
<u>SECTION</u>	<u>TITLE</u>	<u>NO. OF PAGES</u>
<u>Division 01</u>		
00 01 10	Table of Contents	1
01 11 00	Summary of Work	6
01 14 00	Work Restrictions	3
01 31 19	Project Meetings	4
01 32 16	Construction Progress Schedule (GANTT)	4
01 33 00	Submittal Procedures	9
01 35 29	Health and Safety for Contaminated Sites	9
01 35 43	Environmental Procedures	8
01 41 00	Regulatory Requirements	2
01 45 00	Quality Control	3
01 51 00	Temporary Utilities	2
01 52 00	Construction Facilities	3
01 53 00	Mobilization and Demobilization	3
01 74 11	Cleaning	2
01 77 00	Closeout Procedures	2
<u>Division 02</u>		
02 41 13	Selective Site Demolition	6
02 82 00	Asbestos Abatement – Minimum	8
<u>Division 31</u>		
31 00 99	Earthworks	10

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract comprises of removal and disposal of Contaminated Soil, Non-hazardous Debris, Hazardous Debris, and Foundation Material at various sites within Waterton Lakes National Park (WLNP). Clean Backfill shall be supplied, placed, and compacted as shown in the Drawings. Topsoil shall be supplied, placed, and graded to match surface elevations in areas that have been excavated and disturbed.

1.2 PRECEDENCE

- .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Specification.
- .2 The technical specifications and design drawings shall take precedence over the Remedial Action and Risk Management Plan (Dillon, June 2018).
- .3 During the tender period, a mandatory site visit with the Departmental Representative Authorized Personnel will be required, where the bidding Contractor will review current site conditions and quantities for all four sites prior to bid submission. For current site conditions with respect to the extent of debris and soil to be removed, observations during the mandatory site meeting shall take precedence over the extent of debris and soil depicted elsewhere in the tender documents; that is, all debris visible identified within each area during the mandatory site visit shall be removed and disposed of off-site at an approved, licensed disposal facility.

1.3 DEFINITIONS

- .1 “Authorities Having Jurisdiction”: Governmental agency or sub-agency that regulates the codes and standards which shall be met during the remediation process.
- .2 “Clean Backfill”: Backfill material that is free from contamination and hazardous materials and has been tested and proven to be below the regulatory criteria listed in Alberta Tier 1 Soil and Groundwater Remediation Guidelines (Alberta Environment and Parks, 2016) and the Canadian Environmental Quality Guidelines (Canadian Council of Ministers of the Environment, 2014).
- .3 “Contaminated Soil”: Shallow soil (topsoil and subsoil to approximately 0.3m below grade) that has been identified as exhibiting concentrations of contaminants of concern (COCs) that exceed soil quality regulatory guidelines. Contaminated soil shall be removed from the Site. Soils directly in contact with Contaminated Debris shall be considered contaminated as well.
- .4 “Contractor”: The contractor procured to undertake the site management, remediation and restoration as defined, within the context of these Specifications, as the Contractor.

- .5 "Demolition": Rapid destruction of building following removal of hazardous materials.
- .6 "Departmental Representative": Within the context of these Specifications, the term Departmental Representative refers to the person exercising the roles and attributes of Parks Canada under the contract.
- .7 "Departmental Representative Authorized Personnel" (DRAP): Means the person designated in the Contract, or by written notice to the Contractor, to act as the Departmental Representative for the purposes of the Contract, and includes a person, designated and authorized in writing by the Departmental Representative to the Contractor. The Departmental Representative Authorized Personnel provides recommendations-technical guidance to the Departmental Representative, as required, for the enforcement of these specifications.
- .8 "Dillon": Dillon Consulting Limited.
- .9 "Environmental Pollution and Damage": presence of chemical, physical, biological elements or agents which adversely affect environmental and/or human health; unfavourably alter ecological balances; affect other species; or degrade environment aesthetically, culturally and/or historically.
- .10 "Environmental Protection": prevention/control of pollution and habitat or environment disruption during construction.
- .11 "Environmental Protection Plan" (EPP): Environmental Protection Plan may include Erosion and Sediment Control Plan, Working Near Water Plan, Traffic Control Plan, Emergency Response Plan, Spill Response Plan, and Fire Contingency Plan.
- .12 "Fill Placement": Means the placement of import fill materials in designated areas as specified on the Contract Drawings or as directed by the Departmental Representative Authorized Personnel.
- .13 "Foundation Material": Concrete related waste that requires disposal as indicated per the design requirements. Includes concrete pads, foundations, walls, cinder blocks, brick and concrete sidewalks, and piles.
- .14 "Hazardous Debris": Debris and ash waste that is hazardous in nature (e.g., asbestos containing debris and soils impacted by asbestos debris) and requires appropriate bagging and/or encapsulation prior to disposal at an approved disposal facility.
- .15 "Miscellaneous Materials": Miscellaneous equipment and objects within and around the site that is not considered building or equipment debris from the sites, but requires disposal or relocation, as directed by the Departmental Representative Authorized Personnel.
- .16 "Non-hazardous Debris": Waste that is non-hazardous in nature and requires disposal. The non-hazardous debris may contain contamination (e.g., VOC, PAHs, metals). Includes, but is not limited to: burnt building debris and ash, burnt appliances, burnt equipment, surficial debris (e.g., metal, building equipment, roofing, wood, tires, generators), and golf carts.

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- .17 "Owner": Within the context of these specifications, the term Owner refers to Parks Canada Agency (PCA) that is the custodian of the Site.
- .18 "PCA": Parks Canada Agency.
- .19 "Restricted Activity Permit" (RAP): Restricted Activity Permit is issued by PCA that reviews potential environmental impacts to the site from contractor activities. The permit identifies mitigative measures / best management practices the contractor is required to adhere to, in order to minimize damage or impact to the environment or cultural resources at the site. There is no cost associated with the permit.
- The Contractor is required to submit a description of work with anticipated access routes, construction site working areas, other additional information, in conjunction with their Environmental Protection Plan to assist PCA in identifying the appropriate measures shall be included in the permit. No work on site can proceed without permit approval. The permit outlines activities that someone is proposing that are normally not allowed in the park regulations and they are evaluated based on special circumstances and supporting rationale, signed off by Field Unit Superintendent. No work on site can proceed prior to permit approval.
- .20 "Site": Area where the work shall be undertaken. This includes 4 distinct locations:
- .1 Site 4: Gate House (Location: Park Entrance)
 - .2 Site 5: Heavy Equipment Area (Location: Park Entrance)
 - .3 Site 6: Canyon Church Camp (Locations: Hospital, Director's Residence, Cook's Residence, Female Washroom, Cabins)
 - .4 Site 7: Golf Course (Location: Maintenance Shed)
- .21 "Subsoil": Means portion of soil material that lies immediately beneath the Topsoil extending to root depth, very little to no amount of organic soil material.
- .22 "Topsoil": Means uppermost part of the soil, material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding. Friable, fertile, natural loam, neither heavy clay nor of very light sandy nature containing minimum of 4% organic matter of clay loams and not less than 2% organic matter for sandy loams to a maximum of 15%, and capable of sustaining vigorous plant growth, free of rocks of 50 mm in diameter and over, subsoil contamination, roots, weeds, toxic materials, foreign objects and with an acidity range of 7.0 to 8.5; Topsoil containing quackgrass, couchgrass or noxious weeds shall be rejected.
- .23 "Waste Audit" (WA): Detailed inventory of materials in building; indicates quantities of reuse, recycling and landfill.
- .1 Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project.
 - .2 Indicates quantities of reuse, recycling and landfill.

- .24 "WLNP": Waterton Lakes National Park.
- .25 "Waste Management Coordinator" (WMC): "Contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements."

1.4 SUPPORTING DOCUMENTS

- .1 Remedial Action and Risk Management Plan Related to Kenow Wildfire – Final Report (Dillon, 2018).
- .2 Site photos (Dillon, 2017 - 2018).
- .3 Debris and Soil Assessment Related to Kenow Wildfire – Draft Report (Dillon, 2018).

1.5 DESCRIPTION OF WORK

- .1 The required Work to be undertaken by the Contractor for the project shall include but not be limited to: excavation and disposal of Contaminated Soil; segregation, removal, and off-site disposal of Hazardous Debris and Non-hazardous Debris; and removal and off-site disposal of Foundation Material. Work to include transport of material off-site and disposal of material at a licensed disposal facility approved by the Departmental Representative Authorized Personnel; import, placement, and compaction of Clean Backfill import, and placement, and re-grading of topsoil to match surrounding areas within the following 4 locations:

- .1 Site 4: Gate House
- .2 Site 5: Heavy Equipment Area
- .3 Site 6: Canyon Church Camp (Locations: Hospital, Director's Residence, Cook's Residence, Female Washroom, Cabins)
- .4 Site 7: Golf Course (Location: Maintenance Shed)

The other sites, including: Site 1: Helipad, Site 2: Visitor Reception Center, Site 3: Horse Corral, Site 7: Golf Course (Location: Golf Cart Storage), Site 8: Alpine Stables, Site 9: Fire Retardant Spill Site, and Site 10: Salamander Barriers do not require any further remediation and remains outside of the scope of the Contractor.

- .2 Project preparations including:
 - .1 Site survey.
 - .2 Testing of backfill material at borrow source. Borrow source for Clean Backfill and topsoil is the responsibility of the contractor and shall not be provided by PCA.
- .3 Construct Work under a unit price contract or lump sum as designated under measurement of payment sections. Additional work conducted shall be priced in accordance to the unit price list in the bid form.
- .4 Work of Project which is specifically excluded from this Contract:

- .1 Upgrading of any haul or access roads within WLNP.

1.6 CONTRACTOR USE OF PREMISES

- .1 Restricted use of site and site access routes until construction completion. Submit RAP application to the Owner. No work can proceed prior to issuance of RAP.
- .2 At completion the condition of the Sites shall be equal to or better than that which existed previously.

1.7 EXISTING SERVICES

- .1 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative Authorized Personnel of findings.
- .2 Where services are encountered, immediately advise Departmental Representative Authorized Personnel and confirm findings in writing.
- .3 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .4 Record locations of maintained, re-routed and abandoned service lines.
- .5 Cap and mark locations of potentially existing sanitary, storm, and water services at the following sites: Site 4: Gate House, Site 6: Canyon Church Camp, and Site 7: Maintenance Shed. Prevent any damage to the existing facilities and structures.

1.8 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy each document as follows:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed Shop Drawings.
 - .5 List of Outstanding Shop Drawings.
 - .6 Change Orders.
 - .7 Other Modifications to Contract.
 - .8 Field Test Reports.
 - .9 Copy of Approved Work Schedule.
 - .10 Health and Safety Plan and Other Safety Related Documents.
 - .11 Environmental Protection Plan (EPP), including Erosion and Sediment Control Plan, Working Near Water Plan, Traffic Control Plan, Emergency Response Plan, Spill Response Plan, and Fire Contingency Plan.
 - .12 Other documents as specified.

1.9 MEASURE OF PAYMENT

- .1 Work under this contract shall be paid as follows:
 - .1 Lump Sum payment items shall be paid at the lump sum price tendered as listed in the Bid Form provided in this solicitation. Percentage of payment shall be relative to percentage of completion of activity indicated on the Bid Form.
 - .2 Unit price items shall be paid at the unit price tendered as listed in the Bid Form provided in this solicitation.
 - .3 All direct costs for lump sum and unit price items shall be included in the appropriate price item in the Bid Form provided in this solicitation. Direct costs include all costs directly attributable to a particular pay item including equipment, operators, materials, equipment maintenance and depreciation, etc.
 - .4 All indirect costs associated with specific unit price or lump sum items shall be included in the lump sum or unit rate price item in the Bid Form provided in this solicitation. Indirect costs include all costs not directly attributable to the pay items including profit, supervision, overhead, administration, insurance, Worker's Safety Compensation Board (WCB), Contractor's allowance for equipment repairs and depreciation, and any other relevant costs.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 NOT USED

- .1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative Authorized Personnel to facilitate work as stated.
- .2 Maintain existing services and provide for vehicle access.
- .3 All personnel shall not be permitted to set up a camp in WLNP. Parks Canada regulations prohibit anyone working within the Park from using public campground facilities.
- .4 The Contractor shall be permitted to occupy sites where they will be working in WLNP on this project, free of charge from the date of award of the contract up and including completion date of construction.
- .5 On-site sanitary facilities for use by Contractor's personnel shall be allowed.
- .6 Closures: protect work temporarily until permanent enclosures are completed.
- .7 Avoid or terminate activities on site that attract or disturb wildlife and vacate the area and stay away from the immediate location if bears, cougars, wolves, elk or moose display aggressive behaviour or persistent intrusion. Extra care to control materials that might attract wildlife (e.g. lunches and food scraps) must be exercised at all times. If wildlife get into attractants that have been intentionally or accidentally left out, individuals or the Contractor could be charged under the Canada National Parks Act Regulations.

1.2 EXISTING SERVICES

- .1 Notify the Departmental Representative Authorized Personnel and utility companies of intended interruption of services and obtain required permission.
- .2 Provide safe passage for pedestrian and vehicular traffic around each work area.

