



Navigation Protection Program  
820 – 800 Burrard St  
Vancouver, BC, V6Z 2J8

Our File: 2014-500331

## APPROVAL

**APPLICANT:** BC Hydro  
600 – Four Bentall Centre  
1055 Dunsmuir St  
Vancouver, BC, V7X 1V5

**WORK:** Temporary Debris Boom

**SITE LOCATION:** **Located at 56°12'32.82"N, -120°55'59.83"W on unsurveyed foreshore or land covered by water being part of the bed of Peace River, Site C, lying within Section 28, Township 83, Range 19, West of the 6th Meridian Peace River District in the Province of British Columbia.**

As per the application (detailed above) to the Minister of Transport, submitted pursuant to the *Canadian Navigable Waters Act*, for an approval of the work per the attached four (4) plans, the Minister hereby amends the approval to the work pursuant to subsection 9(3)(d) for the construction, of the above mentioned work, in accordance with the following Terms and Conditions:

1. The CNWA Amended Approval and its Terms and Conditions shall be posted at the dam site office, and be provided to the contractor conducting the work.
2. In the event that the operation of the above works is terminated prior to completion, it will be the proponent's responsibility to remove the works and associated equipment in its entirety from the waterway including any anchors and pilings. The banks and bed of the waterway disturbed by the works shall be contoured to match the local conditions as required.
3. The owner shall provide information about any temporary closures to vessel traffic using the Boater Communications Protocol, and post the information on the owner website, on a page related to the project.
4. Any construction equipment anchored or left in or on the waterway overnight shall be marked with a yellow flashing light placed on the extremity closest to the middle of the channel, so as to be visible in all directions to vessel traffic.
5. A minimum of 3 yellow cautionary buoys, no less than 1 meter in diameter, with one placed at each end and one at the midpoint of the boom, are to be equally spaced and maintained along the boom. A minimum of two horizontal bands of yellow retro reflective tape not less than 10 cm in width x 15 cm in length shall be placed around the horizontal circumference of the buoys, and be visible from all directions. All buoys shall have a flashing yellow light at the top displaying a 0.5 second flash every 4 seconds, with a minimum nominal range of 1 nautical mile. The proponent shall inspect the buoys weekly to ensure the lights are functioning.
6. The proponent shall commence with the Boater Communication Protocol and required communications 30 days prior to the installation of the boom, advising users of the boom installation date, and information regarding the portage system.
7. As built plans of the works are to be forwarded to TC upon completion of the project.
8. The proponent shall inspect the boom every 2 weeks or after any significant weather event.



9. The proponent shall install and implement the Peace River Diversion Public Safety Signage Plan, approved by Transport Canada, and as amended from time to time by BC Hydro, and be in accordance with the Canadian Dam Association Technical Bulletin on Public Safety around Dams, 2011 or as updated.

### **Portage System for the temporary Debris Boom**

10. The Portage Terms and Conditions #10 to #14 of this permit shall supersede Terms and Conditions #9 to #12, and Appendix A of the of the approval for the Main Civil Works (NPA File #2008-500822) until the river is:
  - a. Physically closed by the work approved under the Navigation Protection Act (NPA), File #2008-500822; or
  - b. The temporary boom for which this portage condition applies is removed; or
  - c. In the opinion of Transport Canada, it is deemed unsafe for transit.
11. The proponent shall keep a record of the number of portages that were conducted during its first operating period (May 15, 2020 to September 15, 2020), as well as the date, time, type of vessel, and the number of passengers. The record shall be discussed with Transport Canada by December 31, 2020 to determine if changes to the portage system are required.
12. A non-motorized vessel portage system includes appropriate boat launches and the transportation of non-motorized vessels, and allowable passengers for each such vessel. The owner is only required to portage non-motorized vessels that are already waterborne, that have arrived by water to the boat launch from another location and have met the notification requirements.
13. The owner is required to portage up to the allowable number of passengers based on the certified capacity of the portaged vessel. The owner can request this information as part of its notification requirements.

