

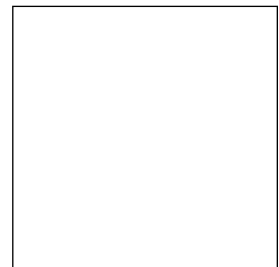
# Margaret Creek Fish Barrier Project

## Project No. 021-006L – Specifications

Document Status – **ISSUED FOR TENDER**

Reference Number	Title	No of Pages
01 11 00	Summary of Work	5
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01 52 00	Construction Facilities	2
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01 57 19	Environmental Procedures	10
01 74 23	Cleaning	2
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Other Related Documents	File Name
Figure 1	ROCK03251-01_FigC01_SiteLocation.pdf
Margaret Creek Fish Barrier Supplemental Information and Photo Package	Margaret Creek Fish Barrier_Supplemental.pdf
Design Drawing Package	ENG.ROCK03251-01 Margaret Creek R1a to C05.pdf



## SECTION 01 11 00 SUMMARY OF WORK

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- .1 Title and description of Work.
- .2 Contract Method.
- .3 Work sequence.
- .4 Contractor use of premises.
- .5 Owner occupancy.

#### 1.2 REFERENCES

- .1 Basic Impact Analysis Margaret Creek Barrier Improvement – Parks Canada, December 2021.

#### 1.3 PRECEDENCE

- .1 For Federal Government projects, General Conditions take precedence over technical specification sections.

#### 1.4 RELATED SECTIONS

- .1 All.

#### 1.5 PROJECT LOCATION

- .1 The project is located in Banff National Park, Alberta approximately 18 km north of the Icefields Parkway interchange.
- .2 All access to the site for all equipment, materials, and personnel mobilization is via helicopter.
- .3 The following are key locations relative to the project:
  - a. The southern intersection of Icefields Parkway (IFP) with the Trans-Canada Highway (TCH) at the icefields interchange is designated as km 0+000. Chainages increase to the north from this point.
  - b. The entrance to the staging area is at km 23+750 – See Figure 1
- .4 The main work area is located approximately 450 m downstream in Margaret Creek (about 50 m upstream from Hector Lake). Margaret Creek connects Margaret Lake to Hector Lake. The approximate work location is shown on Figure 1.
- .5 Staging Location:
  - a. The staging location for the work is down the turn off just south of the Mosquito Creek Wilderness Hostel, as shown in Figure 1.

#### 1.6 WORK COVERED BY CONTRACT DOCUMENTS

- .1 The Project requires rock excavation to develop a 2.5 m to 3.0 m tall vertical separation to restrict fish passage from Hector Lake to Margaret Lake.
  - .a This rock excavation can be undertaken by use of explosive products being loaded into holes drilled into the rock.
  - .b Some of the rock excavated may be left in the channel to be moved through natural fluvial processes following the completion of the project.

- .2 In preparation for and during the Work in Banff National Park, an "Environmental Protection Plan" (EPP) is to be prepared by the successful Contractor to meet the requirements of Section 01 57 19 – Environmental Procedures to ensure the desired minimal adverse effects are achieved. The Departmental Representative and Parks Canada's Environmental Surveillance Officer (ESO) will refer to the approved EPP in determining compliance with the plan and contract specifications. The EPP will form part of the contract.
- .3 Without limiting the scope of work, the work under this Contract generally comprises the following:
  - .a Rock Excavation, Cofferdam Design, installation of cofferdam, and other related works.
  - .b Mobilization and Demobilization of all personnel, equipment, materials, and other resources necessary to execute the Work.
  - .c Manage the project in accordance with Section 01 31 00 – Project Management and Coordination.
  - .d Carry out the Work in the order of priority specified, or as determined by the Departmental Representative.
  - .e Prepare and submit all required submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .f Responsibility for all aspects of site safety in accordance with Section 01 35 30 – Health and Safety Requirements.

#### **1.7 CONTRACT METHOD**

- .1 Construct Work under a Combined Price Contract.

#### **1.8 ACTION REQUIRED BY CONTRACTOR**

- .1 The Contractor shall take whatever measures are necessary to protect all existing infrastructure and habitats at the worksite or laydown area. Protection of existing infrastructure is considered incidental to the Contract.
- .2 The Contractor has checked or is familiar with the Site and understands the extent and details of the work.
- .3 Work shall be completed in accordance with the Basic Impact Analysis (BIA) undertaken by Parks Canada for this project. The BIA will be provided to the Contractor upon Contract Award. All the mitigation measures within the BIA are captured within these technical specifications.

#### **1.9 WORK SEQUENCE**

- .1 Coordinate Progress Schedule to allow Departmental Representative unrestricted access to inspect all phases of the Work.
- .2 Conduct the work in the priority order determined by the Departmental Representative.
- .3 Work may be started in **Fall 2022**, weather permitting, and if the pre-mobilization submittals as per Section 01 33 00 – Submittal Procedures, Clause 1.11.2 are approved by the Departmental Representative.
- .4 Complete all work by **October 29, 2022** (Contract End Date).

#### **1.10 CONTRACTOR USE OF PREMISES**

- .1 The Contractor has unrestricted use of Site, subject to Section 01 14 00 – Work Restrictions, from award of contract and approval of submissions, until the Contract is completed.
- .2 The Contractor shall coordinate use of premises with others under direction of the Departmental Representative.
- .3 The Contractor is responsible for obtaining and paying for use of additional storage or work areas needed for operations under this Contract.
- .4 The Contractor and all Sub-Contractors shall obtain a business license from the Banff National Park Administration Office prior to commencement of Work on site. Details will be provided at start-up meeting.
- .5 All Contractor's and Sub-Contractor's business and private vehicles are required to display a vehicle work pass from Parks Canada. These permits may be obtained free of charge from Parks Canada.

#### **1.11 OWNER OCCUPANCY**

- .1 Owner will occupy premises during construction period to execute normal operations.
- .2 Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

#### **1.12 OWNER FURNISHED ITEMS**

- .1 Owner will not supply any labour, equipment, or material resources for this project apart from the following items:
  - .a Helicopter landing pads.
  - .b Parks Canada Radio equipped with the repeater channel.
  - .c 3D survey of the site in DXF format (as shown in the Contract Drawings).

#### **1.13 SETTING OUT OF WORK**

- .1 Departmental Representative will provide:
  - .a Complete set of Photographs as part of this document.
  - .b Measurements for Payment.
- .2 Contractor shall:
  - .a Allow sufficient time and facilitate site access for Departmental Representative to inspect the work and take measurements for payment. Such inspection may include the use of the Contractors rope access equipment to facilitate locating the work and measurement for payment.
  - .b Discuss and come to an agreement (sign off sheet required) with the Departmental Representative on measurement for payment at the end of each day or completion of work in an area, whichever is more frequent.

#### **1.14 EXECUTION**

- .1 Disposal of Materials from Rock Excavation:
  - .a All materials from rock excavation may be left in place such that the depth of the plunge pool is minimal. Therefore, rock removal or rock placement with machinery is not necessary.
- .2 Blasting:

- .a The Departmental Representative must be provided with proposed Blast Designs in accordance with Section 01 33 00 - Submittals and Section 31 23 21 – Rock Excavation for review at least 48 hours prior to drilling commencing.
  - .b Notwithstanding Departmental Representative's approval of blasting methods, the Contractor shall be completely responsible for any damage, which is a direct result of its blasting or other operations.
  - .c Prior to blasting the Contractor and the Departmental representative will undertake a Pre-Condition Survey in accordance with Section 31 23 21 – Rock Excavation to jointly inspect the creek area. This record will be used as the basis to establish if damage has occurred as a result of blasting.
  - .d Blasting work shall be completed in following the successful construction of the cofferdam. A coffer dam shall be installed upstream of the waterfall for creek diversion during blasting work. Creek flow will be maintained throughout duration of the work. The pump and piping system should be sized appropriately to accommodate minimum flows of 1.5 m<sup>3</sup>/s.
- .3 Execution of Work:
- .a The Contractor shall execute work in an efficient and expeditious manner. The Departmental Representative reserves the right to order the removal from the work site any employee of the Contractor who fails to work in an efficient and expeditious manner. This may include but is not limited to the Project Superintendent. This shall be strictly enforced.
  - .b The Departmental Representative reserves the right to order removal from work site, any piece of equipment that is not in good operating condition and the Contractor shall immediately rectify problem or replace faulty equipment with an equivalent unit within 48 hours.
- .4 Crew Qualifications:
- .a The Contractor must have a crew and supervisors experienced and qualified in rock drilling and blasting, rock bolt installation, and all other work identified herein.
  - .b The Project Superintendent shall have at least ten (10) years' experience with environmentally sensitive rock excavation projects involving scaling, bolting and blasting. The Project Superintendent shall be dedicated to this project.
  - .c The Health and Safety Representative must have at least five (5) years' site-related working experience specific to activities associated with rope access operations in accordance with Section 01 35 30 – Health and Safety Requirements.
  - .d The Blaster shall be licensed with Occupational Health and Safety Alberta and hold a current Non-Mining Blaster's Permit and in accordance with Section 31 23 21 - Rock Excavation.
- .5 Scope and Description of Specific Work Sites:
- .a The work site and staging area are detailed in Figure 1 and Supplemental Information Package, included in the contract documents.
  - .b The quantities of work indicated in the Drawings, Supplemental Photos and summarized in the Bill of Quantities Table, are for estimating purposes only.

**PART 2        PRODUCTS**

**2.1 NOT USED**

.1 Not used.

**PART 3        EXECUTION**

**3.1 NOT USED**

.1 Not used.

**END OF SECTION**

## SECTION 01 14 00 WORK RESTRICTIONS

### PART 1 GENERAL

#### 1.1 PRECEDENCE

- .1 For Federal Government projects, General Conditions take precedence over technical specification.

#### 1.2 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work.
- .2 Section 01 31 00 – Project Management and Coordination.
- .3 Section 01 35 30 – Health and Safety Requirements.
- .4 Section 01 52 00 – Construction Facilities.
- .5 Section 01 57 19 – Environmental Procedures.
- .6 Section 01 74 23 – Cleaning.
- .7 Section 31 23 21 – Rock Excavation.
- .8 Section 31 23 23 – Rock Bolts.

#### 1.3 MEASUREMENT AND PAYMENT

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

#### 1.4 USE OF THE WORKSITE/LAYDOWN AREA

- .1 Laydown area(s) will be allocated by Parks Canada and shall only be used for purposes of the Work. Laydown area(s) will be made available for the Contractors non-exclusive use for the duration of the Work, unless otherwise provided in the Contract Documents.
- .2 Parks Canada Agency regulations prohibit anyone working within the Park from using public campground facilities.
- .3 The Contractor shall be entirely responsible for their security. The definition of the Work Site will be taken to mean any place or location the Contractor is working, has personnel (either working or on standby), or has equipment (being used or stored), or any location noted in the annotated photographs.
- .4 The Contractor shall keep the Work Site clean and free from accumulation of waste materials and rubbish / trash regardless of source in accordance in Section 01 74 23 – Cleaning and Section 01 57 19 – Environmental Procedures. Snow shall be removed by the Contractor as necessary for the performance and inspection of the Work.
- .5 The Contractor may work during daylight hours, seven (7) days per week.
- .6 All vehicles over 4,550 kg using H93N shall obtain Restricted Activity Permits from Banff Dispatch at 403.762.1470 prior to the start of work.

