

# REGIONAL DISTRICT OF NANAIMO

Invitation to Tender 20-031:

Little Qualicum River Pedestrian Bridge

Replacement and Other Work

**TENDER DOCUMENTS**



Prepared for:

Regional District of Nanaimo  
6300 Hammond Bay Road  
Nanaimo, BC  
V9T 6N2

Prepared By:

Herold Engineering Limited  
3701 Shenton Road  
Nanaimo, BC  
V9T 2H1

Date: May 5, 2020  
Project No. 0837-053

[www.heroldengineering.com](http://www.heroldengineering.com)

# Regional District of Nanaimo

## 20-031: Little Qualicum River Pedestrian Bridge Replacement and Other Work

### TABLE OF CONTENTS

ITEM		PAGE
<b>PART I</b>	Invitation to Tender	
<b>PART II</b>	Instructions to Tenderers	IT 1
<b>PART III</b>	Supplementary General and Special Conditions	SC 1
<b>PART IV</b>	Civil Works Contract – CCDC 18	CW 1
<b>PART V</b>	Tender Form, CCDC 18 Unit Price Contract	TF 1
<b>APPENDIX A</b>	Location Map	
<b>APPENDIX B</b>	Contract Drawings (Bound Separately)	
<b>APPENDIX C</b>	Environmental Management Plan for Little Qualicum Pedestrian Bridge by D.R. Clough Consulting, May 2020	
<b>APPENDIX D</b>	Supply, Fabrication and Installation of Bearing Assemblies	
<b>APPENDIX E</b>	Section 11 Notification Confirmation	

## Regional District of Nanaimo

# 20-031: Little Qualicum River Pedestrian Bridge Replacement and Other Work Near Qualicum Beach, BC

***Sealed tenders, clearly marked 'Tender 20-031 Little Qualicum River Pedestrian Bridge – Bridge Replacement and Other Work' will be received by email to [ASadeghi@heroldengineering.com](mailto:ASadeghi@heroldengineering.com) on or before 15:00 hours, May 29, 2020. The owner and consultant will not be responsible for any technological delays. Submissions will be opened in private at that time.***

The project site is located on Little Qualicum River (49°19'38"N, 124°32'57"W) near Qualicum Beach, BC. The site is accessible from Corcan Road or Melrose Road. The work consists of: supply and installation of steel pipe piles, construction of cast in place abutments, supply and installation of steel girder bridge and precast concrete deck panels, and all works incidental thereto as shown on the drawings.

The Tender Documents will be available on BC BID and on the Regional District of Nanaimo website <https://www.rdn.bc.ca/current-bid-opportunities>

The road to the project site is gated from Melrose Road but is open to the public from Corcan Road (the gate is not locked from Corcan). Access from Melrose Road will be made available to the site on May 11, 2020 to May 13, 2020, between 8 am to 3 pm for viewing. Tenderers are expected to familiarize themselves with the project site in its current state and the access road condition from both Corcan Road and Melrose Road.

Location map with direction to the project site is included in **Appendix A**.

Direct all inquiries, in writing to: Attention: Ali Sadeghi, P. Eng., Project Manager, Herold Engineering Limited, 3701 Shenton Road, Nanaimo, BC, V9T 2H1, Phone 250.751.8558, and e-mail: [ASadeghi@heroldengineering.com](mailto:ASadeghi@heroldengineering.com)

Each Tender Form Received from a Bidder must be accompanied by a Bid Bond in the amount equal to TEN PERCENT (10%) of the TOTAL AMOUNT OF TENDER. Bid Bonds shall be issued on a form approved by the Insurance Bureau of Canada and issued by a Surety acceptable to the Owner. The Successful Bidder will be required to submit a 50% Labour & Materials Bond and a 50% Performance Bond within ten (10) days after the Award of Contract.

Tenders must remain valid for sixty (60) days following closing time and date.

***The Owner reserves the right to reject any or all tenders, to accept the tender deemed most favourable in the interests of the Owner, and the lowest or any tender may not necessarily be accepted.***

**Regional District of Nanaimo**

**20-031: Little Qualicum River Pedestrian Bridge**  
**Replacement and Other Work**

**Near Qualicum Beach, BC**

**PART II**

**INSTRUCTIONS TO TENDERERS**

**REGIONAL DISTRICT OF NANAIMO****20-031: Little Qualicum River Pedestrian Bridge Replacement and Other Work****Near Qualicum Beach, BC****PART II****INSTRUCTIONS TO TENDERERS****ARTICLE 1. TENDER**

Tenders, clearly marked 'Tender 20-031 Little Qualicum River Pedestrian Bridge – Bridge Replacement and Other Work' will be received by email to [ASadeghi@heroldengineering.com](mailto:ASadeghi@heroldengineering.com) on or before 15:00 hours, **May 29, 2020**. The owner and consultant will not be responsible for any technological delays. Submissions will be opened in private at that time.

**ARTICLE 2. SCOPE OF WORK**

The scope of work to be carried out for bridge construction and included in the lump sum generally consists of, but is not necessarily limited to, the following:

- Mobilization and Demobilization
- Traffic and site safety management
- Improvement to access road as deemed necessary by Tenderer
- Foundation excavation (including removal of large boulders or cobbles to a depth of 3 m that impede pile installation)
- Supply and installation of steel pipe piles (including splices and additional 3 m allowance indicated on drawings)
- Supply and installation of cast-in-place concrete for pile infill, including rebar cages
- Supply, delivery and erection of steel I-girders and braces
- Supply and installation of cast-in-place pile caps (abutments), ballast walls, including rebar steel reinforcing
- Supply and installation of precast panels
- Formwork for abutments
- Supply and installation of bridge bearings
- Supply and installation of heavy rock riprap
- Bridge end and placement of base course
- Supply and installation of Galvanized railings
- Supply and installation of bridge signage
- Supply and installation of removable locking bollards
- Environmental mitigation
- Quality Management

**ARTICLE 3. STANDARDS AND SPECIFICATIONS**

All work and materials are to be as described in the latest edition of the:

- MoTI Standard Drawings and Specification
- Any specifications referenced on the contract documents or drawings.

The Standard Construction Contract Document for this project is CCDC 18 as amended by the Supplementary General Conditions.

**ARTICLE 4. DEPOSIT FOR CONTRACT DOCUMENTS**

There is no cost for the Contract Documents in digital format.

**ARTICLE 5. EXAMINE**

The Tenderer must carefully examine the Contract Documents and the site of the proposed works, judging for and satisfying themselves as to the probable conditions to be encountered. Should a Tenderer find discrepancies in, or omissions from, the drawings or other documents, or should they be in doubt as to their meaning, they should at once notify the Consultant. The Tenderer may not claim, after the submission of a tender, that there was any misunderstanding with respect to the conditions imposed by the documents.

Although provision is made in the General Conditions for certain unforeseen site conditions, Tenderers shall make allowances in their bids for such conditions as in the sole opinion of the Tenderer are warranted. It is expected that Tenderers will visit the site before tendering and shall satisfy themselves as to the nature and location of the Work, the means of temporary access, and shall obtain all necessary information as to risks, contingencies and circumstances which may affect his Tender. The Tenderer is responsible for obtaining all information required for the preparation of the Tender.

The Tenderer's attention is drawn to the Supplementary General and Special Conditions of the documents, which contain any changes or additions to the General Conditions. The Tenderer's attention is also drawn to any addenda, which may be issued prior to the time of tender closure.

No verbal agreement or conversation made or had at any time with any officer, agency, or employee of the Owner or the Consultant shall affect or modify any of the terms or obligations neither herein stated, nor deemed to be any representation or warranty.

**ARTICLE 6. GEOTECHNICAL INFORMATION**

The Tenderer is advised that all the relevant geotechnical information for this project is compiled in the Tetra Tech reports.

*The report will be made available in future as an addendum to this tender.*

**ARTICLE 7. ENVIRONMENTAL INFORMATION**

An Environmental Management Plan (EMP) is included in **Appendix C**.

The Tenderer is advised that Regional District of Nanaimo will retain an environmental monitor to assist contractor in the implementation of EMP.

**ARTICLE 8. QUERIES/ADDENDA**

Direct all questions in writing **only** to **Ali Sadeghi, P.Eng., Project Manager**, Herold Engineering Limited, 3701 Shenton Road, Nanaimo, BC, V9T 2H1 or by email to [ASadeghi@heroldengineering.com](mailto:ASadeghi@heroldengineering.com).

Addenda may be issued during bidding period. All Addenda become part of the Contract Documents. Changes in cost from Addenda items are to be included in the bid price. Verbal answers are only binding when confirmed by written addenda.

Addenda will be posted to BC BID and on the Regional District of Nanaimo website <https://www.rdn.bc.ca/current-bid-opportunities>.

Clarifications requested by Tenderers must be in writing not less than five (5) days before date set for receipt of Bids.

**ARTICLE 9. FORM OF SUBMISSION**

Tenders, clearly marked 'Tender 20-031 Little Qualicum River Pedestrian Bridge – Bridge Replacement and Other Work' will be received by email to [ASadeghi@heroldengineering.com](mailto:ASadeghi@heroldengineering.com) on or before 15:00 hours, **May 29, 2020**. The owner and consultant will not be responsible for any technological delays. Submissions will be opened in private at that time.

Electronically submitted Tenders will be deemed to be successfully received when the time as posted on the incoming email is at or before the established closing date and time.

It is the Tenderer's sole responsibility to ensure their Tender is received when, where and how it is specified in this document.

**ARTICLE 10. SCHEDULE OF COMPLETION**

The Regional District of Nanaimo requires that this contract be completed by November 15, 2020.

In-stream work must be planned and implemented around the "work in stream window of least risk" between June 15 to September 15.

A bird breeding season pre-clearing nest survey is required if vegetation removal occurs within nesting season between March 15 to August 15.

**ARTICLE 11. TENDER SIGNING**

If the Tenderer is an individual, a corporation or a partnership, the Tender shall be executed by the individual or a partner authorized to legally bind the tenderer to the statements made in the Tender.

If the Tenderer is a joint venture, each party to the joint venture shall execute the Tender under seal in the manner appropriate to such party.

**ARTICLE 12. QUANTITIES**

The quantities inserted against the various items in the Schedule of Quantities and Prices of the Tender Form have been stated for the purpose of comparing tenders on a uniform basis, but it must be distinctly understood that any quantities shown in the said Schedule are approximate only and that neither the Owner nor the Consultant expressly or by implication represent that the actual quantities will even approximately correspond therewith.

No variation in the quantities actually handled shall give rise to any claim against the Owner or the Consultant.

**ARTICLE 13. TENDER PRICE**

Unit and lump sum prices shall be filled in where indicated in the Schedule of Quantities and Prices of the Tender Form. The unit prices shall be extended in accordance with the quantities shown and the extensions shall be inserted in the space provided. The total tender must be an accurate extension of the unit and lump sum prices submitted and the quantities shown.

In the event of a discrepancy between the unit prices and extended totals, the unit prices will govern and the Consultant will correct the extended totals accordingly.

In the event of a discrepancy between a maximum allowable lump sum price and the submitted lump sum price, the maximum allowable price shall govern and the Consultant will correct the price and extend totals accordingly.

The prices tendered shall include the supply of all materials except those specified to be supplied by others, all supervision, labor and equipment and a provision for overhead and profit, and shall represent the entire cost to the Owner for the completed works as specified and shown on the drawings. All costs to prepare a Tender shall be borne solely by the Tenderer.

**ARTICLE 14. FEES FOR CHANGES IN WORK**

Unless otherwise agreed between Owner and Contractor, the allowance for overhead and profit for the payment for approved COST PLUS WORK shall be calculated as follows:

1. For Contractor, for overhead and profit, 10% of the actual cost of the Contractors work.
2. For Contractor, for overhead and profit, 5% of the amount for Subcontractor's work, being the actual costs of the subcontractors work plus the amount set out in .3 below.
3. For Subcontractor, for overhead and profit, 10% of the actual cost of the Subcontractor's work.

**ARTICLE 15. TENDERER'S QUESTIONNAIRE**

The Tenderer must furnish evidence that he has the necessary experience and is prepared to use the necessary personnel and equipment to carry out the work satisfactorily and within the time stated in the Tender Form. The Tenderer's Questionnaire shall be completed in order that his capabilities in this regard can be assessed by the Owner. Failure to complete the Questionnaire may result in the Tender being considered incomplete.

**ARTICLE 16. LIST OF SUBCONTRACTORS**

The Tenderer must indicate, in the List of Subcontractors in the Tender Form, the names of all subcontractors he proposes to employ on the work. Subcontractors shall not be changed or additional subcontractors employed without the written authorization of the Consultant. Failure to submit a complete list may result in the Tender being considered incomplete.

**ARTICLE 17. SCHEDULE OF FORCE ACCOUNT RATES**

The Tenderer must indicate, in the Schedule of Force Account Rates of the Tender Form, all personnel and equipment hourly rates likely to be used on the project. All equipment rates are to be in line with the current 'Blue Book' rates.

These rates will form the basis for payment for force account work carried out in accordance with the General Conditions. Failure to adequately complete the schedule may result in the Tender being considered incomplete.

**ARTICLE 18. LIST OF MANUFACTURERS AND SUPPLIERS**

The Tenderer must indicate in the List of Manufacturers and Suppliers in the Tender Form, the manufacturer or product brand name of the items listed together with the name of the supplier or distributor from which each item will be purchased.

Where more than one supplier or manufacturer is listed or specified, the name of the selected supplier or manufacturer shall be inserted. Manufacturers and suppliers will not be changed from those shown in the Tender Form without the written authorization of the Consultant. Failure to complete the list may result in the Tender being considered incomplete.

**ARTICLE 19. PROPOSED ALTERNATE MATERIALS**

The Tenderer may propose to use materials other than that specified or shown on the drawings by providing the required information in the list of Proposed Alternate Materials in the Tender Form. Evaluation of

proposed alternate materials will be made by the Owner following the closing of tenders. However, the Total amount of Tender must be based on the use of specified materials.

## ARTICLE 20. SECURITY REQUIREMENTS

### Bid Bonds:

The Tender must be accompanied by a Bid Bond in an amount **not less than ten percent (10%) of the Tender Price**. The Bid Bond must be issued by a surety company licensed to conduct business in the province or territory wherein the work is located, and must be accompanied with a Surety's Consent. The Bid Bond must be a digital bond only, no photocopied or scanned copies of the bond are permissible. Failure to comply will result in an incomplete submission.

If the successful Tenderer fails for any reason to execute the Contract Agreement and to provide the surety bonds stipulated in the General Conditions within the time agreed to in the Tender Form, and such extension of time as may be granted by the Owner, that portion of his Bid Bond will be forfeited to and retained by the Owner in the amount of the difference in money between the Total Tender and the amount for which the Owner may legally contract with another party to perform the work, if the latter amount be in excess of the former.

The Bid Bonds submitted by unsuccessful Tenderers will be returned to them as soon as the successful Tenderer has delivered to the Owner a fully executed Performance Bond for the Work or the period for which tenders are irrevocable has elapsed, whichever shall first happen.

### Labour and Material Payment Bonds and Performance Bonds:

The successful Tenderer shall provide a digital Performance Bond and a digital Labour and Material Payment Bond each in the amount of FIFTY PERCENT (50%) of the CONTRACT PRICE.

These bonds must be provided within fourteen (14) days of contract award and must be maintained in good standing until the fulfilment of the Contract, including the requirements of the Warranty provided for in GC 12.3 - Warranty and the payment of all obligations arising under the Contract. Should the successful Tenderer fail to provide these required bonds; the Bid Bond may be forfeited.

All such bonds shall be issued on a form approved by the Insurance Bureau of Canada and issued by a Surety acceptable to the Owner.

The costs attributed to providing such bonds shall be included in the Total Amount of Tender. The obligee on the bonds must be the Owner.

Submit with the Tender and Bid bond, a "Consent of Surety" stating that the Surety is willing to supply the Performance and Labour and Material Payment Bonds required.

## ARTICLE 21. TENDER WITHDRAWAL

A Tenderer may, without prejudice to himself, withdraw his tender on written request received by the Consultant (Ali Sadeghi, Herold Engineering) any time prior to the time set for the closing of tenders.

## ARTICLE 22. REVISIONS TO TENDER

Any revision to the tender by the Tenderer must be in writing by letter, properly executed, and received by the Consultant (Ali Sadeghi, Herold Engineering) at the closing location before the closing time.

**1. Email**

Email revisions must be received as a new email by the Consultant (Ali Sadeghi, Herold Engineering) prior to the established closing time. The Tenderer assumes all responsibility for the timely and effective delivery of any emailed revision.

The revision must substantially comply with the following requirements:

- a. state the tender number and description;
- b. state the closing time; and,
- c. state the amount by which the tender is to be increased or decreased AND the increase or decrease to each unit price affected.

**2. Amount of Bid Bond**

The Tenderer must ensure that the total amount of the Bid Bond is not less than ten percent (10%) of the total tender price. The Tenderer should consider the effect of revisions on the tender price and the bid bond requirements.

**3. Multiple Revisions**

Where a Tenderer submits multiple revisions to the original tender price, each revision should be numbered sequentially by the Tenderer. Unless the Tenderer clearly stipulates to the contrary on the face of the revision, each successive revision will nullify and replace any previous revision to the identified item or tender price.

**4. Unclear or Ambiguous Revisions**

If in the opinion of the Owner or Consultant, any revision is unclear, ambiguous as to meaning or intent, or does not comply with the requirements of Article 14, that revision will be disregarded and the original tender price, or the tender price determined by consideration of any other revisions will prevail.

The Owner or Consultant, their employees and agents will not assume any responsibility for timely receipt of any revisions.

**ARTICLE 23. TENDER REJECTION**

The Owner reserves the right to reject any or all tenders; the lowest will not necessarily be accepted.

Without limiting the generality of the foregoing, any tender may be disqualified or rejected which is incomplete, obscure or irregular, which has erasures or corrections in the Tender Form, which has prices that are omitted or are unbalanced, which contains an escalator clause or other qualifying conditions or has an insufficient or irregular Surety.

A tender shall also be rejected if there is any evidence that the Tenderer has any legal connection with any other company, firm or person submitting a tender for this work, any knowledge of the tender prices to be submitted for this work by others, or any undisclosed connection or arrangement with any other company, firm, or person having a financial interest in the proposed Contract.

The Owner reserves the right to reject any or all tenders, to accept the tender deemed most favourable in the interests of the Owner, and to re-issue the tender with the same or different terms. Acceptance of any tender is based on the availability of adequate funds to the Owner and regulatory approvals.

**ARTICLE 24. AWARD**

Preference will be given to tenders that give the greatest value based on quality, service and price.

The Owner will, upon selection of an acceptable tender, issue in writing a Notice of Award to the successful Tenderer. This notice will be given as soon as possible following the closing of tenders and, unless otherwise agreed to by the Tenderer, not later than sixty (60) days following the closing of tenders.

**ARTICLE 25. WORKSAFE BC AND SAFETY**

1. The Tenderer is advised the workplace may have the following known operations and/or site conditions that could present a potential hazard to workers and other persons at the workplace.

Other hazards may exist, such as:

Excavations	Traffic
Overhead Utilities	Tree Removal
Mobile Equipment	

2. The successful Tenderer will be designated as the Prime Contractor and must be qualified and willing to undertake the role and shall fulfill the **Prime Contractor** responsibilities as defined in
  - a. *WorkSafeBC Occupational Health and Safety Regulation*, Notice of project, Section 20.2, and Coordination of multiple employer workplaces, Section 20.3;
  - b. *Workers Compensation Act* (BC), Coordination at multiple-employer workplaces, Section 118, Subsections (1) & (2); and
  - c. General Requirements, Section 3.10 WorkSafe BC.
3. The Prime Contractor will be required to coordinate the safety of all workers on the work site, including their employees, their subcontractors, Regional District, work crews and their contractors, and private utilities, (BC Hydro, Telus and Shaw).
4. Prior to commencing work, the successful Tenderer will be required to forward a copy of their current OH&S Safety Program document, WorkSafeBC Notice of Project, and WorkSafeBC Clearance Letter.

p

**ARTICLE 26. TESTING**

The Regional District of Nanaimo will employ a Materials Testing Consultant during the work to test all work and materials deemed necessary and determine whether they are in accordance with the Specifications. The Contractor shall coordinate his work with the Consultant to ensure that the testing is done efficiently and no delays are caused.

**ARTICLE 27. DFO PERMITTING**

Submission of The Request for Review for the Department of Fisheries and Oceans is not required for this project. Section 11 notification confirmation is included in **Appendix E**.

**ARTICLE 28. COVID 19**

Tenderers are advised that the Regional District of Nanaimo acknowledges both the challenges and uncertainty in managing the Coronavirus (COVID-19) in BC's construction industry going forward. Portions of this tender contains specific starting and completion dates that may or may not be achievable, depending

on future restrictions and the duration of these restrictions. Additional risk may be realized from supply chain issues and potential construction site slowdowns, resulting in a delay in delivery of the project.

The successful Tenderer will be required to provide the Owner and Consultant with a COVID-19 management plan including safe work plans that meet current Federal and Provincial Government and WorksafeBC requirements.

**REGIONAL DISTRICT OF NANAIMO**  
**20-031: Little Qualicum River Pedestrian Bridge**  
**Replacement and Other Work**  
**Near Qualicum Beach, BC**

**PART III**

**SUPPLEMENTARY GENERAL AND SPECIAL CONDITIONS**

**REGIONAL DISTRICT OF NANAIMO**

**20-031: Little Qualicum River Pedestrian Bridge**

**Replacement and Other Work**

**Near Qualicum Beach, BC**

**PART III**

**SUPPLEMENTARY GENERAL AND SPECIAL CONDITIONS**

1. Supplementary General Conditions.....	SC2
2. Special Conditions .....	SC4
3. Pay Item Descriptions (For all Scheduled Works).....	SC7

## 1. SUPPLEMENTARY GENERAL CONDITIONS

### 1. General

These Supplementary Conditions shall be read in conjunction with the General Conditions of the Contract and shall govern over them.