1.3 SPECIAL REQUIREMENTS - GENERAL

- .1 Carry out Work 7 days a week from 07:00 to 19:00 hours, except on Civic Holidays or long weekends, unless prior written approval is granted by PCA.
- .2 Control generation of airborne dust as required in the Specifications and to the satisfaction of the Departmental Representative Authorized Personnel.
- .3 Submit schedule in accordance with Section 01 32 16 - Construction Progress Schedule - Bar (GANTT) Chart.
- .4 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .5 Keep within limits of work and avenues of ingress and egress.
- .6 Ingress and egress of Contractor vehicles at site is limited to pre-existing roads.

- .7 For the Work in Waterton Lakes National Park, the Contractor and any sub-Contractors shall obtain a business license from the Parks Canada Administration Office in Waterton prior to commencement of the work.
- .8 The Red Rock Canyon Parkway, which provides access to Site 6: Canyon Church Camp, will be closed to public vehicular traffic for the duration of the 2018 season; however, Contractors, Consultants, and public pedestrian traffic will be using the roadway during that period.
- .9 Sections along the Red Rock Canyon Parkway have burnt guardrails that are no longer in place. Access to Site 6: Canyon Church Camp is not obstructed by this impediment, but the missing guardrails pose a safety hazard and the Contractor is required to assess and abate all hazards as part of their safety plan for accessing and working at the site (noting that repair or replacement of the burnt guardrails is not part of this scope per se)..
- .10 Assess and abate all safety hazards (damaged utility poles, hazardous trees, etc.) associated with each site necessary to conduct the work. Assessment and abatement work shall be completed by qualified and experienced personnel (e.g., qualified utility line worker, arborist), as determined by the Departmental Representative Authorized Personnel.
- .11 The Crandell/Canyon campgrounds, which is where Site 6: Canyon Church Camp is located, is accessible by either of two (2) bridges – Canyon Bridge and Crandell Bridge. The Contractor will only be allowed access to Site 6: Canyon Church Camp via the Canyon Bridge. Access via the Crandell Bridge is not allowed, due to the load capacity uncertainties with the bridge. All Contractors shall evaluate any access issues for each work site prior to submitting a tender.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Apply for Restricted Activity Permit (RAP) from Owner. A drawing showing the proposed site access routes should be included with the permit application. No costs associated with RAP application. Submit application and receive approval prior to commencing Work.
- .3 Submit Proposed Site Access Route Plan as part of the Environmental Protection Plan (EPP) in Section 01 35 43 – Environmental Procedures prior to commencing Work.
- .4 Submit contracting submittals (Insurance/bonding, WCB, detailed cost breakdown, preliminary project schedule, and project master plan and schedule) within 3 to 5 days of award notification. Refer to Section 01 32 16 Construction Progress Schedule (GANTT) for schedule requirements.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 ADMINISTRATIVE

- .1 Schedule and administer project meetings throughout the progress of the work at the call of Departmental Representative Authorized Personnel.
- .2 Prepare agenda for meetings.
- .3 Distribute written notice of each meeting three (3) working days in advance of meeting date to Departmental Representative Authorized Personnel.
- .4 Provide physical space and make arrangements for meetings.
- .5 Preside at meetings.
- .6 Ensure representative of Contractor, Subcontractor and suppliers attending meetings are qualified and authorized to act on behalf of party each represents.

1.2 PRE-CONSTRUCTION MEETING

- .1 Within seven (7) calendar days after award of Contract, request a meeting of parties in contract to discuss and confirm administrative procedures and responsibilities, and review RAP restrictions.
- .2 Departmental Representative Authorized Personnel, Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors shall be in attendance.
- .3 Establish time of teleconference meeting and notify parties concerned minimum five (5) working days before meeting.
- .4 Agenda to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section 01 32 16 - Construction Progress Schedules - Bar (GANTT) Chart.
 - .3 Schedule and method for submission of shop drawings, samples, and all other submittals.
 - .4 Format of routine project communications (e.g. email, memoranda) and nomenclature for correspondence headings.
 - .5 Requirements for temporary facilities, office trailers, storage sheds, utilities, fences in accordance with Section 01 52 00 - Construction Facilities.
 - .6 Delivery schedule of specified equipment.
 - .7 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .8 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
 - .9 Appointment of inspection and testing agencies or firms.

- .10 Monthly progress claims, administrative procedures, photographs, and holdbacks.
- .11 Close out procedures and submittals in accordance with Section 01 77 00.
- .12 Insurance and transcript of policies.
- .13 Other business.
- .5 Chair the Pre-construction meeting and prepare Meeting Minutes for distribution.
- .6 Distribute copies of the Meeting Minutes within seven (7) calendar days after the meeting and transmit to meeting participants and affected parties not in attendance.

1.3 ENVIRONMENTAL BRIEFING

- .1 Ensure all contractor and subcontractor forces working on the project receive the Environmental Briefing from the Parks Environmental Surveillance Officer (ESO) prior to the start of any work activities. A briefing must also be scheduled for any new personnel joining the Contractor's site crew after the start of work activities. Provide minimum 48 hours notice to schedule a briefing. Call 403-859-5185 to schedule the briefing.
- .2 Prior to the start of construction, the Contractor and their subcontractors shall arrange an equipment inspection with the Departmental Representative. Vehicles / equipment shall arrive at each Site clean of organic and/or contaminated material, shall be in good working order, and free of leaks.

1.4 WORKER ORIENTATION MEETING

- .1 Hold worker orientation meeting prior to start of construction.

1.5 DAILY TAILGATE SAFETY MEETINGS

- .1 Hold safety meetings daily prior to start of work each day with all workers in attendance.
- .2 Review anticipated safety requirements and precautions.

1.6 PROGRESS MEETINGS

- .1 During course of Work and one (1) week prior to project completion, schedule progress meetings weekly.
- .2 Contractor, major Subcontractors involved in Work, the Departmental Representative Authorized Personnel shall be in attendance.
- .3 Notify parties minimum three (3) days prior to meetings.
- .4 Agenda to include the following:
 - .1 Health, safety, and environmental incidents.
 - .2 Review and discussion of safety concerns, accidents, and "near misses".
 - .3 Review, approval of minutes of previous meeting.

- .4 Review of Work progress since previous meeting.
- .5 Field observations, problems, conflicts.
- .6 Problems which impede construction schedule.
- .7 Review of delivery schedules.
- .8 Corrective measures and procedures to regain projected schedule.
- .9 Revision to construction schedule.
- .10 Progress schedule, during succeeding work period.
- .11 Review submittal schedules: expedite as required.
- .12 Maintenance of quality standards.
- .13 Review proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.
- .14 Remedial or preventive actions to be taken.
- .15 Contract close-out.
- .16 Other business.
- .5 The Departmental Representative Authorized Personnel shall chair progress meetings and prepare Meeting Minutes for distribution.
- .6 The Departmental Representative Authorized Personnel shall distribute copies of the Meeting Minutes within seven (7) calendar days after each meeting and transmit to meeting participants and affected parties not in attendance.
- .7 Representative of Contractor, Subcontractor and suppliers attending meetings shall be qualified and authorized to act on behalf of the party each represents.
- .8 The Contractor to provide a trailer or other suitable location at the project site(s) to hold meetings.

1.7 PROJECT CLOSE OUT MEETING

- .1 Schedule meeting one week prior to completion of work to:
 - .1 Verify Project requirements have been met.

1.8 MEASURE OF PAYMENT

- .1 Project Meetings
 - .1 Scope: Includes scheduling and administering of project meetings throughout the progress of the work as noted in Articles 1.1 to 1.8.
 - .2 Payment: Lump Sum.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 02 41 13 – Selective Site Demolition.
- .2 Section 31 00 99 – Earthworks.

1.2 DEFINITIONS

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

1.3 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.

Waterton Lakes National Park (WLNP)

- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit to Departmental Representative Authorized Personnel within seven (7) calendar days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to Departmental Representative Authorized Personnel within seven (7) working days of receipt of acceptance of Master Plan.
- .4 Submit Detailed Cost Breakdown to Departmental Representative Authorized Personnel within five (5) working days of award notification.

1.5 MASTER PLAN

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

1.6 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Revisions made to the schedule shall be submitted at least twenty-four (24) hours prior to the start of the next scheduled Progress Meeting.
- .3 During progress of Work revise and resubmit the schedule as directed by the Departmental Representative.
- .4 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award.
 - .2 Permits.
 - .3 At each site:
 - .1 Mobilization & Site Setup.

Waterton Lakes National Park (WLNP)

- .2 Install temporary Erosion Control Measures.
 - .3 Removal and Disposal of Hazardous Debris, Non-hazardous Debris, and Foundation Material (including concrete and cinderblocks) as noted on drawings
 - .4 Removal and Disposal of Contaminated Soil.
 - .5 Clean Backfill Placement and Topsoil Placement and Regrading as noted on drawings.
 - .6 Expected date of Quality Control Test Results for placed materials.
 - .7 Final Inspection.
 - .8 De-Mobilization.
- .5 When developing the project schedule, the Contractor should note the schedule implications of confirmatory soil sampling. A five to seven (5-7) calendar day turnaround period in retrieving the soil samples to receiving laboratory analytical results is expected; however, following the excavation of Contaminated Soils, the Contractor may wish to proceed with backfilling before receiving the laboratory analytical results at their own risk and expense, but this approach shall be discussed with the Departmental Representative Authorized Personnel prior to proceeding with the Work. The Contractor may wish to execute their Work in a phased approach, working at different sites while waiting on the confirmatory sampling results.

1.7 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress on a day by day basis.
- .2 Provide one (1) electronic copy of each schedule update.
- .3 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.8 PROJECT MEETINGS

- .1 Refer to Section 01 31 19 – Project Meetings.
- .2 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule. Prepare a recovery plan to address activities behind schedule.
- .3 Weather related delays with their remedial measures shall be discussed and negotiated.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 02 41 13 – Selective Site Demolition.
- .2 Section 31 00 99 – Earthworks.

1.2 ADMINISTRATIVE

- .1 Submit to Departmental Representative Authorized Personnel submittals listed in this specification and summarized in Table 01 33 00 -1 for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default shall be allowed.
- .2 Submit requests for interpretation of Contract Documents, and obtain instructions through Departmental Representative Authorized Personnel.
- .3 Process substitutions through Departmental Representative Authorized Personnel.
- .4 Process change orders through Departmental Representative Authorized Personnel.
- .5 Deliver closeout submittals for review and preliminary inspections, for transmittal to Departmental Representative Authorized Personnel.
- .6 Do not proceed with Work affected by submittal until review is complete.
- .7 Present shop drawings, product data, samples and test results in SI Metric units.
- .8 Where items or information is not produced in SI Metric units, converted values shall be acceptable.
- .9 Review submittals prior to submission to Departmental Representative Authorized Personnel. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project requirements shall be returned without being examined and considered rejected.
- .10 Notify Departmental Representative Authorized Personnel, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .11 Verify that field measurements and affected adjacent Work are co-ordinated.
- .12 Errors and omissions in submission shall not be relieved by Departmental Representative Authorized Personnel's review of submittals.
- .13 Deviations in submission from requirements of Contract Documents shall not be relieved by Departmental Representative Authorized Personnel review.
- .14 Maintain at job site, one copy each of the following:

- .1 Contract Drawings if part of tender.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders.
 - .5 Other modifications to Contract.
 - .6 Traffic Management Plan.
 - .7 Safety Plan.
 - .8 WHMIS.
 - .9 EPP..
 - .10 Field test reports.
 - .11 Copy of approved Work schedule and most recent updated schedule.
 - .12 Labour conditions and wage schedules.
 - .13 Applicable current editions of municipal regulations and by-laws.
- .15 Submit an electronic copy in PDF file for each type and format of submittal.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, panel layout drawings, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit all shop drawings stamped and signed by Professional Engineer registered or licensed in Province of Alberta, Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items shall be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow three (3) calendar days for Departmental Representative Authorized Personnel's review of each submission.
- .5 Adjustments made on shop drawings by Departmental Representative Authorized Personnel are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative Authorized Personnel may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative Authorized Personnel in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and number.

- .3 Contractor's name and address.
- .4 Identification and quantity of each shop drawing, product data and sample.
- .5 Other pertinent data.
- .8 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements, and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Schematic diagrams.
 - .8 Relationship to adjacent work.
- .9 After Departmental Representative Authorized Personnel's review, distribute copies.
 - .1 Submit one (1) electronic copy of shop drawings in format requested for each requirement requested in specification Sections and as the Departmental Representative Authorized Personnel may reasonably request.
 - .2 Submit one (1) electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by the Departmental Representative Authorized Personnel where shop drawings shall not be prepared due to standardized manufacture of product.
 - .3 Submit one (1) electronic copy of test reports for requirements requested in specification Sections and as requested by the Departmental Representative Authorized Personnel.
 - .4 Report signed by authorized official of testing laboratory that material or product identical to material or product to be provided has been tested in accordance with specified requirements.

Waterton Lakes National Park (WLNP)

- .5 Submit one (1) electronic copy of certificates for requirements requested in specification Sections and as requested by the Departmental Representative Authorized Personnel.
- .6 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
- .7 Certificates must be dated after award of project contract complete with project name.
- .8 Submit one (1) electronic copy of manufacturer's instructions for requirements requested in specification Sections and as requested by the Departmental Representative Authorized Personnel.
- .9 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .10 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .11 Delete information not applicable to project.
- .12 Supplement standard information to provide details applicable to project.
- .13 If upon review by the Departmental Representative Authorized Personnel, no errors or omissions are discovered or if only minor corrections are made, copies shall be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy shall be returned and resubmission of corrected shop drawings, through same procedure indicated above, shall be performed before fabrication and installation of Work may proceed.
- .14 The review of shop drawings by the Departmental Representative Authorized Personnel is for sole purpose of ascertaining conformance with general concept.
- .15 This review shall not mean that the Departmental Representative Authorized Personnel approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
- .16 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.4 SAMPLES

- .1 Submit for review samples as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative Authorized Personnel's business address if prior to start of Work, or site office if Work has commenced.

