



ANNEX “A” – STATEMENT OF REQUIREMENTS

Title: Cableway Repairs - Cableway Repairs - Water Survey of Canada Station at Morice River near Houston, British Columbia (08ED002)

The Contractor hereby agrees to provide the construction services outlined below in this Statement of Requirements.

1.0 Introduction

Environment and Climate Change Canada (ECCC) maintains cableway and hydrometric gauging stations across approximately 500 sites in the Pacific and Yukon areas. The hydrometric data support activities such as policy development, infrastructure design, water allocation, flood and drought response, recreation, navigation, ecosystem protection, and scientific study.

Hydrometric stations typically consist of a “walk-in” or “look-in” instrument shelter and a cableway or metering bridge to measure discharge. Other structures include helicopter pads and access stairways. Many of the hydrometric stations were built decades ago where structural degradation has occurred over time. As such, infrastructure deficiencies and safety concerns have been identified; requiring repairs and upgrades to return these stations to operational condition.

1.1 Objective

ECCC requires a Contractor to conduct construction activities to upgrade the existing cableway to a level of safety acceptable for manned operation at the Water Survey of Canada Station at Morice River near Houston, B.C.

2.0 Project Station Location and Access

The subject station is located approximately 59 km Southwest of Houston B.C. and 0.5 km below the outlet of Morice Lake. The station’s coordinates are roughly 54°07’05.0” N and 127°25’26.0”W. See the site maps below (Figure 1).

The site is located within the Morice Lake Provincial Park. During peak times the boat launch and surrounding area can become high traffic areas for tourists. It is the responsibility of the Contractor to ensure safety and security of the construction site. Hand digging is required due to being in the Provincial Park.

The site can be accessed by boat from a boat launch at the end of the Morice Forest Service Road (FSR). Exact coordinates of the boat launch are 54°06’00.55” N, 127°26’57.29” W. Details are in Figure 3. Alternatively, the site can be access by helicopters based in Smithers or Terrace. There is a helipad on the Home-side, but the Far-side does not have helicopter access.

To access the boat launch, start at Steelhead Park in Houston BC. Travel 2km west on Yellowhead highway, and turn south onto the Morice River FSR. Drive 27 km until you reach a fork at the junction of the Huckleberry/Morice Owen and Morice Lake Roads. Turn right onto Morice Lake road, and continue until kilometer marker 75. Take a right at the intersection just past the 75km mark, and follow the road until you hit the Boat Launch at the Campsite. Take a boat and head northeast for approximately 2km until you reach the river mouth, proceed up the river and the cableway site will be approximately 500m in. Likely a jet boat will be required to traverse the river. It is estimated to take approximately 15-20 minutes to reach the site from the boat launch. There is heavy logging traffic within the forest service roads in this area.



High winds in the area can cause whitecaps in the lake, which will limit ability for a boat to reach the boat launch from the site. Provisions should be taken in the case where the boat cannot exit the river.

Wading is only possible at low water level. Caution must be maintained if wading. Boat can be used to cross the river.

Grizzly bears are common in this area, and proper protocols must be taken to ensure wildlife safety.

The soil on the Home-side is expected to be a mixture of silt, sand, cobbles, and boulders.

The soil on the Far-side is expected to be a 0.5m top-layer of silt followed with hard packed clay below. A jack-hammer was required during the previous excavation at this site.

The schedule has been chosen to minimize risk of saturation within the excavation, but it is possible that flooding within the excavation may be encountered on both banks.

Shoring or proper sloping of the excavation will be expected.