The owner shall:

- a) Between May 15 and September 15, provide a portage system operating in both directions from downstream of the construction zone to upstream of the construction zone to transiting non-motorized vessels between the hours of 7am and 7pm daily. The portage system shall be able to transport the non-motorized watercraft typically transiting the river.
- b) Post notice of the suspension of service and post the reason for the suspension of service on the BC Hydro website or at the point of reservation, and at the portage locations, if the portage system is not in operation at any time during the operating period of May 15 and September 15, or the reservoir is being filled.
- c) Operate the portage system if provided notification 7 days in advance, unless multiple vessels are transiting together (a public or groups event) in which case a minimum of 2 weeks notice is required.
- d) Provide adequate information about the portage systems and notification requirements using the Boater Communications Protocol; and
  - i. For the initial start of the portage systems, publicize in regional newspapers bi-weekly for the first month, weekly for the next 2 months (can be combined with river closure information)
  - ii. For subsequent years of construction, publicize weekly for the months of April, May and June



- iii. Permanently post notice at the Peace Island Park boat launch
  - iv. Permanently post notice at the Halfway river boat launch
  - v. Permanently post notice at the Lynx Creek boat launch
  - vi. Post portage information on the owner website, on a page related to the project
14. Install and maintain a sign on the opposite bank of the portage indicating that the portage is on the opposite side. The sign shall be a minimum of 72" x 48", a white background with black lettering. The sign is to be emplaced prior to and for the duration of the boom, until the river is closed by other permanent works.

