APPLICATION: BC Hydro  
Ste 600, Four Bentall Centre, 1055 Dunsmuir St. PO Box 49260  
Vanouver, British Columbia V7X 1V5

WORK: Bridge

SITE LOCATION: Located at approximately 51.22823, -121.39409, Peace River, located on unsurveyed foreshore or land covered by water being part of the bed and islands of the Peace River, MR5 all-season crossing, lying within Sections 27, 28 and 33, Township 83, Range 22, West of The 6th Meridian Peace River District lying South 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 seven (7) attached plan(s) the Minister hereby approves the work pursuant to subsection 7(6) for the construction of the above mentioned work, in accordance with the following terms and conditions:

1. The CNWA Approval and it Terms and Conditions shall be posted at an easily accessible place at the worksite, and be provided to the contractor conducting the work.

2. The owner shall provide information about the causeway or abutments and bridge location using the Boater Communications Protocol, and post the information on the owner website, on a page related to the project.

3. Upon completion of the causeway or abutments and bridge construction, install and maintain a warning sign at the confluence of the side channel and the main channel of the Peace River approximately 150m upstream of the crossing advising of the obstruction of the side channel and include an arrow indicating the direction of the main channel. Sign shall be a minimum of 72" x 48", a white background with black lettering, the size of the text shall be at least 15cm tall with the word "WARNING" at 1.5 times the size of the message text.

WARNING  
OBSTRUCTION AHEAD  
KEEP TO THE MAIN CHANNEL

4. During construction the outermost extent of each abutment or causeway above the surface shall be marked with orange Hi-visibility markers on the upstream and downstream corners.

5. During construction the outermost extent of each abutment or causeway above the surface shall be marked with a flashing yellow light on the upstream and downstream corners.
6. Any construction equipment or machinery left in the water during periods of darkness or limited visibility shall be marked with a yellow flashing light visible to upstream and downstream traffic.

7. If using abutments and bridge deck, the outermost extent of each abutment above the surface shall be marked with orange Hi-visibility markers on the upstream and downstream corners once the bridge deck has been removed, until the abutments are submerged due to inundation.

8. If using abutments and bridge deck, the outermost extent of each abutment above the surface shall be marked with a flashing yellow light on the upstream and downstream corners once the bridge deck has been removed, until the abutments are submerged due to inundation.

9. If causeway is used, the upstream and downstream edges shall be marked with orange Hi-visibility markers, evenly spaced every 20m on both the upstream and downstream sides, until the causeway is submerged due to inundation.

10. Once the causeway or abutments are submerged due to inundation, yellow buoys shall be placed and maintained at the location of the causeway or abutments. Buoys are to be no more than 20 metres apart and no less than 0.6 metres in diameter. Horizontal bands of yellow reflective tape, not less than 10 cm in width and 15 cm in length, shall be either placed at intervals around the horizontal circumference of the buoys or displayed from suitable topmarks that are visible from all directions. Buoys shall remain in place until the water elevation at the causeway or abutment location reaches 5m greater than the causeway or abutment top elevation.

11. Upon completion of the associated vegetation clearing project, the bridge deck and associated equipment shall be completely removed without delay, including all anchors and piles.

SIGNED on December 2, 2019 in Pacific

Jonn Leeden
Navigation Protection Program
Programs Group
Transport Canada
Pacific Region
For the Minister of Transport

/sp
Figure 1. Map showing location of proposed MRS crossing of the Peace River sidechannel.
SITE PLAN
SCALE: 1:500

PROPOSED ROAD ALIGNMENT (TOP)

EDGE OF WATER (TOP)

EDGE OF EXISTING TREELINE (TOP)

NOTE:
1. SITE SURVEY BASED ON LOAD DATA. NO SITE SURVEY HAS BEEN CONDUCTED.
2. GENERAL SITE COORDINATES: NS220521 E389114
3. SURFACE AND CONTOURS ARE IN WGS84.