Figure 1: Morice River Cableway Site

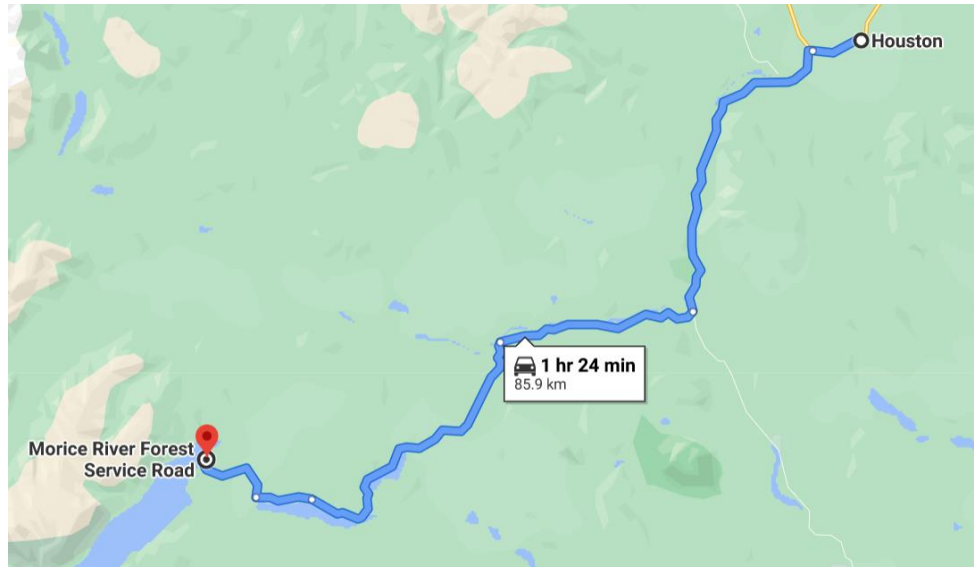


Figure 2: Morice River Station Site Road Access



Figure 3: Morice Lake Campsite/dock to Morice Cableway site

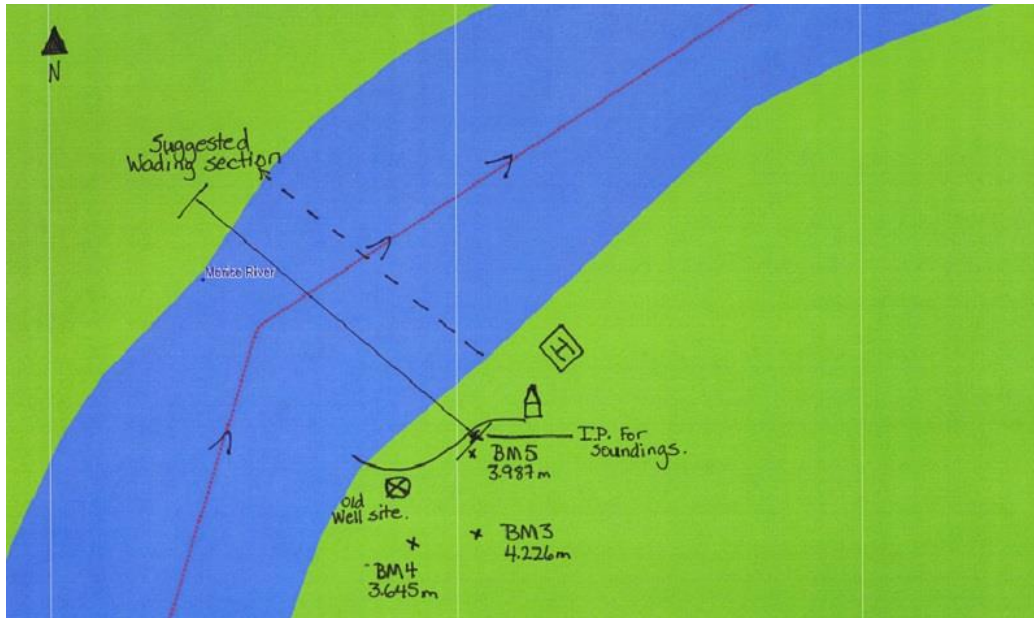


Figure 4: Morice River Suggesting Wading Section

3.0 Existing Infrastructure

The existing cableway spans approximately 85m across Morice River.