#### **Winter removal of the temporary Debris Boom**

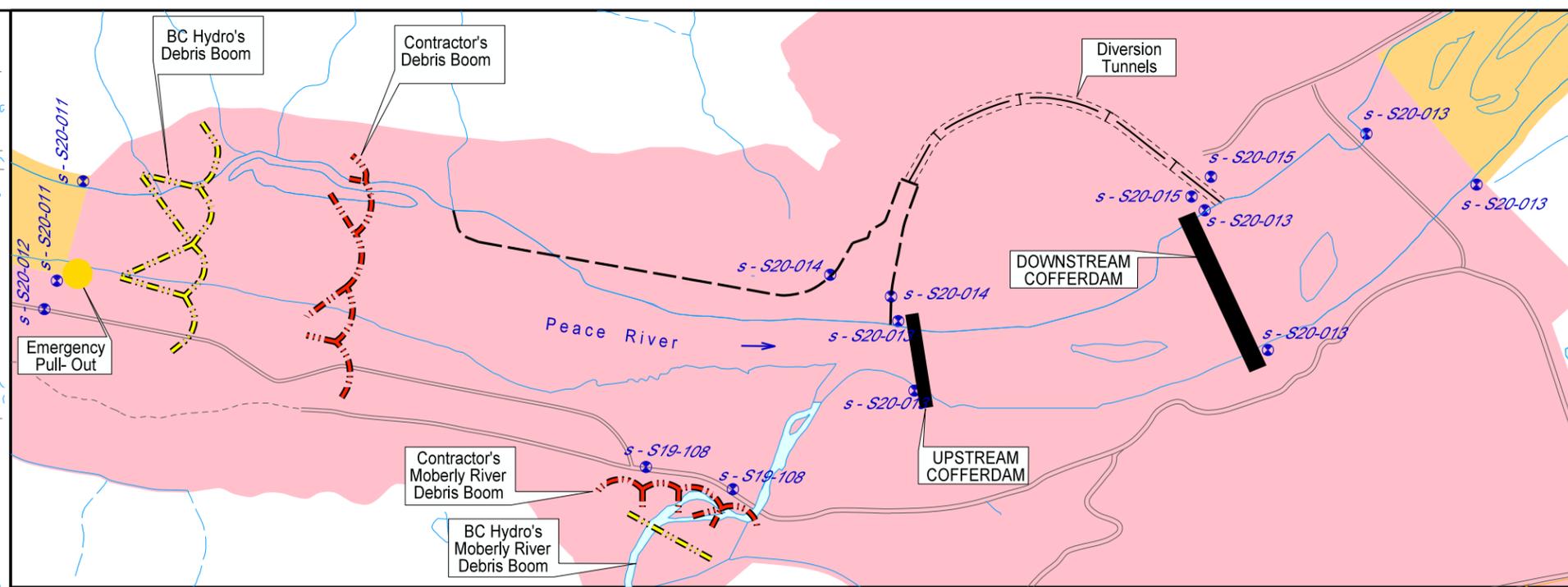
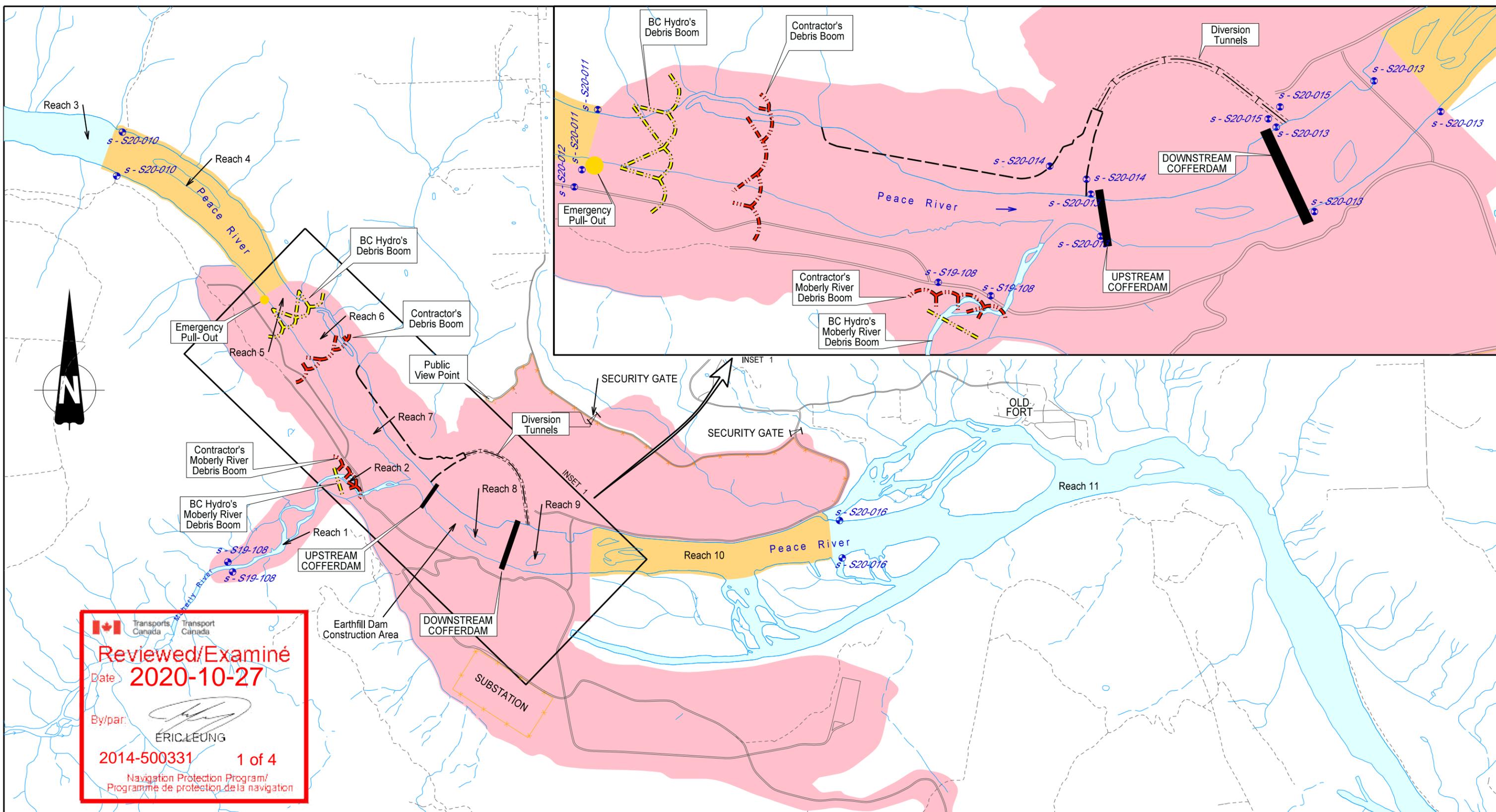
15. Anchors and float assemblies shall be marked with buoys conforming to the *Private Buoy Regulations*.
16. Horizontal bands of yellow reflective tape providing a reflective surface of not less than 10cm in width and 15cm in length shall be placed around the circumference of the buoy.