Waterton Lakes National Park (WLNP)

- .3 Notify Departmental Representative Authorized Personnel in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Adjustments made on samples by Departmental Representative Authorized Personnel are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative Authorized Personnel prior to proceeding with Work.
- .5 Make changes in samples which Departmental Representative Authorized Personnel may require, consistent with Contract Documents.
- .6 Reviewed and accepted samples shall become standard of workmanship and material against which installed Work shall be verified.

1.5 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of colour digital photography in jpg format, fine resolution as directed by Departmental Representative Authorized Personnel.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Provide at least two photos from different locations for each viewpoint.
- .4 Viewpoints and their location as determined by Departmental Representative Authorized Personnel.
- .5 Progress Photographs are to be submitted daily.
- .6 Final Photographs shall be submitted within 24 hours of completion of work.

1.6 SUBMITTALS TABLE

- .1 Adhere to the submittal items and deadlines identified in table 01 33 00-1, unless discussed with the Departmental Representative Authorized Personnel and agreed in writing.
- .2 Prepare a schedule of the required submissions and the date the submissions shall be made. Include columns for Actual Date of Submission, Review Comments Received, Final Submission, and Final Acceptance Received.
- .3 The Owner shall not be responsible for any construction delays resulting from delays in submission acceptance if the submittal dates shown in the Submittal Schedule are not achieved.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

TABLE 01 33 00-1 CONTRACTOR SUBMITTAL SCHEDULE

Specification Section	Description	Date
Division 1		
01 14 00	Restricted Activity Permit	Submit application and receive approval prior to commencing Work
01 14 00	Contracting Submittals	Within 3 to 5 business days of award notification
01 31 19	Request for Project Pre-Construction Meeting	Seven (7) calendar days after Award of Contract
01 31 19	Project Meeting Minutes	Two (2) business days after meeting
01 31 19	Weekly Progress Report	Weekly for duration of project, reported in meeting minutes
01 31 19	Worker Orientation meeting agenda and attendance sheet	Prior to commencing Work
01 32 16	Schedule updates	Weekly for duration of project and at least 24hrs prior to next scheduled Progress Meeting
01 33 00	Progress Photographs	Weekly for duration of project
01 33 00	Final Photographs	Prior to final progress payment request
01 33 00	Monthly Performance Measures Report	Monthly with Invoice
01 33 00	Daily Reports for Potential Additional Work	Daily, as required
01 35 29	Site Specific Health and Safety (H&S) Plan	7 calendar days after date of Notice to Proceed
01 35 29	WHMIS MSDS - Material Safety Data Sheets	7 calendar days after date of Notice to Proceed
01 35 29	Template checklist for items to be inspected on a daily basis	Prior to commencing Work or as required
01 35 29	Personnel training requirements	Prior to commencing Work or as required
01 35 29	Personal protective equipment (PPE) program	Prior to commencing Work or as required
01 35 29	Certification of medical surveillance for site personnel	Within seven (7) calendar days after

TABLE 01 33 00-1 CONTRACTOR SUBMITTAL SCHEDULE

Specification Section	Description	Date
		Notice to Proceed
01 35 29	Proof of respirator fit testing for site personnel	Within seven (7) calendar days after Notice to Proceed
01 35 29	Incident and accident reports	Within 24hrs of incident's occurrence
01 35 29	Copies of Reports/Directions by Federal or Provincial Health and Safety Inspectors	Verbal report immediately followed by Written report in 24 hours
01 35 29	On-site Contingency and Emergency Response Plan	With Health and Safety Plan
01 35 29	Off-site Contingency and Emergency Response Plan	With Health and Safety Plan
01 35 29	Correction Action report for non-compliance Health and Safety issue	As required
01 35 29	Report corrective action for observed environmental non-compliance	As required
01 35 43	Environmental Protection Plan (EPP)	5 working days prior to starting construction activities at each work site
01 35 43	Copies of Environmental Approvals (Where applicable)	Prior to commencing Work or as required
01 35 43	Inventory of Environmental Protection Supplies	Within seven (7) calendar days of Mobilization
01 45 00	Inspection and test reports	Upon request of Departmental Representative Authorized Personnel
01 52 00	Erosion and Sediment Control Plan	As required when revised
01 53 00	Mobilization and Demobilization Plan	Seven (7) calendar days after Award of Contract
01 53 00	Mobilization Notice	Five (5) calendar days prior to Mobilization
01 77 00	Request for Final Inspection	As required
Earthworks		
31 00 99	Copies of scale tickets for fill materials imported to site	End of each day
31 00 99	Copies of scale tickets for material (e.g., Foundation Material, Contaminated Soil) hauled from site to certified landfill	End of each day

TABLE 01 33 00-1 CONTRACTOR SUBMITTAL SCHEDULE

Specification Section	Description	Date
31 00 99	Quality control test results for import earthwork materials	Ten (10) calendar days prior to delivery on site
31 00 99	Quality control test results for placed Clean Backfill materials	As fill placement proceeds
31 00 99	Name and location of laboratory used for soil analyses	Ten (10) calendar days before start of construction
31 00 99	Nuclear density tests at each backfill site	Within 1 business day of fill placement
31 00 99	Compaction reports for each site (approved by a qualified party)	Within 10 calendar days of fill placement

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 02 41 13 – Selective Site Demolition.
- .2 Section 02 82 00 – Asbestos Abatement – Minimum Precautions.
- .3 Section 31 00 99 – Earthworks.

1.2 REFERENCE STANDARDS

- .1 Province of Alberta
 - .1 Occupational Health and Safety Act, R.S.A. - Updated 2018.
- .2 Canada Labour Code, Canada Occupational Safety and Health Regulations 2002.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
- .4 Transportation of Dangerous Goods Act (1999).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit copies of reports or directions issued by Federal and Provincial health and safety inspectors to Departmental Representative Authorized Personnel within 24 hours of receipt.
- .3 Submit copies of incident and accident reports to the Departmental Representative Authorized Personnel.
- .4 Submit site-specific Health and Safety Plan, within 7 calendar days after date of Notice to Proceed and prior to mobilization to site. Address items 1.3.3 to 1.3.13, below:
- .5 Safety and health risk or hazard analysis for each site task and operation found in work plan.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets to the Departmental Representative.
- .7 Develop checklist for items to be inspected on a daily basis. Document actions taken.
- .8 Personnel training requirements including:
 - .1 Names of personnel and alternates responsible for site safety and health, hazards present on site, and use of personal protective equipment.
 - .2 Work practices by which personnel can minimize risks from hazards, safe use of engineering controls and equipment on site, medical surveillance requirements, including recognition of symptoms and signs

which might indicate overexposure to hazards, and elements of site-specific Health and Safety Plan.

- .9 Personal protective equipment (PPE) program addressing:
 - .1 Donning and doffing procedures.
 - .2 PPE selection based upon site hazards.
 - .3 PPE use and limitations of equipment.
 - .4 Work mission duration, PPE maintenance, and storage.
 - .5 PPE decontamination and disposal.
 - .6 PPE inspection procedures prior to, during, and after use.
 - .7 Evaluation of effectiveness of PPE program, and limitations during temperature extremes, and other appropriate medical considerations.
 - .8 Medical surveillance requirements for personnel assigned to work at site.
 - .9 Frequency and types of potential air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation shall be used, including methods of maintenance and calibration of monitoring and sampling equipment.
 - .10 Site control measures employed at site including site map, site work zones, use of 'buddy system', site communications including site security, alerting means for emergencies, standard operating procedures or safe work practices, and identification of nearest medical assistance.
 - .11 Decontamination procedures for both personnel and equipment.
 - .12 Emergency response requirements addressing: pre-emergency planning, personnel roles, lines of authority and communication, emergency recognition and prevention, safe distances and places of refuge, site security and control, evacuation routes and procedures, decontamination procedures not covered under decontamination section, emergency medical treatment and first aid, emergency alerting and response procedures, critique of response and follow-up, PPE and emergency equipment, site topography, layout, prevailing weather conditions, and procedures for reporting incidents to local, provincial, or federal agencies.
 - .13 Written respiratory protection program for project activities.
 - .14 Procedures dealing with heat and/or cold stress.
- .10 Departmental Representative shall review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within seven (7) calendar days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within seven (7) calendar days after receipt of comments from Departmental Representative.
- .11 Respirator Fit Testing: submit proof of respirator fit testing for site personnel, within seven (7) calendar days after date of Notice to Proceed and prior to mobilization to site.

- .12 On-site Contingency and Emergency Response Plan: address standard operating procedures shall be implemented during emergency situations as per the Province of Alberta, Occupational Health and Safety Act, 2002.
 - .1 The Emergency Response Plan shall address standard operating procedures to be implemented during emergency situations and include the phone number, location, directions to the nearest emergency medical facility and also the contact information for all key Project Team members (Prime Contractor, Dillon and PCA). An up-to-date copy of the Emergency Response Plan shall be available at the work sites at all times in an easily accessible location.
- .13 Off-site Contingency and Emergency Response Plan:
 - .1 Prior to commencing Work involving handling of hazardous materials, develop off-site Contingency and Emergency Response Plan.
 - .2 Plan shall provide immediate response to serious site occurrence such as explosion, fire, or migration of significant quantities of toxic or hazardous material from site.

1.4 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project each morning prior to start of work each day. The Contractor's Daily Tailgate Meeting shall identify and address any safety concerns expected during the day's work. These meetings shall be documented and all workers in attendance shall review and provide sign-off that they understand the requirements of his/her task prior to starting it. Tailgate documentation shall be kept onsite and be available for review by Dillon and PCA staff on request.
- .2 Contractor is expected to evaluate any safety-related access issues for each work site prior to submitting a tender.

1.5 MEETINGS

- .1 Health and Safety will be discussed as part of the Pre-Construction Meeting.

1.6 REGULATORY REQUIREMENTS

- .1 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.

1.7 SITE CONDITIONS

- .1 Work at site will involve contact with:
 - .1 Contaminated Soil: soil samples collected from Sites 5, 6, and 7 (Heavy Equipment Area, Canyon Church Camp, and Maintenance Shed, respectively) exceeded ecological guidelines and/or human health guidelines for various contaminants of potential concern.

Waterton Lakes National Park (WLNP)

- .2 Non-hazardous Debris, including but not limited to: ash, appliances, equipment, metal debris, generator, tires, wood, and roofing material. VOC containing debris is also present at Site 4: Gatehouse.
 - .3 Foundation Material, including walls, garage pads, cinder blocks, brick sidewalk, concrete sidewalk, and piles.
 - .4 Hazardous Materials, including but not limited to: asbestos (chrysotile) at Site 6: Canyon Church Camp (Cook's Residence). Refer to Section 02 82 00 – Asbestos Abatement – Minimum Precautions.
- .2 The Red Rock Canyon Parkway, which provides access to Site 6: Canyon Church Camp, will be closed to public vehicular traffic for the duration of the 2018 season. However, Contractors, Consultants, and pedestrian traffic will be using the roadway during that period.
- .3 Sections along the Red Rock Canyon Parkway have burnt guardrails that are no longer in place. Access to Site 6: Canyon Church Camp is not obstructed by this impediment, but the missing guardrails pose a safety hazard and the Contractor is required to assess and abate all hazards as part of their safety plan for accessing and working at the site (noting that repair or replacement of the burnt guardrails is not part of this scope per se).
- .4 The Contractor is expected to assess and abate all safety hazards (damaged utility poles, hazardous trees, etc.) associated with each site. The Contractor's assessment work shall be completed by a qualified and experienced personnel, as determined by the Departmental Representative Authorized Personnel.
- .5 The Crandell/Canyon campgrounds, which is where Site 6: Canyon Church Camp is located, is accessible by either of two (2) bridges – Canyon Bridge and Crandell Bridge. The Contractor shall only be allowed access to Site 6: Canyon Church Camp via the Canyon Bridge. Access via the Crandell Bridge is not allowed, due to the load capacity uncertainties with the bridge. All Contractors shall evaluate any access issues for each work site prior to submitting a tender.

1.8 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan prior to commencing site Work and continue to implement, maintain, and enforce plan until final demobilization from site. A certified asbestos contractor is required to develop and sign the Health and Safety Plan for asbestos abatement work taking place at the Cook's Residence at Site 6. Health and Safety Plan shall address project specifications.
- .2 Ensure Health and Safety guidelines provide for safe and minimal risk working environment for site personnel and minimize impact of activities involving contact with hazardous materials or hazardous wastes on general public and surrounding environment.
- .3 Relief from or substitution for portion or provision of minimum Health and Safety Guidelines specified or reviewed site-specific Health and Safety Plan shall be submitted to Departmental Representative in writing. Departmental

Representative will respond in writing, either accepting or requesting improvements.