GROUND PROFILE ALONG PROPOSED ROAD ALIGNMENT
SCALE: 1:500

ESTIMATED PRESENT WATER LEVEL: +438.47m

BC Hydro
Allnorth
OVERALL AVERAGE GRADE = 0.5%

CHANNEL PROFILE
SCALE: 1:500

SECTION
SCALE: 1:500

SECTION
NOTE: THESE DRAWINGS ARE CONCEPTUAL AND ARE FOR PLANNING PURPOSES ONLY. HIGH WATER LEVELS ARE SHOWN IN PHOTO Imagery AND ARE ESTIMATES ONLY. DURING WINTER CONDITIONS WHEN WATER LEVELS ARE TYPICALLY HIGHER, THE ROAD SURFACE MAY BE UNDERWATER AT TIMES AND MAY REQUIRE MAINTENANCE FOLLOWING HIGH FLOW EVENTS. CULVERTS HAVE NOT BEEN DESIGNED TO HANDLE HIGH WATER FLOWS AND ARE INTENDED TO PROVIDE CHANNEL CONNECTIVITY ONLY.
NOTES:

1. BACKFILL OF APPROACHES SHALL GENERALLY CONFORM TO THE LINES SHOWN ON THE DRAWINGS AND SHALL BE PLACED IN LIFTS NOT EXCEEDING 305mm (12") THICK, COMPACTED TO MINIMUM PROCTOR DENSITY USING A MINIMUM 1000lbs VIBRATORY PLATE COMPACTOR. MATERIAL SHALL BE CLEAN, FREE DRAINING, WELL-GRADED DRAINAGE FILL OF 75mm (3") MINIMUM SIZE. LIFTS SHALL ALTERNATE BOTH WAYS AT EACH END OF THE BRIDGE TO ENSURE MINIMUM DRAINS.

2. NON-WOVEN FILTER FABRIC TO BE PLACED OVER EXCAVATION TO HAVE A MINIMUM BURST STRENGTH OF 200kPA.

3. ALL EXPOSED MINERAL SOILS TO BE SEENED USING AN APPROVED SEALING GRADE SEED MATURE AND COVERED WITH AN APPROVED EROSION CONTROL BLANKET.

4. THE CONTRACTOR IS TO CONTACT THE ENGINEER PRIOR TO PLACING FOUNDATIONS. FOUNDATIONS PLACEMENT SHALL BE SUPERVISED BY THE ENGINEER TO CONFIRM BEARING REQUIREMENTS.

5. ALL PLANS AND REGULATORY APPROVALS TO BE IN PLACE PRIOR TO COMMENCING WORK.

6. ENVIRONMENTAL MANAGEMENT PLAN TO BE PREPARED FOR PROJECT BY OTHERS. COMPLETION OF WORKS TO COMPLY WITH MITIGATION RECOMMENDATIONS OUTLINED IN ENVIRONMENTAL MANAGEMENT PLAN.

7. NO SITE SPECIFIC GEOTECHNICAL INVESTIGATION HAS BEEN COMPLETED AS PART OF ALLNORTH CONSULTANTS LTD SCOPE OF WORK. THEREFORE, THIS DESIGN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A SITE SPECIFIC GEOTECHNICAL FIELD INVESTIGATION OR SITE SPECIFIC GDF. GROUND CONDITIONS MAY VARY AND THE FOUNDATION REQUIREMENTS SHOWN ON THE DRAWINGS MAY UNDERESTIMATE THE FOUNDATION CONDITIONS ENCOUNTERED DURING CONSTRUCTION. ALLNORTH CONSULTANTS LTD DISCLAIMS ALL RESPONSIBILITY FOR ADDITIONAL COSTS OR DELAYS THAT MIGHT RESULT IF THE GROUND CONDITIONS VARY FROM THOSE ASSUMED IN THE DESIGN. THE DESIGN ENGINEER SHALL BE CONSIDERED IF FIELD CONDITIONS VARY FROM THE DESIGN ASSUMPTIONS SHOWN ON THE DRAWINGS OR IN THE CONSTRUCTION SPECIFICATIONS. INSTALLATIONS OF FOUNDATIONS SHALL BE SUPERVISED BY THE DESIGN ENGINEER OR THEIR REPRESENTATIVE.

8. WHERE EXCAVATION SPECIFICATIONS ON THESE DRAWINGS CONFLICT WITH WORKSAFE BC (WSBC) REGULATIONS, WSBC REGULATIONS ARE TO GOVERN.

LOADING DIAGRAM (L-100) OF HIGHWAY G.V.W.: 36,000kgs

DESIGN IN ACCORDANCE WITH CAN/CSA-S6-14 WITH MODIFIED LOADING AS FOLLOWS:

- 7.1m HIGHWAY
- 204.6 kN TRUCK
- 103.5 kN ROLLER
- 204.6 kN TRUCK

CROSSING DESCRIPTION

Survey Control Table:

<table>
<thead>
<tr>
<th>Description</th>
<th>Northing</th>
<th>Easting</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP1</td>
<td>623251.428</td>
<td>599056.007</td>
<td>429.269</td>
</tr>
<tr>
<td>WP2</td>
<td>623255.245</td>
<td>599019.926</td>
<td>429.269</td>
</tr>
<tr>
<td>WP3</td>
<td>623251.805</td>
<td>599103.812</td>
<td>429.040</td>
</tr>
<tr>
<td>WP4</td>
<td>623251.048</td>
<td>599114.856</td>
<td>429.040</td>
</tr>
<tr>
<td>WP5</td>
<td>623257.800</td>
<td>599110.138</td>
<td>428.862</td>
</tr>
<tr>
<td>WP6</td>
<td>623251.895</td>
<td>599120.964</td>
<td>428.982</td>
</tr>
<tr>
<td>WP7</td>
<td>623253.458</td>
<td>599114.863</td>
<td>429.511</td>
</tr>
<tr>
<td>WP8</td>
<td>623252.687</td>
<td>568125.725</td>
<td>429.511</td>
</tr>
</tbody>
</table>
NOTE: THESE DRAWINGS ARE CONCEPTUAL AND ARE FOR PLANNING PURPOSES ONLY. HIGH WATER LEVELS ARE SHOWN ON PHOTO IMAGERY AND ARE ESTIMATES ONLY. DURING WINTER CONDITIONS WHEN WATER LEVELS ARE TYPICALLY HIGHER, THE ROAD SURFACE MAY BE UNDERWATER AT TIMES AND MAY REQUIRE MAINTENANCE FOLLOWING HIGH FLOW EVENTS. CULVERTS HAVE NOT BEEN DESIGNED TO HANDLE HIGH WATER FLOWS AND ARE INTENDED TO PROVIDE CHANNEL CONNECTIVITY ONLY.
NOTES:

1. BACK FILL OF APPROACHES SHALL GENERALLY CONFORM TO THE LINES SHOWN ON THE DRAWINGS AND SHALL BE PLACED IN UFTS NOT EXCEEDING 300mm THICK, COMPACTED TO 95% STANDARD PROCTOR DENSITY USING A MINIMUM 10000lbs VIBRATORY PLATE COMACTOR. MATERIAL SHALL BE CLEAN, FREE OF VAMMING, WELL GRADED GRAVULAR FILT OF 75mm MINIMUM SIZE. UFTS SHALL ALTERNATE BOTH WAYS AT EACH END OF THE BRIDGE TO ENSURE MINIMUM MOVEMENT.

2. NON-WOVEN FILTER FABRIC TO BE PLACED OVER EXCAVATION TO HAVE A MINIMUM MULLEN BURST STRENGTH OF 2500kPa

3. ALL EXPOSED MINERAL SOILS TO BE SEEDED USING AN APPROVED RECLAMATION GRASS SEED MIXTURE AND COVERED WITH AN APPROVED EROSION CONTROL BLANKET.

4. THE CONTRACTOR IS TO CONTACT THE ENGINEER PRIOR TO PLACING FOUNDATIONS. FOUNDATIONS PLACEMENT SHALL BE SUPERVISED BY THE ENGINEER TO CONFIRM BEARING REQUIREMENTS.

5. ALL PERMITS AND REGULATORY APPROVALS TO BE IN PLACE PRIOR TO COMMENCING WORK.

6. ENVIRONMENTAL MANAGEMENT PLAN TO BE PREPARED FOR PROJECT BY OTHERS. COMPLETION OF WORKS TO COMPY WITH MITIGATION RECOMMENDATIONS OUTLINES IN ENVIRONMENTAL MANAGEMENT PLAN.

7. NO SITE SPECIFIC GEOFfXOCATIONAL INVESTIGATION HAS BEEN COMPLETED AS PART OF ALNNORTH CONSULTANTS LIMITED SCOPE OF WORK. THEREFORE, THE DESIGN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A SITE SPECIFIC GEOFfXOCATIONAL INVESTIGATION OR GEOFfXOCATIONAL ADVICE. TERRAIN CONDITIONS MAY VARY AND THE FOUNDATION REQUIREMENTS SHOWN ON THE DRAWINGS OR IN THE CONSTRUCTION SPECIFICATIONS MAY NOT ACCURATELY REFLECT THE GROUND CONDITIONS ENCOUNTERED DURING CONSTRUCTION. ALLNORTH CONSULTANTS LIMITED ACCEPTS NO RESPONSIBILITY FOR ADDITIONAL COSTS OR DELAYS THAT MAY RESULT IF THE GROUND CONDITIONS VARY FROM THOSE ASSUMED IN THE DESIGN. THE DESIGN ENGINEER SHALL BE CONTACTED IF FIELD CONDITIONS VARY FROM THE DESIGN ASSUMPTIONS SHOWN ON THE DRAWINGS OR IN THE CONSTRUCTION SPECIFICATIONS. INSTALLATIONS OF FOUNDATIONS SHALL BE SUPERVISED BY THE DESIGN ENGINEER OR THEIR REPRESENTATIVE.