The right bank consists of a 5.29m tall steel A-frame tower and a single plate anchor approximately 8.9 m back from the A-frame. The anchor is composed of a 14ft rod with a 3ft by 5ft plate at the end. The A-frame is supported by steel plate footings with dimensions of 0.3x0.3m buried to an approximate depth of 1.5m. The A-frame is resting on a freely rotating hinge connection allowing rotation towards and away from the river. The A-frame is held in place by a 3/8" diameter 6x19 IWRC backstay cable extending from the steel plate anchor to the top of the A-frame.

The left bank consists of a 5.38m tall galvanize steel A-frame tower with a single plate anchor, similar to the right bank, approximately 9.95 m back from the A-frame. The A-frame and supporting components are similar to the right bank.

The cables spanning across the river consist of a 1-inch diameter 6x19 IWRC main cable and 1/2-inch diameter 6 x 19 IWRC marker cable. The marker cable supports three aircraft marker cones. The cable car type is an aluminum stand-up car, approximately 1.5m in height.

See section 2.0 for details regarding soil type.

4.0 Scope of Requested Services

The Contractor will provide mobilization and demobilization, all labour, supervision/project management, equipment and supplies, as required, to complete the requested services for the Morice River near Houston cableway, including the following:

- Replace the existing steel plate anchors on each side of the cableway with two (2) new steel plate anchors as per drawing 2812 – Steel Plate Anchor and Reference Plan 2863 – Double Plate Anchor and Bridle system;
 - The existing steel plate anchor can be left in place (unless it is in the way of the new anchors), aircraft cable will be attached to it;



- Compaction of the soil on the steel plate anchors during backfill;
 - Anchors to be at approximately 2.5m depth, but can vary by site. The Contractor is obligated to excavate as deep as required for proper placement of infrastructure per ECCC requirements;
 - ECCC Project Manager will layout the anchor position;
 - Excavation is not to be backfilled unless approval is provided by ECCC Technical Authority;
 - Excavation to be completed by hand;
 - Load test is not required for anchors, ECCC field review will be conducted prior to concealment;
- Footings to be excavated and a total of four (4) 1m x 1m additional plate to be installed, one (1) on each footing, per drawing 5001 – Additional Base Plate;
- Reinstall footings to be plumb;
 - Excavation to be completed by hand;
- Replacement of the main cable with 7/8" 6x26 IWRC and all associated hardware (fist grips, turnbuckles, and thimbles, etc.);
- Replacement of tieback cables with two (2) 1/2" 6x26 IWRC tieback cable and all the associated hardware (fist grips, turnbuckles, and thimbles etc.) on each bank;
- Each tieback will be connected to a steel plate anchor;
- Replacement of the aircraft cable with 3/8" 6x26 IWRC and associated hardware (fist grips, turnbuckles, and thimbles, etc.);
- To be connected to existing steel plate anchor if left in place;
- Replace the decking on the Far-side platform;
- Installation of safety chains/ safety bar at the rear of the A-frame platform;
- Installation of A-frame Safety Loop as per "Safety Loop Sketch";
- Proper disposal of removed infrastructure or other waste produced by construction;
- No waste is to be left within the Provincial Park;
- The site must be restored to its original state;
- Before and after photos are required per section 4.2;
- If required – clearing vegetation or snow to create an access path;
- Qualified Environmental Professional (QEP) services may be required, see section 4.5 for environmental considerations;
- If required – removal of an unforeseen obstacles during excavation, as determined by ECCC;
- See section 4.1 for definition of unforeseen obstacles;
- Submittal of a Work Plan prior to mobilization, as outlined in section 4.1;
- Submittal of a Health and Safety Plan prior to mobilization, as outlined in section 4.1;
- The Contractor is responsible for pickup and delivery of materials and components from Richmond, B.C., or Vernon, B.C. as designated and provided by ECCC, to site location;
- ECCC will provide the list of materials and components;



- Pick-up address: 140 – 13460 Vanier Pl., Richmond, B.C., V6V 2J2;
- Materials will be arranged in approximately 3 or 4 pallets varying in weight;
- Steel plate anchors are expected to be the heaviest single item at 150kg.