1.9 RESPONSIBILITY

- .1 Be responsible for safety of persons and property on site and for protection of persons off site and environment to extent that they may be affected by conduct of Work. As part of the H&S submittal, the Contractor shall clearly acknowledge in writing his/her role as the Prime Contractor for this project with the attendant Occupational Health and Safety legal responsibility and liability.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.10 HAZARD COMMUNICATION REQUIREMENTS

- .1 Comply with Chemical Hazards Regulation, Alta. Reg.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations, Part X - Hazardous Substances.
- .3 Provide Departmental Representative with Material Safety Data Sheets (MSDS) and documentation on any "hazardous" chemical that Contractor or Contractor Representatives plan to bring onto site.

1.11 CORRECTION OF NON-COMPLIANCE

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

1.12 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
- .2 Assign responsibility and obligation to Health and Safety Officer where required to stop or start Work when, at Health and Safety Officer's discretion, it is necessary or advisable for reasons of health or safety.
- .3 Departmental Representative may also stop Work for health and safety considerations where the Contractor fails to meet the minimum health and safety requirements, the costs and delays of such as stoppage shall not be grounds for a claim for extra costs.

1.13 UNFORESEEN HAZARDS

- .1 Should unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, stop work and immediately advise Departmental Representative verbally and in writing.

1.14 HEALTH AND SAFETY OFFICER

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Officer. Health and Safety Officer shall:
 - .1 Have working knowledge of occupational safety and health regulations.
 - .2 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .3 Be responsible for implementing, enforcing daily, and monitoring site-specific Contractor's Health and Safety Plan.
 - .4 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.15 PERSONNEL HEALTH, SAFETY, AND HYGIENE

- .1 Training: ensure personnel entering site are trained in accordance with specified personnel training requirements. Training session shall be completed by Health and Safety Officer.
- .2 Levels of Protection: establish levels of protection for each Work area based on planned activity and location of activity. Minimum PPE required for each level of protection as follows:
- .3 Level C/Modified Level C:
 - .1 Respiratory: half mask, Cartridge - MSA GME-H (GME-P100).
 - .2 Head, Eye, Ear Protection: safety glasses, hard hat.
 - .3 Hand Protection: gloves.
 - .4 Foot Protection: safety shoes.
 - .5 Clothing: Disposable TYVEK chemically resistant coverall in accordance with Section 02 82 00 – Asbestos Abatement – Minimum Precautions,
- .4 Level D:
 - .1 Head, Eye, Ear Protection: safety glasses, hard hat, hearing protection.
 - .2 Clothing: standard high-visibility uniform.
 - .3 Gloves.
- .5 Anticipated levels of personal protection based on work activity are as follows:

Work Activity	Anticipated Level of Personal Protection
Asbestos abatement activities at Site 6: Canyon	Level C

Church Camp – Cook’s Residence. Debris removal (VOC containing) activities at Site 7 – Gatehouse.	
Remedial activities at Site 4, 5, and 7 (Gatehouse, Heavy Equipment, Maintenance Shed, respectively). Remedial activities at Site 6, excluding the Cook’s Residence, are anticipated to use a Level D of personal protection as well.	Level D

.6 Personal Protective Equipment:

- .1 Furnish site personnel with appropriate PPE as specified above. Ensure that safety equipment and protective clothing is kept clean and maintained.

.7 Develop protective equipment usage procedures and ensure that procedures are strictly followed by site personnel; include following procedures as minimum:

- .1 Ensure prescription eyeglasses worn are safety glasses and do not permit contact lenses on site within work zones.
- .2 Ensure footwear is steel-toed safety shoes or boots and is covered by rubber overshoes when entering or working in potentially contaminated work areas.
- .3 Dispose of or decontaminate PPE worn on site at end of each workday.
- .4 Decontaminate reusable PPE before reissuing.
- .5 Ensure site personnel have passed respirator fit test prior to entering potentially contaminated work areas.
- .6 Ensure facial hair does not interfere with proper respirator fit.
- .7 CSA-approved hardhats, high visibility safety vests and work gloves shall be worn by personnel in the work zone.

.8 Respiratory Protection:

- .1 Provide site personnel with extensive training in usage and limitations of, and qualitative fit testing for, air purifying and supplied-air respirators in accordance with specified regulations.
- .2 Develop, implement, and maintain respirator program.
- .3 Monitor, evaluate, and provide respiratory protection for site personnel.
- .4 Ensure levels of protection as listed have been chosen consistent with site-specific potential airborne hazards associated with major contaminants identified on site.
- .5 Immediately notify Departmental Representative when level of respiratory protection required increases.
- .6 Ensure appropriate respiratory protection during work activities. As minimum requirement, ensure that persons entering potentially contaminated work areas are supplied with and use appropriate respiratory protection.
- .7 Assess ability for site personnel to wear respiratory protection.

- .8 Ensure site personnel are able to pass respirator fit test prior to entering potentially contaminated work areas.
- .9 Heat Stress/Cold Stress: implement cold stress and heat stress monitoring program as applicable and include in site-specific Health and Safety Plan.
- .10 Personnel Hygiene and Personnel Decontamination Procedures; provide minimum as follows:
 - .1 Suitable containers for storage and disposal of used disposable PPE.
 - .2 Potable water and suitable sanitation facility.
- .11 Emergency and First-Aid Equipment:
 - .1 Locate and maintain emergency and first-aid equipment in appropriate location on site including first-aid kit to accommodate number of site personnel; portable emergency eye wash; two 9 kg ABC type dry chemical fire extinguishers.
- .12 Site Communications:
 - .1 Post emergency telephone numbers in a conspicuous location at each of the various work sites.
 - .2 Ensure personnel use of "buddy" system and develop hand signal system appropriate for site activities.
 - .3 Provide employee alarm system to notify employees of site emergency situations or to stop Work activities if necessary. Establish an emergency muster point for each work site.
 - .4 Furnish selected personnel with 2-way radios. Cell phone service at some of the work sites will be unreliable or nonexistent.
 - .5 Safety Meetings: conduct mandatory daily safety meetings for personnel, and additionally as required by special or work-related conditions; include refresher training for existing equipment and protocols, review ongoing safety issues and protocols, and examine new site conditions as encountered. Hold additional safety meetings on as-needed basis.
 - .6 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Alberta having jurisdiction, and in consultation with the Departmental Representative Authorized Personnel.

Part 2 Products**2.1 NOT USED**

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

- .1 Reference Standards:
 - .1 Canadian and Alberta Environmental Protection Acts and pursuant regulations including but not limited to:
 - .1 Canadian Environmental Assessment Act (2012) and pursuant regulations.
 - .2 Transportation of Dangerous Goods Act and pursuant regulations.
 - .3 Environment Canada's "Best practices for the Reduction of Air Emissions from Construction and Demolition Activities".
 - .4 Canadian Council of Ministers for the Environment (CCME) Documentation, including but not limited to:
 - .1 Canadian Environmental Quality Guidelines.
 - .5 Alberta Environmental Protection and Enhancement Act (2000) and pursuant regulations.
 - .6 Alberta Tier 1 and Tier 2 Soil and Groundwater Remediation Guidelines.
 - .7 Fisheries Act (1985) and pursuant regulations.
 - .2 U.S. Environmental Protection Agency (EPA)/Office of Water
 - .1 EPA 832/R-92-005-92, Storm Water Management for Construction Activities, Chapter 3.

1.2 ACTION AND INFORMATION SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit two (2) copies of WHMIS SDS in accordance with Section 01 35 29 - Health and Safety for Contaminated Sites.
- .3 For each work site, submit the EPP for review and approval by Departmental Representative Authorized Personnel within fourteen (14) calendar days after Award of Contract and before five (5) working days prior to commencing construction activities or delivery of materials to each site.
- .4 EPP must include comprehensive overview of known or potential environmental issues to be addressed during construction.
- .5 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .6 Include in the EPP and address for each site where construction activities shall take place:

- .1 Names of persons responsible for ensuring adherence to EPP.
- .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
- .3 Names and qualifications of persons responsible for training site personnel.
- .4 Descriptions of environmental protection personnel training program.
- .5 Erosion and Sediment Control Plan identifying type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations and EPA 832/R-92-005, Chapter 3.
- .6 Drawings indicating locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
- .7 Site Access Plans showing proposed access into and out of the Sites.
- .8 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather.
 - .1 Plans to include measures to minimize amount of material transported onto paved public roads by vehicles or runoff.
- .9 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use.
 - .1 Plan to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.
- .10 Spill Response Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
- .11 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing Non-hazardous Debris and Contaminated Soil.
- .12 Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal, including clearing Hazardous Debris.
- .13 Waste Disposal Plan for wastes generated by the Contractor.
- .14 Air Pollution Control Plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
- .15 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .16 Dewatering Plan / Wastewater Management Plan identifying methods and procedures for management and/or discharge of waste waters which are

directly derived from construction activities, such as clean-up water, dewatering of ground water, etc.

- .17 Fire Contingency Plan identifying equipment to be used on site with fire inhibitor devices and listing precautions for stockpiling of fuel and flammable debris on site, with respect to wildfires.
- .18 Working Near Water Plan.
- .19 Site-specific Mitigation Details.
- .20 Restoration Plan.

1.3 DISPOSAL OF WASTE

- .1 Do not bury rubbish and other liquid and solid waste materials on Site.
- .2 Do not dispose of waste or volatile materials, such as oils, etc., onto the ground or into waterways, streams, or drainage ditches.
- .3 Separate and dispose of accumulated waste generated from the construction work in accordance with Federal and Provincial regulations. Dispose of waste in appropriate off-site facilities. Materials to be disposed of off-site include but are not limited to:
 - .1 Hazardous Debris.
 - .2 Non-hazardous Debris, including excess construction materials.
 - .3 Foundation Material.
 - .4 Contaminated Soil.
 - .5 Non-contaminated litter and rubbish.
 - .6 Disposable PPE.
- .4 Disposal/recycling of other waste generated during the project shall be done in compliance with Alberta Waste Regulations and the facilities used shall be approved by the Departmental Representative Authorized Personnel.
- .5 Household appliances that are present need to be managed as solid waste in accordance with local requirements. If present in appliances, any refrigerants present need to be reclaimed, prior to off-site disposal by a certified contractor.

1.4 VEHICLE ACCESS AND PARKING

- .1 Maintenance and Use:
 - .1 Prevent contamination of access and haul roads. Immediately scrape up debris or material on access roads which is suspected to be contaminated as determined by Departmental Representative Authorized Personnel.
 - .2 Departmental Representative Authorized Personnel may collect soil samples for chemical analysis from traveling surfaces of constructed and existing access routes prior to, during, and upon completion of Work. Excavate and dispose of soil contaminated by Contractor's activities at no additional cost to Departmental Representative Authorized Personnel.

- .3 Vehicles/equipment shall be in good working order and not be leaking any fuel or fluids. Vehicles/equipment shall arrive on Site clean of organic material. Prior to mobilizing to Site, Contractor shall arrange an environmental briefing and equipment inspection with the Departmental Representative.
- .4 During construction, if fuel is brought in and stored on site, store it in compliance with applicable Federal and Provincial regulations in a designated fuelling area approved by the Departmental Representative Authorized Personnel. Additionally, an impervious berm shall be constructed around fuel tanks and any other potential spill area. The berms shall be capable of holding 110% of tank storage volumes and shall be to the satisfaction of the Departmental Representative and the Environmental Surveillance Officer before start-up.

Fueling operations and fuel storage shall be at least 200 m away from watercourses, in consultation with the Park Warden Service.

Mobile fuel containers (e.g. slip tanks, small fuel carboys) shall remain in the service vehicle at all times.

- .5 Implement traffic management measures (such as 'Traffic Control Person'), if required, at site access points to direct traffic and minimize impacts to the community.

1.5 FIRES

- .1 Fires and burning of rubbish on site is not permitted.
- .2 A Fire Contingency Plan shall be included with the EPP.

1.6 DRAINAGE

- .1 Develop and submit Erosion and Sediment Control Plan identifying type and location of erosion and sediment controls provided. Plan to include monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
- .2 Provide temporary drainage and pumping required to keep excavations and site free from water. If required, potentially impacted water within the Site (i.e., groundwater or surface water in direct contact with potentially contaminated soils) shall be pumped to areas as designated by the Departmental Representative to meet the requirements of the design.
- .3 Ensure pumped water into waterways, sewer, or drainage systems is free of suspended materials and meets applicable regulatory criteria before discharge.
- .4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

- .5 All dewatering activities require a RAP following submission and approval of the Contractor's Dewatering Plan.

1.7 SITE CLEARING AND PLANT PROTECTION

- .1 Protect trees and plants on site and adjacent properties.
- .2 Minimize stripping of topsoil and vegetation.

1.8 WORK ADJACENT TO WATERWAYS

- .1 Construction equipment shall be operated on land only and above the high-water mark.
- .2 Waterways shall be kept free of excavated fill, waste material and debris.
- .3 Design and construct temporary crossings to minimize erosion to waterways.
- .4 Do not skid logs or construction materials across waterways.
- .5 Avoid indicated spawning beds when constructing temporary crossings of waterways.
- .6 Working Near Water Plan shall be submitted with EPP as necessary.