8. WHERE EXCAVATION SPECIFICATIONS ON THESE DRAWINGS CONFLICT WITH WORKSAFE BC (WSBC) REGULATIONS, WSBC REGULATIONS ARE TO SUPERVISE.

LOADING DIAGRAM - OFF-HIGHWAY G.V.W. = 90680kg

DESIGN IN ACCORDANCE WITH CAN/CSA-S6-14 WITH MODIFIED LOADING AS FOLLOWS:

<table>
<thead>
<tr>
<th>Load Case</th>
<th>204.6</th>
<th>204.6</th>
<th>204.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW</td>
<td>204.6</td>
<td>204.6</td>
<td>204.6</td>
</tr>
<tr>
<td>HO</td>
<td>204.6</td>
<td>204.6</td>
<td>204.6</td>
</tr>
<tr>
<td>G.V.W</td>
<td>90680</td>
<td>90680</td>
<td>90680</td>
</tr>
</tbody>
</table>

ROADWAY TRUCK

TRUCK

KNG

LOG SUPERSTRUCTURE

LEVELING FILL COMPACTED TO 95% S.P.D.

MIXTURE AND COVERED WITH AN APPROVED EROSION CONTROL BLANKET.

4. THE CONTRACTOR IS TO CONTACT THE ENGINEER PRIOR TO PLACING FOUNDATIONS. FOUNDATIONS PLACEMENT SHALL BE SUPERVISED BY THE ENGINEER TO CONFIRM BEARING REQUIREMENTS.

5. ALL PERMITS AND REGULATORY APPROVALS TO BE IN PLACE PRIOR TO COMMENCING WORK.

6. ENVIRONMENTAL MANAGEMENT PLAN TO BE PREPARED FOR PROJECT BY OTHERS. COMPLETION OF WORKS TO COMPY WITH MITIGATION RECOMMENDATIONS OUTLINES IN ENVIRONMENTAL MANAGEMENT PLAN.

7. NO SITE SPECIFIC GEOFfXOCATIONAL INVESTIGATION HAS BEEN COMPLETED AS PART OF ALNNORTH CONSULTANTS LIMITED SCOPE OF WORK. THEREFORE, THE DESIGN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A SITE SPECIFIC GEOFfXOCATIONAL INVESTIGATION OR GEOFfXOCATIONAL ADVICE. TERRAIN CONDITIONS MAY VARY AND THE FOUNDATION REQUIREMENTS SHOWN ON THE DRAWINGS OR IN THE CONSTRUCTION SPECIFICATIONS MAY NOT ACCURATELY REFLECT THE GROUND CONDITIONS ENCOUNTERED DURING CONSTRUCTION. ALLNORTH CONSULTANTS LIMITED ACCEPTS NO RESPONSIBILITY FOR ADDITIONAL COSTS OR DELAYS THAT MAY RESULT IF THE GROUND CONDITIONS VARY FROM THOSE ASSUMED IN THE DESIGN. THE DESIGN ENGINEER SHALL BE CONTACTED IF FIELD CONDITIONS VARY FROM THE DESIGN ASSUMPTIONS SHOWN ON THE DRAWINGS OR IN THE CONSTRUCTION SPECIFICATIONS. INSTALLATIONS OF FOUNDATIONS SHALL BE SUPERVISED BY THE DESIGN ENGINEER OR THEIR REPRESENTATIVE.

8. WHERE EXCAVATION SPECIFICATIONS ON THESE DRAWINGS CONFLICT WITH WORKSAFE BC (WSBC) REGULATIONS, WSBC REGULATIONS ARE TO SUPERVISE.

LOADING DIAGRAM - OFF-HIGHWAY G.V.W. = 90680kg

DESIGN IN ACCORDANCE WITH CAN/CSA-S6-14 WITH MODIFIED LOADING AS FOLLOWS:

<table>
<thead>
<tr>
<th>Load Case</th>
<th>204.6</th>
<th>204.6</th>
<th>204.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW</td>
<td>204.6</td>
<td>204.6</td>
<td>204.6</td>
</tr>
<tr>
<td>HO</td>
<td>204.6</td>
<td>204.6</td>
<td>204.6</td>
</tr>
<tr>
<td>G.V.W</td>
<td>90680</td>
<td>90680</td>
<td>90680</td>
</tr>
</tbody>
</table>