**Should you have any questions, please do not hesitate to contact our office in Pacific by phone at 604-775-8867 or by e-mail at [NPPAC-PPNPAC@tc.gc.ca](mailto:NPPAC-PPNPAC@tc.gc.ca).**

**SIGNED on October 29, 2020 in Pacific**

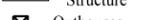
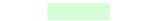
Eric Leung  
Navigation Protection Program  
Programs Group  
Transport Canada  
Pacific Region  
For the Minister of Transport

EL/sr




 Transports Canada / Transport Canada  
**Reviewed/Examiné**  
 Date: **2020-10-27**  
 By/par:   
**2014-500331**      **1 of 4**  
 Navigation Protection Program /  
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LEGEND

|                                                                                     |                    |                                                                                     |                                    |                                                                                       |                                            |
|-------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------|
|  | Normal High Water  |  | Highway / Primary/ Secondary Roads |  | Property/Legal Boundary                    |
|  | DANGER ZONE        |  | Highway / Primary/ Secondary Roads |  | BC Hydro Debris / Public Safety Boom       |
|  | Restricted Area    |  | Rail Road                          |  | Contractor Boom                            |
|  | WARNING ZONE       |  | Shoreline                          |  | Building / Structure                       |
|  | Observe Signs      |  | River / Creek                      |  | Parking Area                               |
|  | Component Boundary |  | Fence Line                         |  | Safety Control Device                      |
|                                                                                     |                    |  | Pipeline                           |  | Hydro Pole                                 |
|                                                                                     |                    |  | Electrical Lines                   |  | Entrance Gate                              |
|                                                                                     |                    |                                                                                     |                                    |  | Recreational Trails Within Operating Areas |

Safety Control Device Prefix

f = Fence  
s = Sign  
b = Boom

Note:  
Base map derived from BC Gov. TRIM 1:20 000 mapping.  
Positional accuracy for booms, gates signs and certain portion of the road, trails and fences are unknown.