1.9 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this Contract.
- .2 Control emissions from equipment in accordance with local authorities' emission requirements.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Appropriate wetting down of materials shall be done prior to handling. Provide dust control for temporary roads. Water is available for site activities from a hydrant at the Parks Canada Operations Compound.
- .4 Execute work by methods to minimize raising dust from construction operations.
- .5 Implement and maintain dust and particulate control measures as determined necessary by Departmental Representative Authorized Personnel during construction and in accordance with Federal regulations.
- .6 At a minimum, use appropriate covers on trucks hauling fine or dusty materials. Use watertight vehicles to haul wet materials.
- .7 Prevent dust from spreading to adjacent sites.
- .8 Departmental Representative Authorized Personnel shall stop work at any time when Contractor's control of dusts and particulates is inadequate for wind conditions present at Site, or when air quality monitoring indicates that release of fugitive dusts and particulates into atmosphere equals or exceeds specified levels.

- .9 If Contractor's dust and particulate control is not sufficient for controlling dusts and particulates into atmosphere, Contractor shall stop work. Contractor shall discuss procedures that Contractor proposes to resolve problem. Make necessary changes to operations prior to resuming excavating, handling, processing, or other work that may cause release of dusts or particulates.
- .10 Ensure hazardous substances (including fuel) are stored, handled, and applied in a manner to prevent release to the environment and in a manner in accordance with applicable regulations including hazardous waste regulations.
- .11 Secure all materials when not in use and at non-productive times (night and shut-down).
- .12 Vehicles shall be shut off when not in use. No vehicle idling on-site.
- .13 Store hazardous or toxic substances in a designated area, as approved by Departmental Representative Authorized Personnel.
- .14 Comply with requirements of WHMIS regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of SDS acceptable to Labour Canada.
- .15 Regularly inspect work areas and surrounding lands to collect wind-blown litter.

1.10 NOISE CONTROL

- .1 Operate all construction equipment with exhaust systems in good repair to minimize noise.
- .2 Restrict construction activities that could create excessive noise to daylight hours.
- .3 Ensure that noise control devices (e.g., mufflers, silencers) on construction equipment are properly maintained.

1.11 NOTIFICATION

- .1 Departmental Representative Authorized Personnel shall notify Contractor in writing of observed noncompliance with Federal laws or regulations, permits, and other elements of Contractor's EPP.
- .2 After receipt of such notice, inform Departmental Representative Authorized Personnel of proposed corrective action and take such action for approval by Departmental Representative Authorized Personnel.
 - .1 Take action only after receipt of written approval by Departmental Representative Authorized Personnel.
- .3 Departmental Representative Authorized Personnel shall issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

1.12 MEASURE OF PAYMENT

- .1 Health and Safety Plan/Environmental Protection Plan
 - .1 Scope: Includes preparation of the Health and Safety (H&S) Plan/Environmental Protection Plan (EPP) and application of permits and/or licenses (as needed).
 - .2 Payment: Lump Sum.
- .2 Environmental Protection Plan Implementation:
 - .1 Scope: Includes carrying out implementation of the EPP, including the ESC (Erosion and Sediment Control) Plan, all labour materials, and equipment determined as required for supplying, installing, constructing, operating, maintaining, and removing ESC provisions after construction, for which payment is not included elsewhere, and in compliance with the Contract Documents. Materials incorporated in these works shall not be paid for under any other item.
 - .2 Payment: Lump Sum.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Responsible for any tools, supplies, and equipment left overnight at each work site.
- .2 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
- .4 Excavation, compaction and hauling equipment handling Hazardous Debris or Contaminated Soil shall be decontaminated prior to working in non-impacted areas and prior to leaving each site. Equipment shall be satisfactorily cleaned before they depart the excavation area. At a minimum, equipment components (e.g., buckets) contacting the Contaminated Soil shall be brushed clean (i.e., to bare metal), and the sweepings contained for management as impacted soil. Where equipment may travel on Contaminated Soil, tracks and tires shall be scraped and brushed to remove soils, as required, before departing the site.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES AND CODES

- .1 Perform Work in accordance with codes that apply at the Federal, Provincial or local level such that in case of conflict or discrepancy between applicable codes, the more stringent requirements apply.
- .2 Meet or exceed requirements of the following items; if there is a discrepancy between the items the more stringent requirement applies:
 - .1 Contract documents, including amendments.
 - .2 Specified standards, codes and referenced documents.

1.2 HAZARDOUS MATERIAL DISCOVERY

- .1 Stop work immediately and notify Departmental Representative Authorized Personnel if substances, toxic and/or hazardous waste discovered outside of the identified contaminants in the tender documents are discovered during excavation.

1.3 SMOKING

- .1 Smoking is prohibited in the work area, on the highway, and in any other location in the park where smoking is prohibited.

1.4 CANADA NATIONAL PARKS ACT AND REGULATIONS

- .1 Perform Work in accordance with National Parks Act when projects are located within boundaries of National Park.
- .2 Perform Work in accordance with all relevant legislation. This includes, but is not limited to:
 - .1 Canada National Parks Act.
 - .2 Canadian Environmental Protection Act, 1999.
 - .3 Canadian Environmental Assessment Act, 2012.
 - .4 Species at Risk Act.
 - .5 Migratory Birds Convention Act, 1994.
 - .6 Fisheries Act.

The Work must also be performed in accordance with the Basic Impact Analysis Report provided in Appendix A.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 31 00 99 – Earthworks.

1.2 QUALITY CONTROL

- .1 Establish and maintain an effective quality control system including quality control procedures and testing to ensure compliance with the requirements of the Contract Documents.
- .2 Conduct tests incorporated in the quality control system and as required.
- .3 Engage qualified personnel, professional engineers, and independent CSA certified materials engineering and testing companies to carry out designs and to perform tests when test required.

1.3 INSPECTION

- .1 Allow Departmental Representative Authorized Personnel access to Work. If part of Work is in preparation at locations other than the Site or Place of Work, allow access to such Work whenever it is in progress and provide equipment and labour to obtain samples as necessary.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative Authorized Personnel, or law of Place of Work.
- .3 If permits are required to conduct special tests, inspections or approvals, inform the Departmental Representative Authorized Personnel of the need to obtain permits before Work is undertaken. Permits are to be satisfactorily completed, and at no additional cost to the Departmental Representative Authorized Personnel.
- .4 Departmental Representative Authorized Personnel shall order part of Work to be examined if Work is suspected to not be 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, Departmental Representative shall pay cost of examination and replacement.

1.4 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies may be engaged by the Departmental Representative Authorized Personnel for purpose of inspecting and/or testing portions of Work. Cost of such services shall be borne by the Departmental Representative.
- .2 Provide equipment and labour required for executing inspection and testing by appointed agencies.

- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency shall request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by the Departmental Representative Authorized Personnel at no cost to the Departmental Representative. Pay costs for retesting and re-inspection.

1.5 ACCESS TO WORK

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

1.6 PROCEDURES

- .1 Notify appropriate agency and the Departmental Representative Authorized Personnel 24 hours 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 orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store test samples.

1.7 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 the Departmental Representative Authorized Personnel as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents at no additional cost to the Departmental Representative Authorized Personnel.

1.8 REPORTS

- .1 Submit electronic copies of inspection and test reports to the Departmental Representative Authorized Personnel.
- .2 Provide copies to subcontractor of work being inspected or tested or manufacturer or fabricator of material being inspected or tested.

1.9 MEASURE OF PAYMENT

- .1 Quality Control Documents and Testing
 - .1 Scope: Includes preparation and submittal of Quality Control (QC) documents throughout the progress of the work and QC testing.
 - .2 Payment: Lump Sum.

PART 2 PRODUCTS**2.1 NOT USED**

.1 Not used.

PART 3 EXECUTION**3.1 QUALITY CONTROL TESTS AND RECORD TESTS**

Perform quality control tests and record tests as noted in the following table.
Turnaround time for laboratory testing should be taken into consideration.

Specification Reference Section		Description	Responsible Party
01 35 43	Environmental Management	Inspect each shipment of materials and timely replace any damaged materials	Contractor
31 00 99	Earthworks	Perform quality control tests for fill materials (which may include laboratory testing of import source materials)	Contractor
		Perform compaction tests and grain size for placed fill materials	Contractor
		Perform quality assurance tests, compaction tests and/or grain size for fill materials as needed	Departmental Representative

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

- .1 U.S. Environmental Protection Agency (EPA) / Office of Water
 - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.2 ACTION AND INFORMATION SUBMITTALS

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

1.3 INSTALLATION AND REMOVAL

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

1.4 DEWATERING

- .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.5 WATER SUPPLY

- .1 Provide supply of potable water for construction use. Water trucks entering the site require a RAP and are to comply with decontamination protocol and disposal requirements. Water is available for site activities from a hydrant at the Parks Canada Operations Compound.

1.6 TEMPORARY POWER AND LIGHT

- .1 Provide and pay for temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of 230 volts 30 amps, or arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal as necessary.

1.7 FIRE PROTECTION

- .1 Prepare and, as needed, implement Fire Contingency Plan per Section 01 35 29 Health and Safety Requirements.
- .2 Provide and maintain temporary fire protection equipment during performance of Work required governing codes, regulations and bylaws.
- .3 Burning rubbish and construction waste materials is not permitted on site.

1.8 MEASURE OF PAYMENT

- .1 Supply, Install and Maintain Temporary Construction Facilities
 - .1 Scope: Includes supply, installation, and maintenance of temporary construction facilities throughout the duration of the

work, removal from site and clean-up of disturbed areas after construction completion.

.2 Payment: Lump Sum.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 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 sediment and erosion control plan, specific to site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.

.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.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.
- .2 U.S. Environmental Protection Agency (EPA) / Office of Water
 - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.2 SUBMITTALS

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

1.3 INSTALLATION AND REMOVAL

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Identify areas for temporary access roads and gate, construction laydown, vehicle parking, equipment decontamination pad, and topsoil stockpiling.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

1.4 SITE STORAGE/LOADING

- .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.5 CONSTRUCTION PARKING

- .1 Parking shall be permitted on site, provided it does not disrupt performance of Work.
- .2 Provide and maintain adequate access to project site.
- .3 Maintain existing, new and temporary roads for duration of Contract and make good damage resulting from Contractors' use of roads.

1.6 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.7 SANITARY FACILITIES

- .1 On-site sanitary facilities for use by Contractor's personnel shall be allowed.

1.8 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect existing traffic conditions on affected roads during construction period except as otherwise specifically directed by Departmental Representative Authorized Personnel.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs.
- .4 Protect public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic. Respect public provincial roadways and users at all times.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor responsible for repair of damage to roads caused by construction operations.
- .7 Construct access and haul roads as necessary.
- .8 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided. Where required, construct temporary pull over areas in order to allow for the safe passing of heavy equipment.
- .9 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .10 Dust control: adequate to ensure safe operation at all times.
- .11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Departmental Representative Authorized Personnel.
- .12 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.
- .13 Provide snow removal during period of Work.
- .14 Remove, upon completion of work, access and haul roads designated by Departmental Representative Authorized Personnel.
- .15 The Crandell/Canyon campgrounds are typically accessible by either of 2 bridges – Canyon and Crandell bridges. The Contractor shall only be allowed to access Site 6: Canyon Church Camp via the Canyon Bridge. Use of Crandell Bridge

shall not be allowed due to load capacity uncertainties. All contractors are expected to evaluate any access issues for each work site prior to submitting a tender.

1.9 CLEAN-UP

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 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, sediment and erosion control plan, specific to site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.
- .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.

END OF SECTION

PART 1 GENERAL

1.1 GENERAL

- .1 Provide all labour, equipment and materials, and performance of all Work necessary for mobilization to, and demobilization from site. This will include all Departmental Representative Authorized Personnel provided supplies, equipment and material.
- .2 Mobilization to include transportation to site of Contractor's labour, equipment, materials, and assembling, erecting, and preparing site in readiness to start Work, all in accordance with Contractor's Schedule.
- .3 Demobilization to include dismantling and removal from site, of all Contractor's equipment, camp facilities and materials, waste resulting from cleanup of site and transportation of labour from site.
- .4 Decontaminate and clean all equipment used on the Project prior to demobilization from each site.
 - .1 Excavation, compaction and hauling equipment handling Contaminated Materials or Contaminated Soil shall be decontaminated prior to working in non-impacted areas and prior to leaving each site. Equipment will be satisfactorily cleaned before they depart the excavation area. At a minimum equipment components (e.g., buckets) contacting the soils will be brushed clean (i.e., to bare metal), and the sweepings contained for management as impacted soil. Where equipment may travel on Contaminated Soil in open excavations, tracks and tires will be scraped and brushed to remove soils, as required, before departing the site.
- .5 Do not mobilize to the site or demobilize from the site without authorization from the Departmental Representative. Comply with Departmental Representative's allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- .6 Summarize the proposed mode, route, equipment, labour and all other requirements for the mobilization and demobilization of all required equipment, materials, waste and personnel to complete the remediation of the project, as indicated in these specifications, in a Mobilization and Demobilization Plan. Submit the Mobilization and Demobilization Plan to the Departmental Representative Authorized Personnel a maximum of seven (7) calendar days after Award of Contract.
- .7 All mobilization and demobilization methods to comply with the requirements of all applicable codes, standards, guidelines and permits, approvals and/or authorizations.

- .8 A Post-Demobilization site visit will be required for each site as part of the Post-Demobilization Inspection. Once demobilization is completed, Departmental Representative will request a Post-Demobilization inspection of Work by Departmental Representative Authorized Personnel and Contractor. If Work is deemed incomplete by Departmental Representative Authorized Personnel, complete outstanding items and request re-inspection.

