transportation of Hot Mix Asphalt

- .1 Trucks shall be equipped with tarpaulins of sufficient weights and size to cover the entire open area of the truck box. Regardless of weather conditions, tarpaulins shall be used.
- .2 Vehicles used for the transportation of hot mix asphalt from the plant to the site of work shall have tight metal boxes previously cleaned of all foreign matter. The inside surface may be lightly lubricated with a soap solution just before loading. Excess lubrication will not be permitted.
- .3 The speed and weight of hauling trucks shall be regulated so that, in the opinion of Parks Canada, no damage will occur to any portion of the work underway. The Contractor at their own expense shall repair any damage to the tack coat, prime coat or the existing surface caused by the Contractor's equipment.

3.6 Pre-Levelling for Asphalt Concrete

- .1 Pre-levelling of uneven surfaces over which asphalt concrete is to be placed shall be accomplished by the use of asphalt concrete placed with a paver, hand or by a combination of these methods.
- .2 After placement, the asphalt concrete used for pre-levelling shall be compacted thoroughly with pneumatic tired rollers.

3.7 Paving Operations

- .1 The asphalt concrete shall be placed to the design thickness as shown on the contract drawings. On new construction where an established reference is lacking, a string-line reference will be required. Adjacent mats on the same lift are to be controlled by use of the grade sensor. No relaxation of the above procedure will be permitted without written approval of Parks Canada.
- .2 The spreader shall be operated in such a manner as to distribute the asphalt concrete mix to proper cross section, width and thickness without causing segregation of the mix.
- .3 Segregated areas, which may occur, shall be corrected immediately. The forward motion of the spreader shall be controlled so that no irregularities in the pavement surface are caused by excessive speed. The rate of placement of the

mixture shall be uniform, and shall be co-ordinated with the production rate of the asphalt plant without intermittent operation of the spreader.

- .4 Any failure of the machine or operation to produce a smooth, uniformly dense mat, free from irregularities, shall be corrected immediately to the satisfaction of Parks Canada.

3.8 Compaction

- .1 The Contractor shall supply sufficient compaction equipment to:
 - .1 Provide a compaction rate that will equal or exceed the placing rate of the spreader.
 - .2 Ensure the specified compaction is attained before the temperature of the mat falls below 80°C.

3.9 Longitudinal and Transverse Joints

- .1 Longitudinal and transverse joints shall be made in a manner consistent with industry standards. Coarse aggregate removed from the hot mix during joint preparation shall not be placed in the same vertical plane. Longitudinal joints shall be offset at least 150 mm and transverse construction joints shall be offset at least 2 metres from one lift to the next..
- .2 Longitudinal joints shall not be located within the edges of the travel lanes in the final lift, unless approved by Parks Canada.
- .3 The exposed edges of all cold asphalt joints and the face of concrete curb and gutter shall be cleaned and painted with a thin coat of asphalt tack.

3.10 Opening to Traffic

- .1 Prior to any application of traffic, paving mats shall be sufficiently cool to resist and deformation or surface scuffing.
- .2 At their discretion, Parks Canada may prohibit traffic from travelling on newly paved surfaces for any length of time deemed necessary.

END OF SECTION

1.0 GENERAL

1.1 Measurement Procedures

- .1 Asphalt tack coat will be considered incidental to asphalt costs. No additional payment will be made for asphalt tack.

1.2 Action and Informational Submittals

.1 Samples:

- .1 If requested, submit two - 1 L samples of asphalt tack coat material proposed for use in new, clean, airtight, sealed, wide mouth jars or bottles made with plastic to Parks Canada, at least 2 weeks prior to beginning Work.
- .2 Sample asphalt tack coat material to: ASTM D 140.
- .3 Provide access on tank truck for Parks Canada to sample asphalt material to be incorporated into Work to ASTM D 140.

1.3 Quality Assurance

- .1 Upon request from Parks Canada, submit manufacturer's test data and certification that asphalt prime material meets requirements of this Section.

1.4 Delivery, Storage and Handling

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labeled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect asphalt tack coats from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Deliver, store and handle materials in accordance with ASTM D 140.
- .5 Provide, maintain and restore asphalt storage area.

2.0 PRODUCTS

2.1 Materials

- .1 Asphalt tack: Anionic emulsified asphalt, slow setting SS-1h
- .2 Cut-back asphalt; to AASHTO M081-92-UL, grade RC-70 or RC-250.
- .3 Water: clean, potable, free from foreign matter.

2.2 Equipment

- .1 Equipment required for Work of this Section to be in satisfactory working condition and maintained for duration of Work.
- .2 Pressure distributor:
 - .1 Designed, equipped, maintained and operated so that 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 allowable variation from any specified rate not exceeding 0.1 L/m².
 - .4 Distribute in uniform spray without atomization at temperature required.
 - .2 Equipped with meter, registering travel in metres per minute, visibly located to enable truck driver to maintain constant speed required for application at specified rate.
 - .3 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.
 - .4 Equipped with easily read, accurate and sensitive device which registers temperature of liquid in reservoir.
 - .1 Measure temperature to closest whole number.
 - .5 Equipped with accurate volume measuring device or calibrated tank.
 - .6 Equipped with nozzles of same make and dimensions, adjustable for fan width and orientation.
 - .7 Equipped with nozzle spray bar, with operational height adjustment in increments of 0.6 metres and capable of being raised or lowered.