4.1 Considerations and General Requirements Procedures

The above-noted cableway is **out of service** and **should not** be used under any circumstance for the transportation of people. Goods may be transported with the cableway with advanced approval from the Technical Authority. It is the Contractor's responsibility to ensure safety for any goods on the cableway.

The Contractor must provide a Work Plan, clearly stating their methodology for the relevant points below:

- Installation of the new steel plate anchors;
- Lowering and replacing the main cable and marker cable; the cable **must not** be left in the river for longer than 1 hour. Care is to be taken by the Contractor to ensure the cable does not cause a safety concern for any traffic within the river. Care must be taken to notify and highlight any danger to river traffic;
- Stabilizing or lowering A-frame; the A-frame **cannot** impact the river bank or be placed in the stream;
 - The steel A-frames have a pin base connection, and it is unstable under reduced tension in the existing cables – **the A-frame structure on both banks are required to be stabilized in all direction during the entire construction activity.**
- Contractor's "Chance find procedures" for Archaeological Materials; ECCC to provide a sample upon contract award.
 - The "Chance Find Procedures" is a project-specific procedure that outlines actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during the project construction and operation.
- List of Contractor's tools and equipment;
 - See section 4.4 for ECCC recommendations;
- Quality control plan;
- Waste management plan;

The Contractor must provide a Health and Safety Plan, clearly stating the procedures for ensuring safety throughout the project. This should include steps in the case of emergency, in the case of potential construction problems, and everyday procedures to promote safety. If at the time of construction the COVID-19 pandemic is ongoing, the Contractor must include measures to reduce the risk of COVID-19 spread between individuals on site. Health and Safety Plan must be in conformity with all regulations and requirements outlined in section 7.0.

Unforeseen obstacles during excavation may include large boulders requiring alternate methods of removal, tree trunks, and significant difference in soil type compared to expected. See section 2.0 for expected soil type. When unforeseen obstacles are identified, the Contractor must immediately inform ECCC's Technical Authority via phone or email as soon as reasonably possible. In cases where unforeseen obstacles are being claimed, full documentation including photos illustrating the obstruction in a clear manner and dimensions (to a reasonable degree) as well as an outline of challenges during removal, must be provided to ECCC's Technical Authority for review and file documentation. Unless otherwise agreed upon, it remains the responsibility of the Contractor to remove the obstruction.

The main cable and marker cable must not be dragged across the river by boat. The cable must be pulled across the river from either shore by winching or other similar methods.



All excavation must be properly shored in accordance with Canadian Labour Code and Worker's Compensation Board Guidelines.

The Contractor is required to have the proper equipment and experience to carry out cable installation. Cables must be installed in accordance to the ECCC/Technical Authority design and specifications, cable manufacturer and cable hardware specification/guidelines. The main cable is required to be installed at the design unloaded sag and tensioned correctly and secured per ECCC standards upon construction completion.

The Contractor is required to have sufficient equipment and experience to carry out the plate anchors and A-frame footings installation. Anchors must be installed at an adequate depth to achieve the correct angles and stick-out as per ECCC structural drawings 2812 and 2863, and it is the responsibility of the Contractor to do so. Full documentation including photographs must be provided to ECCC's Technical Authority. ECCC will conduct a field review prior to concealment to ensure adherence with requirements.

Property belonging to ECCC or a private entity on-site or related to any project must not be damaged. Any damage must be repaired prior to demobilization at the Contractor's expense. ECCC is responsible for notifying the Landowners, Parks, etc. The Contractor must not enter the site without approval from the Technical Authority.