1.2 ACTION AND INFORMATION SUBMITTALS

- .1 Submit Mobilization and Demobilization Plan in accordance with Section 01 33 00 – Submittal Procedures for review by Departmental Representative Authorized Personnel.
- .2 Submit to Departmental Representative Authorized Personnel one (1) electronic copy of the Mobilization and Demobilization Plan.

1.3 MEASURE OF PAYMENT

- .1 Mobilization and Demobilization:
- .1 Scope: Mobilization includes supplying and transporting to each site, labour, equipment, products, and incidentals; includes devising and carrying out a Mobilization and Demobilization Plan, includes applying for any development permits and approvals (where applicable) and paying any associated fees, includes all labour, equipment, materials, meals, accommodation, flights and any other costs necessary to undertake work required; providing and maintaining temporary facilities and controls, including buildings, utilities, and other construction necessary for Contractor's methods carried out during performance of the Contract and which does not remain as part of the permanent work; and all related work and materials for which payment is not included elsewhere.
 - .2 Demobilization includes removing and transporting from each site, labour, equipment, products, and other items not required to remain upon Total Performance of the work; cleaning and restoration of each site after completion of construction activities; Post-Demobilization Inspection; and all related work and materials for which payment is not included elsewhere.
 - .3 Mobilization and Demobilization includes interim and partial mobilization and demobilization activities required to perform the work of the Contract.
 - .4 Payment: Paid in accordance with the following schedule: 50% of the Lump Sum amount with the first Progress Claim, and payment of the remaining 50% of the Lump Sum amount with the final Progress Claim. The total amount of such payments shall not exceed the amount bid for this item.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 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 as directed by Departmental Representative Authorized Personnel. Do not burn waste materials on site.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris generated through project work.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Dispose of waste materials and debris in accordance with arrangements and permits from local authorities.

1.2 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris generated through project work.
- .5 Leave all surfaces in a neat, levelled condition.
- .6 All remaining stockpiles shall be removed and disturbed areas shall be regraded.
- .7 Clean up and dispose of all foreign matter including wire, posts, logs, branches, roots, rocks, refuse, and construction debris.
- .8 Excavation, compaction and hauling equipment handling Hazardous Debris or Contaminated Soil shall be decontaminated prior to working in non-impacted areas or prior to leaving each site. Equipment shall be satisfactorily cleaned before they depart the excavation area. At a minimum equipment components (e.g., buckets) contacting the soils shall be brushed clean (i.e., to bare metal), and the sweepings contained for management as impacted soil. Where equipment may travel on Contaminated Soil in open excavations, tracks and tires shall be scraped and brushed to remove soils, as required, before departing the site.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 GENERAL

1.1 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection: Conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify the Departmental Representative Authorized Personnel in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Request a Departmental Representative Authorized Personnel inspection.
 - .2 Departmental Representative Authorized Personnel Inspection:
 - .1 Departmental Representative Authorized Personnel and Contractor to inspect Work and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed.
 - .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
 - .1 Work: completed and inspected for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Work: complete and ready for final inspection.
 - .4 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by the Departmental Representative Authorized Personnel and Contractor.
 - .2 When Work incomplete according to the Departmental Representative Authorized Personnel, complete outstanding items and request re-inspection.

1.2 Procedures

- .1 Notify Departmental Representative Authorized Personnel when Work is considered ready for Substantial Performance.
- .2 Accompany Departmental Representative Authorized Personnel on preliminary inspection to determine items listed for completion or correction.
- .3 Comply with Departmental Representative Authorized Personnel's instructions for correction of items of Work listed in executed certificate of Substantial Performance.
- .4 Notify Departmental Representative Authorized Personnel of instructions for completion of items of Work determined in Departmental Representative's final inspection.

1.3 FINAL CLEANING

- .1 Clean in accordance with Section 01 74 00 - Cleaning.
- .1 Remove surplus materials, excess materials, rubbish, trailers, tools and equipment.

1.4 MEASURE OF PAYMENT

- .1 Contract Closeout:
 - .1 Scope: Completion of all work items such that the proposed measures function for the purpose intended, including final inspection.
 - .2 Payment: Payment following construction completion of each Schedule A and B items as approved by Department Representative.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 02 82 00 – Asbestos Abatement – Minimum Precautions.
- .2 Section 31 00 99 - Earthworks.

1.2 MEASURE OF PAYMENT

- .1 “Remove Hazardous Debris and Dispose Off-Site”
 - .1 Scope: Includes excavating, removing, separating and/or sorting, transporting, unloading, sorting, recycling/disposing of Hazardous Debris at an approved off-site disposal facility; tipping fees, and all related work and materials for which payment is not included elsewhere. All surface debris, up to a depth of 50mm below ground surface, is to be removed to the satisfaction of the Departmental Representative Authorized Personnel.
 - .2 Payment: Lump Sum.
- .2 “Remove Non-hazardous Debris and Dispose Off-Site”
 - .1 Scope: Includes excavating, removing, separating and/or sorting, transporting, unloading, sorting, recycling/disposing of Non-hazardous Debris at an approved off-site disposal facility; tipping fees, and all related work and materials for which payment is not included elsewhere. All surface debris, up to a depth of 100mm below ground surface, is to be removed to the satisfaction of the Departmental Representative Authorized Personnel. May include Miscellaneous Materials to be disposed or relocated off-site, as directed by the Departmental Representative Authorized Personnel.
 - .2 Payment: Lump Sum.
- .3 “Remove Contaminated Soil and Dispose Off-Site (min. 300mm depth)”
 - .1 Scope: Includes excavating, removing, transporting, unloading, sorting, recycling/disposing of Contaminated Soil at an approved off-site disposal facility; tipping fees, and all related work and materials for which payment is not included elsewhere. Excavation will extend up to 300mm below existing grade.
 - .2 Payment: Tonnes, as documented by weigh tickets provided by the disposal facility.
- .4 “Remove Foundation Material and Dispose Off-Site”
 - .1 Scope: Includes excavating, removing, transporting, unloading, sorting, recycling/disposing of Foundation Material at an approved off-site disposal facility; tipping fees, and all related work and materials for which payment is not included elsewhere. Foundation Material may include rebar and the Contractor shall recycle the concrete, if practical.

- .2 Payment: Tonnes, as documented by weigh tickets provided by the disposal facility.

1.3 REFERENCE STANDARDS

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .2 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Site Meetings.
 - .1 Convene pre-demolition meeting one day prior to beginning work of this Section in accordance with Section 01 32 16 - Construction Progress Schedules - Bar (GANTT) Chart to:
 - .1 Verify project requirements.
 - .2 Review existing site conditions.
 - .2 Arrange for site visit with Departmental Representative Authorized Personnel to examine existing site conditions adjacent to demolition work, prior to start of Work.
 - .3 Hold project meetings every week.
 - .4 Ensure site supervisor, WMC, Departmental Representative Authorized Personnel, and Departmental Representative attend.
 - .5 Reporting Requirements: WMC to complete.
 - .6 WMC shall provide verbal report on status of waste diversion activity at each meeting.
- .2 Scheduling: meet project time lines without compromising specified minimum rates of material diversion.
 - .1 Notify in writing Departmental Representative Authorized Personnel when unforeseen delays occur.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Hazardous Materials:
 - .1 Submit the Notification of Filing with proper authorities prior to beginning of Work as required.
- .3 Certificates:
 - .1 Submit copies of certified weigh bills from authorized disposal sites and reuse and recycling facilities for material removed from site to Departmental Representative Authorized Personnel on a daily basis.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: ensure Work is performed in compliance with TDGA, CEAA, and CEPA.

1.7 STORAGE AND HANDLING

- .1 Store and manage hazardous materials in accordance with Section 01 35 43 - Environmental Procedures.
- .2 Storage and Protection.
 - .1 Protect in accordance with Section 31 00 99 - Earthworks.
 - .2 Protect existing items designated to remain and items designated by the Departmental Representative for salvage. In event of damage to such items, immediately replace or make repairs to approval of Departmental Representative Authorized Personnel and at no cost to Departmental Representative.
 - .3 Remove and store Miscellaneous Materials to be salvaged, in manner to prevent damage.
 - .4 Store and protect in accordance with requirements for maximum preservation of Miscellaneous Material.
 - .5 Handle salvaged Miscellaneous Materials as new materials.

1.8 SITE CONDITIONS

- .1 Site Environmental Requirements.
 - .1 Perform work in accordance with Section 01 35 43 - Environmental Procedures.
 - .2 Ensure that selective demolition work does not adversely affect adjacent watercourses, groundwater, and wildlife, or contribute to excess air and noise pollution.
 - .3 Do not dispose of waste or volatile materials including but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
 - .1 Ensure proper disposal procedures are maintained throughout the project.
 - .4 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties.
 - .5 Control disposal or runoff of water containing suspended materials or other harmful substances as directed Departmental Representative Authorized Personnel.
 - .6 Protect trees, plants and foliage on site and adjacent properties where indicated.
- .2 Existing Conditions.
 - .1 Remove Contaminated Soil, Hazardous Debris, Non-hazardous Debris, and Foundation Materials as noted on the Drawings from site and as

identified during the mandatory site visit, and dispose of at an approved off-site disposal facility in safe manner in accordance with TDGA and other applicable regulatory requirements.

- .2 Clean Backfill shall be placed and compacted in excavations in accordance with the specifications and Drawings to a depth no less than 100mm of the finished grade elevation.
- .3 100mm of Topsoil, placed per the specifications and Drawings and graded to match surrounding elevations, shall be added to areas where Contaminated Soil, Hazardous Debris, Non-hazardous Debris, and Foundation Materials have been removed.

Part 2 Execution

2.1 PREPARATION

- .1 Inspect site with Departmental Representative Authorized Personnel, 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.

2.2 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.

2.3 REMOVAL OPERATIONS

- .1 Remove items as indicated on Drawings.
- .2 Do not disturb items designated to remain in place.
 - .1 Obtain written approval of Departmental Representative prior to removal of trees.
 - .2 Site 6 – Canyon Church Camp:
 - .1 Should any trees need to be cut down during the remediation activities, salvageable timber (greater than 125mm diameter) should be cut into 300mm lengths and stockpiled at the Parks Canada Operations Compound. The cost of cutting trees and managing salvageable timber shall be considered part of the Non-hazardous Debris scope of work.
 - .2 Non-salvageable timber should be disposed of outside the park at a qualified facility and shall be considered a Non-hazardous Debris pay item.
- .3 Dispose of existing topsoil. Do not stockpile for re-use onsite.

- .4 Disposal of Miscellaneous Material:
 - .1 Dispose of Miscellaneous Materials not designated for salvage (timber) or reuse on site at authorized facilities approved by Departmental Representative Authorized Personnel.
 - .2 Trim disposal areas to approval of Departmental Representative Authorized Personnel.
- .5 Imported Material:
 - Fill in areas as indicated and in accordance with Section 31 00 99 - Earthworks.

2.4 STOCKPILING

- .1 Label stockpiles, indicating material type and quantity.
- .2 Excavated Contaminated Soil to be stockpiled on a minimum 300mm thick sacrificial layer of sand or gravel or tightly secured and undamaged impermeable geomembrane, or to be placed directly in a metal disposal bin for haul off-site to prevent cross-contamination with non-contaminated ground surfaces. Sacrificial sand or gravel layer to be disposed of with contaminated soil. Sacrificial geomembrane to be disposed of with non-hazardous debris.
- .3 Locate stockpiled materials convenient for use in new construction to eliminate double handling wherever possible.
- .4 Locate stockpiled materials away from adjacent water courses and low areas of the site wherever possible.

2.5 REMOVAL FROM SITE

- .1 Miscellaneous Materials interfering with the operations of the project will be disposed or relocated, as directed by the Departmental Representative Authorized Personnel. Miscellaneous Material shall be considered part of the Non-hazardous Debris scope of work.
- .2 Dispose of Miscellaneous Materials in accordance with applicable regulations.
 - .1 Disposal Facilities: approved by Departmental Representative Authorized Personnel.

2.6 RESTORATION

- .1 Restore areas and existing works outside areas of demolition to match grade of adjacent, undisturbed areas

2.7 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 Hazardous and Non-Hazardous Debris and Foundation Materials, 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 Remove any disposal bins and sacrificial layers for stockpiling of Contaminated Soil from site and dispose of materials at appropriate facility.
- .4 Excavation, compaction and hauling equipment handling Hazardous Debris or Contaminated Soil shall be decontaminated prior to working in non-impacted areas and prior to leaving each site. Equipment shall be satisfactorily cleaned before they depart the excavation area. At a minimum, equipment components (e.g., buckets) contacting the Contaminated Soil shall be brushed clean (i.e., to bare metal), and the sweepings contained for management as impacted soil. Where equipment may travel on Contaminated Soil, tracks and tires shall be scraped and brushed to remove soils, as required, before departing the site.

2.8 PROTECTION

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

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 Contractor to comply with requirements of this Section when performing the following work at Site 6 – Canyon Church Camp, specifically in the debris boundary of the Cook's Residence (other buildings at this site tested negative for asbestos):
 - .1 Removing non-friable and/or friable asbestos-containing debris materials from the burned building site areas by manual means, if the debris material is removed without being cut, drilled, abraded, ground, sanded, or vibrated [locations indicated on drawings].
 - .2 Removing non-friable and/or friable asbestos-containing debris materials from the burned building site areas, using excavator or other equipment.
 - .3 Breaking, cutting, or drilling of larger non-friable asbestos-containing debris materials from the burned building site areas, using power hand tools equipped with HEPA-filtered vacuum attachment and water application device to control release of airborne dust.