.8 Cleaned if previously used with incompatible asphalt material.

3.0 EXECUTION

3.1 Application

- .1 Apply asphalt tack coat only on clean and dry surface. Surface to be reviewed by Parks Canada prior to applying tack coat.
- .2 Dilute asphalt emulsion with water at 1:1 ratio for application.
 - .1 Mix thoroughly by pumping or other method approved by Parks Canada.
- .3 Apply asphalt tack coat evenly to pavement surface at rate of 0.5L/sq. m.
- .4 Paint contact surfaces with thin, uniform coat of asphalt tack coat material.
- .5 Apply asphalt tack coat only when air temperature greater than 10 degrees C and when rain is not forecast within 2 hours minimum of application.
- .6 Apply asphalt tack coat only on unfrozen surface.
- .7 Evenly distribute localized excessive deposits of tack coat by brooming.
- .8 Where traffic is to be maintained, treat no more than one half of width of surface in one application.
 - .1 Control traffic in accordance with Section 01 35 00.07 Traffic Regulation.
- .9 Keep traffic off tacked areas until asphalt tack coat has set.
- .10 Re-tack contaminated or disturbed areas.
- .11 Permit asphalt tack coat to set before placing asphalt pavement.
- .12 Submit summary report within 7 days minimum of date of application and include information as follows:
 - .1 Total area tack coated.
 - .2 Quantity of tack coat used.
 - .3 Mean application rate.
 - .4 Actual product quantity used when using equipment on pressure distributors.
 - .5 Dipstick measurements or electronic printouts are acceptable.
- .13 Carry out measurements in presence of Parks Canada upon request.

- .14 Inspect tack coat application to ensure uniformity.
 - .1 Re-spray areas of insufficient or non-uniform tack coat coverage.
 - .2 Ensure tack coating performed using hand held devices is consistent in appearance with adjacent areas of machine applied material.

3.2 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 –Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.

END OF SECTION

1.0 GENERAL

1.1 Measurement Procedures

- .1 Asphalt prime will be considered incidental to asphalt costs. No additional payment will be made for asphalt prime.

1.2 Submit in Accordance with Section 01 33 00 - Submittal Procedures

.1 Samples:

- .1 If requested, submit two 1 L samples of asphalt prime proposed for use in new, clean, air tight sealed, wide mouth, jars or bottles made with plastic, to Parks Canada, 2 weeks prior to commencing Work.
- .2 Sample asphalt prime coat materials in accordance with ASTM D 140.
- .3 Provide access on tank truck for Parks Canada to sample asphalt material to be incorporated into Work, in accordance with ASTM D 140.

1.3 Quality Assurance

- .1 Upon request from Parks Canada, submit manufacturer's test data and certification that asphalt prime material meets requirements of this Section.

1.4 Delivery, Storage and Handling

.1 Storage and Handling Requirements:

- .1 Deliver, store and handle materials to ASTM D 140.
- .2 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .3 Store and protect asphalt prime coats from nicks, scratches, and blemishes.
- .4 Replace defective or damaged materials with new.

2.0 PRODUCTS

2.1 Material

- .1 Asphalt material: to Can/ CGSB-16.1 Grade MC-30.
- .2 Sand blotter: clean granular material passing 4.75 mm sieve and free from organic matter or other deleterious materials.
- .3 Water: clean, potable, free from foreign matter.

2.2 Equipment

- .1 Pressure distributor:
 - .1 Designed, equipped, maintained and operated so that asphalt material can be:
 - .1 Maintained at even temperature.
 - .1 Applied uniformly on variable widths of surface up to 5 m.
 - .2 Applied at controlled rates from 0.2 to 5.4 L/m² with uniform pressure, and allowable variation from any specified rate not exceeding 0.1 L/m².
 - .3 Distributed in uniform spray without atomization at temperature required.
 - .2 Equipped with meter registering travel distance in metres per minute, visibly located to enable truck driver to maintain constant speed required for application at specified rate.
 - .3 Equipped with pump having flow meter graduated in units of 5 L or less per minute passing through nozzles and readily visible to operator.
 - .1 Pump power unit to be independent of truck power unit.
 - .4 Equipped with easily read, accurate and sensitive device which registers temperature of liquid in reservoir.
 - .1 Temperature to be measured to nearest whole number.
 - .5 Equipped with accurate volume measuring device or calibrated tank.
 - .6 Equipped with nozzles of same make and dimensions, adjustable for fan width and orientation.
 - .7 Equipped with nozzle spray bar, with operational height adjustment in increments of 0.6 metres and capable of being raised or lowered.
 - .8 Cleaned if previously used with incompatible asphalt material.