Snow clearing/ access path clearing/fixing, removal of vegetation if required (based on recommendation and approval of an Environmental Consultant and/or Technical Authority), is the responsibility of the Contractor. If access requires removal of vegetation, pre-approval must be sought from ECCC Technical Authority. A QEP may be required on-site for this work, see section 4.5 for details.

4.2 Work Authorization

The Contractor must ensure that all pre-construction deliverables, including a detailed outline of all work, schedule, project sequence, shop drawings, mill-certificates, and items related to Section 4.0 are provided prior to the mobilization and commencement of work.

A construction methodology for all parts of the Work must be submitted to ECCC Technical Authority for review prior to any work commencing. ECCC Technical Authority has five (5) business days to review and provide comments.

The Contractor must ensure it provides photos of its work at the site, before, during, and after construction activities. This includes photos of all major installations and changes on the construction site. Extra measures must be taken for installation of the cables/fist grips and steel plate anchors to meet the adequate depth and angle requirements. Photos of the material being disposed at an approved facility are also required. All photos must be provided to the Technical Authority within five (5) business days from completion of the Work. ECCC reserves the right to withhold payment in the case of inadequate photos.

The following documents will be maintained on-site by the Contractor, one copy of each document as follows:

- Contract Drawings, as provided by ECCC;
- Environmental Protection Plan, if provided by ECCC;
- Archaeological Assessment, if provided by ECCC;
- Specifications, if provided by ECCC;
- Contract Documents, as agreed upon;
- Addenda, as agreed upon;



- Reviewed Shop Drawings, as created by the Contractor and approved by the Technical Authority;
- List of Outstanding Shop Drawings, as created by the Contractor;
- Other Modifications to Contract, as agreed upon;
- Copy of Accepted Work Schedule, as created by the Contractor and approved by the Technical Authority;
- Work Plan, as created by the Contractor;
- Health and Safety Plan, as created by the Contractor, and;
- Other documents as required.

The Contractor must adhere to recommendations included in the Environmental Protection Plan (EPP) and Archaeological Assessment (AA) provided by ECCC. Cases of Contractor's or its Subcontractor(s) non-compliance to the EPP or AA observed by ECCC will follow the procedures outlined in section 8.0.

The Contractor must ensure the site is left at the same grade and ground layout as was found. No piles of soil are to be left, any leftover fill must be scattered uniformly through the site. All excess materials, waste, and tools must be removed from the site during demobilization.

Delivery of the project on schedule, budget, and safely is the responsibility of the Contractor. ECCC is not obliged to provide guidance or suggestions beyond those outlined in section 11.0. It is the responsibility of the Contractor to ensure that the construction meets the standards and dimensions specified by ECCC.

4.3 Project Related Materials

The Contractor is responsible for transportation of the required materials and components to the project site. It is the Contractor's decision to determine the most efficient and cost-effective method of transporting the equipment and materials to either side of the cableway. Any transportation methods are the responsibility of the Contractor. Written confirmation is to be provided to ECCC Technical Authority for any material that is collected from ECCC.

The Contractor is responsible for removal and disposal of old material from the project site. Existing/used cable hardware must be marked and is not to be re-used.

Any unused material must be returned within one (1) month from the completion of the project to the ECCC Richmond, B.C. sub-office unless otherwise directed by ECCC Technical Authority.

Richmond Sub-Office Address: 140 – 13460 Vanier Pl., Richmond, B.C., V6V 2J2

4.4 Recommended Specialized Tools/Equipment

ECCC recommends the following tools/equipment:

- Cable Grips, large (up to – 1.1") for the main cable – two or more units;
- Cable Grips, small (up to – 7/8") for marker and tieback cables – two or more units;
- Torque Wrench, 3 ft handle (225 ft-lbs) for the main cable's fist grips;
- Torque Wrench, small (45 ft-lbs and 65 ft-lbs) for marker and tieback cables' fist grips;
- Chain Hoist 1.5 – 3.0 Ton – two or more units;
- Portable Winch (min 8000lbs);
- Shackles, ropes, straps, come-along etc.