The Standard Construction Contract Document for the project is CCDC 18.

### 2. Article A-2 Agreements and Amendments

#### **Add paragraph 2.3:**

Counterpart:

This Agreement may be executed in any number of counterparts, each of which will be deemed to be an original and all of which taken together will be deemed to constitute one and the same instrument. Delivery by electronic transmission in portable document format (PDF) of an executed counterpart of this Agreement is as effective as delivery of an originally executed counterpart of this Agreement.

### 3. GC 1.1 Contract Documents

#### a) **Replace** 1.1.7 with:

1.1.7 If there is a conflict within the Contract Documents:

- .1 The order of priority of documents, from highest to lowest, shall be
  - the Agreement between the Owner and the Contractor,
  - the Definitions,
  - Supplementary Conditions,
  - the Tender Documents,
  - the Drawings,
  - Technical Specifications,
  - the General Conditions,
  - Material and finishing schedules.

#### b) Paragraph 1.1.9 after the words are and shall remain in the first sentence, **add** 'as between the Engineer and the Contractor'

### 4. GC 1.4 Assignment

After neither party to the Contract shall assign the Contract or a portion thereof without the written consent of the other, **delete** 'which consent shall not be unreasonably withheld.'

### 5. GC 3.5 Construction Schedule

**Revise clause 3.5.1.2 to include** "and submit to the Owner and Consultant in PDF format and native file format."

### 6. GC 3.7 Layout of The Work

The Contractor will be responsible for the project layout. Temporary bench marks and digital AutoCAD files will be provided by the Owner. The Contractor must satisfy himself before commencing any work as to the meaning and correctness of all stakes and marks, and no claim will be entertained by the Owner for or on account of any alleged inaccuracies, unless the Contractor notified the Consultant of such inaccuracies in writing before commencing the Work.

The Contractor shall assume full responsibility for alignment, elevations, and dimensions of all parts of the Work, regardless of whether the Contractor's work has been checked by the Consultant.

7. GC 3.12 Use of the Work

**Add paragraph 3.12.3:** The Contractor shall maintain the place of Work in a tidy condition and free from accumulation of debris. Waste material must be promptly removed from site.

8. GC 5.5 Applications for Progress Payment

**Add paragraph 5.5.7:** With each and every application for payment after the first progress payment, a Statutory Declaration on CCDC 9A-2001 Form shall be completed and sworn before a Notary Public or a Commissioner of Oaths for the Province of British Columbia.

9. GC 5.6 Progress Payment

**Revise clause GC 5.6.2 as follows:**

The Owner will, within Thirty (30) days of the date of the Consultant's Certificate, make Agreement. The actual amount paid is subject to the Owner's rights under law or this Contract to make deductions. Payment to the Contractor on account in accordance with the provisions of Article A-5 of the agreement. The actual amount paid is subject to the Owner's rights under law or this Contract to make deductions.

**Add paragraph 5.6.4:** Before any payment is made by the Owner to the Contractor, the Consultant or the Owner may by written notice, require that the Contractor furnish such further detailed information as the Consultant or the Owner may determine is necessary to establish compliance by the Contractor with the Contract Documents.

10. GC 5.7 Substantial Performance Of Work

**Add paragraph 5.7.1.1:** There will be no progressive Substantial Performance of Portions of the Work.

11. GC 5.9 Progressive Release Of Holdback

Paragraph 5.9.1: **Delete** entire paragraph **and replace** with the following: *'There will be no progressive release of holdback funds.'*

12. GC 5.13 Interest

**Add GC 5.13:** Notwithstanding the provisions of Article A-5 PAYMENT, paragraph 5.3, the Owner is not liable to pay interest on any amount which may at any time become payable to the Contractor under this Contract whether or not the payment is in default and whether or not any action or other proceeding has been commenced in respect thereof.

13. GC 6.7 Quantity Variations

Delete entire section.

## 2. SPECIAL CONDITIONS

### 1. Scope of Work

The scope of work to be carried out for bridge construction and included in the lump sum generally consists of, but is not necessarily limited to, the following:

- Mobilization and Demobilization
- Traffic and site safety management
- Improvement to access road as deemed necessary by Tenderer
- Foundation excavation (including removal of large boulders or cobbles to a depth of 3 m that impede pile installation)
- Supply and installation of steel pipe piles (including splices and additional 3 m allowance indicated on drawings)
- Supply and installation of cast-in-place concrete for pile infill, including rebar cages
- Supply, delivery and erection of steel I-girders and braces
- Supply and installation of cast-in-place pile caps (abutments), ballast walls, including rebar steel reinforcing
- Supply and installation of precast panels
- Formwork for abutments
- Supply and installation of bridge bearings
- Supply and installation of heavy rock riprap
- Bridge end and placement of base course
- Supply and installation of Galvanized railings
- Supply and installation of bridge signage
- Supply and installation of removable locking bollards
- Environmental mitigation
- Quality Management

### 2. Herold Engineering (HEL) – Consultant

Herold Engineering acting on behalf of the Regional District of Nanaimo will provide Contract Administration and Construction Field Review services.

### 3. Materials

Imported gravels: bridge end fill, subbase gravel, base course gravel, concrete must meet MoTI specifications.

### 4. Meetings

In addition to a pre-construction meeting with the HEL staff, regular weekly meetings will be held to discuss project progress and address any scope of work updates. Meeting frequency may be adjusted based on project progress and work happening at that time. The meeting location will be at the project site.

### 5. Traffic Accommodation for Bridge Construction

The Contractor is not required to accommodate public traffic, vehicle and or pedestrian access within the Construction area. The Contractor shall be responsible for supplying, installing and maintaining all necessary, signing, flagging and other such warning or traffic control devices for the safety of the public within the construction zone or as determined by the Consultant. During period of inactivity, the Contractor shall inspect all traffic control devices and signage on a continual basis. The Contractor shall supply, install and maintain the sufficient number of interlocking New Jersey type barriers at a 20 degree or less impact angle to close off both approach roads within the limits of the construction zone.

A Traffic Management Plan is to be submitted for approval prior to the pre-construction meeting.

6. Hours of Work

Hours of work for the project shall be limited to between 6 AM and 7 PM, Monday to Friday. Requests for exemptions will be considered based on scheduling requirements.

7. Access Roads Improvement

It is the Contractors responsibility to review and assess the existing access roads and ensure it meets their requirements to complete the project. No alteration to road alignment is anticipated nor allowed without written permission by the Regional District of Nanaimo and the Consultant. Road access road improvement may include grading and resurfacing.

8. Protection of Existing Access Road

The Contractor is cautioned that any damage done to the road wearing surface, such as scoring, teeth marks, track marks, etc., shall be completely reinstated in a manner acceptable to the Consultant and Regional District of Nanaimo and no extra payment shall be made.

9. Dust Control

Dust shall be controlled by the Contractor at all times for the duration of the Contract. The application of used oil or "cut back" bitumen products shall not be used. Aqueous magnesium chloride or calcium chloride can be used, provided the application is not made in an environmentally harmful manner.

10. Work in the Vicinity of Overhead Utility & Power Lines

There are existing 25KV BC Hydro overhead power lines on the West side of the project area. The Contractor shall maintain close liaison with BC Hydro and follow their guidelines for working around overhead power lines.

These include, but are not limited to:

Equipment shall not be operated where it is possible to bring such equipment or any part of the equipment within 5 metres of any energized electrical conductor unless the following safety precautions are taken by the Contractor:

The utility company is notified, the line de-energized, or effectively guarded against contact, or displaced or re-routed from the work area.

WorksafeBC, prior to commencement of construction, is notified in accordance with their required procedure.

For high-voltage transmission lines, a greater clearance is provided, as determined by the utility company.

### Tree Protection

The trees within the project area that are not being removed will require protection. Care is to be taken when working around these trees and the cutting of any roots and placement of riprap. Any Regional District of Nanaimo bylaws related to working around trees apply, unless otherwise advised by the District or the Environmental Monitor.

Tree protection measures are to be to the satisfaction of the Environmental Monitor.

### 11. Record Drawings

- a. Contractor to maintain a complete set of 'redline' record drawings for the duration of the project.
- b. Drawings shall include all information as specified elsewhere for the construction drawings, but shall be corrected upon completion of construction to note all works removed or abandoned during construction. This information shall be retained in a digital point file.
- c. All dimensions, elevations and inverts shown shall reflect the As-Built conditions of the construction and all references to "Proposed" shall be removed. As-Built drawings shall be to scale in accordance with the As-Built dimensions shown. The Revision Table shall be completed indicating the drawings are As-Built. All changes and notes marked in "red ink" on the IFC drawings.
- d. All As-Built features shall be surveyed and survey points recorded in a digital point file with all changes marked on the IFC drawings in red ink. The As-Built drawing shall reflect the true elevation and location of all constructed features, in both the plan and profile views.

### 12. Construction Survey Layout

The Contractor is to provide all necessary construction layout. The Consultant will supply the Contractor with the necessary survey control points and AutoCAD baseplan digital files to enable the Contractor to control the final layout of the work. The Contractor shall be responsible for the conformance of the finished work to this data even though it may be checked by the Consultant. Any known or suspected discrepancies or deviations from the plans are to be reported immediately to the Consultant.

### 13. Environmental Mitigation

The Contractor is advised that the proposed works involve activities within an identified riparian area of Little Qualicum River. The Little Qualicum River is a regionally significant fisheries river.

Given the sensitive nature of the project it is the responsibility of the contractor to ensure that all onsite equipment (excluding the crane) contains only biodegradable hydraulic fluids. In conjunction with this requirement the contractor will be required to install and maintain a floating oil boom downstream of the works. The boom will be required to span the full wetted width of the river during construction

Environmental Mitigation measures must be in accordance with the Erosion and Sediment Control Plan as shown on the drawing S05, and the Environmental Management Plan for Little Qualicum Pedestrian Bridge by D.R. Clough Consulting. in **Appendix C**.

### 3. PAY ITEM DESCRIPTIONS (FOR ALL SCHEDULED WORKS)

#### 1. General Requirements

##### 1. Working in Vicinity of Utilities

Payment for all associated costs with work in the vicinity of the identified utilities shall be made at lump price as shown in the Tender Form. The price shall include all work incidental thereto for line to be de-energized, or effectively guarded against or temporary relocation.

WorkSafe form 30M33 and BC Hydro Line Manager (Qualicum Beach) to review requirements for working in proximity to the 25KV power lines located overhead of the work area. The Contractor shall complete form 30M33 along with any OH&S requirements prior to commencing work on the site. On-site review prior to work with BC Hydro Line Manager will be required.

##### 2. Environmental Mitigation

Payment for Environmental Mitigation will be made at the lump sum price as shown in the Tender Form. The price shall include all work incidental thereto for the implementation of the recommendations made in the Environmental Management Plan for Little Qualicum Pedestrian Bridge by D.R. Clough Consulting, included in the **Appendix C** and Erosion & Environmental Mitigation Plan, Drawing S05. The Contractor will be required to maintain the works until Total Performance of the Contract or as directed by the environmental consultant.

##### 3. Traffic Accommodation Plan

This item is for all costs associated with the preparation of Traffic Management Plan, control of public traffic as required for the work, as outlined in Item 5, Special Conditions of the Contract, all in accordance with the TAC Uniform Traffic Control Devices and the approved Traffic Management Plan. Payment will be made at the lump sum amount tendered for this item.

##### 4. Project Layout

This item is for all of the Contractor's costs related to the survey layout item required for the construction of the bridge and any other items required to complete the work. The Consultant will provide the digital layout information. Payment will be made at the lump sum amount tendered for this item.

##### 5. Tree Removal, Clearing and Grubbing

Payment for clearing and grubbing will be made at the lump sum price as shown in the Tender Form. The price shall include all work incidental thereto for the cutting of trees, clearing and grubbing of all trees and vegetation (including roots and stumps) within the limits shown on the drawings, and disposed offsite.

## 2. Foundation Excavation and Backfill

### 1. Common Excavation

Payment for the common excavation will be made at the lump sum price as shown in the Tender Form. The price shall include equipment, labour, and all work incidental thereto for the removal and disposal offsite of all material below grade as shown on the drawings.

### 2. Imported Granular Fill

Payment for imported granular fill material (Bridge End fill, Base Course) will be made at the unit price per tonne shown in the Tender Form. This price shall include the supply, placement, and compaction of the material. Payment will be based on weigh slips and checked in the field by the Consultant.

## 3. Bridge Construction

The scope of the work to be carried out for bridge construction and included in the lump sum items generally consist of, but are not necessarily limited to, the following (as shown on the drawings) as outlined in items 2.1.

- Mobilization and Demobilization
- Access improvement (if required at the discretion of the contractor)
- Steel Pile Foundation
- Cast in Place Concrete Cap and Ballast Wall
- Steel Girders and Bracing
- Precast Concrete Deck Panels
- Galvanized Steel Railing

Payment will be made at a Lump Sum Price Bid for the items listed in the Tender Form. Progress payment will be made monthly, based on percentage of work completed, and materials and fabricated-components delivered to the site and incorporated in the works. Progress claims shall be submitted in sufficient detail to outline work complete and components on site.

If additional length of pile is required to be installed (beyond the anticipated length plus 3 m allowance per pile), payment will be made on a Unit Rate basis per metre of additional length installed, including any splices required and additional material delivered to the site. The Unit Rate for additional pile length installed will be negotiated with the Contractor.

## 4. Riprap

### 1. Riprap (Class 500 kg)

Payment for Riprap will be made at the unit rate basis per cubic metre, per class of material shown in the Tender Form. Riprap gradation shall conform to BC MoTI Class 500 kg with a nominal thickness of 1.5 m.

The existing riprap on site may be utilized at the discretion of the Consultant.

This price shall include the supply, and placement, of material to the specifications shown on the drawings, contract documents and reference specifications, including the non-woven geotextile underlay. Payment will be made per measurements taken in the field by the Consultant.

#### 5. Miscellaneous Work

##### 1. Removable Bollards

Payment for removable supply and installation of Steel Bollards as specified in the drawings will be made at a lump sum as shown in the Tender Form.

The prices shall include the supply of all materials, labor and equipment to completed works as specified and shown on the drawings.

##### 2. Sign Post

Payment for removable supply and installation of Signage as specified in the drawings will be made at a lump sum as shown in the Tender Form.

The prices shall include the supply of all materials, labor and equipment to completed works as specified and shown on the drawings.

#### 4. STANDARD SPECIFICATIONS

The 2016 BC Ministry of Transportation Standard Specifications for Highway Construction shall apply to this project, as indicated on the Bridge General Notes. Standards shall be as amended in these special provisions.

The Appendix "Supply, Fabrication and Installation of Bearing Assemblies" shall apply for this project and can be found in **Appendix D**.

Reference in the Standard Specifications to "BC Ministry of Transportation", "Ministry Representative", or other implied reference to Owner, shall refer to the Regional District of Nanaimo or its designated representative (including Consultants where applicable).

**Regional District of Nanaimo**  
**20-031: Little Qualicum River Pedestrian Bridge**  
**Replacement and Other Work**  
**Near Qualicum Beach, BC**

**PART IV**

**CIVIL WORKS CONTRACT**  
**CCDC 18**

**Regional District of Nanaimo**  
**20-031: Little Qualicum River Pedestrian Bridge**  
**Replacement and Other Work**  
**Near Qualicum Beach, BC**

**PART V**

**TENDER FORM, CCDC 18 UNIT PRICE CONTRACT**

**REGIONAL DISTRICT OF NANAIMO****Regional District of Nanaimo****20-031: Little Qualicum River Pedestrian Bridge Replacement and Other Work****PART V****TENDER FORM**

The undersigned Tenderer, having carefully examined the Contract Documents and the locality of the proposed work, and having full knowledge of the work required and of the materials to be furnished and used, hereby agrees to provide all necessary materials, supervision, labour, and equipment and to perform and complete all work and fulfil everything as set forth and in strict accordance with the Contract Documents and Addenda numbered \_\_\_\_\_\* for the prices stated in the Tender Form Schedule of Quantities and Prices.

The undersigned also agrees:

1. That the Instructions to Tenderers form part of this tender and agrees to be bound by the requirements set forth in the Instructions to Tenderers.
2. That the Owner is not bound to accept the lowest or any tender.
3. That this tender is irrevocable for sixty (60) days after the closing date for receipt of tenders and that the Owner may at any time within such period accept this tender whether any other tender has previously been accepted or not.
4. To commence and proceed actively with the work after Notice to Proceed is received, and to attain Substantial Performance, as defined by the Builders Lien Act, subject to the provisions of the General Conditions for extension of Contract time.
5. To do all extra work not reasonably inferable from the specifications or drawings but called for in writing by the Consultant and to accept as full compensation therefore payment in accordance with the provisions of the General Conditions.
6. That the estimates of quantities shown in the Tender Form are estimates only for the purpose of comparing tenders on a uniform basis and that neither the Owner nor the Consultant represent that the actual quantities will correspond therewith and that we will be paid at the tendered unit prices for the actual quantities handled.
7. That the Owner may delete from the Contract a portion or portions of the Work without any change in the unit prices provided such deletion is not for the purpose of allowing someone else to perform the deleted portion during the Contract Time.

\* To be Completed by Tenderer

\_\_\_\_\_  
Name of Contractor

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
City, Postal Code

\_\_\_\_\_  
Date

\_\_\_\_\_  
Phone No.

Total Amount of Tender \$ \_\_\_\_\_

\_\_\_\_\_  
Signature of Authorized Representative

The above tendered sum **includes all taxes**, duties and any other additional charges on any or all material, equipment and labour, and it is understood that payment will be made for the completion of all work specified in this Contract on the basis of the unit prices tendered only and that any approved extras or refunds shall be made by mutual agreement between the Consultant and the Contractor.

**Completion of Work**

If the undersigned be notified in writing of the acceptance of this proposal, within fourteen (14) days following such acceptance, he agrees to execute and Agreement for the above stated sum in the form of the specimen submitted to guarantee completion of the Contract in accordance with the documents and within the time stated in the Specifications.

**Security Deposit and Surety's Consent**

Accompanying this tender please find our security deposit in the form of a **bid bond in the amount of \$ \_\_\_\_\_ being ten percent (10%)** of the tender price (including taxes), and a "Surety's Consent" to provide a Performance Bond and a Labour and Materials Bond each in the amount to 50% of the tender price. This security deposit for unsuccessful Tenderers will be refunded within (30) days from the tender opening date. The security deposit for the successful tender will become the property of the Owner if the Tenderer fails or refuses to execute a contract bond within ten (10) days after notification that he is the successful Tenderer.

**Signatures**

The undersigned agrees that the Owner reserves the right to reject the tender on any one or all projects.

I.	_____	_____
	Witness	Legal Name of Tenderer
	_____	
	Title	
	_____	
	Date	
II.	_____	
	Witness	
	_____	
	Title	
	_____	
	Date	_____
		Signature of Authorized Representative

**TENDER FORM UNIT PRICE CONTRACT**

**TF4**

Item	Description	Est. Qty	Units	<i>Unit Price</i>	Total
Section 1	General Requirements				
1.01	Working in Vicinity of Utilities	1	Lump Sum		
1.02	Project Layout	1	Lump Sum		
1.03	Traffic Accommodation Plan	1	Lump Sum		
1.04	Environmental Mitigation	1	Lump Sum		
1.05	Tree Removal, Clearing and Grubbing	1	Lump Sum		
Section 2	Foundation Excavation and Backfill				
2.01	Common Excavation	285	Cubic metre		
2.02	Bridge End Fill	190	Tonne		
2.03	Base Course	45	Tonne		
Section 3	Bridge Construction				
3.01	Mobilization/Demobilization and access improvement	1	Lump Sum		
3.02	Steel Pile Foundation	1	Lump Sum		
3.03	Cast-in-place Concrete Abutments and Ballast Wall	1	Lump Sum		
3.04	Steel Girders and Bracing	1	Lump Sum		
3.05	Precast Concrete Deck Panel	1	Lump Sum		
3.06	Galvanized Steel Railings	1	Lump Sum		
Section 4	Riprap				
4.01	Riprap (Class 500 kg) – nominal thickness 1.5 metre	350	Cubic metre		
Section 5	Miscellaneous Work				
5.01	Supply and installation of Removable Bollards	1	Lump Sum		
5.02	Supply and installation of New Signs	1	Lump Sum		

SUMMARY

Section 1 – General Requirements	_____
Section 2 - Foundation Excavation and Backfill	_____
Sections 3 – Bridge Construction	_____
Sections 4 - Riprap	_____
Sections 5 - Miscellaneous Work	_____
Subtotal - Tender Bid Price	=====
GST 5%	_____
TOTAL	=====



**LIST OF SUBCONTRACTORS**

It is our intention that the following work will, subject to the Consultant's approval, be subcontracted to the firms indicated below. All other work will be performed by our own forces, except as authorized in writing by the Consultant.

<b><u>Trade / Payment Method</u></b>	<b><u>Name and Address of Subcontractor</u></b>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**LIST OF MANUFACTURERS AND SUPPLIERS**

The following is a list of suppliers from whom we intend to purchase the various items of material indicated, together with the product brand name or the name of the manufacturer of each.

We will alter neither products nor suppliers from those listed below without the written authorization of the Consultant.

<b><u>Item</u></b>	<b><u>Product Brand Name or Manufacturer</u></b>	<b><u>Supplier</u></b>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**SCHEDULE OF FORCE ACCOUNT RATES**

The following personnel and equipment rates will form the basis of payment for force account work carried out in accordance with Article 17 of the General Conditions. (Complete Schedule or attach similar information).

Personnel:

<b><u>List by Occupation</u></b>	<b><u>Hourly Rate</u></b>	<b><u>Overtime Rate</u></b>
Superintendent		
Foreman		
Labourer		
Flagger/TCP		
Others		
(Specify)		

Equipment: (to be as per current 'Blue Book' rates).