#### 1.5 WORK CONDUCTED OVER OR ADJACENT TO WATERWAYS

- .1 All components of the Work shall be conducted in accordance with Section 01 57 19 - Environmental Procedures, and the Environmental Protection Plan for the project.
- .2 All components of the Work shall be conducted without equipment entering waterbodies.

- .3 All waste materials from the Work shall be contained and collected in a manner to prevent any contact with waterways. Waste materials shall be heli-lifted from site and disposed of in accordance with Section 01 57 19 - Environmental Procedures and the Environmental Protection Plan for the project.
- .4 The Contractor is responsible for the development and supply of construction access to the Work as approved by the Departmental Representative. This will involve the design, construction, operation, and removal of a coffer dam and related piping infrastructure upstream of the worksite. Pumps / water diversion method used to redirect the creek flow should be sized appropriately to accommodate a minimum flow rate of 0.7 m<sup>3</sup>/s to an estimated maximum flow rate of 1.5 m<sup>3</sup>/s.

#### **1.6 PROTECTION OF PERSONS AND PROPERTY**

- .1 The Contractor shall comply with all applicable safety regulations of Occupational Health and Safety Alberta including, but not limited to, the Worker's Compensation Act and the Occupational Health and Safety Regulations, Industrial First Aid Regulations, and Workplace Hazardous Materials Information System Regulations.
- .2 The Contractor shall take all necessary precautions and measures to prevent injury or damage to persons and property on or near the Work Site in accordance with Section 01 35 30 – Health and Safety Requirements.
- .3 The Contractor shall promptly repair, replace, or compensate for any loss or damage caused by the Contractor to any property or, if Parks Canada so directs, shall promptly reimburse to Parks Canada the costs resulting from such loss or damage.
- .4 Blast Guards and overnight security personnel shall not have worked for at least eight (8) hours prior to the start of their shift and shall not work for at least twelve (12) hours after their shift is complete.

#### **1.7 USE OF PUBLIC AREAS**

- .1 The Contractor shall ensure its vehicles and equipment do not cause nuisance in public areas. Vehicles and equipment leaving the Work Site and entering public roadways shall be cleaned of soil, seeds, and other detritus clinging to the vehicle body and wheels. All vehicles transporting materials to or from the Work Site shall be loaded in a manner that prevents dropping of materials or debris on the roadways. Where contents may be blown off during transit such loads shall be covered by tarpaulins or other suitable covers. Spills of materials in public areas shall be removed or cleaned immediately by the Contractor at no cost to the Owner. PCA ESO equipment inspection is required prior to use of equipment on site. All activities shall be in accordance with Section 01 57 19 - Environmental Procedures, and the Environmental Protection Plan for the project.

#### **1.8 SUPERVISORY PERSONNEL**

- .1 Any changes to the Contractor's Supervisory Personnel must be approved in writing by the Departmental Representative before they begin Work at the Site.
- .2 Crew Qualifications and Experience must remain consistent for the duration of the Work.

#### **1.9 MEETINGS**

- .1 The Work includes attending weekly meetings between the Contractor and the Departmental Representative. The weekly meeting may be held at PCA offices at the discretion of the Departmental Representative. The meetings will be called and chaired by the Departmental Representative as required. The Contractor shall be represented at such meetings to the satisfaction of the Departmental Representative.



- .2 The Departmental Representative will schedule a start-up meeting to be held on site after award notification in accordance with Section 01 31 00 - Project Management and Coordination.
- .3 The Contractor shall assemble its entire site staff for an initial environmental briefing to be conducted by Parks Canada Environmental Safety Officer at initial project start-up. The briefing shall be and held at a time and place agreeable to the Departmental Representative and Contractor. Subsequent environmental briefings will be arranged for new staff arriving on the project, in accordance with Section 01 57 19 - Environmental Procedures.

#### **1.10 MIXING, TRANSPORTATION, AND STORAGE OF EXPLOSIVES**

- .1 No site for storage of explosives products will be provided to the Contractor. It is the responsibility of the Contractor to store all explosives products **outside of the Park** in accordance with all federal and provincial regulations and Section 01 52 00 - Construction Facilities. Storage of explosives and all detonating apparatus shall also be stored in accordance with Section 31 23 21 – Rock Excavation, Clause 3.3.6. Transportation of explosives to and from the worksite is the responsibility of the Contractor.

### **PART 2 PRODUCTS**

#### **2.1 NOT USED**

- .1 Not Used.

### **PART 3 EXECUTION**

#### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## SECTION 01 21 00 ALLOWANCES

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

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

#### 1.2 REFERENCES

- .1 General Conditions (GC), Section 6 – Delays and Changes in the Work – Construction Services.

#### 1.3 PRIME COST SUM

- .1 Include in Lump Sum Price Item 3 - Prime Cost Sum of \$35,000.
- .2 The Contract Price, and not Prime Cost Sum, includes Contractor's overhead and profit in connection with such Prime Cost Sum.
- .3 Prime Cost Sum is not a sum due to the Contractor; it is a fixed amount specified under Lump Sum Bid Item 3 to cover unforeseen contingencies or additional visits by the Blasting Consultant as instructed by the Departmental Representative. Expenditures under the Prime Cost Sum will be authorized in accordance with procedures provided in General Conditions (GC), Section 6 – Delays and Changes in the Work – Construction Services.
- .4 Any additional work must be approved by the Departmental Representative prior to commencement.
- .5 Work under the Prime Cost Sum may include, but not be limited to: tree felling and bucking; rock scaling; rock excavation; and rock bolting, within the Project Site.
- .6 Once additional work has been agreed upon with Parks Canada Agency, it shall be included as an item on the Project Schedule. This shall occur on the next update of the Project Schedule.

#### 1.4 MEASUREMENT AND PAYMENT

- .1 Payment for work under Lump Sum Price Item 2 - Prime Cost Sum will be made using negotiated rates or by material, labour and equipment rates as per the following:
  - a. Rental rates will be in accordance with the current Alberta Road Builders and Heavy Construction Association rate schedule, and will be all inclusive and fully operated.
  - b. Vehicles (i.e. Pickup trucks) will be paid either at daily rates as per the Alberta Road Builders and Heavy Construction Association rate schedule (most recent edition) or by mileage using National Joint Council (NJC) rates, whichever is lower. The Contractor will not be permitted to claim both daily rental and mileage rates.
  - c. Hourly rental of equipment will be measured in actual working time and necessary travel time within project limits. Transportation time to and from site to be reimbursed only if equipment is used exclusively for additional work.
  - d. Equipment paid on standby will be paid on 50% of the relevant Less Operator rates to a maximum of 10 hours per day.

- e. When based upon actual costs for additional works under Prime Cost Sum, payment will be based upon supplied invoices and other work records.
- f. All expenditures must be substantiated with verified invoices and/or accepted daily extra work reports.
- g. The Prime Contractor may apply up to 10% mark-up to subcontractor or supplier invoices only, as accepted by Departmental Representative. No mark-up will be allowed on relevant equipment and labour rates.
- h. A request for additional payment will be considered submitted when all required documentation has been received by the Departmental Representative.
- i. The Departmental Representative's, or their delegate's, signature on extra work reports is only a record of the equipment, materials and labour hours utilized on the task, not an agreement to entitlement rates, quantities and applicable invoices. Labour and equipment rates are to be reviewed by the Departmental Representative against the appropriate accepted rates when submitted for payment.
- j. The Contractor shall submit extra work reports to the Departmental Representative within 24 hours of the day of extra work.
- k. The Departmental Representative's, or their delegate's signature on any of the Contractor's Daily Extra Work Reports shall not be an agreement to waive any portion of the Contract regardless of any working to the contrary.
- l. Unless otherwise provided for in the Contract, payment on a Force Account basis represents complete payment (exclusive of GST) and reimbursement for all impacts, related costs and expenses, including, without limitation: time; labour; materials; equipment; mobilization; demobilization; subcontracting; overhead; profit; general supervision; safety; quality control; occupational tax and any other Federal or Provincial revenue legislation exclusive of GST; premiums for public liability and property damage insurance policies; bonding; for the use of all tools and equipment for which no specific rental payment provision exists; and for all costs incurred by the Contractor in supplying materials.

**PART 2      PRODUCTS**

**2.1      NOT USED**

.1 Not Used.

**PART 3      EXECUTION**

**3.1      NOT USED**

.1 Not Used.

**END OF SECTION**

## SECTION 01 25 20 MOBILIZATION AND DEMOLITION

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- .1 All.

#### 1.2 RELATED SECTIONS

- .1 All.

#### 1.3 DESCRIPTION

- .1 Consists of preparatory work and operations including but not limited to, those necessary for the daily movements of personnel, initial site establishment and ongoing maintenance, equipment, supplies, magazines, shops, offices, and incidentals to and from the project sites.
- .2 All project personnel, materials and equipment shall be mobilized to site via appropriately sized helicopter.

#### 1.4 MEASUREMENT AND PAYMENT

- .1 Payment shall be made under "Lump Sum Price Item 1 – Mobilization/Demobilization".
- .2 60% of Lump Sum Contract Price for Mobilization and Demobilization to be paid when mobilization to site is complete.
- .3 The Remainder of the Lump Sum Price for Mobilization and Demobilization to be paid when work is complete and all materials, equipment, and other facilities have been removed from site and site is cleaned and left in a condition to the satisfaction of the Departmental Representative and all other Agencies having Jurisdiction.
- .4 Payment of only 25% of the total price tendered will be scheduled as outlined above. If the amount bid for Mobilization and Demobilization is greater than 25% of the total price tendered, payment of the remainder of the amount will be authorized when contract has been completed.
- .5 The Contractor shall allow the Departmental Representative and ESO mobilization from either the helicopter base or the staging area to site each day. The cost of this shall be considered incidental to the contract and shall not be measured for payment.

### PART 2 PRODUCTS

#### 2.1 NOT USED

- .1 Not Used.

### PART 3 EXECUTION

#### 3.1 NOT USED

- .1 Not Used.

END OF SECTION

## **SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

- .1 This section includes the requirements for Project Management and Coordination during the Work, including organization and start-up, on-site documents, scheduling, meetings, and submittals.

#### **1.2 RELATED SECTIONS**

- .1 Section 01 11 00 – Summary of Work.
- .2 Section 01 14 00 – Work Restrictions.
- .3 Section 01 33 00 – Submittal Procedures.
- .4 Section 01 35 30 – Health and Safety Requirements.
- .5 Section 01 57 19 – Environmental Procedures.
- .6 Section 01 52 00 – Construction Facilities.
- .7 Section 01 77 00 – Closeout Procedures.
- .8 Section 01 78 00 – Closeout Submittals.