4.5 Environmental Considerations

The Contractor will submit a request to ECCC Technical Authority for any work including removal of vegetation or snow or any actions affecting the environment. ECCC will consult with a Qualified



Environmental Professional (QEP) to determine requirements and limitations for work. ECCC Technical Authority will provide approval to proceed or request to re-evaluate approach. The Contractor will not proceed with the action prior to approval. Approval may include any amount of limitations determined by QEP.

All cleared vegetation shall be cut and evenly distributed in small brush piles within / at the edge of existing vegetation outside riparian zones. No large brush piles that could pose a potential fire risk shall be created. Any medium to large diameter vegetation removal will be monitored by QEP. Re-planting of vegetation will not be required.

Limitations may include, but are not limited to, restriction of area where vegetation can be cleared, size/amount of vegetation that can be cleared, or requirement for QEP to be on-site. Specifically a QEP may be required on-site for certain cases of vegetation clearing or crossing an excavator over the river. Requirement for QEP on-site will be determined by the QEP prior to action. ECCC will arrange for the QEP to be on-site, but it is the responsibility of the Contractor to ensure a QEP is present for any action requiring QEP on-site.

Cases of non-compliance observed by ECCC will follow the procedures outlined in section 8.0.

5.0 Deliverables

5.1 Pre-Construction Deliverables

The Contractor must ensure that all pre-construction deliverables are completed. This includes:

- Work Plan Methodology;
- Schedule;
- Health and Safety Plan;
- Shop drawings, as applicable;
- Mill-certificates, as applicable.

Documents are to be provided prior to the mobilization and commencement of work. Details of construction methodology to be per section 4.2. ECCC Technical Authority has **5 business days** to review and provide comments.

5.2 Construction Deliverables

The Contractor must ensure that all deliverables related to the construction are completed. The Contractor must:

- Provide the ECCC Technical Authority with a written receipt of materials collected from ECCC;
- Provide all services outlined in Section 4.0.

5.3 Post-Construction Deliverables

Upon completion, the Contractor must ensure that all post-construction deliverables are submitted to the Technical Authority. This includes:

- Photos of before, during, and after construction;
 - See section 4.2 for photo requirements.

6.0 Damages, Lost Materials, and Defective Work

Property belonging to ECCC, the Crown, or a private entity on-site or related to the project must not be damaged. Any damage must be repaired prior to demobilization at the Contractor's expense.



Any material that is lost or damaged by the Contractor must be reported to ECCC Technical Authority as soon as reasonably possible and replaced at the Contractor's expense. Extra material is to be returned to ECCC at the completion of the project as per section 4.3.

Any Work rejected by ECCC as a result of poor workmanship, use of defective products or damage caused by negligent or deliberate acts or omissions of the Contractor or of its Subcontractors is to be replaced by the Contractor at the Contractor's expense.

7.0 Safe Work Procedures

The Contractor must remain in compliance with the Canada Labour Code, National Joint Council Occupational Health and Safety Directive, and WorkSafeBC Guidelines. The Contractor must provide ECCC Technical Authority with details for each construction task compiled into a Health and Safety Plan.

The Contractor is expected to follow safe work procedures, including proper Personal Protective Equipment (PPE) use at all times. A Personal Flotation Device must be worn if there is a risk of drowning. A complete Basic First Aid Kit must be carried and on-site. Protection against wildlife is included within PPE.

The Contractor is responsible for circulation of the Health and Safety Plan to all individuals on site and ensuring that all individuals are in adherence to the Health and Safety Plan. Cases of non-compliance observed by ECCC will follow the procedures outlined in section 8.0.

All guidelines and regulations provided by the Government of Canada, the Province of BC, WorkSafeBC, and the British Columbia Construction Association relating to the COVID-19 pandemic must be practiced throughout all construction activities.