<b><u>Description</u></b>	<b><u>Hourly Rate</u></b>	<b><u>Model and Size</u></b>
Track Excavator		
Rubber Tired Backhoe		
Dump Truck		
Truck and Pump		
Compactor		
Others		
(Specify)		

**PROPOSED ALTERNATE MATERIALS**

We propose using the following materials as alternates to those specified and shown on the drawings. Should any of these proposed alternates be accepted, we will adjust our Total Tender in accordance with the price variation shown below. These prices will represent the total cost difference to the Owner for supply and installation of the proposed alternate products in lieu of those specified.

<b>Item</b>	<b>Product Brand Name or Manufacturer</b>	<b>Supplier</b>	<b>Price Variation</b>

## **APPENDIX A**

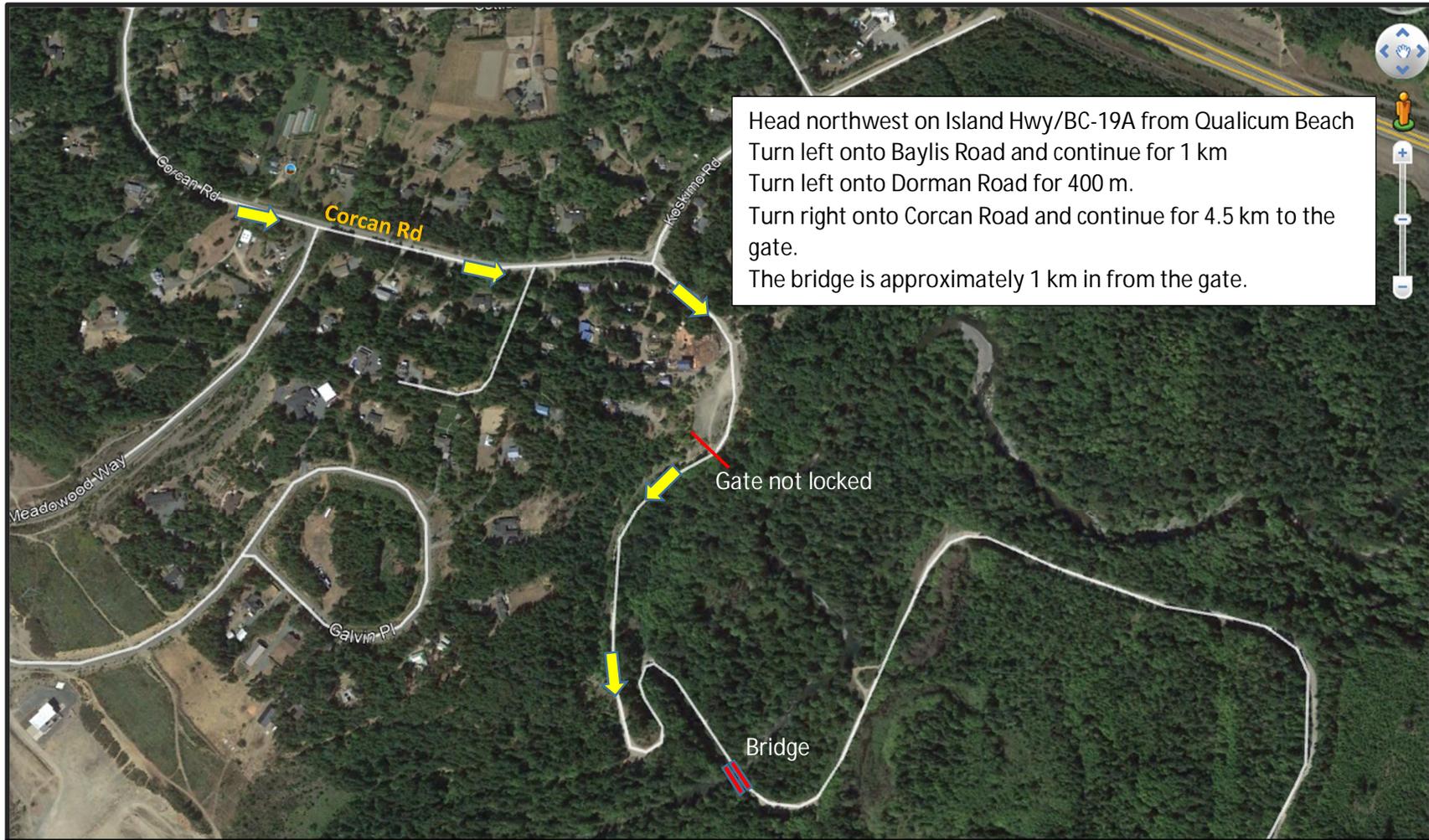
### **REGIONAL DISTRICT OF NANAIMO**

#### **Regional District of Nanaimo 20-031: Little Qualicum River Pedestrian Bridge Replacement and Other Work**

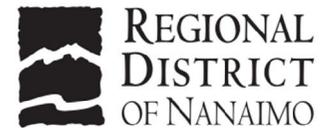
#### **PART V**

##### **Location Map**

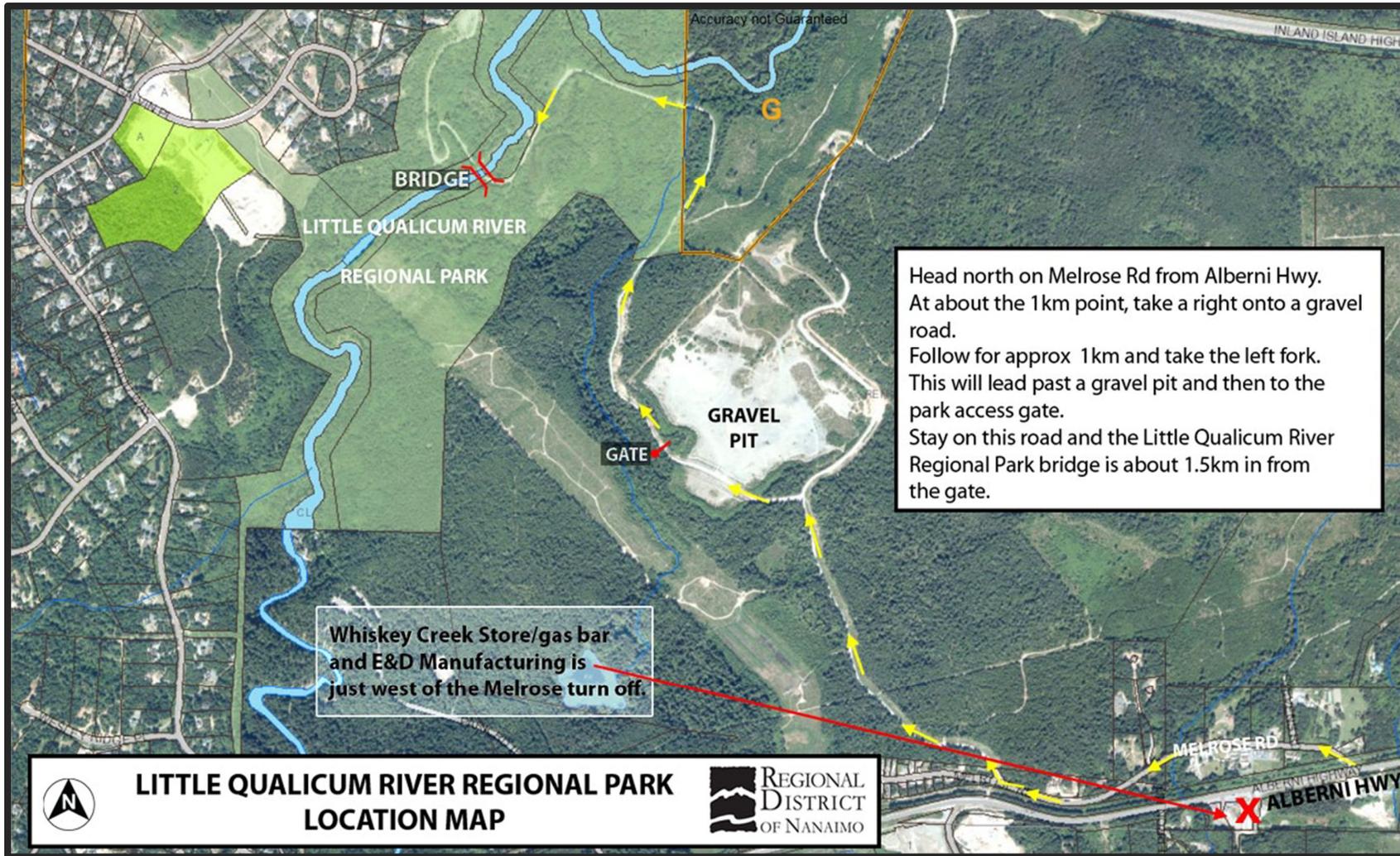
### Direction From Corcan Road



## LITTLE QUALICUM RIVER REGIONAL PARK LOCATION MAP



### Direction From Melrose Road



## **APPENDIX B**

### **REGIONAL DISTRICT OF NANAIMO**

#### **Regional District of Nanaimo 20-031: Little Qualicum River Pedestrian Bridge Replacement and Other Work**

**SCHEDULE OF DRAWINGS  
(Drawings bound separately)**

**SCHEDULE OF DRAWINGS****(Drawings bound separately)**

Drawing No.	Project Drawing No.	Description	Revision No.	Date
0837-053-S00	S00	Cover sheet, Key Plan and Drawing List	0	May 4, 2020
0837-053-S01	S01	General Notes – Sheet 1	0	May 4, 2020
0837-053-S02	S02	General Notes – Sheet 2	0	May 4, 2020
0837-053-S03	S03	Existing Site Plan	0	May 4, 2020
0837-053-S04	S04	General Arrangement	0	May 4, 2020
0837-053-S05	S05	Environmental Mitigation Plan	0	May 4, 2020
0837-053-S06	S06	Cast-in-Place Abutments	0	May 4, 2020
0837-053-S07	S07	Steel Girders – Sheet 1	0	May 4, 2020
0837-053-S08	S08	Steel Girders – Sheet 2	0	May 4, 2020
0837-053-S09	S09	Precast Deck Panels and Removable Bollard	0	May 4, 2020
0837-053-S10	S10	Guardrails	0	May 4, 2020

## **APPENDIX C**

### **REGIONAL DISTRICT OF NANAIMO**

#### **Regional District of Nanaimo 20-031: Little Qualicum River Pedestrian Bridge Replacement and Other Work**

**Environmental Management Plan for Little Qualicum Pedestrian  
Bridge by D.R. Clough Consulting Ltd. May 2020.**

## **APPENDIX D**

### **REGIONAL DISTRICT OF NANAIMO**

#### **Regional District of Nanaimo 20-031: Little Qualicum River Pedestrian Bridge Replacement and Other Work**

**Supply, Fabrication and Installation of Bearing Assemblies**

## **APPENDIX E**

### **REGIONAL DISTRICT OF NANAIMO**

#### **Regional District of Nanaimo 20-031: Little Qualicum River Pedestrian Bridge Replacement and Other Work**

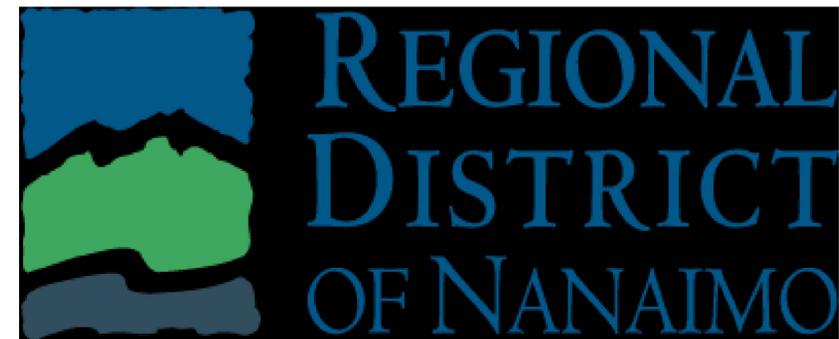
##### **Section 11 Notification Confirmation**

File: H:\Projects\0837-053 Little Qualicum River Bridge Replacement\045 Drawings\Active\0837-053-500.dwg Plot Time: May 01, 2020 - 4:13pm User: PUnghy  
©Copyright reserved. This drawing remains the exclusive property of Herold Engineering Limited and may not be reused or reproduced without written consent of Herold Engineering Limited.



SITE LOCATION  
49° 19' 37.8" N.  
124° 32' 57.0" W.

KEY PLAN  
N.T.S.



# LITTLE QUALICUM RIVER PEDESTRIAN BRIDGE

## DRAWING LIST

<u>DRAWING NUMBER</u>	<u>DESCRIPTION</u>
0837-053-S00	COVER SHEET, KEY PLAN AND DRAWING LIST
0837-053-S01	GENERAL NOTES - SHEET 1
0837-053-S02	GENERAL NOTES - SHEET 2
0837-053-S03	EXISTING SITE PLAN
0837-053-S04	GENERAL ARRANGEMENT
0837-053-S05	ENVIRONMENTAL MITIGATION PLAN
0837-053-S06	CAST-IN-PLACE ABUTMENTS
0837-053-S07	STEEL GIRDERS - SHEET 1
0837-053-S08	STEEL GIRDERS - SHEET 2
0837-053-S09	PRECAST DECK PANELS AND REMOVABLE BOLLARD
0837-053-S10	GUARDRAILS



3701 Shenton Rd, Nanaimo, BC V9T 2H1  
Tel: 250-751-8558 Fax: 250-751-8559  
Email: mail@heroldengineering.com

HEROLD PROJECT No.  
0837-053



ARCHITECTURAL D. 3K - 3K

THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF HEROLD ENGINEERING LTD. IT IS TO BE USED ONLY FOR THE PROJECT AND NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF HEROLD ENGINEERING LTD.

**PILE FOUNDATIONS: STEEL PIPE**

- REFER TO THE GEOTECHNICAL REPORT PREPARED BY EBA TETRATECH. FILE # VGE003532-01
- STEEL PILES SHALL CONFORM TO ASTM A252, GRADE 3 OR BETTER. SPLICES AND SEAMS SHALL BE FABRICATED WITH FULL PENETRATION BUTT WELDS IN ACCORDANCE WITH CSA W59. MILL CERTIFICATES FOR THE PILE MATERIAL SHALL BE SUBMITTED TO THE ENGINEER. PREVIOUSLY USED PIPE WILL NOT BE ACCEPTED.
- REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF CSA A23.1 AND CAN/CSA-G30.18 FOR GRADE 400 REINFORCING.
- CAST-IN-PLACE CONCRETE AND CONSTITUENT MATERIALS FOR PILE FILL SHALL MEET THE REQUIREMENTS OF CSA A23.1. THE COMPRESSIVE STRENGTH OF CONCRETE f<sub>c</sub> SHALL BE DETERMINED BY TESTING AS SPECIFIED IN CSA A23.1 AND CSA A23.2. CONCRETE COMPRESSIVE STRENGTH IS SPECIFIED ON THE STRUCTURAL DRAWINGS.
- PILES SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR LAYOUT OF THE PILES. WHERE CONCRETE OR OTHER OBSTRUCTIONS ARE ENCOUNTERED THEY SHALL BE REMOVED.
- PILE DRIVING EQUIPMENT SHALL BE SUFFICIENT TO DELIVER FORCE TO DRIVE THE PILE TO END BEARING PRACTICAL REFUSAL ON THE DENSE NATIVE SANDS AND GRAVEL OR TILL AS PER THE GEOTECHNICAL REPORT HEREIN ATTACHED. THE GEOTECHNICAL ENGINEER WILL ESTABLISH THE FINAL TIP ELEVATIONS BASED ON THE DESIGN LOADS, RESISTANCE TO PILE DRIVING, PILE TYPE AND METHOD OF DRIVING.
- THE CONTRACTOR IS TO SUBMIT WITH THE BID THE METHOD OF INSTALLATION COMPLETE WITH THE METHOD OF CERTIFYING ACCEPTANCE THAT THE PILE MEETS THE ULS LOAD CRITERIA OF 741kN PER PILE. THE ACCEPTANCE CRITERIA ARE DISCUSSED IN THE GEOTECHNICAL REPORT.
- DROP HAMMER AND DIESEL HAMMER ARE CONSIDERED ACCEPTABLE METHODS. VIBRATORY METHODS ARE NOT ACCEPTABLE FOR THIS PROJECT EXCEPT FOR USE IN EXTRACTION, IF REQUIRED.
- ALL PILES SHALL BE DRIVEN TO DEPTHS INDICATED IN THE GEOTECHNICAL REPORT TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
- MAXIMUM TOLERANCES FROM THE LOCATIONS SHOWN ON THE DRAWINGS SHALL BE 75mm IN ANY DIRECTION AT THE POINT OF CUT-OFF AS INDICATED ON THE DRAWINGS. MAXIMUM DEVIATION FROM PLUMB BELOW THE GROUND LINE IS 5mm PER METRE.
- PILES SHALL BE DRIVEN OPEN ENDED, UNLESS SPECIFIED OTHERWISE, TO PRACTICAL REFUSAL. ADJACENT PILES ARE TO BE MONITORED FOR UPLIFT DUE TO THE DRIVING PROCEDURE AND ARE TO BE RE-DRIVEN TO REFUSAL IF UPLIFT OCCURS. ONCE THE PILE IS ACCEPTED BY THE GEOTECHNICAL ENGINEER IT IS TO BE CLEANED OUT OF ALL SOIL, MATERIAL AND WATER TO THE BOTTOM. THE AREA AROUND THE PILE IS TO BE EXCAVATED TO THE LEVEL INDICATED ON THE DRAWINGS. REINFORCEMENT IS TO BE PLACED AS SHOWN ON THE DRAWINGS AND THE PILE FILLED WITH CONCRETE IN ACCORDANCE WITH CSA A23.1. DEWATERING AND CONTROL OF WATER DURING THE FILLING PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE TOP OF THE PILES SHALL BE PROTECTED BY A SUITABLE DRIVING CAP TO PREVENT DAMAGE TO THE PILES. PILES SHALL BE DRIVEN WITHOUT EXCESSIVE DEFORMATION TO THEIR HEADS. SUFFICIENT LENGTH OF PILE ABOVE CUT-OFF SHALL BE ALLOWED SO THAT NO PART OF THE HEAD OF THE PILE DAMAGED DURING INSTALLATION REMAINS IN THE WORK. DAMAGED PILES SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- ANY PILE SO DAMAGED AS TO BE UNFIT FOR THE USE FOR WHICH IT WAS INTENDED, AND ANY PILE WHICH CANNOT BE BROUGHT WITHIN TOLERANCE FOR LOCATION WILL BE REJECTED. A REJECTED PILE SHALL BE RETRACTED AND REPLACED BY A NEW PILE. WHERE A PILE CANNOT BE RETRACTED OR THE GEOTECHNICAL ENGINEER DOES NOT APPROVE THE RETRACTION, THEN A NEW PILE IS TO BE DRIVEN IN A LOCATION AS DIRECTED BY THE STRUCTURAL ENGINEER OF RECORD. ALL COSTS ASSOCIATED WITH REJECTED PILES SHALL BE PAID BY THE CONTRACTOR WITH NO ADDITIONAL COSTS TO THE OWNER.
- ALL STEEL PIPE PILES SHALL BE CUT-OFF AT THE ELEVATION INDICATED, REINFORCED AND CONCRETE FILLED AND TEMPORARILY PROTECTED BY EFFECTIVE MEANS. REINFORCING STEEL PROTRUDING FROM THE TOP OF THE PILE IS TO BE FLAGGED FOR VISIBILITY REASONS.
- PILES ARE EXPECTED TO BE SPLICED NO MORE THAN ONCE PER PILE AND THE BID PRICE IS TO INCLUDE A SINGLE SPLICE. WHEN CONDITIONS OCCUR WHERE AN EXTRA SPLICE IS REQUIRED, PILING SHALL BE SPLICED A MAXIMUM OF TWICE PER PILE. THE MINIMUM LENGTH OF PILE BETWEEN SPLICES SHALL BE 8 METRES. PILING SHALL BE ALIGNED PLUMB AND STRAIGHT END TO END. ALL WELDS SHALL BE PRE-QUALIFIED FULL PENETRATION BUTT WELDS IN ACCORDANCE WITH CSA W59 AND THE CANADIAN WELDING BUREAU. WELDS AND WELDING PROCESSES SHALL BE PROTECTED FROM ENVIRONMENTAL ELEMENTS IN ACCORDANCE WITH THE BEST TRADE PRACTICE. PREHEAT AND INTERPASS TEMPERATURES ARE TO MEET STANDARDS SPECIFIED THEREIN FOR COLD WEATHER FIELD WELDING. WELDING SHALL BE DONE BY WELDING FIRMS QUALIFIED AS CSA W47.1 DIVISION 2.1 OR BETTER. THE CONTRACTOR SHALL PRODUCE EVIDENCE THAT ALL WELDING OPERATORS ARE CURRENTLY QUALIFIED TO THE STANDARDS HEREIN REQUIRED. SUBMIT SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA SHOWING WELDED SPLICE DETAILS.

**MECHANICAL AND ADHESIVE ANCHORS**

- ALL ANCHORS ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- ALL ANCHORS ARE TO BE THE ADHESIVE TYPE. MECHANICAL ANCHORS ARE ONLY TO BE USED WHEN SPECIFICALLY CALLED-UP ON THE DRAWINGS. SUBSTITUTIONS MUST BE APPROVED BY THE PROJECT ENGINEER PRIOR TO USE.
- UNLESS NOTED OTHERWISE ADHESIVE ANCHORS SHALL BE HILTI 'HAS-E' OR 'HIT-Z' ROD. REFER TO DRAWINGS FOR ANCHOR LOCATIONS, SIZES, CENTRES AND EMBEDMENT LENGTH.
 

USE HILTI HIT-HY200 WHEN:  
A QUICK CURE IS REQUIRED,  
CONDITIONS ARE DRY,  
HOLES ARE HAMMER DRILLED,  
HOLES ARE NOT OVER-SIZED,  
BASE MATERIAL TEMPERATURE IS ABOVE MINUS 10° CELCIUS.