#### **1.3 MEASUREMENT AND PAYMENT**

- .1 Work in this section will be considered incidental to the Contract and no separate payment shall be made to the Contractor.

#### **1.4 COORDINATION**

- .1 Co-ordinate progress schedules, submittals, use of site, temporary utilities, construction facilities, construction Work, and Work by others, under instructions of the Departmental Representative.
- .2 The Contractor shall co-ordinate with other contractors and stakeholders working on the site to develop a work schedule agreeable to all parties to carry out the work without interruption.

#### **1.5 CONSTRUCTION ORGANIZATION AND START-UP**

- .1 Within seven (7) days after award of Contract, a start-up pre-construction meeting is required to discuss administrative procedures, responsibilities, and specific requirements. The meeting shall be chaired by the Departmental Representative who will prepare the minutes of the meeting, as specified in Section 01 14 00 – Work Restrictions.
- .2 Senior representatives of the Owner, Departmental Representative, Contractor, major Subcontractors, field inspectors, and supervisors are to attend the start-up meeting. The meeting shall be held at the PCA offices in Banff (time and location to be decided). Attendance at the pre-construction meeting is considered incidental to the contract.
- .3 Pre-construction meeting agenda will include:
  - .a Appointment of official representatives of participants in Work.
  - .b Schedule of Work and progress scheduling in accordance with Section 01 33 00 – Submittal Procedures.

- .c Requirements for temporary facilities, offices, storage sheds, utilities, fences in accordance with Section 01 52 00 – Construction Facilities.
  - .d Site safety and security in accordance with Section 01 52 00 – Construction Facilities and Section 01 35 30 – Health and Safety Requirements.
  - .e Proposed changes (Contemplated Change Notice - CCN), change orders (CO), required approvals, Site Instruction (SI), Request for Information (RFI), Non-Conformance Reports (NCR), mark-up percentages, time extensions, and other administrative requirements and procedures.
  - .f Owner furnished materials.
  - .g Monthly progress claims, photographs, and holdbacks.
  - .h Closeout procedures and submittals in accordance with Section 01 77 00 – Closeout Procedures and Section 01 78 00 – Closeout Submittals.
  - .i Insurances, blasting licenses, and transcript of policies.
  - .j Other business.
- .4 All Work shall comply with the Departmental Representative's allocation of laydown areas on site for field offices and sheds, for access, traffic, parking, sanitary facilities, and use of temporary utilities and construction facilities.
  - .5 The Contractor shall coordinate intra-project communications including submittals, reports and records, schedules, coordination of Drawings, recommendations, and resolution of ambiguities and conflicts through Departmental Representative.
  - .6 Coordinate with Departmental Representative to review and layout the proposed work prior to the start of work at that site.

## **1.6 ON-SITE DOCUMENTS**

- .1 Maintain at job site, one copy each of the following:
  - .a Contract Drawings, Specifications, and Addenda.
  - .b Reviewed Submittals as per Section 01 33 00 - Submittal Procedures, Clause 1.6.10.
  - .c Contemplated Change Notice (CCN), Change Order (CO), Site Instruction (SI), Request for Information (RFI), Non-Conformance Report (NCR), and other modifications to the Contract.
  - .d Field Test Records and Reports.
  - .e Inspection Certificates.
  - .f Manufacturer's Certificates.
  - .g Safety Plan.
  - .h WHMIS documentation and all Health and Safety records.
  - .i Environmental Protection Plan.
  - .j Proposed blasting plans and As-built Blasting Records for each blast.
  - .k Copy of accepted Work Schedule and most recent updated schedule in Gantt chart format.
  - .l Labour conditions and wage schedules.
  - .m Applicable current editions of municipal regulations and by-laws.
  - .n Restricted Activity Permits (RAPs).

- .o Cofferdam design and any installation instructions.

## **1.7 SCHEDULES**

- .1 Submit preliminary construction progress schedule in accordance with Section 01 33 00 – Submittal Procedures to Departmental Representative coordinated with Owner's project schedule.
- .2 After Departmental Representative review, revise and resubmit schedule to comply with revised project schedule.
- .3 Periodically revise and resubmit schedule as directed by Departmental Representative.

## **1.8 CONSTRUCTION PROGRESS MEETINGS**

- .1 The Work includes attending weekly progress meetings between the Contractor and the Departmental Representative. The weekly meeting may be held on site or at the PCA offices in Banff at the discretion of the Departmental Representative. The meetings will be called and chaired by the Departmental Representative as required. Senior team members or off-site personnel shall be given the opportunity to attend via phone, satellite phone, internet, or in person as required. The Contractor shall be represented at such meetings to the satisfaction of the Departmental Representative.

## **1.9 SUBMITTALS**

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit requests for payment for review and transmittal to Departmental Representative.
- .3 Submit requests for interpretation of Contract Documents and obtain instructions through Departmental Representative.
- .4 Process Change Orders through Departmental Representative.
- .5 Deliver closeout submittals for review and preliminary inspections, for transmittal to Departmental Representative in accordance with Section 01 78 00 - Closeout Submittals.

## **1.10 CLOSEOUT PROCEDURES**

- .1 The Contractor shall undertake project closeout in accordance with Section 01 77 00 - Closeout Procedures.

## **PART 2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **PART 3 EXECUTION**

### **3.1 NOT USED**

- .2 Not Used.

**END OF SECTION**

## SECTION 01 33 00 SUBMITTAL PROCEDURES

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- .1 Shop Drawings and product data.
- .2 Certificates and transcripts.
- .3 Required Contractor Submittals:
  - .a Pre-mobilization Submittals:
    - i. Schedule.
    - ii. Contractor Chain of Command.
    - iii. Work Plan.
    - iv. Construction Access Plan.
    - v. Environmental Protection Plan (EPP).
    - vi. Blasting Safety Plan.
    - vii. Emergency Response Protocol.
    - viii. Health and Safety Plan.
    - ix. Certificates of Insurance.
    - x. Restricted Activity Permits (RAPs).
    - xi. Business Licence(s).
    - xii. Blaster Qualifications.
    - xiii. Cofferdam design
    - xiv. Attestation Form (ITT bid).
  - .b Construction Phase Submittals:
    - i. Proposed Blast Design(s).
    - ii. Monthly Progress Reports including revised Project Schedule.
    - iii. Pre-Construction Condition Surveys.
    - iv. Work Site Health and Safety Inspection Report.
    - v. As-Blasted Record.
  - .c Project Completion Submittals:
    - i. Record digital Photographs (Digital format not prints).
    - ii. As-Built Blasting Records.

#### 1.2 PRECEDENCE

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

#### 1.3 RELATED SECTIONS

- .1 Section 01 14 00 – Work Restrictions.
- .2 Section 01 35 30 – Health and Safety Requirements.



- .3 Section 01 55 26 – Traffic Management.
- .4 Section 01 57 19 – Environmental Procedures.
- .5 Section 01 78 00 – Closeout Submittals.
- .6 Section 31 23 21 – Rock Excavation
- .7 Section 31 23 23 – Rock Bolts.

#### **1.4 REFERENCES**

- .1 Not used.

#### **1.5 MEASUREMENT AND PAYMENT**

- .1 Work in this section is considered incidental to the Contract and no separate payment shall be made to the Contractor.

#### **1.6 ADMINISTRATIVE**

- .1 Provide submittals to Departmental Representative for review a minimum of twenty (20) calendar days prior to the start of the Work. Failure to provide submittals in ample time is not considered sufficient reason for an extension of Contract Time.
- .2 All submittals shall be in English. Documents translated from another language shall be acceptable.
- .3 Work affected by a submittal shall not proceed until review is complete and submittal is accepted by the Departmental Representative.
- .4 All information should be provided in SI Metric Units. Where information is not produced in SI Metric units, converted values by the Contractor are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents the necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying any deviations from requirements of the Contract Documents stating reasons for deviations.
- .7 Verify that field measurements and affected adjacent Work are coordinated.
- .8 The Contractor's responsibility for errors and omissions in submissions is not relieved by Departmental Representative's review of submittals.
- .9 The Contractor's responsibility for deviations in submissions from requirements of the Contract Documents is not relieved by Departmental Representative's review.
- .10 Keep one Departmental Representative reviewed and accepted copy of each submission on site.

#### **1.7 SHOP DRAWINGS AND PRODUCT DATA**

- .1 Submit manufacturers' data sheets for all explosive, rock bolt, and all other products to be incorporated into the Work prior to their use in the Work.

#### **1.8 SAMPLES**

- .1 Not used.

#### **1.9 MOCK-UPS**

- .1 Not used.

#### **1.10 CERTIFICATES AND TRANSCRIPTS**

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

#### **1.11 REQUIRED CONTRACTOR SUBMITTALS**

- .1 General:
- .a This Clause identifies the plans, programs, and documentation required prior to mobilization to site, during the construction phase, and upon project completion.
  - .b The Contractor shall not construe the Departmental Representative's review and acceptance of the submittals to imply approval of any particular method or sequence for conducting the Work. Acceptance of the programs shall not relieve the Contractor from the responsibility to conduct the Work in strict accordance with the requirements of Federal or Provincial regulations, this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor shall remain solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.
- .2 Pre-Mobilization Submittals:
- .a Submit the following plans and programs to the Departmental Representative for review a minimum of twenty (20) days prior to mobilization to the project site. The Contractor shall not begin mobilization, or any site Work until the Departmental Representative has authorized acceptance of the submittals in writing:
    - i. Project Schedule in resourced Gantt Chart format detailing milestone dates, schedule of workdays, and manpower required to complete each project activity.
    - ii. Contractor Chain of Command including a list of contact persons on the Contractor's Crew who are available on a 24-hour basis in the event of emergencies.
    - iii. Work Plan, describing the Contractor's intended methods of construction including but not limited to the environmental mitigation strategies in accordance with Section 01 57 19 - Environmental Procedures, infrastructure protection plan and projected number of personnel on site.
    - iv. Construction Access Plan, which shall include, but not be limited to, procedures for accessing all areas of the Work.
    - v. Environmental Protection Plan (EPP) including erosion and sediment Controls and spill response, in accordance with Section 01 57 19 - Environmental Procedures.
    - vi. Blasting Safety Plan, describing special procedures to be followed during rock blasting to ensure protection of the public and workers in accordance with Section 01 35 30 – Health and Safety Requirements.
    - vii. Emergency Response Protocol detailing the Contractor's procedures for management of emergency situations and providing a response plan, protocols, and contact information.
    - viii. General Blasting Plan for the work which outlines the proposed types of explosives, delays, detonators, and provide details for drilling, loading, and

blasting. Handling and storage practices for explosives products shall be described in detail.