2.3 Aggregate Spreader

- .1 Apply blotter sand to primed surfaces using roll type spreader, or rotating disc sander capable of applying aggregate at variable widths and at variable rates.

3.0 EXECUTION

3.1 Application

- .1 Proceed with application of prime coat only after receipt of written approval of granular base surface from Parks Canada.
- .2 Cutback asphalt:
 - .1 Heat asphalt prime to between 40 °C and 95 °C for pumping and spraying.
 - .2 Apply asphalt prime to granular base at a rate of 1.5 +/- 0.5 L/m².
 - .3 Apply on dry surface.
- .3 Apply asphalt prime only on unfrozen surface.
- .4 Apply asphalt prime coat only when air temperature is greater than 10 degrees C and when rain is not forecast within 2 hours.
- .5 Paint contact surfaces with thin, uniform coat of asphalt prime material.
- .6 Where traffic is to be maintained, treat no more than one-half width of surface in one application.
- .7 Prevent overlap at junction of applications.
- .8 Do not prime surfaces that will be visible when paving is complete.
- .9 Apply additional material to areas not sufficiently covered
- .10 Keep traffic off primed areas until asphalt prime has cured.
 - .1 Control traffic in accordance with Section 01 35 00.07 – Traffic Regulation.
- .11 Permit prime to cure before placing asphalt paving.

3.2 Use of Sand Blotter

- .1 If asphalt prime fails to penetrate within 24 hours, spread sand blotter material in amounts required to absorb excess material.
- .2 Allow sufficient time for excess prime to be absorbed
- .3 Apply second application of sand blotter as required.
- .4 Do not roll blotter sand.
- .5 Sweep and remove excess blotter material.

3.3 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 –Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.

END OF SECTION

1.0 GENERAL

1.1 Action and Informational Submittals

.1 Product Data:

.1 Submit manufacturer's printed product literature and data sheets for pavement markings and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Samples:

.1 If requested, submit to Parks Canada following material sample quantities at least 2 weeks prior to commencing work.

.1 Two 1 L samples of each type of paint.

.2 One 1 kg sample of glass beads.

.2 Mark samples with name of project and its location, paint manufacturer's name and address, name of paint, specification number and formulation number and batch number.

1.2 Delivery, Storage and Handling

.1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.2 Storage and Handling Requirements:

.1 Store materials off ground, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Replace defective or damaged materials with new.

1.3 Measurement and Payment

.1 Pavement markings including reflective glass beads shall be measured by linear kilometres of solid lines or dash lines painted.

2.0 PRODUCTS

2.1 Materials

.1 Paint and Markings:

.1 To CGSB 1-GP-74M-79, Paint, Traffic, Alkyd.

.2 Colour: to CGSB 1-GP-12C-68, yellow 505-308, white 513-301.

.2 Thinner: to CAN/CGSB-1.5.

- .3 Glass reflective beads: type suitable for application to wet paint surface for light reflectance.
- .4 Glass reflective beads only required on Highway pavement markings.

3.0 EXECUTION

3.1 Examination

- .1 Verification of Conditions: verify conditions of substrates and surfaces to receive pavement markings previously installed under other Sections or Contracts are acceptable for product installation in accordance with MPI instructions prior to pavement markings installation.
 - .1 Visually inspect substrate in presence of Parks Canada.
- .2 Pavement surface: dry, free from water, frost, ice, dust, oil, grease and other deleterious materials.
- .3 Proceed with Work only after unacceptable conditions have been rectified.

3.2 Equipment Requirements

- .1 Paint applicator: approved pressure type mobile with positive shut-off distributor capable of applying paint in single, double and dashed lines and capable of applying marking components uniformly, at rates specified, and to dimensions as indicated.
- .2 Distributor: capable of applying reflective glass beads as overlay on freshly applied paint.

3.3 Application

- .1 Pavement markings: laid out by Contractor.
- .2 Unless otherwise approved by Parks Canada, apply paint only when air temperature is above 10 degrees C, wind speed is less than 60 km/h and no rain is forecast within next 4 hours.
- .3 Apply traffic paint evenly at rate of 3 m²/L.
- .4 Do not thin paint unless approved by Parks Canada.
- .5 Symbols and letters to dimensions indicated.
- .6 Paint lines of uniform colour and density with sharp edges.
- .7 Thoroughly clean distributor tank before refilling with paint of different colour.

- .8 Apply glass beads at rate of 200 g/m² of painted area immediately after application of paint.

3.4 Tolerance

- .1 Paint markings: within plus or minus 12 mm of dimensions indicated.
- .2 Remove incorrect markings to the satisfaction of Parks Canada.

3.5 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 –Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.

3.6 Protection

- .1 Protect pavement markings until dry.
- .2 Repair damage to adjacent materials caused by pavement marking application.

END OF SECTION