USE HILTI HIT-RE500-V3 WHEN:  
EXTENDED WORKING TIME IS REQUIRED AND CURE TIME IS NOT CRITICAL,  
HOLES ARE DRILLED USING DIAMOND CORE, PNEUMATIC OR HAMMER DRILLS,  
DEEP EMBEDMENT IS SPECIFIED,  
THE APPLICATION IS UNDERWATER, OR  
HOLES ARE OVERSIZED.
- REFER TO DRAWINGS FOR MECHANICAL ANCHOR LOCATIONS, SIZES, CENTRES AND EMBEDMENT LENGTH.
- HOLES FOR MECHANICAL ANCHORS SHALL BE CLEANED OUT WITH HIGH PRESSURE AIR OR BRUSH PRIOR TO ANCHOR INSTALLATION.
- INSTALLERS OF HILTI PRODUCTS SHALL HAVE RECEIVED TRAINING BY HILTI (CANADA) CORP. IN THE USE OF THE SPECIFIED PRODUCTS. THE GENERAL CONTRACTOR SHALL PROVIDE THE DESIGN ENGINEER WITH A LETTER STATING THAT THIS TRAINING HAS BEEN COMPLETED.

**STRUCTURAL STEEL**

- ALL STEEL WORK SHALL BE IN ACCORDANCE WITH CSA-S6, THE STANDARD SPECIFICATIONS AND THE REVIEWED SHOP DRAWINGS.
- THE STEEL FABRICATOR SHALL SUBMIT SHOP DRAWINGS AS SPECIFIED UNDER SUBMITTALS TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INDICATE ALL DETAILS, FASTENERS, MATERIAL SPECIFICATIONS, FINISHES AND DESIGN LOADS.
- A COPY OF THE FABRICATOR'S CANADIAN WELDING BUREAU CERTIFICATES SHALL BE INCLUDED WITH THE SHOP DRAWING SUBMISSION.
- ALL WELDING SHALL BE IN ACCORDANCE WITH CSA W59 AND SHALL BE PERFORMED BY FABRICATORS QUALIFIED BY THE CANADIAN WELDING BUREAU UNDER CSA W55.3. FABRICATING SHOP TO HAVE A MINIMUM DIVISION 2.1 CERTIFICATION BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1 AND CSA W55.3 FOR RESISTANCE WELDING OF STRUCTURAL COMPONENTS. THE FABRICATOR SHALL SUBMIT PROOF OF CERTIFICATION PRIOR TO START OF WORK.
- ALL WELDING ELECTRODES SHALL CONFORM TO CSA W48.
- CONNECTIONS NOT DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED FOR THE LOADS INDICATED ON THE DRAWINGS. UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS CONNECTION DETAILS ARE SCHEMATIC ONLY AND FINAL CONNECTION CONFIGURATION IS THE RESPONSIBILITY OF THE FABRICATOR. USE A MINIMUM OF 2-M20 (3/4") A325 BOLTS PER CONNECTION. CONNECTIONS DESIGNED BY THE CONTRACTOR SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA. CONNECTIONS SHALL BE DESIGNED TO CSA-S16-09 TO RESIST FORCES, MOMENTS AND SHEARS INDICATED ON THE PLANS. IN INSTANCES OF NON-COMPLIANCE THE FABRICATOR SHALL BE RESPONSIBLE FOR ADDITIONAL COSTS ASSOCIATED WITH ACHIEVING COMPLIANCE WITH THE STANDARD.
- CONNECTIONS DETAILED ON THESE STRUCTURAL DRAWINGS SHALL BE FABRICATED AND ERECTED AS SHOWN. ALTERNATIVES MAY BE CONSIDERED AT THE SOLE DISCRETION OF THE STRUCTURAL ENGINEER OF RECORD BUT MUST BE PRE-APPROVED BY SAME. WHERE AN ALTERNATIVE IS APPROVED IT SHALL BE AT NO ADDITIONAL COST TO THE OWNER AND SHALL NOT NEGATIVELY IMPACT THE CONSTRUCTION SCHEDULE.
- BOLTS AND ANCHOR RODS SHALL BE LONG ENOUGH THAT THE END OF THE BOLT OR ROD IS OUTSIDE THE FACE OF THE NUT.
- ALL WELDED, HEADED STUDS, AND WELDED DEFORMED BAR ANCHORS SHALL BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS IN ACCORDANCE WITH CSA W55.3.
- DO NOT FIELD BURN BASE PLATE HOLES OR CONNECTION BOLT HOLES UNLESS APPROVED IN WRITING BY THE ENGINEER. NO FIELD CUTTING OR ALTERATION OF STRUCTURAL MEMBERS IS TO OCCUR WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER
- IF ANCHOR BOLTS ARE MISPLACED OR BOLT HOLES MISALIGNED, INFORM THE ENGINEER.
- PROVIDE STRUCTURAL STEEL TO CSA G40.20/G40.21 OR ASTM A992 WITH THE FOLLOWING GRADES:
 

STEEL GIRDERS	350A
ITEMS WELDED DIRECTLY TO GIRDERS	350A
ITEMS IDENTIFIED AS FRACTURE CRITICAL	350AT CATEGORY 2 OR BETTER
PIPE RAILINGS	240W (35W) TO ASTM A53, GALVANIZED
WIDE FLANGE SECTIONS	350W (50W) OR ASTM A992/A992M-11, GALV.
CHANNELS AND ANGLES	300A, OR 300W (44W) GALV
HSS SECTIONS	350W (50W) CLASS 'C', GALV
MISCELLANEOUS STEEL PLATES	300W (44W)
STUDS	ASTM A108, GRADE 1020
- BOLT SIZING SHALL BE AS NOTED ON DRAWINGS AND DETAILS. PROVIDE BOLTS TO CSA G40.21 WITH THE FOLLOWING GRADES:
 

ERECTION BOLTS TO ASTM A325-10	
FINAL BOLTED CONNECTIONS; ASTM A325 UNLESS NOTED OTHERWISE	
ANCHOR RODS SHALL MEET THE REQUIREMENTS OF ASTM F1554, GRADE 105 OR A193 B7 (105 ksi YIELD STRENGTH) AND SHALL BE HOT DIPPED GALVANIZED PER ASTM A153 OR ZINC PLATED PER ASTM B695.	
- ALL BOLTS USED IN CONNECTIONS SHALL BE PRE-TENSIONED AND HAVE SURFACES OF CLASS 'A' OR BETTER.
- THE CONTRACTOR SHALL PROVIDE SEAL WELDED CLOSURE PLATES AT ALL OPEN ENDS OF EXTERIOR HSS SECTIONS. PLATE THICKNESS SHALL BE A MINIMUM OF 6 mm (1/4") UNLESS NOTED OTHERWISE. PROVIDE 9.5 DIA DRAIN HOLE AT LOW END OF ALL HSS PIECES

**WELDING INSPECTIONS**

- ALL INSPECTIONS SHALL BE PERFORMED BY A COMPANY CERTIFIED TO CSA W178.1 AND EMPLOYING FIELD INSPECTORS CERTIFIED TO CSA W178.2. BOTH SHALL BE CERTIFIED FOR THE RELEVANT CLASS OF INSPECTION. INSPECTION PROCEDURES SHALL BE AS OUTLINED BELOW.
- ALL CP TENSION WELDS SHALL BE TESTED BY A THIRD PARTY WELDING INSPECTOR ENGAGED BY CONTRACTOR USING NON-DESTRUCTIVE MEANS (X-RAY OR ULTRASONIC). PROVIDE TEST REPORTS UPON REQUEST.
- ALL WELDS ARE TO BE VISUALLY INSPECTED BY CONTRACTOR OR BY CERTIFIED THIRD PARTY ENGAGED BY CONTRACTOR. PROVIDE WRITTEN REPORTS UPON REQUEST.
- AT IT'S DISCRETION, OWNER MAY ENGAGE A THIRD PARTY WELD INSPECTOR (OWNER'S REPRESENTATIVE) TO PERFORM PERIODIC VISUAL REVIEW OF WELDS OR INDEPENDANT NON-DESTRUCTIVE TESTING. PER THE STANDARD SPECIFICATIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INSPECTIONS AND PROVIDING SUITABLE AND SAFE ACCESS TO THE WORK BEING INSPECTED.
- ALL FAILURES IDENTIFIED BY THE TESTING AND INSPECTIONS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COST OF ADDITIONAL TESTING TO CONFIRM CONFORMANCE WITH SPECIFICATIONS SHALL BE BORNE BY THE CONTRACTOR.
- SUBMIT ALL TEST REPORTS TO THE STRUCTURAL ENGINEER FOR REVIEW. DO NOT COVER MEMBERS AND THEIR CONNECTIONS WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.

**REINFORCING STEEL**

- REINFORCING STEEL SHALL BE DEFORMED STEEL 400 GRADE AND SHALL CONFORM TO CAN/CSA-G30.18
- WELDABLE LOW ALLOY DEFORMED STEEL REINFORCING BARS, GRADE 400W, SHALL CONFORM TO CAN/CSA-G30.18. MILL CERTIFICATES SHALL BE SUPPLIED TO THE STRUCTURAL ENGINEER FOR ALL WELDABLE REINFORCING STEEL USED IN THE PROJECT.
- WELDED WIRE FABRIC, DEFORMED, SHALL CONFORM ASTM A497.
- WELDING OF REINFORCING STEEL SHALL CONFORM TO CSA W186 "WELDING OF REINFORCING BARS IN REINFORCED CONCRETE CONSTRUCTION". WELDING OF REINFORCING SHALL BE ALLOWED ONLY AS NOTED ON PLANS. WHERE WELDING OF REINFORCING IS REQUIRED MILL CERTIFICATES FOR WELDABLE REINFORCING SHALL BE PROVIDED PRIOR TO WELDING. WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER IS REQUIRED FOR ANY ADDITIONAL WELDING.
- ALL REINFORCING BARS SHALL BE TIED SECURELY TO PREVENT DISPLACEMENT.
- UNLESS NOTED OTHERWISE ON PLANS, LAP LENGTHS FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

CONCRETE MPa	REINFORCING BAR LAP LENGTHS					
	BAR SIZE					
	10M	15M	20M	25M	30M	35M
30	355 (14")	510 (20")	710 (28")	1065 (42")	1295 (51")	1500 (59")
35	330 (13")	480 (19")	660 (26")	990 (39")	1195 (47")	1395 (55")
40	305 (12")	455 (18")	610 (24")	940 (37")	1120 (44")	1320 (52")
45	280 (11")	430 (17")	560 (22")	890 (35")	1040 (41")	1245 (49")

NOTES:  
1. MULTIPLY VALUES BY 1.3 FOR HORIZONTAL REINFORCEMENT PLACED IN SUCH A WAY THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE.  
2. MULTIPLY VALUES BY 1.5 FOR EPOXY COATED REINFORCEMENT WITH CLEAR COVER LESS THAN 3 BAR DIAMETERS OR BAR SPACING LESS THAN 7 BAR DIAMETERS.  
3. MULTIPLY VALUES BY 1.2 FOR ALL EPOXY COATED REINFORCEMENT OTHER THAN IN 2. ABOVE.

- NO SPLICES OTHER THAN THOSE NOTED ON THE DRAWINGS ARE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.
- WHERE CONCRETE SURFACES ARE TO BE EXPOSED ONLY NON-CORROSIVE TYPE REINFORCING CHAIRS SHALL BE USED TO SUPPORT THE REINFORCING STEEL.
- DOWELS ARE TO BE TIED IN PLACE PRIOR TO POURING CONCRETE - "WET DOWELING" OF ANY REINFORCING STEEL IS NOT PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
- HOOKS ON ALL TIES SHALL BE BENT AT LEAST 135° AND HAVE A MINIMUM LEG OF 6 TIMES THE TIE BAR DIAMETER.
- PROVIDE CORNER BARS TO MATCH HORIZONTAL WALL REINFORCEMENT.
- ALL BARS SHALL BE BENT AT TEMPERATURES GREATER THAN 10°C.
- NO BARS WHICH ARE PARTIALLY EMBEDDED IN CONCRETE SHALL BE FIELD BENT EXCEPT AS SHOWN ON THE DRAWINGS OR APPROVED IN WRITING BY THE PROJECT STRUCTURAL ENGINEER.

**CAST-IN-PLACE CONCRETE** **HEL-014**

- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA A23.1-09 AND A23.2-09.
- CONCRETE MIXES, AGGREGATES AND CEMENTITIOUS MATERIALS, INCLUDING PORTLAND CEMENT AND PORTLAND LIMESTONE CEMENT, SHALL CONFORM TO CAN/CSA A23.1-09 AND A23.2-09 AND CAN/CSA-A3000-08 AND SHALL HAVE THE FOLLOWING PROPERTIES BASED UPON PERFORMANCE CRITERIA PROPORTIONING:

CLASS	28 DAY STRENGTH	MAX. AGG. SIZE	SLUMP	AIR CONTENT	EXPOSURE	CEMENT TYPE
ABUTMENTS & PILE FILL	35MPa	19 mm (¾")	75mm ±20	5-8%	C-1	GU
BRIDGE DECK	45 MPa	19 mm (¾")	75mm ±20	5-8%	C-1	GU

- IN ADDITION TO THE ABOVE CRITERIA, ALL STRUCTURAL CONCRETE FOR THIS PROJECT SHALL CONTAIN AT LEAST 8% TYPE 1 FLYASH AND 5% SILICA FUME BY MASS OF CEMENTITIOUS MATERIALS BUT NOT MORE THAN INDICATED IN THE STANDARD SPECIFICATIONS, SECTION 211.
- PORTLAND LIMESTONE CEMENT (PLC) SHALL MEET THE REQUIREMENTS OF CSA A3000 FOR LIMESTONE CEMENTS.
  - CONCRETE TESTING SHALL BE CARRIED OUT BY A THIRD PARTY TESTING FIRM ENGAGED BY THE CONTRACTOR AND PAID FOR BY THE OWNER AND SHALL BE IN ACCORDANCE WITH CAN/CSA A23.1-09 AND A23.2-09. THE MINIMUM NUMBER OF TESTS PERFORMED SHALL BE AS PER CSA A23.2-09. ADDITIONAL TESTING SHALL BE PERFORMED AT THE DIRECTION OF THE STRUCTURAL ENGINEER. CONTRACTOR SHALL PROVIDE TESTING AGENCY WITH ADEQUATE NOTICE TO PROVIDE TESTING AS REQUIRED.
  - CHAMFER ALL EXPOSED EDGES OF CONCRETE WITH A 19mm (3/4") CHAMFER UNLESS NOTED OTHERWISE.
  - CONCRETE FINISHES SHALL BE IN ACCORDANCE WITH CAN/CSA A23.1-09 AND AS FOLLOWS UNLESS NOTED OTHERWISE:
 

U/S DECK;	STEEL FORM
SIDES OF DECK	STEEL FORM
CONCRETE BARRIERS	STEEL FORM
TOP OF DECK;	BROOM FINISH
  - ALL CONCRETE CURING SHALL BE IN ACCORDANCE WITH CAN/CSA A23.1-09. SPECIAL PRECAUTIONS SHALL BE TAKEN PER CSA A23.1 FOR PLACING AND CURING CONCRETE AT OR ABOVE 27° C AND AT OR BELOW 5° C.
  - UNLESS NOTED OTHERWISE, OR REQUIRED FOR FIRE RESISTANCE RATING, ALL REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER DISTANCES:
 

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	75 mm
BRIDGE DECK U.N.O.	40 mm

\* IN ADDITION, COVER MUST BE AT LEAST 1.0x THE BAR DIAMETER FOR INTERIOR EXPOSURE, AND 1.5x THE BAR DIAMETER FOR EXTERIOR EXPOSURE
  - CONTROL JOINTS SHALL BE PROVIDED IN BOTH DIRECTIONS IN ALL SLABS-ON-GRADE AT A MAXIMUM SPACING OF 3600mm (12'-0") FOR UNREINFORCED SLABS AND 6100mm (20'-0") FOR REINFORCED SLABS, UNLESS NOTED OTHERWISE ON DRAWINGS.
  - JOINT FILLER SHALL BE INSTALLED IN ALL EXPANSION AND CONSTRUCTION JOINTS.
  - EMBEDDED PLATES AND ANCHOR BOLTS FOR STRUCTURAL STEEL SHALL BE SECURELY TIED OR FASTENED IN PLACE PRIOR TO POURING CONCRETE. ALL ANCHOR BOLTS SHALL BE LAID OUT USING A TEMPLATE. "WET DOWELING" OF ANCHOR BOLTS AND EMBEDDED PLATES IS NOT PERMITTED.

**PRECAST CONCRETE**

THE FOLLOWING SHALL APPLY TO PRECAST CONCRETE CONSTRUCTION:

- DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO CAN/CSA A23.4. DESIGN LOADS AS PER GENERAL NOTES AND DRAWINGS.
- PRECAST MANUFACTURER SHALL BE CERTIFIED IN ACCORDANCE WITH CAN/CSA 23.4.
- CONCRETE FOR DECK PANELS SHALL HAVE THE FOLLOWING PROPERTIES BASED UPON PERFORMANCE CRITERIA PROPORTIONING:
 

56 DAY TYPE	MAXIMUM STRENGTH	SLUMP AGG. SIZE	AIR CONTENT	EXPOSURE	CEMENT
45 MPa	19 mm	75 mm	5-8%	C-1	GU

- IN ADDITION TO THE ABOVE CRITERIA, ALL STRUCTURAL CONCRETE FOR THIS PROJECT SHALL CONTAIN AT LEAST 8% TYPE 1 FLYASH AND 5% SILICA FUME BY MASS OF CEMENTITIOUS MATERIALS BUT NOT MORE THAN INDICATED IN THE STANDARD SPECIFICATIONS, SECTION 211.
- ALL REINFORCING STEEL, BOLTS, PLATES, INSERTS ETC FOR PRECAST CONNECTIONS SHALL BE DETAILED AND SUPPLIED BY PRECAST MANUFACTURER. ANY PROPOSED ALTERNATE CONNECTIONS MUST BE PRE-APPROVED BY STRUCTURAL ENGINEER IN WRITING.
  - SUBMIT SHOP DRAWINGS AS SPECIFIED UNDER 'SUBMITTALS' FOR REVIEW BY THE PROJECT ENGINEER PRIOR TO FABRICATION. DRAWINGS SHALL SHOW ALL DESIGN LOADS, CONCRETE MIX DESIGNS, REINFORCING, DIMENSIONS, DETAILS, CONNECTIONS AND FASTENERS FOR EACH TYPE OF PANEL. INCLUDE ERECTION AND INDIVIDUAL PANEL DRAWINGS.
  - PRECAST SUPPLIER SHALL CHECK ALL ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENINGS.
  - FIELD CUTTING AND DRILLING IS NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.
  - NON-PRESTRESSED REINFORCEMENT SHALL BE IN ACCORDANCE WITH REINFORCING STEEL SPECIFICATION.
  - PRESTRESSED TENDONS SHALL BE UNCOATED, SEVEN-WIRE, 12.7 MM DIAMETER, LOW RELAXATION STRANDS WITH A MINIMUM ULTIMATE TENSILE STRENGTH OF 1860 MPa. MATERIALS SHALL CONFORM TO CSA G279.
  - POWDER ACTUATED FASTENERS SHALL NOT BE USED FOR FASTENING TO PRECAST MEMBERS. SEE DRAWINGS FOR CONNECTION DETAILS. STRUCTURAL ENGINEER SHALL APPROVE ALL LOCATIONS AND TYPES OF FASTENINGS.
  - PROVIDE A 19mm CHAMFER ON ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE.
  - UNLESS NOTED OTHERWISE, CONCRETE FINISHES SHALL BE AS FOLLOWS:

CONCRETE FINISHES	
U/S DECK (BRIDGE SOFFIT)	STEEL FORM
SIDES OF DECK	STEEL FORM
TOP OF DECK AND CURBS	BROOM

ISSUES					
No.	DATE	ISSUED FOR	No.	DATE	ISSUED FOR
0	2020.05.04	TENDER			

SUB CONSULTANT
----------------

DRAFTED PHU/GMW	 <p>3701 Shenton Rd, Nanaimo, BC V9T 2H1 Tel: 250-751-8558 Fax: 250-751-8559 Email: mail@heroldengineering.com</p>
DRAFTING REVIEW JMCC	
DESIGNED SJS	
DESIGN REVIEW GAB	

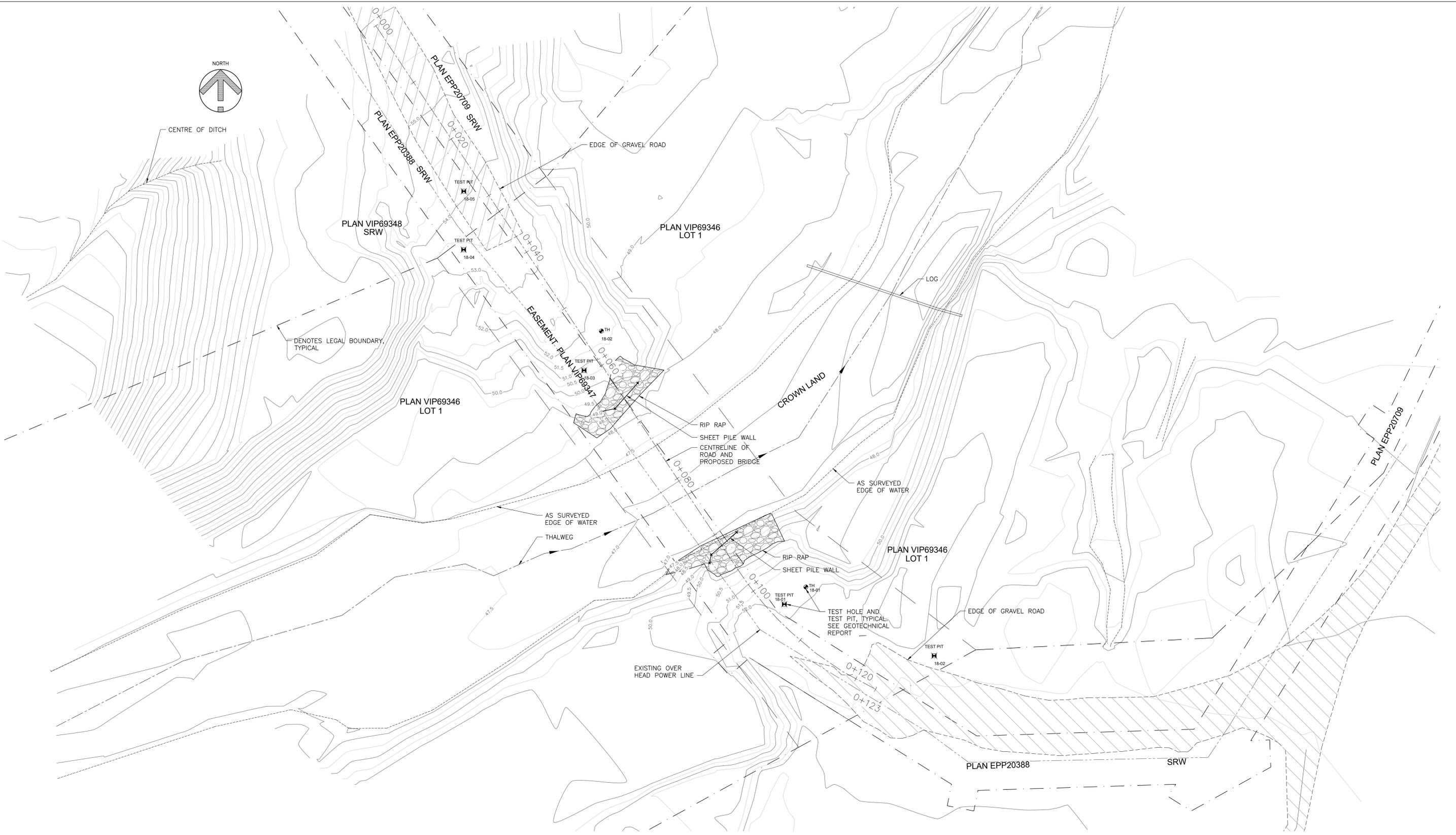
ENGINEERS SEAL	GENERAL NOTES - SHEET 2
----------------	-------------------------

**LITTLE QUALICUM RIVER BRIDGE REPLACEMENT**

REGIONAL DISTRICT OF NANAIMO

HEL PROJECT No. 0837-053	CLIENT DWG. No. N/A
SCALE NONE	PERMIT No. N/A
HEL DRAWING No. <b>S02</b>	REVISION 0

ISSUED FOR TENDER



ISSUED FOR TENDER

- NOTES:**
- FOR GENERAL NOTES, SEE DWG. S01 AND S02.
  - SURVEY DATA PROVIDED BY 3D GEOMATICS FROM A SURVEY ON 2018-11-06.