- ix. Occupational Health and Safety Program - The Contractor shall have a Certificate of Recognition (COR) or Registered Safety Plan (RSP) including a site-specific Health and Safety Plan acceptable to the Departmental Representative. The Contractor shall implement and maintain the Health and Safety Plan during the Work.
- x. Rock Bolt Installation Procedure and example Rock Bolt Installation Record in accordance with Section 31 23 23 – Rock Bolts.
- xi. Certificates of Insurance in accordance with Section 31 23 21 – Rock Excavation.
- xii. Number and type of camping trailers.
- xiii. Restricted Activity Permit application forms which may include scaling, blasting, haulage and disposal, and tree felling.
- xiv. Copy of Business Licence for applicable Park(s) for Contractor and all sub-contractors.
- xv. Blaster Qualifications.
- xvi. Attestation Form (ITT bid).
- xvii. Cofferdam Design and Installation Procedure.

.3 Construction Phase Submittals:

- .a Proposed Blast Designs:
  - i. Not less than two (2) days prior to commencing work at each blasting location, submit a Proposed Blast Design for that trim location to the Departmental Representative for review in accordance with Section 31 23 21 – Rock Excavation.
- .b Monthly Progress Report updates will be submitted, including an updated schedule.
- .c Daily Quantity Sheet. The Contractor is required to submit a daily quantity sheet for the work.
- .d Pre-Construction Condition Survey. The Contractor shall submit a survey of the pre-existing conditions at each work site prior to undertaking blasting or other work that could damage existing infrastructure. The Pre-Construction Condition Survey shall be in a format acceptable to the Departmental Representative and include digital photos, measurements, and written descriptions as appropriate to document the existing conditions as per Section 31 23 21 - Rock Excavation.
- .e Work Site Health and Safety Inspection Report (weekly) – Submit weekly in accordance with Section 01 35 30 – Health and Safety Requirements.
- .f As-Built Blasting Record - not more than one (1) working day after completing work at each trim location, the Contractor shall submit an As-Built Blasting Record to the Departmental Representation as per Section 31 23 21 - Rock Excavation.

.4 Project Completion Submittals:

- .a Closeout submittals in accordance with Section 01 78 00 – Closeout Submittals.

**PART 2 PRODUCTS**

**2.1 NOT USED**

.1 Not Used.

**PART 3 EXECUTION**

**3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

## SECTION 01 35 30 HEALTH AND SAFETY REQUIREMENTS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- .1 Health and safety considerations required to ensure that PCA shows due diligence towards health and safety on construction sites, and meets the requirements laid out in Public Works and Government Services Canada (PWGSC) Department Policy DP 073 – Occupational Health and Safety – Construction.
- .2 The Contractor shall take all necessary precautions and measures to prevent injury or damage to persons and property on or near the Work Site.

#### 1.2 PRECEDENCE

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

#### 1.3 RELATED SECTIONS

- .1 All Sections.

#### 1.4 MEASUREMENT AND PAYMENT

- .1 Work in this section will be considered incidental to the Contract and no separate payment shall be made to the Contractor.

#### 1.5 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
- .3 Province of Alberta:
  - .a Workers Compensation Act.
  - .b Occupational Health and Safety Regulations.

#### 1.6 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan at least twenty (20) days prior to mobilization to site. Health and Safety Plan must include:
  - .a Contractor's health and safety policy.
  - .b Identification of applicable compliance obligations.
  - .c Definition of responsibilities for project safety/organization chart for project.
  - .d General safety rules for project.
  - .e Job specific safe work procedures and communications plan.
  - .f Inspection policy and procedures.
  - .g Incident reporting and investigation policy and procedures.
  - .h On-Site Contingency and Emergency Response Plans to address standard operating procedures to be implemented during emergency situations.
  - .i Occupational Health and Safety meetings.

- .j Occupational Health and Safety communications and record keeping procedures.
  - .k Results of site specific safety hazard assessment.
  - .l Results of safety and health risk or hazard analysis for site tasks and operation.
  - .m Schedule of regular on-site health and safety meetings.
  - .n Schedule of regular on-site tool-box meetings.
  - .o Lightning / thunderstorm response plan.
  - .p COR Certificate.
  - .q Type of satellite communication devices being used.
  - .r Plan for casualty extraction from the site.
- .3 The Departmental Representative will review the Contractor's site-specific Health and Safety Plan and provide comments to the Contractor within seven (7) days after receipt of plan. The Contractor shall revise the plan as appropriate and resubmit it to the Departmental Representative within five (5) days after receipt of comments.
  - .4 The Departmental Representative's review of the Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
  - .5 The Contractor shall submit an electronic version or two (2) paper copies of a weekly Work Site Health and Safety Inspection Report prepared by the Contractor's authorized Safety Representative to the Departmental Representative on a weekly basis.
  - .6 The Contractor shall submit copies of reports or directions issued by Federal and Provincial health and safety inspectors to the Departmental Representative.
  - .7 The Contractor shall submit copies of incident and accident reports to the Departmental Representative within 48 hours of the incident / accident.
  - .8 The Contractor shall submit copies of Safety Data Sheets (SDS) to the Departmental Representative.

#### **1.7 FILING OF NOTICE**

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

#### **1.8 SAFETY ASSESSMENT**

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

#### **1.9 MEETINGS**

- .1 The Contractor shall schedule and oversee a Health and Safety meeting with the Departmental Representative prior to commencement of Work.
- .2 The Contractor shall hold daily toolbox meetings and biweekly Health and Safety meetings.

#### **1.10 REGULATORY REQUIREMENTS**

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

#### **1.11 PROJECT/SITE CONDITIONS**

- .1 Work at site will involve contact with WCB Alberta.

- .2 The work site is remote and there is no cellular communication available. The Contractor shall provide appropriate health and safety cover for the remote helicopter access site. At the minimum the Contractor shall have satellite communications such as a satellite phone, Zoleo device, or Garmin InReach.

#### **1.12 GENERAL REQUIREMENTS**

- .1 Where deficiencies or concerns are noted, The Departmental Representative may alert the Contractor in writing, and may request correction of deficiencies or concerns in a timely manner.

#### **1.13 RESPONSIBILITY**

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

#### **1.14 COMPLIANCE REQUIREMENTS**

- .1 Comply with the Workers Compensation Act and Occupational Health and Safety Regulations of Alberta.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

#### **1.15 UNFORESEEN HAZARDS**

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

#### **1.16 HEALTH AND SAFETY REPRESENTATIVE**

- .1 Employ and assign to the Work, a competent and authorized Health and Safety Representative. The Health and Safety Representative must:
  - .a Have minimum five (5) years' site-related working experience specific to activities associated with Blasting, helicopter longlining, and remote site work.
  - .b Have working knowledge of occupational safety and health regulations.
  - .c 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.
  - .d Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
  - .e Be on site during execution of Work and report directly to and be under direction of Site Supervisor.
  - .f Prepare weekly Work Site Health and Safety Inspection Reports to be submitted to the Departmental Representative on a weekly basis.

#### **1.17 POSTING OF DOCUMENTS**

The Contractor shall ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with the Departmental Representative.

#### **1.18 CORRECTION OF NON-COMPLIANCE**

- .1 The contractor shall immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .1 The Contractor shall provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .2 The Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.
- .3 In the event that work is temporarily stopped either by the Departmental Representative, or by a body having jurisdiction, it will not relieve the Contractor of his responsibilities under this Contract. Standby time and all costs associated with a stop work order due to safety considerations, is considered incidental to the contract.

#### **1.19 BLASTING**

- .1 Blasting or other use of explosives is not permitted until approval has been provided by the Departmental Representative.
- .2 Blasting is to be in accordance with Section 01 57 19 - Environmental Procedures, and Section 31 23 21 – Rock Excavation.

#### **1.20 POWDER ACTUATED DEVICES**

- .1 The use of powder actuated devices is only permitted after receipt of written permission from the Departmental Representative.

#### **1.21 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.

#### **1.22 LIGHTNING PROTOCOL**

- .1 The Contractor must have a Thunderstorm response plan in place, such as the 30 Second-30 Minute Rule, as part of their Health and Safety Plan. Standby time and shutdown time due to lightning or other inclement weather is considered incidental to the Contract.

### **PART 2 PRODUCTS**

#### **2.1 NOT USED**

- .1 Not used.

### **PART 3 EXECUTION**

#### **3.1 NOT USED**

- .1 Not used.

**END OF SECTION**



## SECTION 01 52 00 CONSTRUCTION FACILITIES

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- .1 Construction aids.
- .2 Office and sheds.
- .3 Parking.
- .4 Project identification.
- .5 Resident Departmental Representative facilities requirements.

#### 1.2 PRECEDENCE

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

#### 1.3 RELATED SECTIONS

- .1 Section 01 14 00 – Work Restrictions.
- .2 Section 01 25 20 – Mobilization and Demobilization.
- .3 Section 01 31 00 – Project Management and Coordination.
- .4 Section 01 57 19 – Environmental Procedures.
- .5 Section 31 23 21 –Rock Excavation.

#### 1.4 MEASUREMENT AND PAYMENT

- .1 Work in this section will be considered incidental to the Contract and no separate payment shall be made to the Contractor.

#### 1.5 INSTALLATION AND REMOVAL

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

#### 1.6 SITE STORAGE/LOADING

- .1 Confine work and operations of employees in accordance with the Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load any part of the Work with a weight or force that will endanger the Work or site personnel.

#### 1.7 CONSTRUCTION PARKING

- .1 Provide and maintain adequate access and parking at the project site in areas approved by the Departmental Representative.
- .2 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.
- .3 Camping is permitted in Mosquito Creek laydown area. Camping is only permitted in well maintained trailers.

## **1.8 SECURITY**

- .1 If required by the Contractor, the Contractor shall provide and pay for security personnel to guard the Work, Work Site, and contents of Site after working hours, during holidays, and during extended shutdowns. The Contractor is advised that thefts and some random acts of vandalism to equipment have occurred within the National Park.
- .2 Personnel used for security work shall not work for at least eight (8) hours prior to the start of their shift and not work again on this project twelve (12) hours after their shift ends in accordance with Section 01 14 00 – Work Restrictions. Camping trailers are not allowed for security purposes.
- .3 Security personnel shall be dedicated to this task and shall not be undertaking separate or alternative duties other than a Blast Guard.
- .4 Security personnel are considered incidental to the Contract.

## **1.9 OFFICES**

- .1 No site office is required to be provided.
- .2 Provide a clearly marked and fully stocked first aid case in a readily available location.

## **1.10 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Laydown areas shall be allocated by the Departmental Representative in accordance with Section 01 31 00 - Project Management and Coordination.

## **1.11 SANITARY FACILITIES**

- .1 The Contractor shall provide portable sanitary facilities in accordance with governing regulations and Environmental Procedures for this project.
- .2 The facilities noted in Clause 1.11.1 above shall be maintained at least once a week. Consumables replenished as required by the Contractor with no additional cost to the Project.
- .3 Post notices and comply with requirements of the local health authorities. Keep area and premises in sanitary condition.

## **PART 2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **PART 3 EXECUTION**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## **SECTION 01 56 00 TEMPORARY BARRIERS AND ENCLOSURES**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

- .1 Barriers.
- .2 Environmental Controls.
- .3 Traffic Controls.
- .4 Fire Routes.