8.0 Notifications of Non-Compliance

The following procedures will be followed in the case that non-compliance is observed by ECCC.

1. The Technical Authority will notify Contractor in writing of observed non-compliance related to Health and Safety, Environment, Private Property, or any other regulations and requirements.
2. After receipt of such notice, the Contractor shall inform the Technical Authority of proposed corrective action within one (1) day to obtain the approval from the ECCC Technical Authority. Technical Authority will provide review and approval in one (1) day.
3. Once approval has been provided by the ECCC Technical Authority, the Contractor may proceed with the proposed actions.
4. If warranted, the ECCC Technical Authority will issue a Stop Work Order until satisfactory corrective action has been taken by the Contractor.
5. Suspensions will be lifted once the corrective action(s) have been proposed and taken by the Contractor, with the approval of the Technical Authority.
6. No time extensions will be granted or equitable adjustments will be given to the Contractor for such suspensions.
7. In the case where there is immediate danger to the health and safety of a worker or integrity of infrastructure, the Contractor may take immediate actions.

9.0 Schedule

ECCC estimates that completion of the project will require 16 days on-site. An additional four (4) days may be allotted where required. This consists of two (2) days for clearing of vegetation and two (2) days in the case of unforeseen obstacles during excavation as determine by ECCC, see section 4.1 for details. Unless otherwise agreed upon, the project is to be completed over 16 days between **August 20**,



2021 and September 20, 2021. The final invoice must be submitted once work has been completed, no later than **March 15, 2022.**

A kick-off meeting between ECCC and the Contractor shall be scheduled within five **(5) business days** of contract award. Meeting to be arranged and led by the representative of ECCC.

The Contractor must submit to ECCC a comprehensive schedule of the project work/task(s) prior to mobilization. The schedule must be approved by both parties.

Weekly progress meetings are to be arranged by the Contractor to provide weekly updates to ECCC. This should include reporting of ongoing project schedule.

Standard work schedules for members of ECCC are Monday to Friday 8:00 AM to 4:30 PM. 72-hour notice must be provided when an ECCC member is required outside of these hours. ECCC cannot guarantee the availability of a representative for on-site support outside of these hours.

A standard construction work day, used in the estimated project length, is considered 7.5 hours per day.

The Contractor must provide 72-hour advance notice when requesting the on-site presence of an ECCC member. See section 11.0 for list of items requiring ECCC field review.

10.0 Documents

The following documents, drawings and photos are part of this project (located in the ZIP files) and are intended to be read with this Statement of Requirements:

- (1) 2812 – Steel Plate Anchors
- (2) 2863 – Double Anchor System
- (3) 3136 – Heavy Duty A-frames
- (4) 5001 – Additional Base Plates
- (5) Safety Loop Drawing
- (6) River Cableway Drawings – General Final
- (7) Crosby Fist Grip Specifications
- (8) HG-228 J&J Turnbuckles Specifications
- (9) Related Photos

11.0 Environment and Climate Change Canada Responsibilities

ECCC will provide the following:

- All materials required for construction;
- Acquisition of relevant permits and background information with the Province of British Columbia and the Department of Fisheries and Oceans;
 - BC Water Act Notification;
 - Archaeological Assessment;
 - Desktop Study - Environmental Assessment;
 - Working around Water Permit, as applicable;
- Providing drawings and description of all components related to the work;
- Supply of Qualified Environmental Professional (QEP) services, as required;
- Will provide on-site and remote support during all phases of the project;
 - Will be on-site at the beginning of construction and to conduct a final sign-off and survey upon completion;
 - ECCC will provide field review of the following installations:



- Lay-out of the steel plate anchors locations and distance from the A-frame;
- Approval of depth, angle, and location of components installed by excavation prior to backfill;
- Inspection of cableway at completion of construction and prior to hand-over.