ISSUES					
No.	DATE	ISSUED FOR	No.	DATE	ISSUED FOR
0	2020.03.13	TENDER			

SUB CONSULTANT	

DRAFTED  
JJMC

DRAFTING REVIEW  
JMCC

DESIGNED  
SJS

DESIGN REVIEW  
GAB

**HEROLD ENGINEERING**

3701 Shenton Rd, Nanaimo, BC V9T 2H1  
Tel: 250-751-8558 Fax: 250-751-8559  
Email: mail@heroldengineering.com

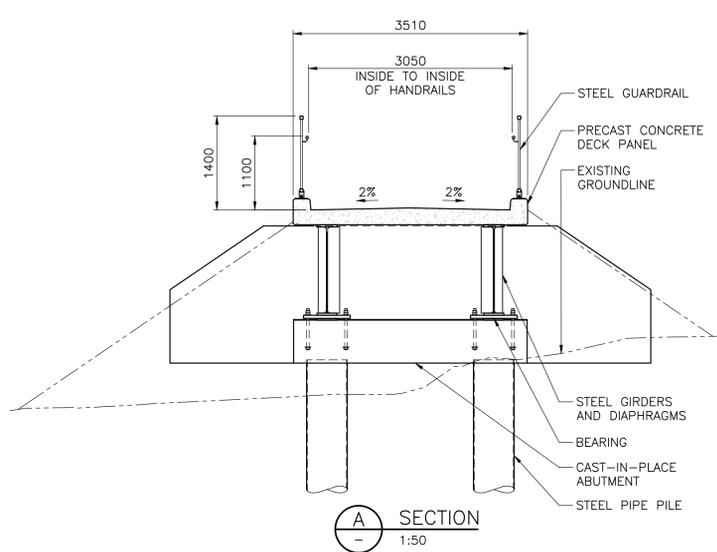
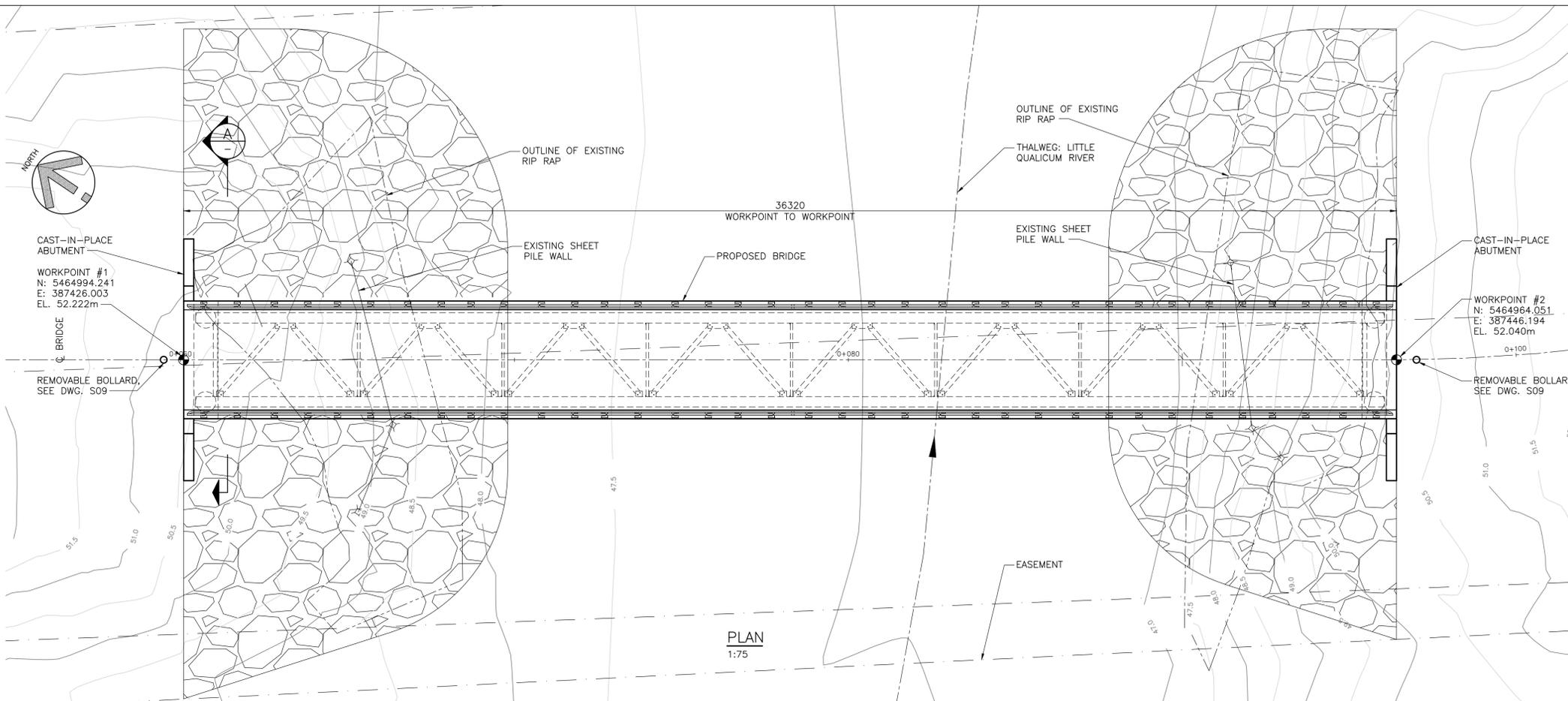
ENGINEERS SEAL

EXISTING SITE PLAN

LITTLE QUALICUM RIVER BRIDGE REPLACEMENT

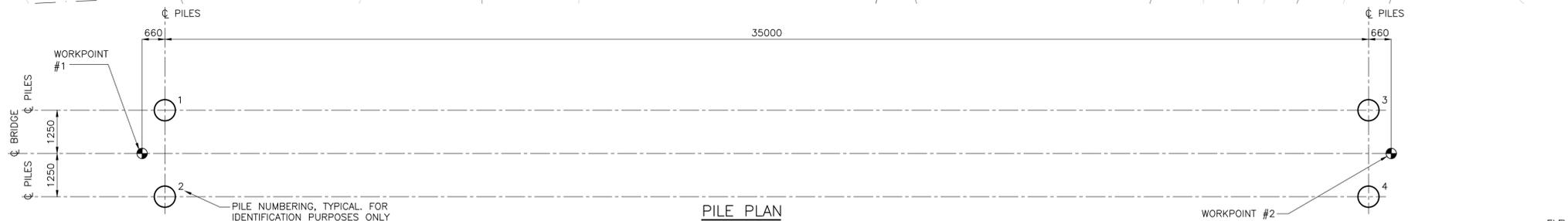
REGIONAL DISTRICT OF NANAIMO

HEL PROJECT No. 0837-053	CLIENT DWG. No. N/A
SCALE 1:250	PERMIT No. N/A
HEL DRAWING No. <b>S03</b>	REVISION 0



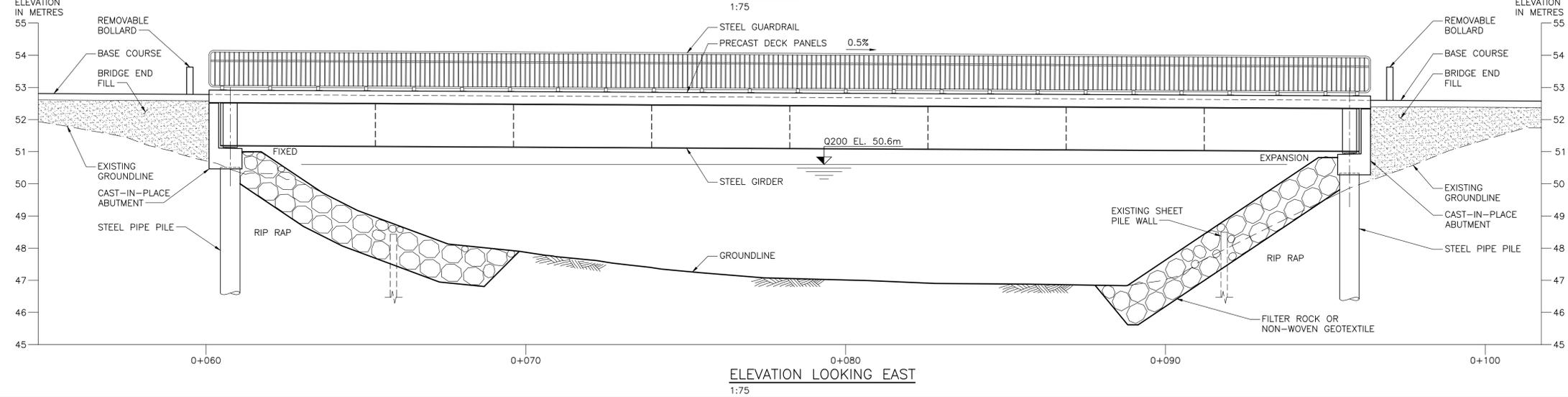
PILE LIST								
STRUCTURE	PILE #	SIZE: OUTSIDE DIAMETER AND WALL THICKNESS (mm)	CUT-OFF EL. (METRES)	ESTIMATED TIP EL. (METRES)*	ADDITIONAL ALLOWANCE	ESTIMATED TOTAL LENGTH OF PILE (METRES)*	ACTUAL TIP EL. (METRES)	AS BUILT LENGTH (METRES)
NORTH ABUTMENT	1	610 x 19	50.514	39.514	3.0	14.000		
NORTH ABUTMENT	2	610 x 19	50.514	39.514	3.0	14.000		
SOUTH ABUTMENT	3	610 x 19	50.332	39.332	3.0	14.000		
SOUTH ABUTMENT	4	610 x 19	50.332	39.332	3.0	14.000		

\* ESTIMATED VALUES ARE BASED ON THE ANTICIPATED PILE EMBEDMENT.  
NOTE: FOR PILE TO PILE CAP CONNECTION ALONG APPROACH, SEE DWG. S06.



RIP RAP TABLE				
CLASS OF RIP RAP (KG)	ROCK GRADATION % SMALLER THAN GIVEN ROCK MASS (KG)			
	500	15%	50%	85%
50		500	1500	
APPROXIMATE AVERAGE DIMENSION (mm)				
500	15%	50%	85%	<100%
	330	715	1030	1220

NOTE: EXISTING RIP RAP FOUND ON SITE MAY BE RE-USED TO COMPLEMENT THE NEW RIP RAP.



**ISSUED FOR TENDER**

**NOTES:**  
1. FOR GENERAL NOTES, SEE DWG. S01 AND S02.

ISSUES			
No.	DATE	ISSUED FOR	
0	2020.05.01	TENDER	

SUB CONSULTANT			
No.	DATE	ISSUED FOR	

**HEROLD ENGINEERING**  
3701 Shenton Rd, Nanaimo, BC V9T 2H1  
Tel: 250-751-8558 Fax: 250-751-8559  
Email: mail@heroldengineering.com

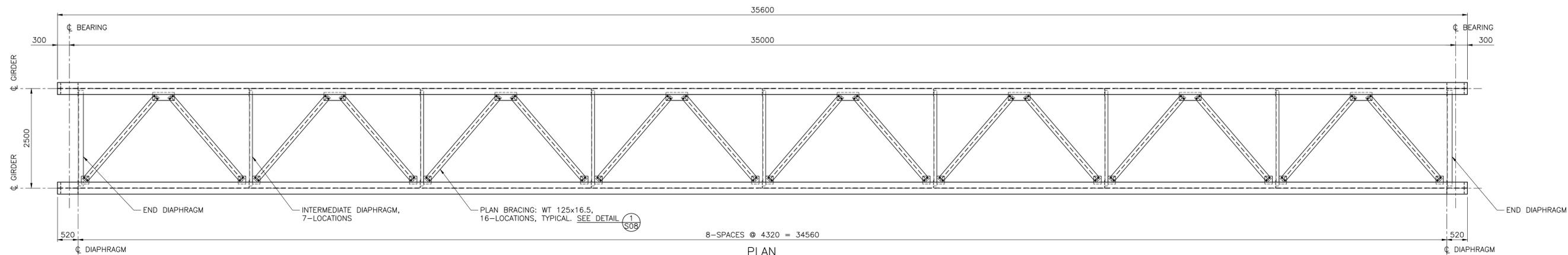
ENGINEERS SEAL  
**GENERAL ARRANGEMENT**

**LITTLE QUALICUM RIVER BRIDGE REPLACEMENT**  
REGIONAL DISTRICT OF NANAIMO

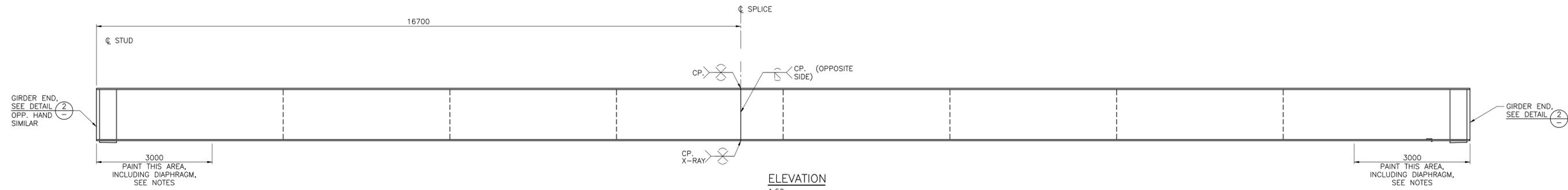
HEL PROJECT No. 0837-053	CLIENT DWG. No. N/A
SCALE AS SHOWN	PERMIT No. N/A
HEL DRAWING No. <b>S04</b>	REVISION 0



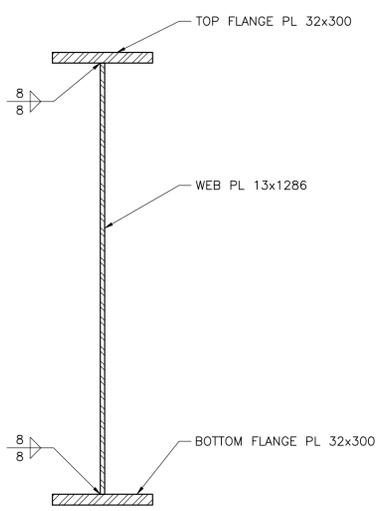




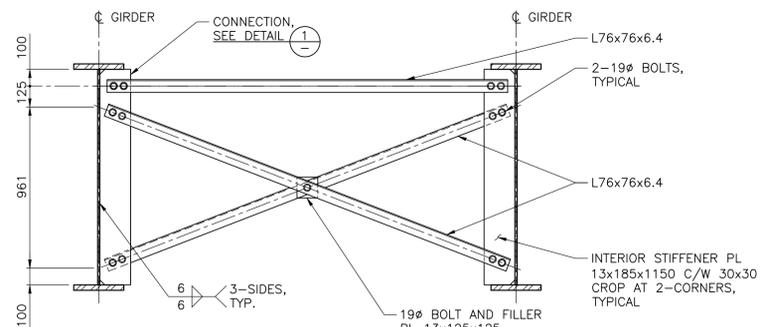
PLAN  
1:50



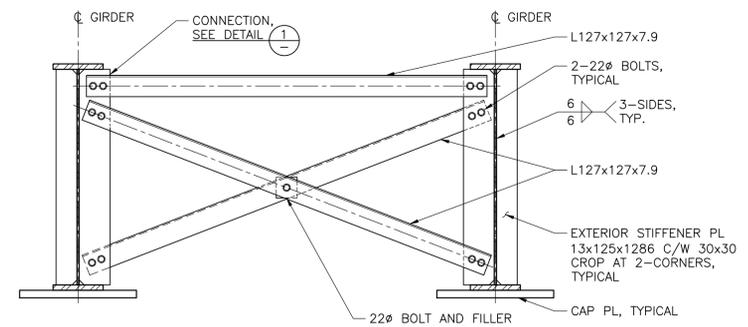
ELEVATION  
1:50



SECTION - GIRDER  
1:10

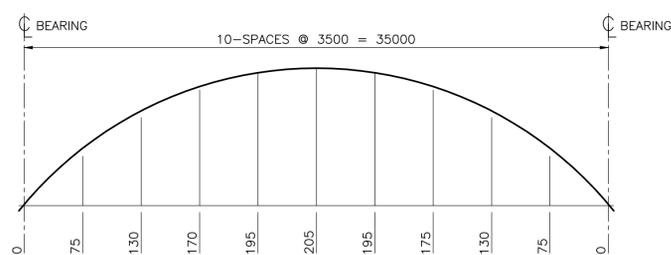


INTERMEDIATE DIAPHRAGM  
1:20

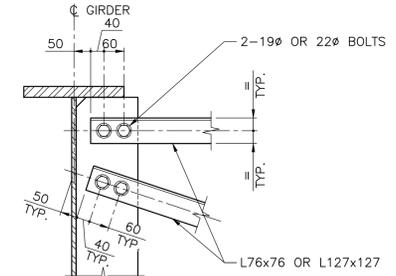


END DIAPHRAGM  
1:20

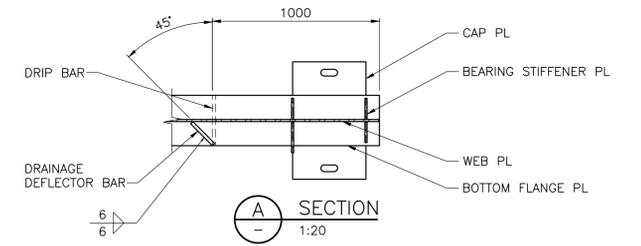
NOTE: SIMILAR TO END DIAPHRAGM, UNLESS NOTED OTHERWISE.



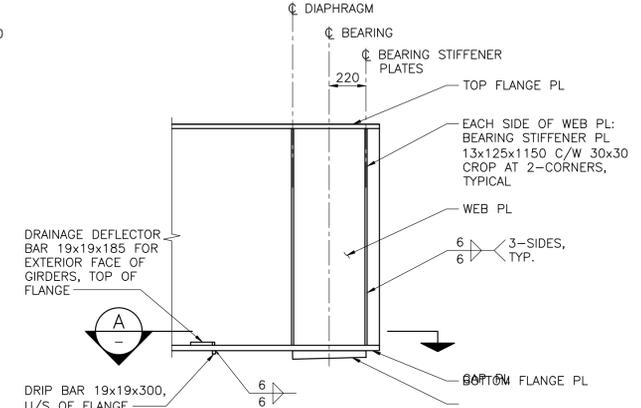
GIRDER CAMBER DIAGRAM  
HORIZONTAL SCALE: 1:200  
VERTICAL SCALE: 1:5



1 DETAIL  
1:10



A SECTION  
1:20



2 DETAIL  
1:20

ISSUED FOR TENDER

- NOTES:
- FOR GENERAL NOTES, SEE DWG. S01 AND S02.
  - ALL STEELWORK NEXT TO ABUTMENTS AS INDICATED ON DRAWINGS TO BE PAINTED PER SPECIFICATIONS EXCEPT TOP FLANGE OF DIAPHRAGM, TOP FLANGE OF GIRDERS AND CONNECTION FAYING SURFACES. COLOUR OF PAINT TO MATCH WEATHERED STEEL SURFACE.