#### **1.2 PRECEDENCE**

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

#### **1.3 RELATED SECTIONS**

- .1 Section 01 55 26 – Traffic Management.
- .2 Section 01 52 00 – Construction Facilities.
- .3 Section 01 57 19 – Environmental Procedures.

#### **1.4 MEASUREMENT AND PAYMENT**

- .1 Work in this section will be considered incidental to the Contract and no separate payment shall be made to the Contractor.

#### **1.5 INSTALLATION AND REMOVAL**

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

#### **1.6 HOARDING**

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

#### **1.7 GUARD RAILS AND BARRICADES**

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

#### **1.8 WEATHER ENCLOSURES**

- .1 Not used.

#### **1.9 DUST TIGHT SCREENS**

- .1 Not used.

#### **1.10 ACCESS TO SITE**

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

### **PART 2 PRODUCTS**

#### **2.1 NOT USED**

- .1 Not Used.

**PART 3      EXECUTION**

**3.1      NOT USED**

.1   Not Used.

**END OF SECTION**

## SECTION 01 57 19 ENVIRONMENTAL PROCEDURES

### PART 1 GENERAL

#### 1.1 PRECEDENCE

- .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other Divisions of this Project Manual.
- .2 Where there is a discrepancy or inconsistency between this Section 01 57 19 – Environmental Procedures, the BMPs and other documents, the BMPs take precedence over other documents.

#### 1.2 REFERENCES

- .1 Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters – Wright and Hopky, 1998
- .2 Parks Canada National Best Management Practice (BMP) – Roadways, Highway, Parkway and Related Infrastructure, May 2015.
- .3 Basic Impact Analysis Margaret Creek Barrier Improvement – Parks Canada, August 2022.
- .4 Whirling Disease in Lake Louise, Yoho, Kootenay Field Unit: Direction for Permitted Users Conducting water-Related Activities in LLYK – Parks Canada, 2017.

#### 1.3 RELATED SECTIONS

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 52 00 – Construction Facilities.

#### 1.4 MEASUREMENT AND PAYMENT

- .1 The cost of all Work including environmental and aesthetic protection in accordance with this Section 01 57 19 – Environmental Procedures shall be incidental to the Contract and will not be measured for payment.
- .2 Preparation and implementation of an Environmental Protection Plan (EPP) in accordance with this Section 01 57 19 – Environmental Procedures will not be measured separately for payment and will be considered incidental to the Work.

#### 1.5 SUBMITTALS

- .1 Submittals shall be in accordance with Section 01 33 00 – Submittal Procedures.
- .2 The Contractor is required to prepare and submit an Environmental Protection Plan (EPP) in accordance with Section 01 33 00 – Submittal Procedures. The EPP document will be reviewed and accepted for use on the project by the Departmental Representative in collaboration with the Parks Canada designated Environmental Surveillance Officer (ESO).

#### 1.6 NATIONAL PARK REGULATIONS

- .1 The Contractor shall ensure that all work is performed in accordance with the ordinances, laws, rules and regulations set out in the Canada National Parks Act and Regulations.
- .1 The following permits are required prior to commencement of Work:
  - .a Business License for Contractor and Sub-contractors.

- .b Restricted Activity Permits applicable to the work.
- .2 All Contractors' vehicles are required to display a vehicle work pass from Parks Canada. These permits may be obtained free of charge from Parks Canada.
- .3 Work shall be performed in accordance with the Basic Impact Analysis (BIA) undertaken by Parks Canada for this project.
- .4 The Contractor shall follow developed plans and protocols to prevent the spread of aquatic invasive species, specifically Parks Canada's 2017 Whirling Disease in Lake Louise, Yoho, Kootenay Field Unit: Direction for Permitted Users Conducting Water-Related Activities in LLYK.

#### **1.7 ENVIRONMENTAL SURVEILLANCE OFFICER (ESO)**

- .1 PCA will assign an ESO to the project to ensure compliance with the identified environmental protection measures. In addition to the measures identified in these Specifications, the ESO may require other mitigation in response to any unforeseen environmental impacts. The ESO or Departmental Representative may suspend Work that is in non-compliance of these Specifications or additional mitigation measures required by the ESO. The Contractor is responsible for environmental monitoring to meet the requirements of the EPP over the course of construction.

#### **1.8 IMPACT ASSESSMENT ACT (IAA)**

- .1 Execution of the work is subject to the provisions within the Impact Assessment Act (IAA 2019).
- .2 Refer to the PCA Best Management Practices (BMPs) for the Work included with this tender. The Contractor is required to implement all recommendations and mitigations and follow all procedures and processes whether supply, construction, administration or otherwise as described in the BMPs.
- .3 The Contractor shall prepare their EPP to implement the mitigations identified in this Section 01 57 19 – Environmental Procedures, the BMPs, and all Contract Documents as a minimum but shall ensure that all environmental requirements under the Contract and associated with the Works are appropriately managed through their EPP processes.
- .4 Failure to comply with or observe environmental protection measures as identified in the Contract Documents may result in the work being suspended pending rectification of the problems. The Contractor shall do as requested at their expense and no claim for time or additional costs will be accepted.

#### **1.9 RESTRICTED ACTIVITY PERMITS**

- .1 Prior to commencing any activity, the Contractor may be required to first obtain a Restricted Activity Permit (RAP) in consultation with PCA and Departmental Representative.
- .2 Prior to mobilization, Contractor is to establish what RAPs are required for the Works, for the duration of the project. Include, in the project schedule, the acquisition of the application for RAPs, allowing no less than 2 weeks for review and acceptance by the ESO.
- .3 Contractor shall list RAPs they require in the EPP.
- .4 The Contractor is required to submit an application form to the Departmental Representative for each required RAP at least seven (7) days before the activity commences.

- .5 RAP application details include, but are not limited to: Name of activity, start and end date of activity, location of Work, Contractor company name and address, Contractor contact name, phone number and email address and vehicle / equipment information.
- .6 Following the application submission, the Contractor may be required to provide further details regarding the Work to PCA.
- .7 Submission of a RAP application to the Departmental Representative does not permit the Contractor to commence the restricted activity.

#### **1.10 START-UP AND ENVIRONMENTAL BRIEFING**

- .1 All staff employed at the construction site will be subject to a briefing regarding their individual and collective responsibilities to ensure avoidable adverse environmental impact does not arise from their activities and personal choices. Employees must attend this briefing, before beginning their work at the site.
- .2 New employees may join the Contractors' work force after the initial round of Environmental Briefing. In that case and as required, subsequent Environmental Briefings can be presented as numbers warrant, by arrangement with the Environmental Surveillance Officer (ESO) through the Departmental Representative
- .3 The ESO or alternate designated PCA staff member will present the Environmental Briefing.
- .4 The Contractor shall employ an Environmental Monitor (EM) to prepare the EPP and to monitor the Construction on a full-time basis to ensure compliance. The EM shall be an appropriately qualified environmental professional (QEP) experienced working in the National Parks.
- .5 Parks Canada shall have an ESO attending the site to monitor the construction activity for conformance with the EPP. The ESO or alternate designated Parks Canada staff member will present the "environmental briefing". The ESO's main duties are to monitor the progress of the construction on an on-going basis to ensure compliance with environmental protection measures, and to provide guidance through the Departmental Representative, in the event of unanticipated environmental problems. Although the ESO has authority to enforce National Parks Act violations, direction to the Contractor will be the duty of the Departmental Representative. In instances of immediate environmental concern, ESO has authority to stop work directly.

#### **1.11 CONSTRUCTION SITE ACCESS AND PARKING**

- .1 The Contractor shall review both short and long-term construction access requirements with the Departmental Representative, both at start-up and on an ongoing basis. In consultation with the Departmental Representative, the Contractor shall formulate an agreement for worker transportation to and from the work sites and where workers shall park their private vehicles. Generally, personal vehicles shall be parked at least 30 metres distance from any watercourse.

#### **1.12 PROTECTION OF WORK LIMITS**

- .1 The EPP shall include details of how the Contractor shall mark work limits and procedures that shall be employed to ensure trespass outside these limits does not occur, to the satisfaction of the Departmental Representative and the ESO. The Contractor shall ensure that the environment beyond the work limits is not negatively affected or damaged by construction and shall instruct workers on the defined boundaries.

### **1.13 SEDIMENT AND EROSION CONTROL**

- .1 Sediment and erosion control measures that prevent sediment from entering any waterway, water body or wetland in the vicinity of the construction site are a critical element of the project and shall be implemented by the Contractor. This includes releasing sediments accumulated within the stream during construction activities.
- .2 On-site sediment control measures shall be constructed and functional prior to initiating activities that may generate sediment or deleterious runoff. The EPP shall include an Erosion and Sediment Control Plan to direct prevention, monitoring and mitigation of erosion and sediment mobilization. This shall include water quality (turbidity) monitoring and shall be to the satisfaction of the Departmental Representative and ESO.
- .3 The regular monitoring and maintenance of all erosion control measures is required and shall be the responsibility of the Contractor. If the design of the control measures is not functioning effectively they are to be repaired or replaced. The Departmental Representative and ESO also will monitor erosion control performance.

The site shall be secured against erosion during periods of construction inactivity.

### **1.14 HAZARDOUS PRODUCTS AND SPILL MANAGEMENT**

- .1 The Contractor shall prevent any deleterious and objectionable materials from entering streams, rivers, wetlands, water bodies or watercourses that would result in damage to aquatic and riparian habitat.
- .2 The EPP shall include a list of products and materials to be used or brought to the construction site that are hazardous or toxic to the environment. Such products include, but are not limited to, waterproofing agents, grout, cement, concrete finishing agents, hot poured rubber membrane materials, asphalt cement, sand blasting agents, and petroleum-based products, nitroglycerine based emulsions. Hazardous products shall be stored at least 100 m from the highwater mark or any waterbody, where reasonably possible, unless in secondary containment. If that distance cannot be achieved because of other environmental constraints, hazardous products must be stored within secondary containment capable of holding 110% container capacity.
- .3 A Spill Response Plan shall be prepared as part of the EPP and shall detail containment and storage, security, handling, use, and disposal of empty containers, surplus product, or waste generated through use of products outlined in Clause 1.13.2, to the satisfaction of the Departmental Representative and the ESO and in accordance with all applicable Federal and Provincial legislation.
- .4 An impervious berm shall be constructed around fuel tanks and any other potential spill area. The berm shall be capable of holding 110% of the tank storage volume and shall be to the satisfaction of the Departmental Representative and the ESO before start-up. Measures such as collection/drip trays and berms lined with occlusive material such as plastic and a layer of sand, and double-lined fuel tanks can prevent spills into the environment.
- .5 The Contractor shall prevent blowing dust and debris by covering and/or providing dust control by methods approved by the Departmental Representative or ESO.
- .6 The Contractor shall provide spill kits at re-fuelling, lubrication, and repair locations that will be capable of dealing with 110% of the largest potential spill and shall be maintained in good working order at all times. The ESO and Departmental Representative prior to project start-up must approve these spill kits. The Contractor



and site staff shall be informed of the location of the spill response kit(s) and be trained in their use.