 Power smart

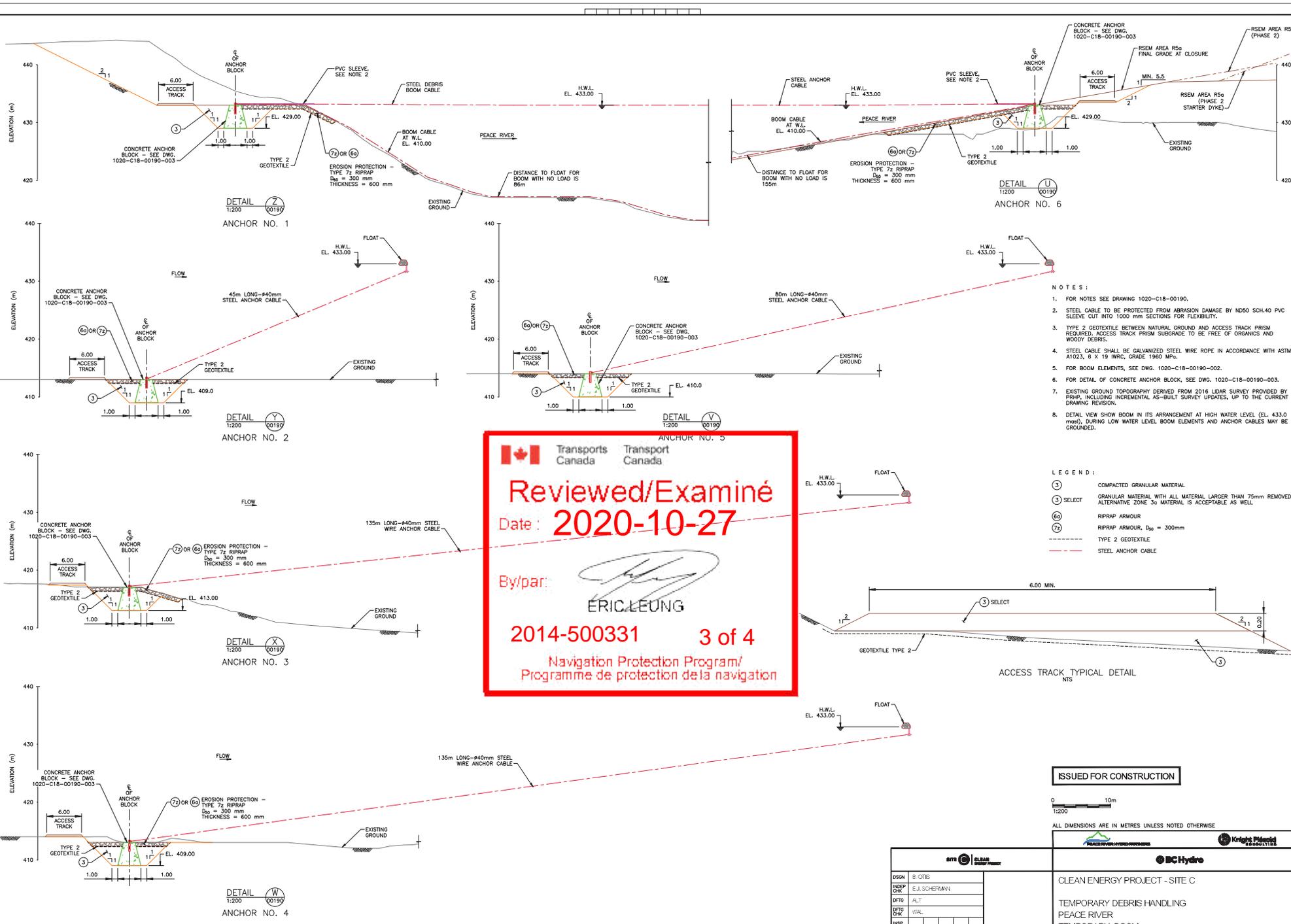
ENGINEERING  
 PHOTOGRAMMETRY SERVICES

SITE C  
 PUBLIC SAFETY MANAGEMENT PLAN  
 MAP - 2  
 DAM SITE

MAP 2

|              |       |               |       |
|--------------|-------|---------------|-------|
| DATE         | DISTR | DWG NO        | DISTR |
| Feb 22, 2020 |       | 1016-C11-0xxx | B     |





- NOTES:**
- FOR NOTES SEE DRAWING 1020-C18-00190.
  - STEEL CABLE TO BE PROTECTED FROM ABRASION DAMAGE BY NDSO SCH-40 PVC SLEEVE CUT INTO 1000 mm SECTIONS FOR FLEXIBILITY.
  - TYPE 2 GEOTEXTILE BETWEEN NATURAL GROUND AND ACCESS TRACK PRISM REQUIRED; ACCESS TRACK PRISM SUBGRADE TO BE FREE OF ORGANICS AND WOODY DEBRIS.
  - STEEL CABLE SHALL BE GALVANIZED STEEL WIRE ROPE IN ACCORDANCE WITH ASTM A1023, 6 X 19 IWRC, GRADE 1960 MPa.
  - FOR BOOM ELEMENTS, SEE DWG. 1020-C18-00190-002.
  - FOR DETAIL OF CONCRETE ANCHOR BLOCK, SEE DWG. 1020-C18-00190-003.
  - EXISTING GROUND TOPOGRAPHY DERIVED FROM 2016 LIDAR SURVEY PROVIDED BY PRM, INCLUDING INCREMENTAL AS-BUILT SURVEY UPDATES, UP TO THE CURRENT DRAWING REVISION.
  - DETAIL VIEW SHOW BOOM IN ITS ARRANGEMENT AT HIGH WATER LEVEL (EL. 433.0 mm), DURING LOW WATER LEVEL BOOM ELEMENTS AND ANCHOR CABLES MAY BE GROUNDLED.