ISSUES					
No.	DATE	ISSUED FOR	No.	DATE	ISSUED FOR
0	2020.05.01	TENDER			

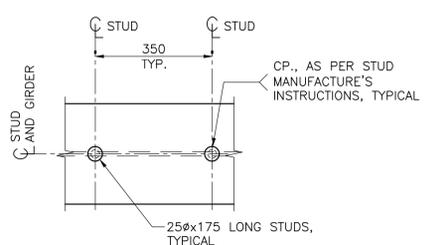
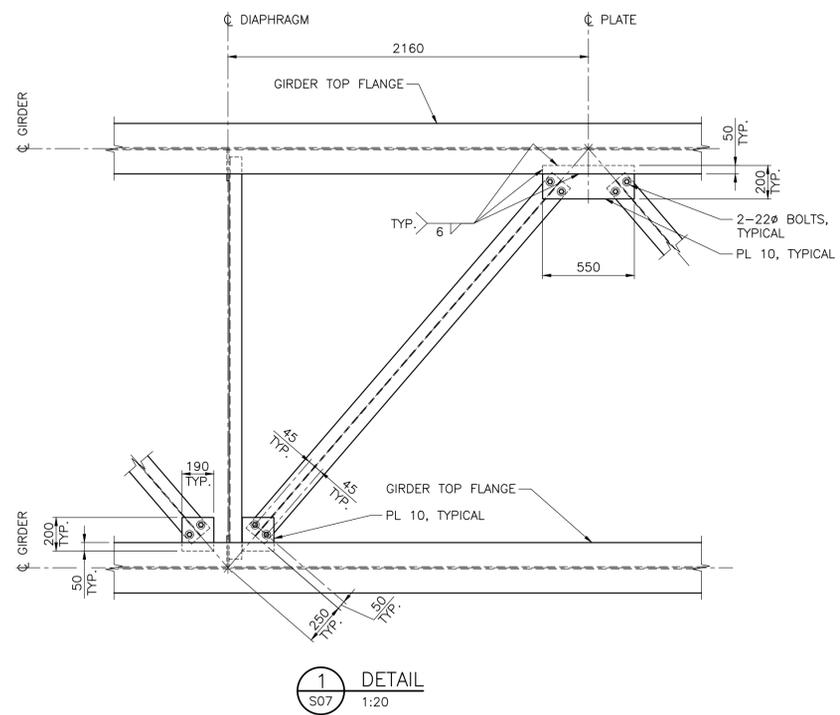
SUB CONSULTANT
----------------

**HEROLD ENGINEERING**  
 3701 Shenton Rd, Nanaimo, BC V9T 2H1  
 Tel: 250-751-8558 Fax: 250-751-8559  
 Email: mail@heroldengineering.com

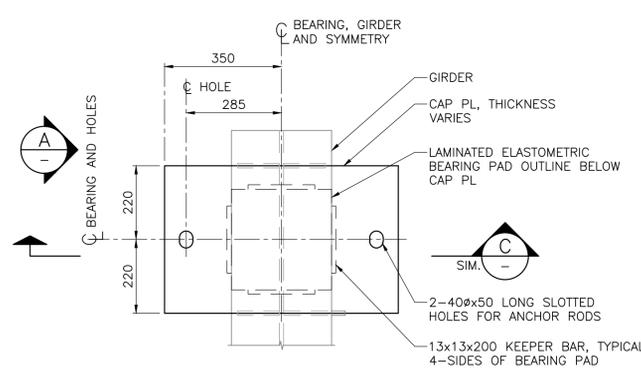
ENGINEERS SEAL  
 STEEL GIRDERS - SHEET 1

**LITTLE QUALICUM RIVER BRIDGE REPLACEMENT**  
 REGIONAL DISTRICT OF NANAIMO

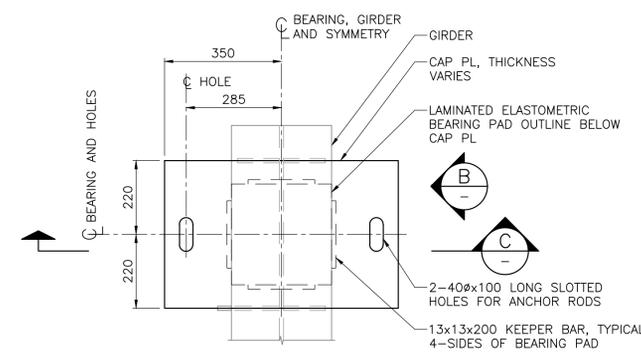
HEL PROJECT No. 0837-053	CLIENT DWG. No. N/A
SCALE AS SHOWN	PERMIT No. N/A
HEL DRAWING No. <b>S07</b>	REVISION 0



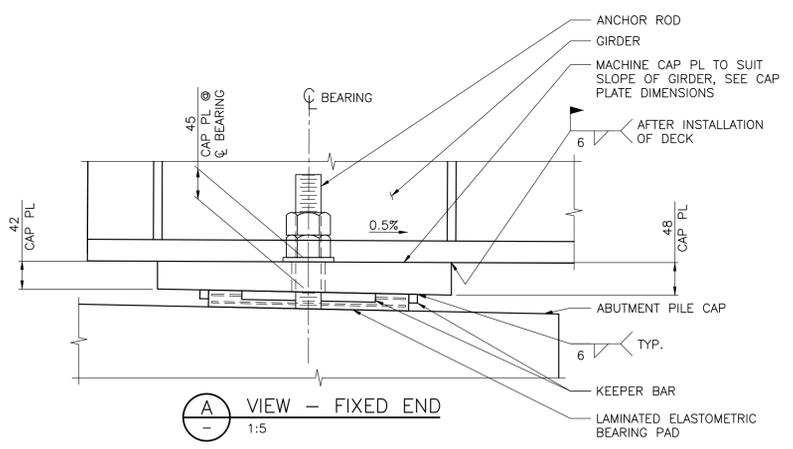
DETAIL - STUDS  
1:10



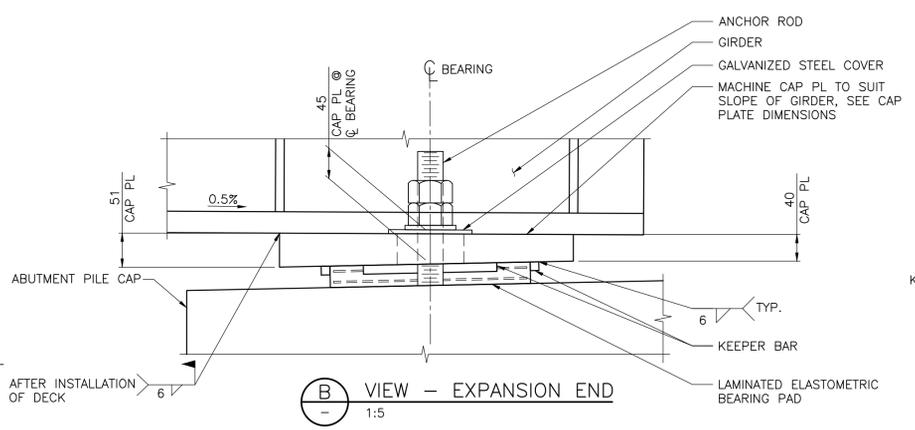
PLAN - CAP PLATE AT FIXED END  
1:10  
NOTE: ANCHOR BOLTS NOT SHOWN.



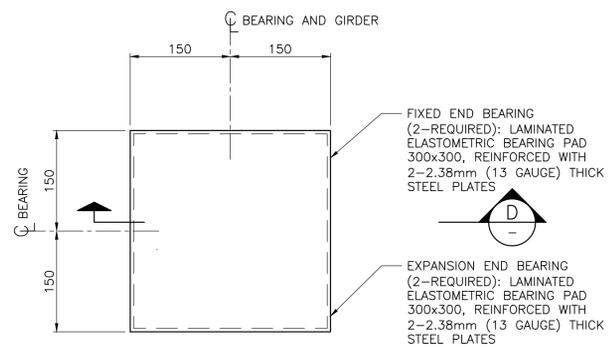
PLAN - CAP PLATE AT EXPANSION END  
1:10  
NOTE: ANCHOR BOLTS NOT SHOWN.



VIEW - FIXED END  
1:5



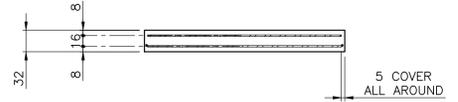
VIEW - EXPANSION END  
1:5



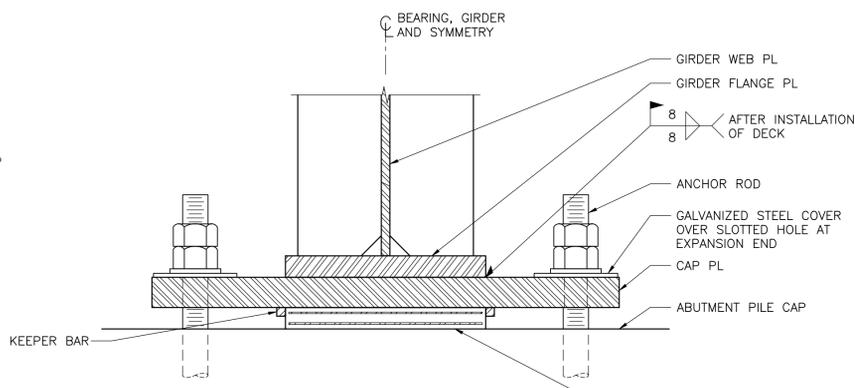
PLAN - LAMINATED ELASTOMETRIC BEARING PAD  
1:5



SECTION - FIXED END BEARING  
1:5



SECTION - EXPANSION END BEARING  
1:5



SECTION  
1:5

NOTE: BEARING AT EXPANSION END SHOWN, FIXED BEARING SIMILAR.

ISSUED FOR TENDER

NOTES:  
1. FOR GENERAL NOTES, SEE DWG. S01 AND S02.

ISSUES					
No.	DATE	ISSUED FOR	No.	DATE	ISSUED FOR
0	2020.05.01	TENDER			

SUB CONSULTANT	

DRAFTED JUMC  
DRAFTING REVIEW JMCC  
DESIGNED SJS  
DESIGN REVIEW GAB

**HEROLD ENGINEERING**

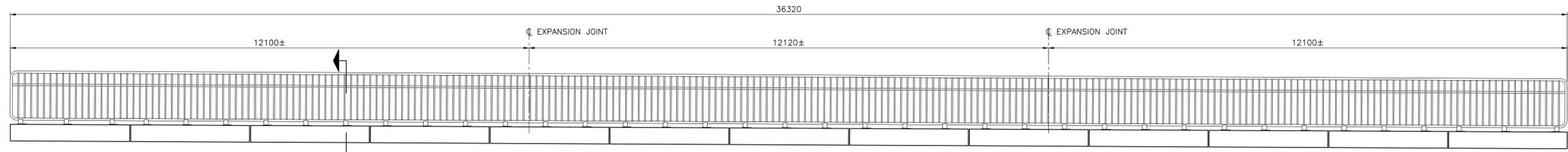
3701 Shenton Rd, Nanaimo, BC V9T 2H1  
Tel: 250-751-8558 Fax: 250-751-8559  
Email: mail@heroldengineering.com

ENGINEERS SEAL  
STEEL GIRDERS - SHEET 2

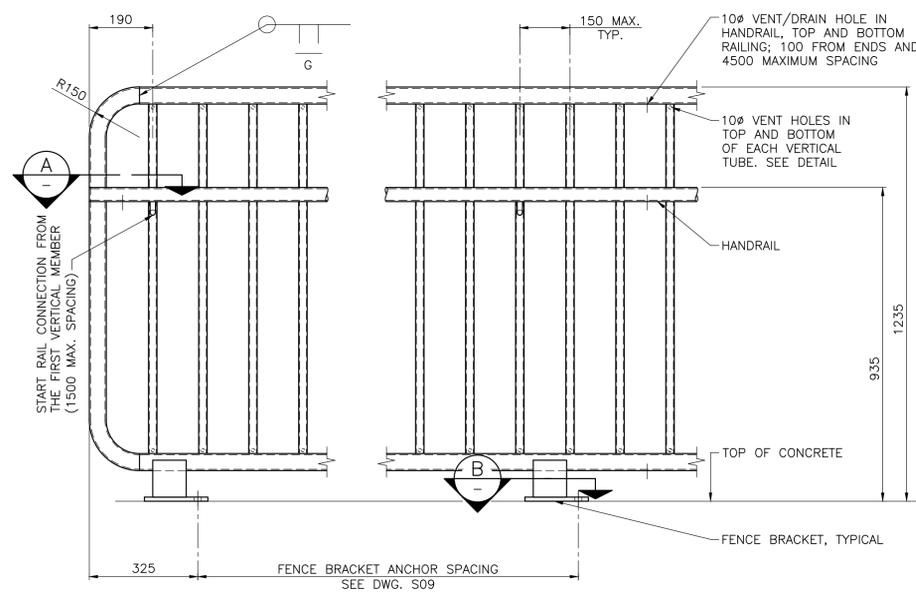
LITTLE QUALICUM RIVER BRIDGE REPLACEMENT  
REGIONAL DISTRICT OF NANAIMO

HEL PROJECT No. 0837-053	CLIENT DWG. No. N/A
SCALE AS SHOWN	PERMIT No. N/A
HEL DRAWING No. <b>S08</b>	REVISION 0

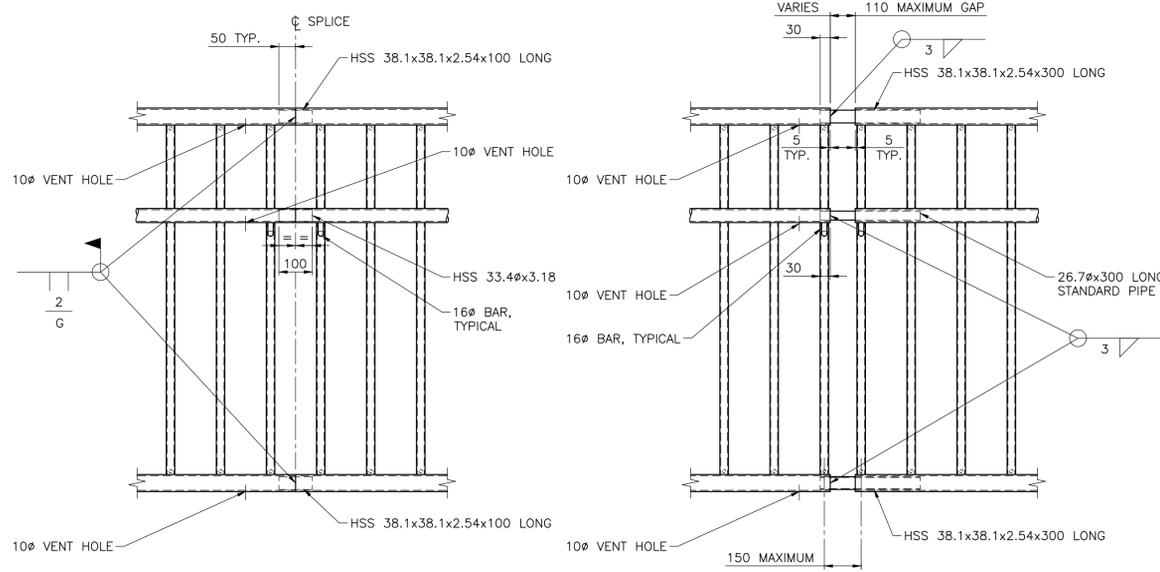




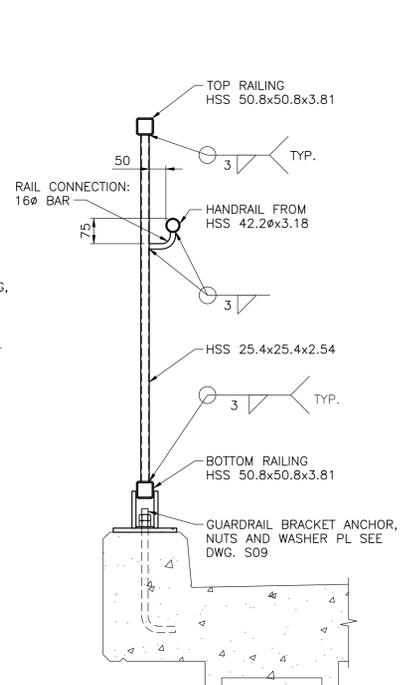
ELEVATION LOOKING EAST  
1:50



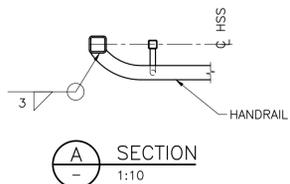
END DETAIL 1:10  
TYPICAL DETAIL 1:10



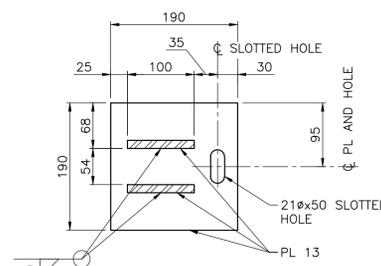
RAIL SPLICE DETAIL 1:10  
RAIL EXPANSION JOINT DETAIL 1:10



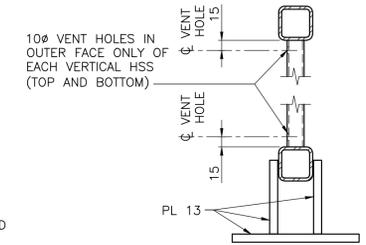
SECTION C 1:10



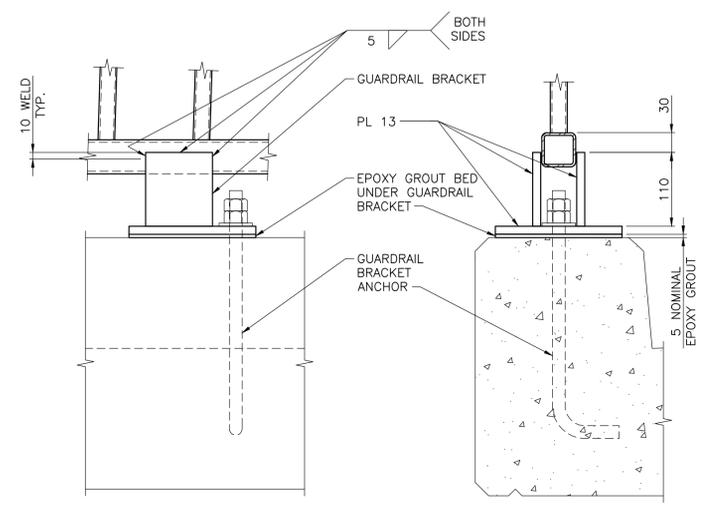
SECTION A 1:10



SECTION B 1:5



DETAIL - VENT HOLE 1:5



ELEVATION 1:5  
SECTION 1:5  
DETAIL - GUARDRAIL BRACKET 1:5

ISSUED FOR TENDER

NOTES:  
1. FOR GENERAL NOTES, SEE DWG. S01 AND S02.

ISSUES					
No.	DATE	ISSUED FOR	No.	DATE	ISSUED FOR
0	2020.05.01	TENDER			

SUB CONSULTANT

DRAFTED JUMC  
DRAFTING REVIEW JMCC  
DESIGNED SJS  
DESIGN REVIEW GAB

**HEROLD ENGINEERING**

3701 Shenton Rd, Nanaimo, BC V9T 2H1  
Tel: 250-751-8558 Fax: 250-751-8559  
Email: mail@heroldengineering.com

ENGINEERS SEAL

GUARDRAIL

LITTLE QUALICUM  
RIVER BRIDGE REPLACEMENT

REGIONAL DISTRICT OF NANAIMO

HEL PROJECT No. 0837-053	CLIENT DWG. No. N/A
SCALE AS SHOWN	PERMIT No. N/A
HEL DRAWING No. <b>S10</b>	REVISION 0

# Environmental Management Plan:

---

For

---

***Little Qualicum River Pedestrian Bridge***

Prepared by:

**D.R. Clough Consulting**

6966 Leland Road, Lantzville B.C. V0R 2H0, BC

## Contents

1. Introduction.....	4
1.1 Intention of this Environmental Management Plan .....	4
1.2 Roles and Responsibilities .....	5
2. Regulatory and Legislative Requirements .....	6
3. Work Description Overview .....	6
Figure 1: Project Location and Drainages.....	8
4. Environment .....	9
5. Environmental Concerns.....	9
6. Best Management Practices .....	10
7.0 . Fish and Wildlife Management.....	12
7.1. Potential Impacts of Construction .....	12
7.2. Construction Environmental Management.....	12
7.2.1. General.....	12
7.2.2. Noise Management .....	12
7.2.3. Human/Wildlife Conflict Management.....	13
8.0 Spill Prevention and Response.....	13
8.1. Potential Construction Impacts .....	13
8.2. Spill Management .....	13
8.2.1. General.....	13
8.2.2. Hazardous Materials Transportation.....	14
8.2.3. Storage.....	14
8.2.4. Handling Fuels & Oils.....	14
8.2.5. Concrete.....	14
8.3. Emergency Spill Response Plan.....	15
8.4. Notification and Reporting.....	15
8.5. Spill Response Material Requirements.....	15
8.6 Emergency Erosion and Sediment Control (ESC) Contingency Plan .....	16
9. Air Quality Management.....	16
9.1. Potential Impacts of Construction .....	17
9.2. Environmental Management .....	17
9.2.1. Greenhouse Gases .....	17
9.2.2. Particulate Matter .....	17

9.3. Monitoring .....	17
10. Sensitive Ecosystems Management .....	17
10.1. Potential Impacts of Construction .....	18
10.2. Environmental Management .....	18
11. Vegetation Management .....	18
11.1. Potential Impacts of Construction .....	18
11.2. Tree Protection Plan Management .....	18
11.3 Invasive Species Management .....	18
12. Waste Management .....	19
12.1. Potential Impacts.....	19
12.2. Environmental Management .....	19
12.2.1. General Waste .....	19
12.2.2. Hazardous Waste.....	19
13. Archaeological and Heritage Impact .....	19
13.1. Potential Construction Impacts .....	19
13.2. Archaeological Management .....	19
14. Site Restoration and Landscaping .....	20
14.1. Environmental Management .....	20
15. Conclusion .....	21
Appendix 1: Site Photos.....	22

# 1. Introduction

This Environmental Protection Plan (EPP) is intended to address potential environmental issues associated with proposed full spanning bridge across the Little Qualicum River. This project is situated within Little Qualicum River Regional Park (Figure 1) in Qualicum, BC. The bridge site is locally known as the Glory Hole Bridge and it connects between Meadowood Way on the northwest to Melrose Road to the South east. The bridge structure was designed by Herold Engineering Limited on behalf of the Regional District of Nanaimo. D.R. Clough Consulting assessed the proposed route right of way for impacts to fish, fish habitat, vegetation, and ecological communities. The survey also identified any potential, cultural heritage sites and valued ecosystems components (VEC's) it encountered. Mitigation measures and management strategies have been developed by D.R. Clough Consulting in an effort to minimize project-related environmental effects for the duration of the project. Environmental protection for the project will be in accordance with Department of Fisheries and Oceans Acts and Regulations, B.C. Ministry of Forests, Lands and Natural Resource Operations, B.C. Ministry of Environment, and Fisheries and Oceans Canada. 2012. Fish-stream crossing guidebook,

B.C. Environment Develop With Care Guidelines as well as Ministry of Highways Standard Specifications for Highway Construction, Section 165; Protection of the Environment (2016).