- .7 Timely and effective action shall be taken to stop, contain, and clean up all spills as long as the site is safe to enter. The Departmental Representative and the ESO shall be notified immediately of any spill. If not available, Banff Dispatch shall be immediately contacted at 403-762-1470.
- .8 In the event of a major spill (> 5L), all other work shall be stopped and all personnel devoted to spill containment and clean up.
- .9 The costs involved in a spill incident (the control, clean up, disposal of contaminants, and site remediation to pre-spill conditions) shall be the responsibility of the Contractor. The site will be inspected to ensure completion to the expected standard and to the satisfaction of the Departmental Representative and ESO.

#### **1.15 EQUIPMENT MAINTENANCE, FUELLING AND OPERATION**

- .1 The Contractor shall ensure that all soil, seeds and any debris attached to construction equipment to be used on the project site shall be removed (e.g. power washing) outside of the National Park before delivery to the work site. The Contractor must provide at least 48 hours notice to the Departmental Representative for ESO equipment inspection and mobilization to site.
- .2 Equipment fuelling sites will be identified by the Contractor and approved by the Departmental Representative and the ESO. Except for chain saws, refuelling or equipment maintenance activities shall not occur closer than 100 metres to any streams (and only over an impervious containment system), wetlands, water bodies or waterways. If refuelling or equipment maintenance activities cannot be avoided, secondary containment must be used and a spill contingency plan must be implemented. Equipment shall be fuelled on stable surfaces. Chain saws should be refueled at least 10 m from the high-water mark of any waterbody on a stable surface.
- .3 Equipment used on the project shall be fueled with E10, and low sulphur diesel fuels and shall conform to local emission requirements. The Contractor is to ensure that unnecessary idling of vehicles/equipment is avoided.
- .4 Oil changes, lubricant changes, greasing and machinery repairs shall be performed at locations approved by the ESO or the Departmental Representative. Waste lubrication products (e.g. oil filters, used containers, used oil, etc.) shall be secured in spill-proof containers and properly recycled or disposed of at an approved facility. No waste petroleum, lubricant products or related materials are to be discarded, buried or disposed of in borrow pits, turnouts, picnic areas, viewpoints, etc. anywhere within a National Park.
- .5 The Contractor shall ensure that all equipment is inspected daily for fluid/fuel leaks and maintained in good working order.
- .6 Fuel containers, lubricant products, or other potentially deleterious substances shall be stored only in secure locations specified by the Departmental Representative and be secured to ensure they are tamperproof and cannot be drained by vandals. Alternatively, the Contractor may hire security personnel to prevent unauthorized access or damage.
- .7 Overnight equipment shall be parked on spill containment trays, as per Clause 1.15.4.
- .8 Noise and air pollution on site from equipment and trucks shall be kept to a minimum by shutting off all motors while not in use.

- .9 Pre and post construction inspections will be conducted of the laydown areas. The Contractor will be responsible for cleaning of all surfaces to remove oil/fuel stains.
- .10 Petroleum products are considered animal attractants and need to be handled and stored accordingly.

#### **1.16 OPERATION OF EQUIPMENT**

- .1 Equipment movements shall be restricted to the 'footprint' of the construction area. The work limits shall be identified by stake and ribbon or other methods approved by the Departmental Representative. Unless authorized by the Departmental Representative, activities beyond the work limits are not permitted. No machinery shall enter, work in or cross over streams, rivers, wetlands, water bodies or watercourses, nor damage aquatic and riparian habitat or trees and plant communities.
- .2 When, in the opinion of PCA, negligence on the part of the Contractor results in damage or destruction of vegetation, or other environmental or aesthetic features beyond the designated work area, the Contractor shall be responsible, at his or her expense, for complete restoration including the replacement of trees, shrubs, topsoil, grass, etc. to the satisfaction of the Departmental Representative and ESO.
- .3 Vehicle movements shall be restricted to work limits.
- .4 Spill containment trays shall be placed under all equipment when parked, including compressors, when in operation. The spill containment trays shall have a minimum side wall height of 100 mm and be constructed of hydrocarbon resistant material. Tarpaulins and cardboard shall not be used as containment under vehicles or equipment.

#### **1.17 FIRE PREVENTION AND CONTROL**

- .1 A fire extinguisher shall be carried and available for use on each machine and equipment.
- .2 Construction equipment shall be operated in a manner and with all original manufacturer's safety devices to prevent ignition of flammable materials in the area.
- .3 Care shall be taken while smoking on the construction site to ensure that the accidental ignition of any flammable material is prevented. Smoking or other activities with the potential to cause a fire may be restricted and/or prohibited in some of the work areas at the discretion of the ESO and the Departmental Representative depending on the current fire hazard rating.
- .4 In case of fire, the Contractor or worker shall take immediate action to extinguish the fire provided it is safe to do so. The ESO and the Departmental Representative shall be notified of any fire immediately. If not available, Banff Dispatch shall be immediately contacted at 403-762-1470 and 911 in case of emergencies.
- .5 Fires or burning of waste materials is not permitted.

#### **1.18 WILDLIFE**

- .1 During the Environmental Briefing all personnel shall be instructed by the ESO on procedures to follow in the event of wildlife appearance near or within the work site and any other wildlife concerns.
- .2 If necessary, schedule construction activities around important wildlife windows. The Project is located in Bird Conservation Region (BCR) 10 and within nesting zone A3. The migratory window occurs from April 10 until August 22. Bird sweeps of the work

will need to be coordinated with the Departmental Representative during the migratory bird window.

- .3 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 behavior or persistent intrusion. Extra care to control materials that might attract wildlife (e.g. lunches and food scraps) shall be exercised at all times.
- .4 Notify the ESO and Departmental Representative immediately about dens, litters, nests, wildlife-vehicle collisions, carcasses (road kills), bear activity or encounters on or around the site or crew accommodation. Other wildlife-related encounters are to be reported within 24 hours. If the ESO or Departmental Representative is not available, Banff Dispatch shall be immediately contacted at 403-762-1470.
- .5 Feeding or harassment of wildlife is strictly prohibited.
- .6 If project works are to be carried out within a restricted activity period for fisheries, the recommendations and instructions of a qualified aquatic environmental specialist are recommended. Restricted activity periods are times when works that disrupt the bed or banks of a waterbody must be avoided to prevent disturbing fish, fish eggs, or habitat during sensitive periods of their reproductive life cycle. The follow restricted activity periods for fish species in Banff National Park are listed below:
  - a. Arctic Grayling – April 16 to June 30
  - b. Cutthroat Trout – May 16 to August 15
  - c. Brook Trout – October 1 to April 15
  - d. Brown Trout – October 1 to April 15
  - e. Bull Trout – September 1 to April 30
  - f. Golden Trout – May 16 to July 31
  - g. Lake Trout – September 16 to April 15
  - h. Lake Whitefish – October 1 to April 30
  - i. Mountain Whitefish – September 16 to April 15
  - j. Rainbow Trout – May 1 to July 15
- .7 Construction activities have the potential to impact bats and bat hibernacula. Prior to construction activities, a survey will be conducted to identify the presence of any hibernacula within the construction area. Surveys have been completed at Mosquito Creek Campground and no bat hibernacula were identified.

#### **1.19 RELICS, FOSSILS AND ANTIQUITIES**

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

## **1.20 WASTE MATERIALS STORAGE AND REMOVAL**

- .1 The Contractor shall dispose of hazardous wastes in conformance with the Environmental Contaminants Act, applicable provincial regulations, and the Code of Good Practice for Management of Hazardous and Toxic Wastes at Federal Establishments.
- .2 All wastes originating from construction, trade, hazardous and domestic sources, shall be kept separate for disposal in separate waste streams where available or required.
- .3 Construction, trade, hazardous waste and domestic waste materials shall not be burned, buried or discarded at the construction site or elsewhere within National Parks. These wastes shall be contained and removed in a timely and approved manner by the Contractor and workers and disposed of at an appropriate waste landfill and recycling site(s) located outside the park. Construction waste storage containers, provided by the Contractor, shall be emptied by the Contractor when 90% full. Waste containers shall have lids, and waste loads shall be covered while being transported.
- .4 The Contractor and workers shall make efforts to reduce, reuse, and recycle materials.
- .5 All efforts to prevent wildlife from obtaining food, garbage or other domestic wastes shall be made by the Contractor and contract staff while undertaking work in National Parks. Such wildlife attractants shall not be stored at the work site overnight. Lunches, coolers and food products, including waste food products, shall be securely stored away from access by animals. Daily removal from the National Park and off-site disposal of food scraps, food wrappers, pop cans, domestic waste, and other potential wildlife attractants is mandatory. Existing Parks Canada waste receptacles shall not be used for disposal of such wastes without prior arrangement with PCA.
- .6 The Contractor and workers shall immediately report any circumstances related to food/garbage and wildlife to the ESO or the Departmental Representative. If neither can be reached, the Contractor/worker shall immediately contact Banff Dispatch at 403-762-1470.
- .7 Sanitary facilities shall be provided and maintained in accordance with Section 01 52 00 – Construction Facilities.

## **1.21 MISCELLANEOUS SITE MANAGEMENT CONTINGENCIES**

- .1 The National Park Act regulations prohibit anyone working within National Parks from using public campground facilities.
- .2 Removal and storage of snow shall be the Contractors responsibility and arranged with the ESO and the Departmental Representative.
- .3 The Contractor shall control blowing dust and debris generated from the construction site by means such as covering or wetting down dry materials and rubbish.
- .4 Security services at the work site may be desirable or necessary during the contract, especially during quiet times. Fuel tanks or other potentially deleterious substances shall be secured to ensure they are tamperproof and cannot be drained by vandals.
- .5 Pets shall not be brought to or maintained at the construction site.

## **PART 2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **PART 3 EXECUTION**

### **3.1 SPECIFIC CONCERNS RELATIVE TO BLASTING**

- .1 Prior to blasting, the Contractor shall sweep the work area and maintain a continuous watch for wildlife that may be present. If wildlife are present, work shall be halted until the wildlife have passed through the area or have been hazed out of the area by the ESO or a Park Warden.
- .2 Steps shall be taken to minimize flyrock and dust.
  - .a During blasting, trees and other vegetation shall be protected as much as practicable by laying charges and delays to direct explosives away from trees.
- .3 The Contractor shall describe the proposed type and quantities of explosives to be used to the satisfaction of the Departmental Representative and ESO. Blasting products that may produce high residual nitrogen concentrations (such as ANFO) will not be permitted.
- .4 Blasting shall comply with the standards outlined in DFO's "Guidelines for the use of explosives in or near Canadian fisheries waters" (Wright and Hopky 1998).
- .5 Blast holes shall not be charged with explosives if there is a reasonable expectation of an extreme weather event (heat, rain, snow, or electrical storm).