- LEGEND:**
- (3) COMPACTED GRANULAR MATERIAL
  - (SELECT) GRANULAR MATERIAL WITH ALL MATERIAL LARGER THAN 75mm REMOVED. ALTERNATIVE ZONE 3a MATERIAL IS ACCEPTABLE AS WELL
  - (60) RIPRAP ARMOUR
  - (72) RIPRAP ARMOUR, D<sub>50</sub> = 300mm
  - TYPE 2 GEOTEXTILE
  - - - STEEL ANCHOR CABLE

  
**Reviewed/Examiné**  
 Date: **2020-10-27**  
 By/par:   
**ERIC LEUNG**  
 2014-500331      3 of 4  
 Navigation Protection Program/  
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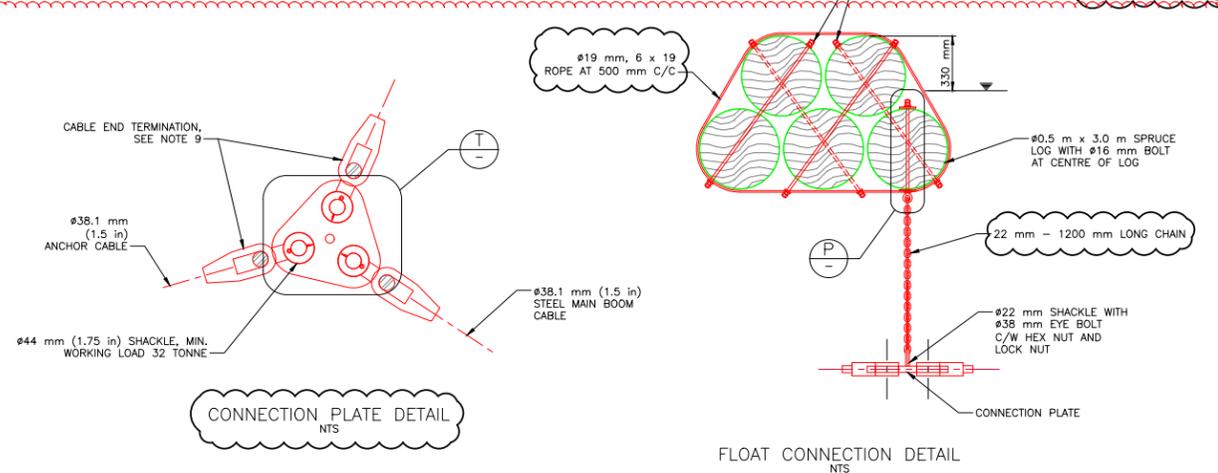
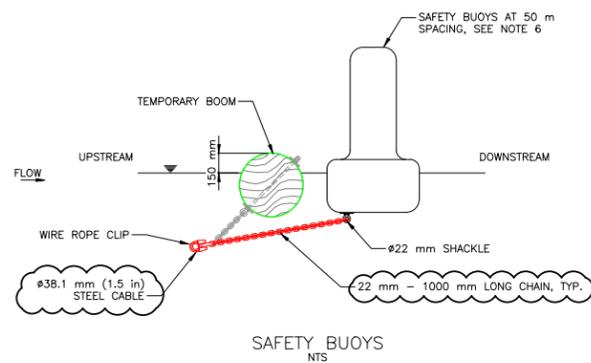
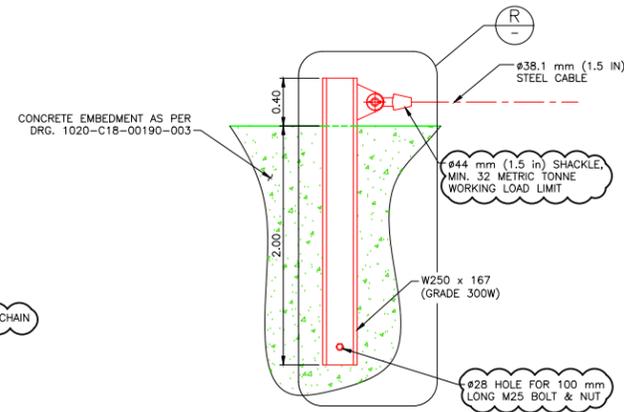
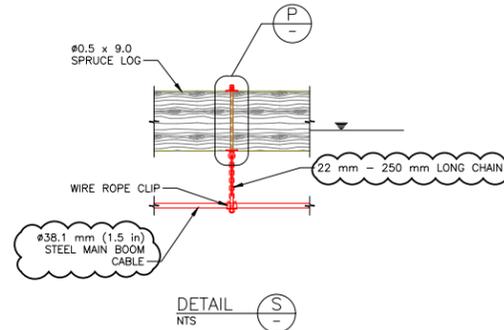
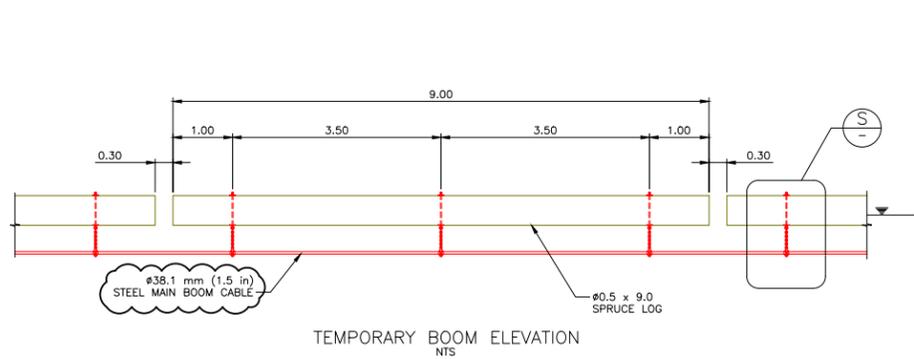
**ISSUED FOR CONSTRUCTION**