This EMP includes the identified VEC's and recommendations associated with the effects to the environmental assessment (Clough 2019). It includes identification of criteria to be incorporated into the project-specific requirements.

## 1.1 Intention of this Environmental Management Plan

This EMP is intended to mitigate environmental impacts and reduce the risk of unforeseen environmental incidents from project. All contractor(s) working on the project must comply with the EMP and/or provide suitable alternative approaches, which will be required to be preapproved by the project manager and the environmental monitor, while still be in compliance with applicable legislation. This EMP outlines the following:

- Roles and responsibilities for the Project Manager, and the Environmental Monitor (EM)
- Regulatory requirements and permitting for the project.
- Key construction activities and schedule
- Existing environmental conditions and resources
- Potential project effects and mitigative measures
- Management measures to mitigate potential project effects
- Environmental monitoring, reporting and compliance requirements

This EMP is considered an adaptable document that will be reviewed and updated prior to and during construction activities. The management plans and monitoring protocols outlined in this EMP may be re-evaluated to identify and update deficiencies to improve overall environmental protection.

## 1.2 Roles and Responsibilities

Table 1: Roles and Responsibilities

Project Manager	<ul style="list-style-type: none"> <li>• Project Owner responsible for delivering works associated with these works.</li> <li>• Responsible for overall environmental management and performance of the works.</li> <li>• Administers contracts and assesses the Contractor(s) ability to comply with the EMP as part of the tender evaluation process.</li> <li>• Provides the Contractor and EM with Project-Specific details including permits and this EMP.</li> <li>• Authorizes stop work authority to Project personnel for non-compliance with this EMP and contravention of the regulatory permits and allow them to suspend project activities that are at risk of causing or potentially causing serious harm to flora fauna or the adjacent environment.</li> <li>• Notifies regulatory agencies or authorizes notification of environmental non-compliance or environmental incidences, where applicable.</li> </ul>
Prime Contractor	<ul style="list-style-type: none"> <li>• Understands details of the project by reviewing background information supplied in the tender package.</li> <li>• Construct works according to approved designs and standards as laid out in the contract and this EMP</li> <li>• Verifies that all personnel are appropriately trained and competent in the use of mitigative measures laid out in this EMP such as sediment control and spill response.</li> <li>• Notifies site management and EM when any non-compliances are observed</li> <li>• Immediately reports environmental incidents to the manager and EM and initiates appropriate response action.</li> <li>• Corrects deficiencies and non-compliance under the PM and EM and regulators.</li> </ul>
Environmental Monitor	<ul style="list-style-type: none"> <li>• Attends and records environmental tailgate meetings with contractor(s)</li> <li>• Maintains an updated version of the EMP and is familiar with all aspect of the document.</li> <li>• Communicates requirements of this EMP to the site manager and contractor(s)</li> <li>• Evaluates and reports on the effectiveness of the environmental mitigation measures and contractor(s) work procedures through regular site visits. No set schedule for monitoring is prescribed however; the EM will be required to be onsite for all Instream Works (rip rap/piling) as well as concrete pours The frequency of site visits will be determined prior to construction start up and will be based on regulatory requirements</li> <li>• Advises the contractor of non-compliance and of any emerging environmental issues and assists in providing solutions to address them</li> <li>• Provides a corrective log to the contractor where appropriate</li> <li>• Has the authority to issue a stop work order where activities are impacting or will impact the adjacent environment</li> <li>• Measures and monitors water quality as per this EMP, the Water Quality Monitoring Program and regulatory requirements</li> <li>• Maintains records of site visits and regularly updates the Project Manager.</li> <li>• Writes EM reports which are to be submitted to the PM</li> <li>• Monitors construction activity to verify that works are in compliance with this EMP as well as permits and regularity requirements.</li> </ul>

	<ul style="list-style-type: none"> <li>• Addresses non-compliance issues immediately</li> <li>• Provides guidance and direction during and after any contaminant spill in accordance with this EMP.</li> <li>• Has authority to stop works where activities are impacting, or will impact the adjacent environment.</li> </ul>
--	--

## 2. Regulatory and Legislative Requirements

Table 2: Applicable Legislation and Permitting

Permit	Regulatory Agency	Permit Requirement	Status
Fisheries and Oceans Canada Request for Review	DFO	A self-assessment was conducted in January 2020 and it was deemed that this project could follow the approved BMP's and would not result in serious harm.	A DFO Request for Review has yet to be applied for.
Section 11 Water Act Notification	BC GOV -MFLNRO	Submitted tracking number <b>100307611</b>	Approved
Scientific Fish Collection Permit	MFNRO	A Scientific Fish Collection Permit is required to salvage and relocate fish impacted during dewatering	A fish collection permit will be provided by the owner. At this point it is not expected to be required.
Wildlife Act (Section 34)	MFNRO	Protects nesting birds and their nests	a bird breeding season pre-clearing nest survey is required if vegetation removal occurs within nesting season (March 15-August 15)

Notes: MFNRO- Ministry of Forests, Lands and Natural Recourse Operations; DFO- Fisheries and Oceans Canada.

## 3. Work Description Overview

The proposed project will include installation of an approximately 35m full spanning bridge over the Little Qualicum River within the Little Qualicum River Regional Park. The work is scheduled for the instream work is scheduled for the general period of least risk for Vancouver Island (July 15-September 15) and is expected to take approximately 8 weeks. The contractors should understand the environmental limitations and risks associated with this location. Work must assume rain events will occur and be working within their capabilities to protect the site environment. They must understand in advance the conditions, which indicate a weather shutdown is required for the site.

The project includes and activities, required to complete the proposed works, have the potential to affect the valued ecosystem components including; fish habitat and wildlife. The planned works are outlined below including the main environmental aspects to consider:

- Environmental pre-work meeting

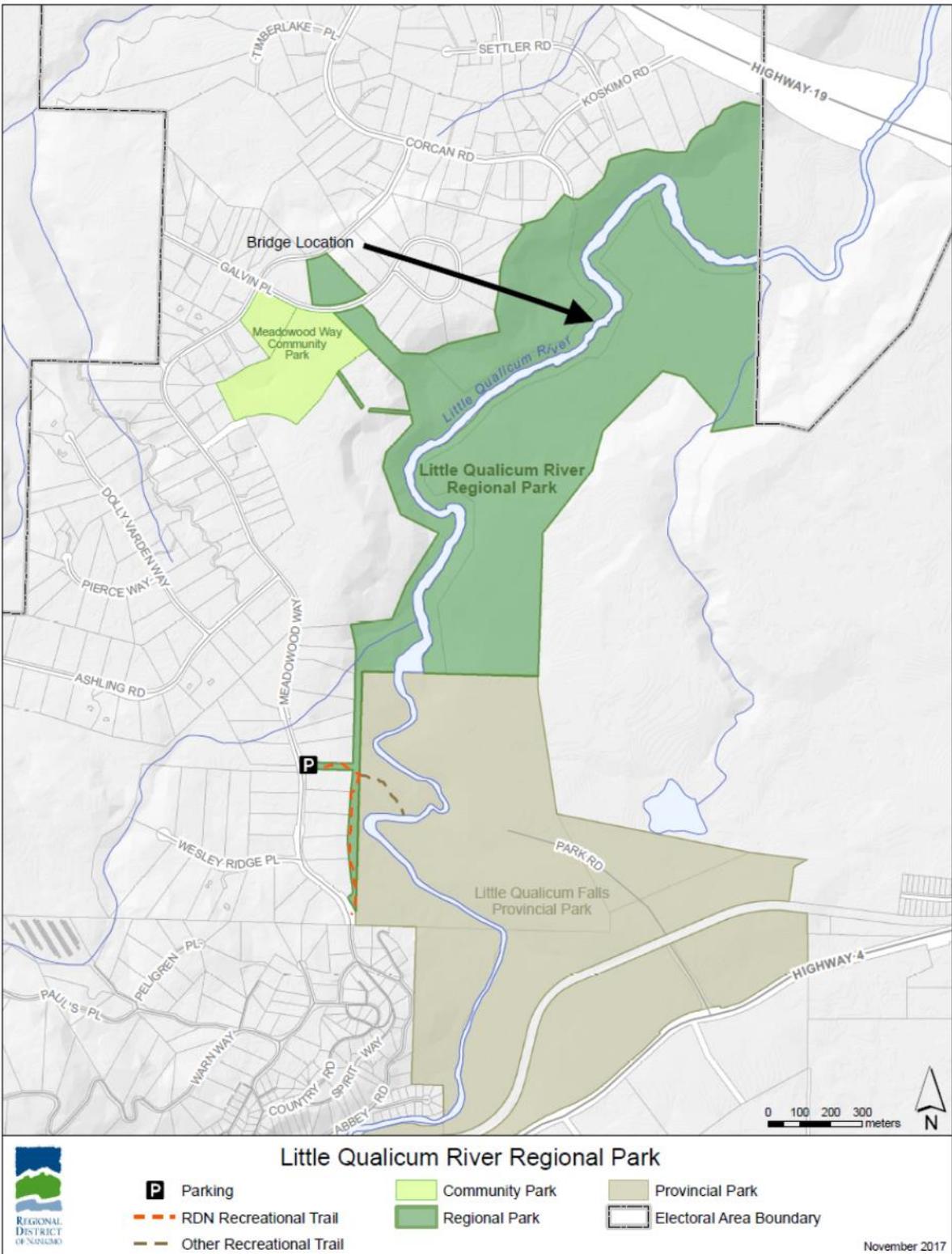
- Clear and grub of project area. Set up of site sediment and spill controls and may require a pre clearing bird sweep depending on start date as per H.E.L. drawing.
- Installation of remainder of Erosion and Sediment Control (ESC) measures and site isolation.
- Instream Works. This will include a debris collection net downstream. The net will require cleaning of debris throughout the project by the successful contractor. Rip rap placement as per design.
- A water tight coffer dam will be installed around each abutment to bypass expected stream flows around the jobsite to preserve downstream aquatic life (expected to be <math><1.5\text{ m}^3/\text{s}</math> but will rise quickly during periods of rain and during early September when flows from Cameron Lake are released to improve salmon migration). This area may need dewatering depending on flows.

Construction timing for the project is anticipated over a 2-months period

Table 3: Project Components and Environmental Activity

<b>Components</b>	<b>Timing and Length</b>	<b>Activity</b>
Installation Environmental and Erosion Protection Measures Nesting Sweep	Prior to start up	Installation of environmental protection measures. Bird nest sweep 5 days prior to vegetation removal.
Vegetation Removal Access Road Preparation	TBD	Remove shrubs and trees within clearing limits. Installation of access road to stream crossing to provide equipment access.
Pilling installation	Mid summer early fall (2 weeks)	Ensure acoustic recordings are in accordance with BMP's
Instream Works	Late summer (5-7 days)	Rip Rap installation and flow reestablishment.
Bridge Construction	4-Weeks	Delivery and construction of Bridge girders. Precast bridge deck panels.

Figure 1: Project Location and Drainages



## 4. Environment

This project is situated within Little Qualicum River Regional Park (Figure 1) in Qualicum, BC. The bridge site is locally known as the Glory Hole Bridge and it connects between Meadowood Way on the northwest to Melrose Road to the South east.

The Little Qualicum River originates on the steep hillsides of Mount Arrowsmith and runs through Cameron Lake, through Parksville and into the Strait of Georgia. The watershed is approximately 251km<sup>2</sup> in size and is situated. The river has perennial flows and year round fish populations. It is a regionally significant sport fish river primarily for Steelhead, Cutthroat and introduced Brown trout, as well as having a commercial fishery production of Chum, Coho and Chinook. It also supports populations of Sockeye Salmon, Pink Salmon and Dolly Varden Char.

The survey area is in a specific ecological area. It is within the Coastal Douglas Fir moist maritime (CDFmm) Biogeoclimatic zone (see section 3.1). The project area features a mature 2<sup>nd</sup> growth forest within the park which has permitted regeneration of the CDF forest types listed above. There are other types of land uses in the area including; forested natural areas, private land logging, wilderness recreational users (hikers, bikers and motorized vehicles observed), residential lots are 300m to the west and a gravel quarry to the east on Melrose Road. There are culturally important sites in the area such as cemeteries and burial grounds

## 5. Environmental Concerns

Potential environmental concerns specially Fish and Fish Habitat was identified in the 2019 EA (Clough 2019). Table 4 summarizes potential project impacts.

Table 4: Project Valued Ecological Environmental Components

Components	Pathway of Effect	Timing and Length	Potential Effects
Vegetation Removal Access Road Improvements	Vegetation clearing.  Destruction of sensitive habitats during clearing and access road improvements	2-3 days (TBD)	Reduction of nesting habitat. Pre clearing nesting sweep required.
Pile Driving	Water quality	2 Weeks (mid to late summer)	Decreased water quality and or inadvertent fish kills through acoustic disturbance to the stream bank
Rip Rap Installation	Sedimentation	1 Week (late summer)	Decrease in wetted area and volume in stream which may increase water temperature and effect water quality.  Increased fish mortality through higher water temperatures
Bridge Installation	Water quality/chemistry	Late summer early fall (8weeks)	Decrease in water quality during concrete deck pours as pH is toxic to aquatic life.

	Light and noise pollution during expected construction activities.		Temporary loss of rearing wildlife habitat for amphibians/reptiles, avians and mammals
--	--	--	--

## 6. Best Management Practices

The EMP considers the following BMP’s for consideration of this project. These include but are not limited to:

- Ministry of Environment Regional Timing Windows (MOE 2007)
- A Field Guide to Fuel Handling Transportation & Storage (MWLAP 3rd Edition 2002)
- B.C. Ministry of Forests, Lands and Natural Resource Operations, B.C. Ministry of Environment, and Fisheries and Oceans Canada. 2012. Fish-stream crossing guidebook. Rev. ed. For. Prac. Invest. Br. Victoria, B.C
- Land Development Guidelines for the Protection of Aquatic Habitats (DFO 1993)
- Develop with Care: Environmental Guidelines for Urban and Rural Land Development in BC (MOE 2014)
- Guidelines for Amphibian and Reptile Conservation During Urban and Rural Development in British Columbia (MOE 2014)
- Guidelines for Raptor Conservation During Urban and Rural Land Development
- Environment Canada General Nesting Periods of Migratory Birds in Canada (EC 2014)
- Standards and Best Practices for Instream Works (MWLAP 2004)

Table 5: Project Components and Environmental Mitigations

Components	Mitigation Measures
Plans and Permits	A copy of EMP and other permits must be kept onsite after review by prime contractor.
Timing	Sensitive works shall be in compliance with timing windows as laid out in the EMP
Pre Work	<p>Work must be planned around the “work in stream window of least risk” (June 15-September for freshwater) and the bird nesting window (March 15 – Aug 15) where a pre-clearing sweep would be required prior to vegetation removal along the entire stream bank.</p> <p>Environmentally sensitive areas must be identified, flagged, or noted to construction crew</p> <p>All equipment shall be cleaned of mud, grease and oils and in good repair before arriving at the site and checked at least daily for leaks. Each machine must contain a spill kit. Refueling of equipment must be a minimum of 30m from the ESA areas.</p> <p>All environmental safety material (i.e. spill kits) must be readily available on site. Erosion control coverings such as plastic, pumps, tarps and straw bales are to be on the job site (specifications below). Erosion and sediment control materials must be installed prior to work.</p> <p>There must be no trespass into wetted areas or other identified ESA’s. No vegetation disturbed other than those specified in work area. An arborist will be retained if significant tree roots are located which are located outside of the clearing limits.</p>

	<p>Wet weather shutdown applies, rainfall will not be recorded but in any circumstance (whether raining or not) where a potential exists for release of sediment to offsite, the activity must be stopped. Especially important during concrete pours.</p>
Planning	<p>Prior to construction erosion and sediment control measures must be installed and functional. The boundaries of on-site environmentally sensitive areas (ESA) around streams or other features will be clearly defined. Construction activities may only take place within the defined boundaries away from ESA's.</p> <p>Restrict vehicle and equipment access or mitigate for sensitive soil areas. Construct ditches or water diversions so they do not directly discharge sediment-laden surface flows into a stream</p> <p>Refuelling and/or lubricating of vehicles and equipment will be conducted in a designated area at least 30m away from watercourses and water bodies.</p> <p>Drainage planning for direction of surface water flow on the site, including locations of ditches and watercourses. Expected rainfall during construction should be considered in plans. Location(s) of environmentally sensitive areas adjacent to the Project.</p>
Weather	<p>Where possible, plan construction activities during dry weather to avoid erosion and sediment events. Stop work during heavy precipitation or at the discretion of Environmental Monitor. Disturbed areas should be covered/re-vegetated as soon as possible.</p>
Construction	<p>Construction equipment will only operate within the designated boundaries of the Project.</p> <p>Vegetation removal should take place immediately prior to construction activities to minimize soil exposure. During clearing, stockpiling native shrubbery (i.e. Salmonberry ) for later replanting may be considered by the contractor as a component of the final landscaping. Soils and surface disturbance to be minimized with no ruts and a smooth surface.</p> <p>Spoil must be stored in delineated boundaries/stock pile areas or trucked out. All exposed surfaces including the ditch lines, fill material, spoil piles or construction materials and equipment must not release deleterious materials into the ESA's. Maintain erosion control measures (i.e. sediment fence) around exposed soil piles and access routes.</p> <p>Debris management: Debris is not permitted to be lost off the new bridge structure, if the EM deems a risk of lost material exists then a catchment structure will be required.</p>
Instream Works - excavation	<p>Instream work will be scheduled for the least risk period of the work schedule. The contractor should use weather forecasts to fit the best weather window for the entire instream period to avoid weather shutdowns.</p> <p>The isolation of the work site will require a coffer dam as per drawings. The amount of pumping and wetted area will depend on the season of work and stream levels. Work in stream requires the work area to be isolated to prevent escape of sediment and entry of fish.</p> <p>Fish removal is not expected but will be provided by the owner if required.</p>
Pile Driving	<p>Steel Pipe Piles (less than 24 inch in diameter): When driving steel piles of less than 24 inches in diameter regardless of the type of hammer being used, the following Best Management Practices will be employed to minimize the impact on the fish habitat: • Because of the small diameter of the pile it is an accepted principle that the energy required to drive the pile to final point of installation would not result in shock wave in excess of 30 kPa, and therefore would not require protective measures from the possibility</p>

	of shock waves. • If due to the ground conditions, the pile installation is exceeding the agency guidelines then contractors will adjust methods to avoid or mitigate the level so that it will protect fish from exposure to potentially harmful shock wave area. Ie deployment of a bubble curtain, increase cofferdam area for further fish isolation upon review with EM and project supervisor. If after preventive measures are introduced, and monitoring reveals unacceptable conditions (excessive shock), then the work will stop immediately and the works adjusted until acceptable.
Concrete Management	All forms filled with concrete in the work site must be fully isolated from the waterway with leakproof sealing measures and containment. concrete is required to be isolated from the wetted environment for a minimum of 48 hours.

## 7.0 . Fish and Wildlife Management

Efforts will be made to minimize potential impacts of the project on fish and wildlife. In regards to fisheries resource: works are planned that will require fish removal and temporary water bypass. A pre-clearing nesting sweep is scheduled prior to any vegetation removal.

### 7.1. Potential Impacts of Construction

- Harmful alteration, damage or destruction of fish habitat (e.g. sedimentation, encroachment).
- Loss or alteration of wildlife habitat due to ditching excavation and direct destruction of nests, burrows, and/or den sites not previously identified.
- Mortality and injury (e.g., as a result of: vehicle-wildlife collisions; possible ingestion of hazardous materials associated with construction).
- Adverse physiological or behavioural effects (e.g., adverse effect of noise and/or light from construction on nesting or mating function).

### 7.2. Construction Environmental Management

The following practices will be undertaken to minimize the potential impacts to fish and wildlife:

#### 7.2.1. General

- Drainages leading to fish habitat are to be identified and protected through EMP management plan.
- Ideally, construction should be scheduled outside of the breeding/nesting/denning period for key wildlife such as cavity nesters, raptors, ducks, herons, songbirds and furbearers (March 15-August 15)
- Wildlife dens and other areas of significant wildlife activity observed during construction will be reported to the environmental monitor.
- Avoid excessively loud construction noise, especially during the bird-nesting window.
- Dispose of waste generated from the Project in wildlife proof containers.
- Minimize potential vehicle-wildlife collisions by adhering to speed limits posted on clear signage, using radio communication along access roads to warn vehicles of wildlife occurrences in the area and by using caution during mobilization and demobilization.