### **3.2 SPECIFIC CONCERNS RELATING TO EXCAVATING AND PLACEMENT**

- .1 Materials shall be placed at storage sites or on the grade without spillage outside the working limits. Any material inadvertently falling outside the work limits is to be removed promptly in a manner that does not damage trees or vegetation at that location. The Contractor shall instruct workers to prevent pushing, placement, raveling, storage or stockpiling of any materials (e.g. slash, rock, fill or topsoil) in the trees bordering the right-of-way or into watercourses or water bodies.
- .2 All sediment control measures shall be implemented by the Contractor prior to the commencement of the work in the vicinity of water bodies, watercourses, and wetlands.
- .3 The Contractor is to prepare an EPP which details how the dewatering, including fish salvage and exclusion, shall be undertaken prior to construction activities, to the satisfaction of the Departmental Representative and the ESO. The Contractor will also need to obtain a RAP prior to undertaking the work. Special attention is to be given to the environmental sensitivity of the discharge area, freezing conditions operation, and overflow avoidance, decanting and settlement pond reclamation. Water containing suspended materials shall not be pumped into watercourses, drainage systems or on to land, except with the permission of the Departmental Representative and the ESO.

### **3.3 SPECIFIC CONCERNS RELATIVE TO EROSION CONTROL AND SEDIMENTATION**

- .1 The EPP shall include an Erosion and Sedimentation Management Plan for the components of this contract that are undertaken in proximity to watercourses, wetlands or riparian environments. This plan shall be to the satisfaction of the Departmental Representative and ESO. If sediment ponds are required, they shall

be designed to settle all sediment particles 0.02 mm or larger. The ponds shall also be designed to handle 1:5 year storm events, with overflow spill capacity for 1:10 year storm events and emergency spillway capacity for 1:100 year storm events.

- .2 An important desired end result is to allow no release into watercourses of sediments in levels that are deleterious to fish or that would harmfully alter, disrupt, or destroy fish habitat. Similarly, there is to be no sediment release into areas of vegetation growth or sensitive areas of sediments in levels that would adversely alter growing or hydraulic conditions. The target is 0 mg/L of TSS over background levels. The threshold is a maximum instantaneous increase of 25 mg/L over background levels when background levels are <250 mg/L, or a maximum instantaneous increase of 10% over background levels when background levels are >250 mg/L. This threshold shall not be exceeded.

### **3.4 SPECIFIC CONCERNS RELATIVE TO PROJECT WORK SITE(S)**

- .1 Creek flow will be maintained and redirected around the work site throughout the duration of the work. The Contractor is advised that water diversion systems implemented for the project site should be sized to accommodate minimum flow rates of 1.5 m<sup>3</sup>/s
- .2 If gravel-bags or yard-bags are used in the creation of coffer dams, the gravel must be clean washed pea-gravel.
- .3 All Pumps, and coffer dam pipes, are required to be fitted with intake mesh size 2.54 mm, as per the DFO, to prevent entrainment and impingement of fish. Block nets shall be monitored to ensure adequate flow and prevent build up of vegetation or debris.
- .4 Flow dissipaters must be used to prevent scour and erosion at the downstream end of water diversion.
- .5 All grey water must be pumped from site into vegetated areas to allow for natural deposition of mobilized sediment prior to the water re-entering a waterbody.
- .6 There is currently an unmaintained trail between Hector Lake and Margaret Lake that passes immediately adjacent to the barrier construction area. This path will be used whenever possible to minimize impacts to surrounding soil and vegetation.
- .7 Whitebark Pine is an endangered SARA listed species with the potential to occur in the project area. A survey was conducted within the project area that has identified whitebark pine communities and individuals. No whitebark pine trees will be harmed or killed through project activities.

**END OF SECTION**

## SECTION 01 74 23 CLEANING

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

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

#### 1.2 PRECEDENCE

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

#### 1.3 RELATED SECTION

- .1 Section 01 52 00 – Construction Facilities.
- .2 Section 01 57 19 – Environmental Procedures.
- .3 Section 01 77 00 – Closeout Procedures.
- .4 Section 31 23 21 – Rock Excavation.
- .5 Section 31 23 23 – Rock Bolts.

#### 1.4 MEASUREMENT AND PAYMENT

- .1 Work in this section will be considered incidental to the Contract and no separate payment shall be made to the Contractor.

#### 1.5 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by the Owner, the Public, or other Contractors.
- .2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative.
- .3 Clear snow and ice from access to work areas during active construction periods and to maintain access to environmental protection facilities outside active construction times.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site bear proof containers for collection of waste materials and debris in accordance with Section 01 52 00 – Construction Facilities and Section 01 57 19 – Environmental Procedures.
- .6 Remove waste material and debris from site at end of each working day.
- .7 Dispose of waste materials and debris off site in approved facilities outside of the Park.
- .8 Store volatile waste in covered metal containers, and remove from premises at end of each work day.
- .9 Do not burn waste materials in the Park.
- .10 Provide adequate ventilation during use of volatile or noxious substances.
- .11 Pre- and post-construction surveys will be conducted of the laydown areas. The Contractor shall be responsible for cleaning of all hard surfaces to remove oil/fuel stains.



- .12 Use only cleaning products recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer. Departmental Representative approval is required before using any cleaning products in the Park.
- .13 The Departmental Representative and Environmental Surveillance Officer may, at their total discretion, require the Contractor to suspend work activities until such a time as the Work Site is cleaned and debris, waste, and animal attractants are satisfactorily managed. The Contractor shall do as requested at their cost and no claim for time or additional costs will be accepted.

#### **1.6 FINAL CLEANING**

- .1 When Work is Substantially Complete, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .3 Remove waste products and debris including that caused by PCA or other Contractors.

### **PART 2 PRODUCTS**

#### **2.1 NOT USED**

- .1 Not Used.

### **PART 3 EXECUTION**

#### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**



## SECTION 01 77 00 CLOSEOUT PROCEDURES

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- .1 Administrative procedures preceding preliminary and final inspections of Work.

#### 1.2 PRECEDENCE

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

#### 1.3 RELATED SECTIONS

- .1 Section 01 31 00 – Project Management and Coordination.
- .2 Section 01 74 23 – Cleaning.
- .3 Section 01 78 00 – Closeout Submittals.

#### 1.4 MEASUREMENT AND PAYMENT

- .1 Work in this section will be considered incidental to the Contract and no separate payment shall be made to the Contractor.

#### 1.5 INSPECTION AND DECLARATION

- .1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents. Once the Contractor's Inspection is complete:
  - .a Notify Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
  - .b Request Departmental Representative's Inspection.
- .2 Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
- .3 Completion: The Contractor shall submit a written certificate that the following have been performed:
  - .a Work has been completed and inspected for compliance with Contract Documents.
  - .b Defects have been corrected and deficiencies have been completed.
  - .c Work is complete and ready for Final Inspection.
- .4 Final Inspection: when items noted above are completed, request final inspection of Work by Departmental Representative, and Contractor. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.

### PART 2 PRODUCTS

#### 2.1 NOT USED

- .1 Not Used.

**PART 3      EXECUTION**

**3.1      NOT USED**

.1      Not Used.

**END OF SECTION**

## SECTION 01 78 00 CLOSEOUT SUBMITTALS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- .1 As-built records.
- .2 Warranties and bonds.

#### 1.2 PRECEDENCE

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

#### 1.3 MEASUREMENT AND PAYMENT

- .1 Work in this section will be considered incidental to the Contract and no separate payment shall be made to the Contractor.

#### 1.4 RELATED SECTIONS

- .1 Section 01 31 00 – Project Management and Coordination.
- .2 Section 01 33 00 – Submittal Procedures.
- .3 Section 01 77 00 – Closeout Procedures.

#### 1.5 CLOSEOUT SUBMITTALS

- .1 The Contractor shall provide the following documents and information to the Departmental Representative prior to them being eligible for Final Completion as detailed in Section 01 77 00 – Closeout Procedures.

#### 1.6 AS-BUILTS AND SAMPLES

- .1 The Contractor shall maintain at the site for Departmental Representative one record copy of the following in accordance with Section 01 31 00 – Project Management and Coordination:
  - .a Contract.
  - .b Specifications.
  - .c Addenda.
  - .d Change Orders and other modifications to the Contract.
  - .e Field Test Records.
  - .f Inspection certificates.
  - .g Manufacturer's Certificates.
- .2 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .3 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .4 Keep record documents and samples available for inspection by Departmental Representative.

- .5 All Documents included in this Specification shall be submitted to the Departmental Representative prior to Demobilization.

## **1.7 RECORDING ACTUAL SITE CONDITIONS**

- .1 Record information on set of Drawings and Tender photos are required.
- .2 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .3 Specifications: legibly mark each item to record actual construction, including:
  - .a Changes made by Addenda and change orders.

## **1.8 WARRANTIES AND BONDS**

- .1 Despite inspection and acceptance of the Work by or on behalf of the Owner and without restricting any provisions of the Contract or any condition, warranty or provision imposed by law, the Contractor, if requested by the Owner to do so, must replace, repair or correct, at its own option and expense any work that becomes defective or fails to conform to the requirements of the Contract, where applicable. The warranty period will be 12 months after delivery and acceptance of the Work.
- .2 The warranty period is automatically extended by the duration of any period or periods where the Work is unavailable for use or cannot be used because of a defect or non-conformance during the original warranty period. The warranty applies to any part of the Work replaced, repaired or corrected, for the greater of:
  - .a The warranty period remaining, including the extension, or
  - .b 90 days or such other period as may be specified for that purpose by agreement between the Parties.
- .3 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .4 List subcontractor, coffer dam designer, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .5 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work.
- .6 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- .7 Verify that documents are in proper form, contain full information, and are notarized.
- .8 Co-execute submittals when required.
- .9 Retain warranties and bonds until time specified for submittal.

## **PART 2 PRODUCTS**

### **2.1 NOT USED**

- .1 Not Used.

## **PART 3 EXECUTION**

### **3.1 NOT USED**

- .1 Not Used.

**END OF SECTION**

## SECTION 31 23 21 ROCK EXCAVATION

### PART 1 GENERAL

#### 1.1 PRECEDENCE

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

#### 1.2 RELATED SECTIONS

- .1 Section 01 14 00 – Work Restrictions.
- .2 Section 01 31 00 – Project Management and Coordination.
- .3 Section 01 33 00 – Submittal Procedures.
- .4 Section 01 35 30 – Health and Safety Requirements.
- .5 Section 01 57 19 – Environmental Procedures.