1.2 RELATED REQUIREMENTS

- .1 31 00 99 – Earthworks.

1.3 REFERENCE STANDARDS

- .1 Federal
 - .1 Department of Justice Canada (Jus).
 - .2 Canadian Environmental Protection Act, 1999 (CEPA).
 - .3 Canada Labour Code Part II, SOR 86-304 - Occupational Health and Safety Regulations.
 - .4 Transportation of Dangerous Goods Act, 1992 (TDGA).
 - .5 Transportation of Dangerous Goods Regulation, SOR/2017-253.
 - .6 Workplace Hazardous Materials Information System (WHMIS 2015), Safety Data Sheets (SDS).
 - .7 Public Services and Procurement Canada (PSPC) Asbestos Management Standard, June 5, 2017.
- .2 Provincial (Alberta)
 - .1 Occupational Health and Safety Act (RSA 2000 cO-2).
 - .2 Occupational Health and Safety Regulation, 62/2003 (amendments 182/2013).
 - .3 Occupational Health and Safety Code, 2009.
 - .4 Alberta Human Services - Asbestos Abatement Manual, 2009.
 - .5 Alberta Environment and Sustainable Resource Development – Guidelines for the Disposal of Asbestos Waste.

Waterton Lakes National Park (WLNP)

- .3 RJ & Associates Environmental Consultants Inc.
 - .1 Hazardous Materials Assessment Report for the Kenow Wildfires at Waterton Lakes National Park, Waterton Lakes Alberta, January 2, 2018.

1.4 DEFINITIONS

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Amended Water: water with nonionic surfactant wetting agent added to reduce water tension to allow thorough wetting of fibres.
- .3 Asbestos-Containing Materials (ACMs): materials that contain 1.0 percent or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and settled dust.
- .4 Asbestos Work Area: area where work takes place which will, or may, disturb ACMs.
- .5 Authorized Visitors: Parks Canada, Engineer[s], Consultant[s], or designated representative[s], and representative[s] of regulatory agencies and any visitor approved by Parks Canada.
- .6 Competent worker [person]: in relation to specific work, means a worker who:
 - .1 Is qualified because of knowledge, training, and experience to perform the work.
 - .2 Is familiar with applicable provincial and federal laws and with the provisions of the regulations that apply to the work.
 - .3 Has knowledge of all potential or actual danger to health or safety in the work.
- .7 Friable material: means material that: When dry, can be crumbled, pulverized, or powdered by hand pressure, or is crumbled, pulverized, or powdered.
- .8 Non-Friable Material: material that when dry cannot be crumbled, pulverized, or powdered by hand pressure.
- .9 Occupied Area: any area of the building or work site that is outside Asbestos Work Area.
- .10 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.
- .11 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity

for work.

- .12 Sealant (Encapsulant): sealant or encapsulant to be used during the final clean-up operations shall be slow-drying and remain tacky on surfaces for a minimum of 8 hours for the purpose of trapping residual airborne fibres during the settling period. Products used must have flame spread and smoke development ratings both less than 50. Products shall leave no stain when dry.
- .13 Bin Liner: double layered rip-proof polyethylene sheeting designed to be installed inside of disposal bins and have the ability to be sealed once filled with ACMs.
- .14 Super Sack: large hazardous waste bag consisting of 6 mil interior liner and fabric coated outer sack with double wall stiffeners, sealable top, and lifting hooks.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.
- .2 Submit Provincial requirements for Notice of Project Form, as well as Exposure Control Plan and Safe Work Procedures. The Exposure Control Plan must outline the Contractor's proposed asbestos abatement methodology in a step-wise approach, including total number of workers involved, list of all equipment and subcontractors to be used, and a work schedule.
- .3 Submit proof of Contractor's Asbestos Liability Insurance.
- .4 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.
- .5 Submit proof that all asbestos workers and supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.
- .6 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (qualitative test) with respirator that is personally issued.
- .7 Submit proof that all HEPA-filtered equipment (vacuums and negative air units) to be used have undergone and successfully passed a DOP (Dispersed Oil Particulate) test.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial, and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.
- .2 Health and Safety:
 - .1 Perform construction occupational health and safety in accordance with Section 01 35 29 - Health and Safety for Contaminated Sites.
 - .2 Safety Requirements: worker protection.
 - .1 Protective equipment and clothing to be worn by workers and machine operators while in Asbestos Work Area include:
 - .1 Air purifying half-mask respirator with P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected, and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean, and sanitary location. The employer to establish written procedures regarding the selection, use, and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
 - .2 Disposable-type protective clothing (TYVEK coverall) that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker or machine operator who enters the work area, and the protective clothing shall consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing to include suitable footwear, and to be repaired or replaced if torn.
 - .2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
 - .3 Before leaving Asbestos Work Area, the worker or operator can

decontaminate his or her protective clothing, if observed to have visible gross contamination, by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing and placing it in a container as asbestos waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.

- .4 Facilities for washing hands and face shall be provided within or close to the Asbestos Work Area. A lined pail with clean water and wash cloths is acceptable. No more than two workers per wash out pail.
- .5 Ensure workers wash hands and face when leaving Asbestos Work Area. Facilities for washing are to be located just outside the perimeter boundary of the Asbestos Work Area.
- .6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities in accordance with Parks Canada practices.
- .2 Place materials defined as hazardous or toxic in designated containers.
- .3 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, and Regional and Municipal regulations.
- .4 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial, and Municipal regulations. Dispose of asbestos waste in sealed double thickness [6] mils bags, lined disposal bins, super sack waste bags or leak proof drums. Label containers with appropriate warning labels.
- .5 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

- .1 Reports and information pertaining to ACMs to be handled, removed, or otherwise disturbed and disposed of during this project are found in Appendix of this specification.
- .2 Notify Departmental Representative of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Departmental Representative.

1.9 SCHEDULING

- .1 Hours of Work: perform work involving asbestos abatement at each site location as described in Section 01 14 00 Work Restrictions.

1.10 PERSONNEL TRAINING

- .1 Before beginning Work, provide Departmental Representative satisfactory proof that every worker and/or operator has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, following minimum requirements:
 - .1 Fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instruction and training must be provided by a competent, qualified person.

Part 2 Products

2.1 MATERIALS

- .1 Drop Sheets:
 - .1 Polyethylene: 0.15 mm thick.
 - .2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in a concentration to provide thorough wetting of asbestos-containing material.
- .3 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.15 mm thick sealable polyethylene waste bag.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labelling requirements: affix pre-printed cautionary asbestos warning in both official languages that is visible when ready for removal to disposal site.
- .4 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.

- .5 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

Part 3 Execution

3.1 PROCEDURES

- .1 Perform construction in accordance with applicable Federal and Provincial Occupational Health and Safety Regulations.
- .2 Before beginning Work, isolate Asbestos Work Area using, minimum, preprinted cautionary asbestos warning signs in both official languages that are visible at access routes to Asbestos Work Area. A work perimeter set back of 30 metres, where possible, must be established including asbestos warning signage 30 meters from the asbestos removal area. Depending on wind conditions, the downwind direction may require further set back distance.
- .3 The placement of double lined disposal bins for direct transfer of asbestos debris materials should be at the upwind edge of each Asbestos Work Area.
- .4 The position of excavator equipment should attempt to have the machine outside of the asbestos boundary tape line, with only the excavator arm and bucket extended inside of the Asbestos Work Area.
- .5 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
 - .1 Use FR polyethylene sheeting, 6 mil waste bags or Super Sacks to double wrap and seal larger asbestos debris materials and/or objects with asbestos fiber contamination in Asbestos Work Area. Double wrapped asbestos waste materials can be placed inside of disposal bins in preparation for offsite transport and disposal.
 - .2 Use excavator machine with thumb bucket to remove asbestos-impacted debris materials from the Asbestos Work Area to inside double lined waste disposal bins. Confirmed non-asbestos containing building materials and features (e.g. Foundation Material) remaining on site or recyclable materials such as waste metal must be HEPA vacuumed and/or wet wiped followed by the application of a slow-drying sealant (Encapsulant).
 - .3 Once all asbestos-impacted debris materials have been removed from a burned building site, the surface layer (approx. 50 mm) of soil is to be scraped and placed into lined disposal bins as asbestos contaminated soils.
 - .4 Do not use compressed air to clean up or remove asbestos-impacted debris.
- .6 Wet materials containing asbestos to be cut, broken, scraped, or otherwise disturbed unless wetting creates hazard or causes damage.

- .1 Use garden reservoir type low - velocity fine - mist sprayer.
- .2 All workers inside of the Asbestos Work Area should be positioned upwind during asbestos disturbing activities to reduce exposure potential.
- .3 Perform Work to reduce dust creation to lowest levels practicable. Debris materials are to be pre-wet before disturbance.
- .4 Work will be subject to visual inspection and air monitoring.
- .7 Frequently and at regular intervals during Work and immediately on completion of work:
 - .1 Wet down the work site ground surface and excavator bucket to reduce dust.
 - .2 Asbestos debris materials removed manually are to be placed directly into waste bags, and not staged or piled at a secondary location.
- .8 Cleanup:
 - .1 Place asbestos containing waste in sealed waste bags. Treat disposable protective clothing as asbestos waste; wet and fold these items to contain dust, and then place in plastic bags.
 - .2 Clean exterior of each waste-filled bag using damp cloths and place in second clean waste bag immediately prior to removal from Asbestos Work Area.
 - .3 Seal waste bags and remove from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal Authority having jurisdiction. Supervise disposal and ensure that landfill operator is fully aware of hazardous nature of material to be disposed and that the appropriate guidelines and regulations for asbestos disposal are followed.
 - .4 Perform final thorough clean-up of all equipment and tools used inside the Work areas using damp cloths. The final clean is to include the excavator bucket, thumb attachment, and lower portion of the excavator arm.

3.2 AIR MONITORING

- .1 Given the open environment, low-risk, and low quantities of asbestos debris at Site 6: Canyon Church Camp (Cook's Residence), air monitoring and sampling will not be required. However, it will be incumbent on the Contractor to assess site conditions prior to starting any construction activities at Site 6 to see if air monitoring and air sampling is preferred.
- .2 During the work, Parks Canada may decide to take air samples at appropriate locations at the work perimeter. A third party consultant may be commissioned by Parks Canada to perform environmental oversight during abatement activities and to conduct air monitoring and testing.
- .3 Ensure that respiratory safety factors are not exceeded.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 02 41 13 – Selective Site Demolition.
- .2 Section 02 82 00 – Asbestos Abatement – Minimum Precautions.

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600kN-m/m³).
 - .2 ASTM D4318, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
 - .3 ASTM D422, Standard Test Method for Particle-Size Analysis of Soils
 - .4 ASTM C136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- .2 Canadian General Standards Board
 - .1 Sieve sizes to CAN/CGSB-8.1, Sieves, Testing, Woven Wire, Inch Series
- .3 CSA International
 - .1 CSA A23.1/A23.2-09, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
- .4 Parks Canada
 - .1 Waterton Lakes National Park, General Project Best Management Practices. Version 2.0. May 2017.

1.3 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures and Article 1.6 – Materials Quality Control and Quality Assurance.
- .2 Provide grain size documentation before importing material and again thereafter if there is a contemplated change in material source.

1.4 MATERIALS QUALITY CONTROL AND QUALITY ASSURANCE

- .1 Quality Control:
 - .1 Transport only acceptable materials to Site. Do not import any contaminated materials to Site.
 - .2 Imported earthworks materials: Engage an independent certified materials engineer and testing company to perform quality control tests at each borrow site location of imported materials.

- .1 Submit copies of quality control test results to the Departmental Representative Authorized Personnel.
- .2 Each quality control test shall include: laboratory analysis as specified in the references above, compaction test for fill materials (noting soil density and moisture content), location of the test, and date when test was taken.
 - .1 A minimum of three (3) nuclear density tests shall be required at each backfill site and further tests may be required at the discretion of the Departmental Representative Authorized Personnel.
 - .2 A compaction report shall be provided for each site summarizing the nuclear density results and the report shall be approved by a qualified party.
- .3 If materials are not in accordance with the Contract, Departmental Representative Authorized Personnel may reject the materials, and shall notify the Contractor thereof immediately. The notice shall state the Departmental Representative Authorized Personnel's reasons and the Contractor shall promptly modify procedures to ensure materials comply with the Contract.
- .4 Perform quality control tests as specified in the references above.
- .5 Testing frequency: As determined with Departmental Representative Authorized Personnel.
- .3 Do not begin backfilling or filling operations until material has been approved for use by the Departmental Representative Authorized Personnel.
- .4 The Contractor is responsible for all cost associated with testing of materials.
- .2 Quality Assurance:
 - .1 The Departmental Representative Authorized Personnel may reject earthwork materials at the source, in transport vehicles, in stockpiles or in place.
 - .2 Imported Clean Backfill and Topsoil: Samples shall be taken by the Departmental Representative Authorized Personnel for quality assurance testing as deemed necessary. Cooperate with the Departmental Representative Authorized Personnel during sampling and testing. Load and dispose of sampled materials when no longer required by the Departmental Representative Authorized Personnel. The frequency of sampling and testing shall be determined by the Departmental Representative Authorized Personnel.
 - .3 Testing of materials and compaction of fill materials shall be carried out by testing laboratory designated by the Departmental Representative Authorized Personnel.