0 10m  
1:200  
ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE

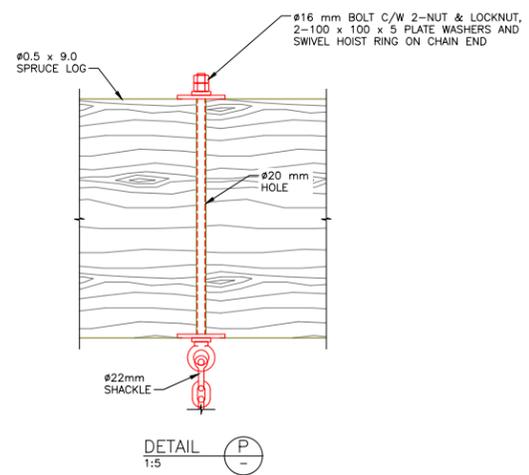
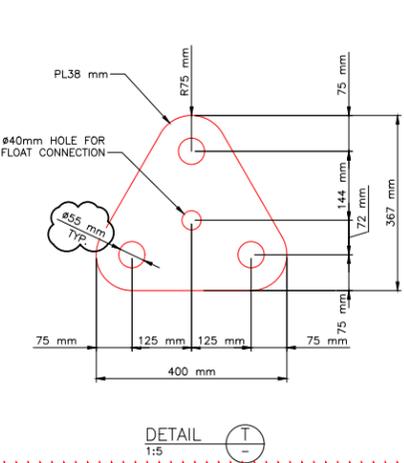
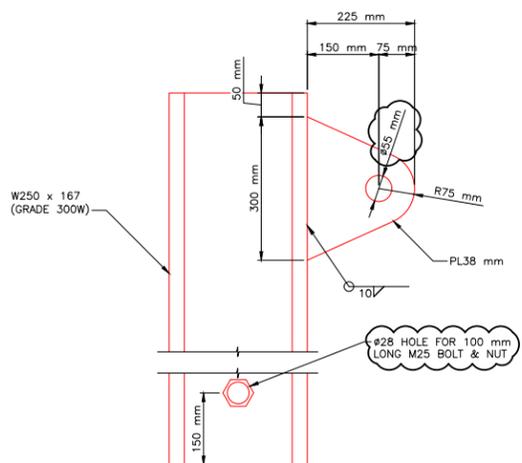
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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------|
|   |                                                                      |  |                                      |
| DSSN<br>INSP<br>DFTO<br>DFTO<br>INSP                                                                                                                                        | E. OTIS<br>E.J. SCHERMAN<br>ALT<br>WAL<br>STR<br>MECH<br>GEO<br>ELEC | DATE<br>20SEP2019                                                                     | DIST<br>DWG NO<br>1020-C18-00190-001 |
| REV<br>E.J. SCHERMAN<br>ADPT<br>S.R. MATHRAM                                                                                                                                | DATE<br>20SEP2019                                                    | DIST<br>DWG NO<br>1020-C18-00190-001                                                  | SHEET NO<br>AO<br>0                  |