#### 1.3 DEFINITIONS

- .1 Blasting Consultant: A consultant with expertise in blasting and non-explosive rock excavation who is independent of the Contractor and retained by the Contractor to provide blasting design and quality control functions as specified herein. The Blast Consultant must be registered with an applicable professional organization in Alberta such as APEGA or approved alternate.
- .2 Blaster: A licensed blaster with Occupational Health and Safety Alberta who holds a current “Non-Mining” Surface Blasting Blaster’s Permit.
- .3 Controlled Blasting: The use of blasting methods designed to prevent rock damage or overbreak beyond the Limits of Excavation, provide adequate fragmentation, and prevent damage to infrastructure from vibrations, fly rock, or falling rock. Unless otherwise authorized by the Departmental Representative.
- .4 Trim Blasting (Trimming): Usually instructed on a case by case basis and comprises the removal of potentially unstable rock material from the face of a rock slope that is too large to be removed by scaling using controlled blasting techniques. Drilling is often completed using plugger drills with operators suspended on ropes.
- .5 Backline Holes: The line of holes drilled along the backslope of the limit of excavation.
- .6 Production Holes: Holes within the limit of excavation that are not backline holes.
- .7 Cushion Blasting: A blasting method where holes drilled along the final excavation backslope (i.e., backline holes) are detonated after production holes have been detonated.
- .8 Pre-Shear Blasting (or Presplitting): A blasting method where holes drilled along the final excavation backslope are detonated in advance of the production holes to create a fracture line along the limits of excavation.
- .9 Buffer Blasting: A line of holes located nearby and parallel to the backline holes to prevent damage beyond the limits of excavation.
- .10 Fly Rock: Fragmented material (typically fragments of rock) that is thrown during blasting.

- .11 Vibration Monitoring: The use of a seismograph to record blast induced ground movements.
- .12 Overpressure Monitoring: The use of a hydrophone to measure blast induced overpressures.
- .13 Stemming: Inert material placed in a drill hole on top of the explosives to contain the explosive gases.
- .14 Limits of Excavation: Surfaces forming the required extent of excavation (i.e., the extents within which rock will be removed or Design Line) shown on photographs/drawings or as directed by the Departmental Representative.
- .15 Underbreak: Material remaining on the final face that causes the excavation not to reach the Limits of Excavation.
- .16 Overbreak: Additional excavation beyond the Limits of Excavation. Usually overbreak is an undesirable occurrence.
- .17 Blast Guard: Personnel dedicated to the security of a loaded blast who shall not have worked for at least eight (8) hours prior to the start of their shift and shall not work for at least twelve (12) hours after their shift is complete. The use of a Blast Guard is incidental to the work.
- .18 Rip Rap: Rock that is hard, durable, and angular of a quality that will not disintegrate on exposure to water or the atmosphere.
- .19 Coffer Dam: A structure designed by a Professional Engineer used to divert sufficient water around the work location to enable the Contractor to perform their work expeditiously and work safely.

#### 1.4 MEASUREMENT AND PAYMENT

- .1 Rock excavation will be measured as the in-situ "bank" volume of rock excavated, based on measurements agreed upon by the Departmental Representative and the Contractor before drilling commences on each blast. Over excavation and Overbreak beyond the Limits of Excavation, and secondary breaking of oversize material resulting from blasting will not be measured for payment.
- .2 The blast shall be measured on site by the Departmental Representative and be agreed upon with the Contractor prior to the blast being undertaken.
- .3 Payment for Rock Excavation will be made at the Contract Unit Price per cubic metre (m<sup>3</sup>) of rock excavated. The tendered unit price shall be full compensation for supplying all material, labour and equipment to execute the work as specified.
- .4 Payment for a blast will not be made until the As-Build Blast Record have been received and approved by the Departmental Representative.
- .5 The Coffer Dam design, materials (including pipe construction), installation, dismantling, removal, and off-site disposal shall be paid under Unit Rate Item #3 (Lump Sum). The Lump Sum Unit Rate Item #3 shall include all helicopter time associated with this structure. Mobilization of materials to the laydown area shall be measured under Unit Rate Item #1 (Mobilization and Demobilization.) No additional costs shall be measured for this their mobilization.
- .6 Clean up and disposal of materials produced by Rock Excavation will be paid separately in accordance with Section 31 23 22 - Common Excavation.

- .7 Rock Scaling or temporary support to facilitate access to trim locations and performance of blasting is considered incidental to the work.
- .8 Scaling of the trim area and the slope below the trim area to remove all loose rock produced by blasting is considered incidental to the work.
- .9 Preparation of submittals, Proposed Blasting Plan(s), and As-Build Blast Records is considered incidental to the work.
- .10 Protection of infrastructure is considered incidental to the work.
- .11 The use of a Blast Guard, if required, is incidental to the work.
- .12 If the Contractor fails to follow their Blast Design and the cut face remains in an undesirable condition following blasting, all remedial measures necessitated by improper blasting as determined by the Departmental Representative shall be at the Contractor's expense.
- .13 Mobilization and demobilization required for this Work shall be incidental to "Lump Sum Price Item 1 – Mobilization / Demobilization", and no additional payment will be made.
- .14 Environmental mitigations required in accordance with Section 01 57 19 – Environmental Procedures, for the Work in this Section shall be incidental to the contract and no separate payment will be made to the Contractor.

#### **1.5 SUBMITTALS**

- .1 Submittals shall be in accordance with 01 33 00 – Submittal Procedures;
- .2 The General Blasting Plans and Blasting Safety Plan.
- .3 Pre-Construction Condition Survey: The Contractor shall submit to the Departmental Representative, not less than two (2) days before Blasting, a Pre-Construction Condition Survey of all infrastructure in the area that might be subject to damage. The format of the survey shall be acceptable to the Departmental Representative.
- .4 Proposed Blast Design: Not less than two (2) days prior to commencing work for each blast, submit a Proposed Blast Design for that blast to the Departmental Representative for review. The Proposed Blast Design shall be in a format acceptable to the Departmental Representative and include as a minimum the following information:
  - .a Plan and cross section sketch drawings of proposed trim showing the free face, drill pattern (burden and spacing), dimensions, estimated volume, calculations for maximum charge weight per delay and vibration prediction.
  - .b Diameter, inclination, orientation, depth, and number of drilled holes.
  - .c Loading diagram showing type and amount of high explosive or non-explosive products, powder factor, initiators, and depth of stemming for each type of blast hole.
  - .d Initiation sequence for blast holes including delay pattern and delay times.
  - .e Manufacturer's data sheets for all explosive and non-explosive products, delays and initiation systems to be used.
  - .f Proposed time and date of blast.
  - .g Methods of protecting existing infrastructure that shall be employed.
  - .h Estimated peak particle velocity at the closest edge of Hector Lake.

- .i Estimated overpressures at Margaret Creek discharge into Hector Lake.
- .5 Blasting plan submittals are for quality assurance and record keeping purposes. Review of the Proposed Blast Designs by Departmental Representative shall not relieve Contractor from responsibility for accuracy and adequacy of the designs when implemented.
- .6 As-Built Blasting Record: Not more than one (1) working day after completing a blast, submit an As-built Blasting Record to the Departmental Representative. The As-built Blasting Record shall indicate all deviations from the Proposed Blast Design, the actual date, time, and duration of blasting.

## **PART 2 PRODUCTS**

### **2.1 TYPES OF EXPLOSIVES AND ACCESSORIES**

- .1 Bulk or ammonium nitrate and fuel oil (ANFO) type explosives shall not be used.
- .2 Where there is a danger of initiation system cut-offs, detonators and delay elements must be of a type that includes down-hole delays (e.g. Handidet) to prevent cut-offs.
- .3 Non-explosive rock excavation products shall be produced by a recognized manufacturer.
- .4 The blasting is located in a creek bed, therefore the explosive products shall have suitable water resistance for the Contractor's schedule.

## **PART 3 EXECUTION**

### **3.1 QUALITY CONTROL**

- .1 Proposed Blast Designs for Blasting shall be prepared by the licensed Blaster who will directly oversee the Blasting Consultant.
- .2 The Blasting Consultant shall have at least ten (10) years relevant experience, including experience with non-explosive rock excavation methods. The blasting consultant shall not be a direct employee or affiliated with the contractor and shall be registered with a professional body in Alberta. Qualifications of the Blasting Consultant shall be subject to approval by the Departmental Representative.
- .3 The Blasting Consultant shall make an initial Site Visit prior to any drilling to inspect the Rock Excavation area and advise on blasting /excavation methods and measures necessary to protect infrastructure and the environment. The Departmental Representative may require the Blasting Consultant to make subsequent Site Visits during the course of the work.
- .4 The Blaster shall be licensed with Occupational Health and Safety Alberta and hold a current Non-Mining Surface Blaster's Permit.
- .5 The Blaster shall directly oversee the drilling, loading, and detonation of all blasts.
- .6 The Contractor shall not commence drilling or other work on a trim blast until the Blast Design has been submitted to and reviewed by the Departmental Representative.



- .7 The Contractor shall provide sufficient time between the completion of drilling and start of loading to permit the Departmental Representative to measure the length of holes, dimensions of the blast, and perform other quality assurance tasks and is considered incidental to the work.

### **3.2 GENERAL REQUIREMENTS**

- .1 Blasting shall only be conducted after the Departmental Representative has received the Certificates of Insurance required by the Contract Documents, as specified in Section 01 33 00 - Submittal Procedures, Clause 1.1.3. The Certificates shall verify that the Blaster's General Liability and Property Damage Coverage contain no specific exclusions for Work related to Blasting
- .2 Rock shall be blasted such that it does not necessitate the use of machinery in the stream bed.
- .3 The contractor shall obtain all necessary permits from, and shall comply fully with the laws, rules and regulations of Municipal, Provincial and Federal agencies in connection with the use, transport, storage and safe handling of all explosives. The contractor shall be familiar with the Industrial Health and Safety regulations published by the Worker's Compensation Board of the Province in which the site is located.
- .4 Explosives and all detonating apparatus may be stored in magazines located near the work site in accordance with the requirements of all Federal or Provincial inspectors having jurisdiction, and the requirements of the Explosives Act (Canada), R.S.C. 1985, as amended, and any applicable Municipal By-laws. Alternatively, explosives may be flown in on the day of the blast.
- .5 Blasting shall only be conducted after the Departmental Representative has received the Certificates of Insurance required by the Contract Documents. The Certificates shall verify that the Blaster's General Liability and Property Damage Coverage contain no specific exclusions for Work related to Blasting.
- .6 The Blaster shall bear full responsibility for ensuring that all Blasting Operations are conducted in a satisfactory manner and in accordance with these specifications. The Departmental Representative's review of the Blasting Plan shall in no way relieve the Blaster from this obligation, nor shall the Engineer assume any responsibility for the adequacy of the Blasting to achieve adequate breakage or acceptable results.
- .7 Blasts shall be designed such that Peak Particle Velocities do not exceed 13 mm/s in a fish spawning bed during the period of egg incubation.
- .8 No explosive is to be detonated in or near fish habitat that produces, or is likely to produce, an instantaneous pressure charge greater than 100 kPa (14.5 psi).

### **3.3 ENVIRONMENTAL REQUIREMENTS**

- .1 Dispose of waste materials in accordance with Section 01 57 19 – Environmental Procedures.
- .2 All lead lines, shock tubes, delays, or other blast related paraphernalia shall be removed from site and disposed appropriately prior to demobilization.

**END OF SECTION**