1.5 MEASURE OF PAYMENT

- .1 “Remove Contaminated Soil and Dispose Off-site (min. 300mm depth)” shall be measured in tonnes, as documented by scale tickets provided by the authorized disposal facility. The unit price includes all labour, material, equipment and incidentals, including sorting, loading, removal and hauling to off-site disposal area of surface vegetation, Topsoil, shallow subsoil, deleterious materials (such as grass, rocks and roots), dumping, and all related work and materials for which payment is not included elsewhere. The unit price shall also include any waiting time for the Departmental Representative to take confirmatory samples and for the receipt of confirmatory test results. The Contractor may wish to proceed with backfilling at their own risk and expense, but this approach shall be discussed with the Departmental Representative prior to proceeding with the work.
- .1 Contaminated Soil excavation quantities measured shall be actual tonnes removed within following limits:
 - .1 Width and length for excavation boundary as indicated on the Drawings.
 - .2 Depth from ground elevation immediately prior to excavation, to elevation as indicated on Drawings.
 - .3 Excavation of Contaminated Soil to include removal of surface vegetation with the Contaminated Soil.
- .2 Shoring, bracing, cofferdams, underpinning and de-watering of excavation shall not be measured separately for payment. Any snow removal required for the project duration shall be considered incidental to the work.
- .3 “Supply, Place, and Compact Clean Backfill Material (200mm thickness)” and “Supply, Place, and Compact Clean Backfill Material (1400mm thickness)” shall be measured by a unit rate of tonnes and shall be calculated based on the scale tickets from the borrow pit. Clean Backfill shall be applied and compacted in locations as shown in the Drawings. The unit price includes all labour, material, equipment and incidentals required to supply, load from off-site borrow source, place, spread, condition, shape, remove deleterious materials (such as rocks and roots), compact and grade. The Contractor shall have the subsoil inspected and approved by the Departmental Representative Authorized Personnel prior to placing.
- .4 “Supply, Place, and Grade Topsoil (min. 100mm thickness)” shall be measured by a unit rate of square meters and shall be calculated based on the plan area of placed Topsoil in square metres with a thickness of 100mm. 100mm of Topsoil shall be applied to all areas that have been excavated or disturbed (e.g., Non-hazardous Debris removal that has extended below ground surface). The unit price includes all labour, material, equipment and incidentals required to supply, load from off-site borrow source, haul, place, condition, shape, remove deleterious materials (such as grass, rocks and roots), spread, fine grade and blend into existing ground surface of adjacent areas. Topsoil preparation shall be inspected and approved by the Departmental Representative Authorized Personnel prior to placing.

- .5 No measurement for payment shall be made for:
- .1 Rejected material.
 - .2 Surplus material.
 - .3 Excavation, and stripping and replacement of organic material beyond specified limits.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Contaminated Soil, which includes:
- .1 Existing Surface Vegetation,
 - .2 Existing In-situ Topsoil,
 - .3 Existing In-situ Gravel, and
 - .4 Existing In-situ Subsoil.
- .2 Clean Backfill: Pit run fill gravel

(Square Openings) Metric Sieve Sizes	% Passing by Weight	
200 mm	100	Total Sample
150 mm	96 – 100	
80 mm	60 – 80	
25 mm	70 – 100	Material Passing 80 mm Sieve
5.0 mm	25 – 63	
1.25 mm	14 – 41	
0.630 mm	7 – 30	
0.160 mm	3 – 18	
0.080 mm	2 – 9	

- .3 Topsoil:
- .1 Topsoil should be sourced locally wherever possible.
 - .2 Topsoil for disturbed areas: mixture of particulates, microorganisms and organic matter which provides suitable medium for supporting intended plant growth.
 - .1 Soil classification based on Unified Soil Classification System to consist of 20 to 70 % sand, minimum 7 % clay, and contain 2 to 10 % organic matter by weight.
 - .2 Contain no toxic elements, weeds, or growth inhibiting materials.
 - .3 Volume of debris and stone in Topsoil not to exceed 20%.
 - .4 Finished surface free from:

- .1 Debris and stones over 50 mm diameter.
- .2 Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.
- .5 Consistence: friable when moist.
- .3 Prior to the import of Topsoil materials, schedule an inspection with the Environmental Surveillance Officer; weeds and invasive species are a primary concern with importing Topsoil.
- .4 Unsuitable materials:
 - .1 Weak and compressible materials under excavated areas.
 - .2 Frost susceptible materials under excavated areas.
 - .3 Frost susceptible materials:
 - .1 Fine grained soils with plasticity index less than 10 when tested to ASTM D4318, and gradation within limits specified when tested to ASTM D422 and ASTM C136: Sieve sizes to CAN/CGSB-8.1.

<u>Sieve Designation</u>	<u>% Passing</u>
2.00 mm	100
0.10 mm	45-100
0.02 mm	10-80
0.005 mm	0-45
 - .2 Coarse grained soils containing more than 20% by mass passing 0.075 mm sieve.

2.2 SOURCE QUALITY CONTROL

- .1 Provide the Departmental Representative Authorized Personnel with test results, with sufficient lead time, for both imported Clean Backfill and Topsoil for review and approval from a qualified laboratory.
- .2 Testing of Clean Backfill and Topsoil shall be carried out by testing laboratory designated by Departmental Representative.
 - .1 Soil sampling, testing and analysis to be in accordance with Federal standards.

PART 3 EXECUTION

3.1 SITE PREPARATION

- .1 Remove debris, metal, wire, wood, rocks, snow, ice, water, and loose material prior to start of fill placement. Do not place fill when the material, the foundation, or the surface on which it would be placed is frozen.
- .2 Subgrade surface shall be in a firm, dry condition prior to placement of first lift of backfill.

3.2 ACCIDENTAL FINDS

- .1 Artifacts, relics, antiquities and items of historical interest such as cultural features (i.e., structural remains and/or artifact concentrations), cornerstones, commemorative plaques, inscribed tablets, buried bison bones, stone tools, above ground cairns and similar objects found on the work site shall be reported to the Departmental Representative immediately. Work in the immediate area of the find shall be suspended until the nature of the find is verified by the Departmental Representative or Environmental Surveillance Officer. The Contractor and workers shall wait for instructions before proceeding with their work.
- .2 All historical or archaeological objects found in National Parks are protected under the Canada National Parks Act and Regulations and are the property of Parks Canada. The Contractor and workers shall protect any articles found and request direction from the ESO or the Departmental Representative.
- .3 The following interventions from PCA are required:

Site	Description of Action
4: Gatehouse	Any remedial work that goes beyond the present disturbed footprint (including utility lines) shall be monitored by Terrestrial Archaeology. In all previously disturbed areas, Accidental Finds protocol (see below) shall be applied.
5: Maintenance Shed	Any remedial work that goes beyond the present disturbed footprint (including utility lines) shall be monitored by Terrestrial Archaeology. In all previously disturbed areas, Accidental Finds protocol (see below) shall be applied.
6: Canyon Church Camp	The contaminated cleanup that involves ground disturbance outside of the Canyon Church Camp's disturbed building footprints outlined in the project cleanup plan shall require archaeological monitoring.

3.3 EXAMINATION

- .1 Verification of Conditions:
 - .1 Before commencing work, establish locations of buried and overhead utilities and/or piping within the Site.
- .2 Evaluation and Assessment:
 - .1 Complete the required compaction testing on the placed fill materials and provide the test reports from a qualified laboratory for review and approval. Additional testing may be requested by Parks Canada, as required.
 - .2 Not later than 48 hours before fill placement with approved material, notify the Departmental Representative Authorized Personnel when compaction tests can be carried out by qualified testing agency.

- .3 Before commencing work, conduct, with the Departmental Representative Authorized Personnel, visual inspection and photograph survey of existing surface features within and adjacent to the Site which may be affected by the work.

3.4 PREPARATION

- .1 Temporary Erosion and Sedimentation Control:
 - .1 Use 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, in accordance with sediment and erosion control drawings.
- .2 Protection of in-place conditions:
 - .1 Protect excavations from freezing.
 - .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 Departmental Representative Authorized Personnel's.
 - .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 shall remain undisturbed.
- .3 Remove surface debris prior to removal of Contaminated Material as per Section 02 41 13 – Selective Site Demolition.
- .4 Remove rocks, snow, ice, water, and loose material prior to start of fill placement. Do not place fill material when the material, the foundation, or the surface on which it would be placed is frozen.

3.5 EXCAVATION

- .1 Shore and brace excavations, protect slopes and banks and perform work in accordance with applicable regulations.
- .2 Contaminated Material:
 - .1 Excavate Contaminated Soil to depths as indicated on Contract drawings.
 - .2 Excavated Contaminated Soil to be stockpiled on a minimum 300mm thick sacrificial layer of sand or gravel or tightly secured and undamaged impermeable geomembrane, or to be placed directly in a metal disposal bin for haul off-site to prevent cross-contamination with non-contaminated ground surfaces. Sacrificial sand or gravel layer to be disposed of with contaminated soil. Sacrificial geomembrane to be disposed of with non-hazardous debris.
 - .3 Stockpile in locations as directed by Departmental Representative Authorized Personnel. Contractor is responsible for all cost associated with temporary stockpiling of materials on Site.

- .4 Keep material stockpiles neat and regular in form and ensure maximum height does not exceed 6 m.
- .5 Maintain a minimum clearance distance of 5 m between each stockpile.
- .3 Excavate as required to carry out work, in all materials met.
- .1 Do not disturb soil or rock below bearing surfaces. Notify the Departmental Representative Authorized Personnel when excavations are complete.
- .4 Drain surface water away from the stripped areas to prevent ponding and infiltration in fill placement areas.

3.6 SITE QUALITY CONTROL

- .1 Fill material and spaces to be filled to be inspected and approved by the Departmental Representative Authorized Personnel.

3.7 FILL PLACEMENT

- .1 Supply, Place, and Compact Clean Backfill in areas where excavations are greater than 100mm below finished grade elevation have occurred (i.e., basement, Contaminated Soil excavations, removed pile foundations, below-grade concrete slabs, etc.).
- .2 Start fill placement only after inspection and receipt of written approval of Clean Backfill and Topsoil and spaces to be filled from Departmental Representative Authorized Personnel and after confirmatory sampling results are reviewed by the Departmental Representative Authorized Personnel.
- .3 Remove snow, ice, construction debris, organic soil and standing water from spaces to be filled.
- .4 Lateral support: maintain even levels of fill around structures as work progresses, to equalize earth pressures.
- .5 Compaction of Clean Backfill: Fill excavated areas with imported clean fill compacted as specified for fill. The sub-grade shall be in firm, dry condition prior to placing the first lift of backfill.
- .6 Placing:
 - .1 Place fill materials in 150 mm (uncompacted) lifts. Add water as required to achieve specified density.
- .7 Compaction Requirements: Compact each layer of material to following standard proctor maximum dry densities (SPMDD) to ASTM D698:
 - .1 Clean Backfill: 98% SPMDD and within $\pm 3\%$ of optimum moisture content.
 - .2 A minimum of three (3) nuclear density tests shall be required at each backfill site and further tests may be required at the discretion of the Departmental Representative Authorized Personnel.

- .3 A compaction report shall be provided for each site summarizing the nuclear density results and the report shall be approved by a qualified party.
- .8 Topsoil Requirements: Supply, Place, and Grade Topsoil to match surface elevations of surrounding areas where any Non-hazardous Debris and Hazardous Debris has been removed, and on top of any areas where Clean Backfill has been applied. A minimum 100mm thickness of Topsoil is required for these areas.
- .1 Topsoil is not to be compacted.

3.8 GRADING

- .1 Additional Imported Clean Backfill or Imported Topsoil may be required to counteract settlement.
- .2 Blend in edges of graded areas to match grades of adjacent, undisturbed areas.
- .3 Grade to eliminate rough spots and low areas and ensure positive drainage.

3.9 ACCEPTANCE

- .1 Departmental Representative Authorized Personnel shall inspect and test Topsoil in place and determine acceptance of material, depth of Topsoil and finish grading.

3.10 SURPLUS MATERIAL

- .1 Dispose of surplus materials off-site or as directed by Departmental Representative Authorized Personnel.

3.11 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Dispose of cleared and grubbed material off site daily.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
- .3 Excavation, compaction and hauling equipment handling Hazardous Debris or Contaminated Soil shall be decontaminated prior to working in non-impacted areas or prior to leaving each site. Equipment shall be satisfactorily cleaned before they depart the excavation area. At a minimum equipment components (e.g., buckets) contacting the soils shall be brushed clean (i.e., to bare metal), and the sweepings contained for management as impacted soil. Where equipment may travel on Contaminated Soil in open excavations, tracks and tires shall be scraped and brushed to remove soils, as required, before departing the site.

END OF SECTION

APPENDIX
BACKGROUND INFORMATION

The following information is provided as *Background Information* for the *Tenderers*:

Document Title	
A	Basic Impact Analysis and Best Management Practices Report
B	Remediation Action and Risk Management Plan Related to Kenow Wildfire – Final Report

END OF SECTION