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 2020-10-27 10:00:00 AM  
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| REF# | DRAWING NUMBER | TITLE              | REF# | DRAWING NUMBER | TITLE              | NO | REMARKS | DATE | DESIGNED | INSP | DFTO | DFTO | INSP | INSP | INSP | INSP | REV | ADPT |
|------|----------------|--------------------|------|----------------|--------------------|----|---------|------|----------|------|------|------|------|------|------|------|-----|------|
|      |                | REFERENCE DRAWINGS |      |                | REFERENCE DRAWINGS |    |         |      |          |      |      |      |      |      |      |      |     |      |



- NOTES:
- STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH CSA G40.21 GRADE 350W UNLESS NOTED OTHERWISE.
  - STEEL CABLE SHALL BE GALVANIZED STEEL WIRE ROPE IN ACCORDANCE WITH ASTM A1023, 6 X 36 IWRC, GRADE EIPS WITH STEEL CORE.
  - CHAIN SHALL BE IN ACCORDANCE WITH ASTM A952 GRADE 100. CHAIN FITTINGS SHALL BE AT MINIMUM OF THE SAME WORKING LOAD LIMIT AS THE CHAIN.
  - ALL WELDING TO CSA W59 USING E49XX ELECTRODES AND SHALL BE PERFORMED BY WELDERS CERTIFIED BY CANADIAN WELDING BUREAU.
  - ALL STRUCTURAL STEEL BOLTS, NUTS, WASHERS, WIRE ROPE, CHAIN AND HARDWARE SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A123 AND A153.
  - SAFETY BUOYS SHALL BE WORTHINGTON NO. SWFCCB-1428W AS PER BC HYDRO'S TECHNICAL SPECIFICATIONS SECTION 13 80 50.
  - STEEL FABRICATION SHALL BE AS PER TECHNICAL SPECIFICATION 05 12 23 STRUCTURAL STEEL.
  - AVERAGE DIAMETER OF SPRUCE LOG TO BE 500 mm, LOG TAPER SHALL NOT EXCEED 50 mm AT ENDS (MINIMUM LOG DIAMETER 400 mm).
  - STEEL CABLE END TERMINATION TO BE EYE SPLICE OR SPLETER SOCKET AS APPROVED BY THE ENGINEER. END TERMINATION SHALL HAVE EFFICIENCY NO LESS THAN 0.9.



Reviewed/Examiné

Date: **2020-10-27**

By/par:

ERIC LEUNG

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ISSUED FOR CONSTRUCTION



ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE



BC Hydro

CLEAN ENERGY PROJECT - SITE C

TEMPORARY DEBRIS HANDLING  
PEACE RIVER  
TEMPORARY BOOM - MISCELLANEOUS DETAILS  
ELEVATION, SECTIONS AND DETAILS

|                           |               |  |
|---------------------------|---------------|--|
| SITE CLEAN ENERGY PROJECT |               |  |
| DSGN                      | B. OTIS       |  |
| INDEP. CHK                | E.J. SCHERMAN |  |
| DFTG. CHK                 | ELG/ALT       |  |
| DFTG. CHK                 | WAL           |  |
| REV                       | E.J. SCHERMAN |  |
| ACPT                      | S.R. MOTTRAM  |  |

| NO | REMARKS                   | DATE      | DESIGNED   | INSP. CHK | DFTG. CHK | INSP. CIV | INSP. STR | INSP. MECH | INSP. GEO | INSP. ELEC | REV | ACPT |
|----|---------------------------|-----------|------------|-----------|-----------|-----------|-----------|------------|-----------|------------|-----|------|
| 2  | UPDATED NOTES AND DETAILS | 07MAY2020 | C. CAPUCCO | BO        | ALT       | WAL       |           |            |           |            | EJS | SRM  |
| 1  | UPDATED NOTES AND DETAILS | 28FEB2020 | C. CAPUCCO | BO        | ALT       | WAL       |           |            |           |            | EJS | SRM  |

| REF# | DRAWING NUMBER | TITLE              | REF# | DRAWING NUMBER | TITLE              |
|------|----------------|--------------------|------|----------------|--------------------|
|      |                | REFERENCE DRAWINGS |      |                | REFERENCE DRAWINGS |

DATE: 26SEP2019    DIST:    DWG NO: 1020-C18-00190-002    SIZE: A0    R: 2