#### 7.2.2. Noise Management

Noise should be managed to minimize noise issues that could potentially arise during the construction of the Project. Typically, noise is caused by on-site construction equipment, such as construction vehicles or trucks. The following are measures and techniques used to mitigate noise issues:

- Restrict construction activities to daylight hours.
- Use the quietest equipment and construction methods reasonably available.
- Avoid unnecessary idling, revving of engines, and or engine brakes.
- Maintain equipment in good working order, particularly exhaust systems.
- General construction operations should be performed to minimize noise through timing and duration of activities.

### 7.2.3. Human/Wildlife Conflict Management

Depending on the project commencement date, there is potential for human and wildlife conflicts to occur during the construction of the Project. Eagles, ravens, mink, racoon, otter, deer and bear are locally common. Human/Wildlife interaction should be managed to minimize the potential of human harm. The following measures and practices can be utilized to avoid potential conflicts:

- In order to avoid creating an attraction to wildlife food and food waste material must be kept out of access from wildlife.
- Grass seed, hay, straw and other edible materials must be stored in protection from wildlife. Avoid spillage and over-application that could attract roadside wildlife.
- Do not allow garbage receptacles to overflow and no littering.
- Workers will not feed any wildlife.
- Garbage receptacles should be kept clean and emptied regularly.
- Encounters with wildlife and observation of signs (e.g., tracks, scat) will be reported. The workers will inform the site superintendent of any encounter or observation took place and monitor for reoccurrence.

## 8.0 Spill Prevention and Response

Given the sensitive nature of the project it is the responsibility of the contractor to ensure that all onsite equipment (excluding the crane) contains only bridgeable hydraulic fluids. In conjunction with this requirement the contractor will be required to install and maintain a floating oil boom downstream of the works. The boom will be required to span the full wetted width of the river during construction.

This Spill Prevention and Response Plan (SPRP) will address regulatory and institutional requirements relating to spill emergency management requirements and spill reporting. The purpose of the SPRP is to:

- 
- Identify planning processes and preventive measures that will be implemented to mitigate the risk of spills or other environmental incidents.
- Facilitate effective response to environmental emergencies such as spills of hazardous materials to water, land and air.
- Outline the responsibilities of various environmental personnel that may be involved in a spill emergency.
- 

## 8.1. Potential Construction Impacts

- Release of hazardous substances to the environment through leaks or spills in/on soil, surface water or groundwater as a result of the improper storage, handling, or transportation of hazardous materials (e.g., hydrocarbons products, concrete, etc).

## 8.2. Spill Management

### 8.2.1. General

- Hazardous materials including Dangerous Goods, as defined under the *Transportation and Dangerous Goods Act*, used during the construction of the Project will be stored and handled to avoid spills and to allow for containment and recovery of spills in accordance with all applicable legislation and regulation.
- There will be at least one site-specific spill kit that is capable of handling the largest potential spill on-site at all times. Additionally, smaller equipment mounted kits will be available for initial response or minor incidents.
- The PC will be responsible for providing personnel that are knowledgeable in the procedures of the SPRP and are adequately trained to respond to hazardous material spills and emergencies on-site at all times.
- The PC is responsible for maintaining the contents of the spill kits at the specified level.

### 8.2.2. Hazardous Materials Transportation

- Hazardous materials will be transported in accordance with regulations of the federal *Transportation of Dangerous Goods Act* (TDG) and *Environmental Management Act*.
- Vehicles transporting hazardous products will carry spill control measures adequate to deal with emergencies during transportation.
- All hazardous materials transported to and from the Project will be accompanied by the applicable TDG shipping description, labeling and documentation.

### 8.2.3. Storage

- Containers shall be labeled in accordance to the regulations of the TDG.
- On-site fuel storage, if necessary, will be installed and operated in compliance with CCME (2003) code of practice, and should be located a minimum of 50 m from environmentally sensitive areas.
- Fuel and hazardous material storage tanks, barrels, or containers (e.g., jerry cans) must be well maintained (e.g., no visible cracks) and meet all applicable provincial and federal standards and requirements.
- Fuel and hazardous material storage facilities will be clearly marked and spill-reporting procedures will be posted.

### 8.2.4. Handling Fuels & Oils

- The PC will ensure that personnel operating any fuel dispensing equipment will be trained in emergency procedures in the event of a potential fire or spill. Personnel must be present and fully alert at all times during any transfers.
- All equipment and vehicles will be checked daily to determine that systems, including fittings and hoses, are free of leaks and in good mechanical condition prior to completing a transfer.
- Smoking is not permitted during fuel transfers.
- Fueling of heavy equipment will be facilitated by support vehicles equipped with tidy tanks. In the event of an accidental spill, absorbing pads will be deployed to ground surfaces and cleaned up appropriately.
- In the event of an accidental release of fuel or hydraulic oil, an oil spill response kit consisting of absorbing pads and other spill containment materials will be deployed immediately.
- Wrap hose connections with sorbent material to catch any leaks and drips during transfers.
- Do not fill tanks to the top. Leave adequate headspace to ensure that overfilling does not occur.
- If a leak is observed from any equipment, place appropriate spill response materials (e.g., drip trays, sorbent pads) under the leak immediately, as per the Spill Prevention and Emergency Response. Repair the leak immediately.
- Contaminated materials including absorbing pads and/or soil will be placed in sealed plastic containers for removal offsite to an approved disposal site.
- Containment materials and equipment will be stored in a readily available area for immediate use and be of sufficient quantity to receive contaminants for later disposal at an acceptable location.

### 8.2.5. Concrete

Concrete works will be managed to minimize potential environmental impacts associated with concrete (e.g., increased pH and sediment-laden water). The following best management practices are recommended to reduce the environmental impact of concrete works:

- Using pre-cast concrete structures whenever possible.
- Isolation of freshly cured concrete for a minimum of 48 hours from the wetted environment.
- Isolating concrete work from entering into any watercourse.
- Disposing wash-water created by the washing of equipment and/or vehicles associated with concrete works is not permitted within the Park boundaries.
- Washing of equipment and/or vehicles associated with concrete works will not be permitted in the Park boundaries.
- Preventing any water that contacts uncured or partly cured concrete from directly entering any watercourse.
- Disposing raw or uncured waste concrete by removal by burial is not permitted on the site.

- Protecting freshly poured concrete from rain or surface flows until curing is sufficiently complete to prevent leaching and impacts of increased pH. In the event of rainfall, concrete that has been recently poured should be covered with poly sheets.
- Report immediately any spills of concrete fines and wash-water.

### 8.3. Emergency Spill Response Plan

Fuelling of heavy equipment will be conducted from vehicles equipped with tidy tanks in designated areas outside of environmentally sensitive areas and unnamed tributary channels (>30m from channel). In the event of an accidental spill, sorbent pads will be deployed to ground surfaces. In the event of accidental release of fuel or hydraulic oil to the stream, an oil spill response kit consisting of a coiled boom will be deployed immediately downstream of the spill area. Contaminated materials including sorbent pads, oil boom or soils will be placed in a sealed plastic drum following removal. Containment materials and equipment will be stored in a readily available area for immediate use and be of sufficient quantity to receive contaminants for later disposal at an acceptable location.

Heavy equipment will be inspected daily as a preventative measure to avoid unnecessary spills or leaks due to poor equipment maintenance. Equipment operators and labourers will be instructed as to emergency response procedures and assume full responsibility for containment in the event of an accidental spill.

The site superintendent, or equivalent, will provide direction and participate in the clean-up of contaminants, particularly where a spill to the aquatic environment occurs. The following spill response measures will be followed in the event of an accident:

- Ensure worker and public safety.
- Control the spill source.
- Secure the spill site and eliminate potential ignition sources.
- Contain the spill and prevent contaminant entry into water.
- Report the incident.
- Clean-up, store and dispose of contaminants.
- Monitor downstream impacts to aquatic resources.

### 8.4. Notification and Reporting

All spills are to be reported to the owners representative, however depending upon the severity of the spill (i.e. >100 L of flammable liquids or oils), the Project Superintendent or other person designated by the Project Superintendent will also report the details of the incident (location, substance, time and duration of spill, estimated volume, containment action) to the Provincial Emergency Program of MWLAP in the interest of public safety. Following successful containment of the spill, all contaminants and contaminated materials will be disposed of in a manner consistent with MWLAP policy.

### 8.5. Spill Response Material Requirements

The following material shall be on site at all times during construction works to deal with potential spills immediately;

Job Site Spill Kit – 2 Required containing: (Large Drum Kit)

- 20 Absorbent Pads (Oil, Gas & Diesel)
- 20 Universal Pads (Antifreeze & Most other liquids)
- 6 -3"x48" Absorbent Socks (Oil, Gas & Diesel)
- 4-2lb bags of Oil Absorbent
- 5 HD Disposal Bags
- 4 pairs Nitrile Gloves

Equipment Mounted Kits – Per Machine: (5 Gallon Bucket Kit)

- 15 Absorbent Pads (Oil, Gas & Diesel)
- 15 Universal Pads (Antifreeze & Most other liquids)
- 2 -3"x48" Absorbent Socks (Oil, Gas & Diesel)
- 2 HD Disposal Bags

- 1 pair Nitrile Gloves
- Pickup Trucks (w/fuel tanks): (Standard Bag Kit)
- 15 Absorbent Pads (Oil, Gas & Diesel)
  - 5 Universal Pads (Antifreeze & Most other liquids)
  - 2 -3"x48" Absorbent Socks (Oil, Gas & Diesel)
  - 2 HD Disposal Bags
  - 1 pair Nitrile Gloves

Additional materials to the standard equipment above will also include:

- Additional sorbent pads to handle any potential spills.
- Roll of 6mil poly sheeting.

## 8.6 Emergency Erosion and Sediment Control (ESC) Contingency Plan

In the event of slope failure or significant release of sediment to local watercourses or connected drainage features, the PC will respond immediately with the following actions (at a minimum):

1. Stop work and assess the incident.
2. Once the root cause and level of risk has been identified the following ESC response measure may be used:
  - a. Redirection of any runoff away from a watercourse.
  - b. Once the root cause and level of risk has been identified the following ESC response measure may be used:
    - i. Redirect or contain runoff locally to avoid further issues.
    - ii. Redirect turbid water to local vegetated area of infiltration or localized collection area.
    - iii. Dewater the isolated work area and direct the turbid water to a localized collection area.
    - iv. In the event of a potential high-risk impact to the aquatic environment, turbid water will be pumped into sediment traps lined with filter cloth, or other mechanical water treatment system, to remove sediments prior to discharge.
  - c. Turbid runoff will not be diverted to other watercourse or sensitive areas.
  - d. Clear run off will be redirected to the closest unaffected storm water collector, impacted areas will be temporarily covered with poly to avoid further concerns.
  - e. The area will be contained through deployment of available ESC measures. Application of ESC measures may include but are not limited to:
    - i. Clear gravel and filter fabric check-dams.
    - ii. Straw.
    - iii. Silt fence.
    - iv. Spill kits.
    - v. Submersible pumps and discharge hoses.
3. If runoff has not been controlled/redirected/contained completely, damming, ditching or berming areas of active flow will be done in order to avoid additional soil erosion issues or slop failures.
4. Contact the PM and EM to inform them of the ESC incident.

## 9. Air Quality Management

Construction of the Project may result in short-term air quality impacts limited to the immediate vicinity of the Project site. In order to minimize potential impacts to air quality an air quality management plan has been developed. The major potential sources of air pollution during construction are:

- Greenhouse gases (e.g., diesel and gasoline) from construction vehicles and stationary combustion sources (e.g., open burning).

- Particulate matter from non-combustion sources (e.g., soil disturbance, land clearing) and use of unpaved access roads.

## 9.1. Potential Impacts of Construction

- Adverse impacts from equipment emissions.
- Dust and debris during construction and clearing activities.
- Emissions of greenhouse gases during construction and operation.

## 9.2. Environmental Management

### 9.2.1. Greenhouse Gases

- Undertake maintenance of construction equipment and vehicles in accordance with the manufacturer's specifications.
- Equipment will be fitted with standard emission control devices appropriate to the equipment and in compliance with Federal and Provincial regulation and standards.
- Vehicles or equipment that is found to be producing elevated levels of air pollution will be removed from service and replaced with appropriate equipment.
- Consider car-pooling for the daily commute to the site.
- Operate equipment at optimum rated loads.
- Do not allow vehicles or equipment to idle for extended periods of time.
- Turn off vehicles or equipment when not in use.
- If possible, use low sulphur diesel fuel.
- Use electrically powered, rather than gas or diesel powered, equipment wherever practical.
- In cold weather, where possible, use electrical heaters rather than engine idling to prevent engine freeze.

### 9.2.2. Particulate Matter

- If possible, wet surfaces of exposed soils to minimize the potential for the development of dust.
- Cover or wet down surfaces that are exposed for extended periods of time, dry soil storage piles, and dry materials to minimize the potential of wind erosion.
- Use environmentally acceptable dust suppressants or water, as necessary, to control dust on access roads, work areas, and disposal areas.
- Do not use oil or chemical dust suppressants.
- Adhere to speed limits on roads.
- Cover fine grained materials when transporting them (to prevent or mitigate loss of material through wind exposure).
- Monitor the need for, and the effectiveness of, dust suppression measures.

## 9.3. Monitoring

To monitor compliance with the above bulleted requirements:

- Regular visual inspections should be conducted on surrounding vegetation and if excessive amounts of fugitive dust are observed settling on surfaces, the EM should discuss with the on-site contactor mitigation techniques that are directed at stabilizing the source(s) of the fugitive dust.

## 10. Sensitive Ecosystems Management

In order to minimize potential impacts of the Project on Sensitive Ecosystems during construction, including species at risk, a Sensitive Ecosystem Management Plan has been developed. An endangered ecosystem and species survey is included in the Environmental Assessment (Clough 2019).

The results of the EA showed the conservation data center (CDC). The list includes 32 potential species in the area; ranging from Northern Goshawk (*Accipiter gentilis laingi*), Painted Turtles (*Chrysemys picta*) and Barn Owl (*Tyto alba*). The historically cleared bridge and road location are very low in terms of habitat quality or preference to most of these listed species. The invertebrate and plant community has listed

species as well but are also unlikely to be within these previously disturbed areas. The Douglas Fir/Oregon Grape community is mapped to occur throughout the park boundary. The existing plant communities listed will not be harmed as no disturbance to vegetation outside of the road prism is permitted.

### **10.1. Potential Impacts of Construction**

Potential adverse effects of construction include:

- Destruction or alteration of habitat.
- Removal or modification of riparian habitat/changes to watercourse morphology.
- Sediment deposition (e.g., erosion and deleterious substances deposition).
- Changes in water quality and turbidity.
- Introduction of hazardous spills to aquatic habitat.
- Blockage of fish and aquatic wildlife passage.
- Destruction of nests

### **10.2. Environmental Management**

- The boundary of the project site and access routes will be known to all site personnel.
- Vehicles and equipment are prohibited from working outside of the defined construction area.
- Use appropriate erosion and sediment control techniques.

## **11. Vegetation Management**

To minimize impacts to vegetation adjacent to and on the project site the following procedures will be followed:

### **11.1. Potential Impacts of Construction**

- Destruction or disturbance of rare plant species and listed ecological communities on and adjacent to the project site.
- Destruction or disturbance of vegetation on and adjacent to the project site. This project features minimal clearing (mostly alder trees below the power lines).
- Increased opportunity for establishment or spread of invasive plant species on newly disturbed lands.

### **11.2. Tree Protection Plan Management**

Vehicles and equipment are prohibited from working outside of the defined construction area. Where possible, vegetation will be left intact with root systems undisturbed. Retain wildlife trees and shrub and understory vegetation that matches that of the surrounding area. This will help reduce the introduction of invasive species into the surrounding area, encourage wildlife use, and retain wildlife forage species.

### **11.3 Invasive Species Management**

An inspection along the work areas indicated the road shoulder of limited native shrubbery dominated by invasive plant species; Himalayan Blackberry and Scotch Broom are the prevailing plants on the site.

General practices to control spread of invasives include:

- Avoid disturbance of plant community - do not remove plants beyond immediate work area, pull back or prune on site for clearance/visibility.
- Avoid removal of plants from local area - move no organic material beyond the work areas.
- Avoid transportation of invasives into the area - avoid seed bearing hay as erosion control, use straw or inorganic products.
- Report any new incidences of invasives to the EM.

## 12. Waste Management

Waste Management Plan will be based on the “Reduce, Reuse and Recycle” principle. Where possible, the contractor will apply this principle during construction activities to minimize the amount of waste generated.

### 12.1. Potential Impacts

- Waste generated on the project site could potentially attract wildlife, creating nuisance wildlife.
- Release of hazardous waste could potentially contaminate soil or a watercourse.

### 12.2. Environmental Management

The following outlines the practices PC will undertake to minimize the potential impacts associated with general construction waste and hazardous waste:

#### 12.2.1. General Waste

- PC shall not dump, burn, and/or allow sub-contractors to dump and/or burn garbage or any other construction waste associated with construction of the Project.
- Should construction waste be dumped, the contractor shall immediately act to clean up and remove the waste material.
- PC shall arrange for disposal of construction-related waste in a manner acceptable to the applicable government agency.
- PC shall establish regular clean up and disposal programs so as to prevent the unnecessary accumulation of construction waste.
- On site sanitary facilities will be used.
- All food waste and domestic garbage will be collected daily from the project site, and be disposed of in an appropriate and safe manner that does not attract wildlife.
- Upon completion of construction activity the project site will be cleaned of all resulting construction waste.

#### 12.2.2. Hazardous Waste

The disposal of hazardous waste generated during the construction of the Project will be disposed of in compliance with the *Hazardous Waste Regulation* under the *Environmental Management Act*.

- Dispose of used oil, filters, and grease cartridge lubrication containers and other products used for equipment maintenance in a designated hazardous waste receptacle. Dispose of waste oil, solvents, and other petroleum products at an appropriately licensed disposal facility.
- PC will dispose of recovered spilled material, contaminated soil and absorbent materials.
- The handling and disposal of hazardous waste will comply with the *Environmental Management Act* and its Regulations and the federal *Transportation of Dangerous Goods Act*.

## 13. Archaeological and Heritage Impact

No archeological impacts are expected given the minimal excavation and previous disturbance. Works will proceed under chance find procedures. Below are expected practices of contractors.

### 13.1. Potential Construction Impacts

Construction of the project will involve the removal of soil from the project site, excavations which could potentially unearth, damage or destroy archaeological and/or other heritage resources.

### 13.2. Archaeological Management

The following outlines the course of action to be taken should possible encounters with previously unknown or undisclosed archaeological materials during construction be found. Chance and Find Procedure: if potential archeological items are discovered stop and contact the PM and EM.

- Encounters of actual or suspected archaeological or historical materials such as, human bones, pithouses, stone tools, rock paintings, shell deposits (middens) and culturally modified trees, they

will, subject to safety considerations, immediately cease work in the location and notify the project team.

- All employees and subcontractors shall be instructed to not collect archaeological or historical materials.
- If instructed to do so, locations of actual or suspected archaeological finds shall be secured against theft and trespass by unauthorized individuals, until such time as they have been inspected.
- Construction personnel shall ensure that other workers in the vicinity are aware that the affected location is to be avoided until assessed.
- If the affected location is busy or high traffic area, if instructed to do so by the Client/Clients representative, assign an employee to stake or flag off the affected location to prevent additional disturbances. The employee should mark an exclusion zone (typically 30 m) around the discovery.
- In the case of discovery of an isolated artifact, whenever possible leave the artifact on the ground where it was found. However, if the artifact is in imminent danger of being destroyed or damaged, collect it and mark its location with a stake or flag.

## **14. Site Restoration and Landscaping**

This seeks to identify measures needed to reinstate areas affected by construction activity. These activities will as a minimum meet the requirements of the contract and/or engineer specifications.

- Installation of 250 live stakes (Willow and Red Osier Dogwood) along the lower stream banks and floodplain along the western streambank.
- Installation of 40 1-gallon conifer plants including Western Red Cedar, Hemlock, Douglas Fir, Sitka Spruce, Salmonberry, and Pacific Nine bark.

### **14.1. Environmental Management**

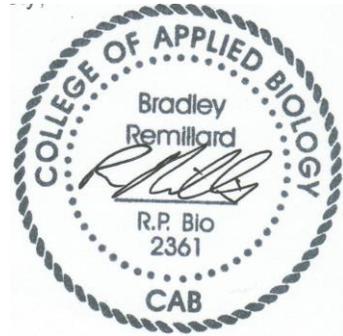
The following mitigation measures are recommended:

- Disturbed areas will be contoured as per design. Including stream restoration.
- The PC will remove all sediment and erosion control measures, once new vegetation has been established.
- All equipment and non-biodegradable materials will be removed from the project site.
- Native re-vegetation seed shall be applied as specified in the Contract.
- Seeding should closely follow the final landscaping, weather permitting.
- Timing of seeding is weather related and must be done in a period that allows seed germination and adequate water in spring and fall, or summer if maintenance watering is assured.

## 15. Conclusion

This document outlines the existing environmental status and value of the Little Qualicum River Bridge project. Following an onsite inspection and environmental assessment we can conclude there is a low probability for serious environmental harm to the environment as a result of this project. If construction activities follow best management practice and protocols this project should not experience any environmental issues.

Sincerely,



Brad Remillard, RPBio

## Appendix 1: Site Photos



1.) From parking area at top of western (left bank) bank looking east over bridge location.



2.) From top of eastern (right bank) bank looking upstream at four alder trees which will likely need to be removed for crane safety.



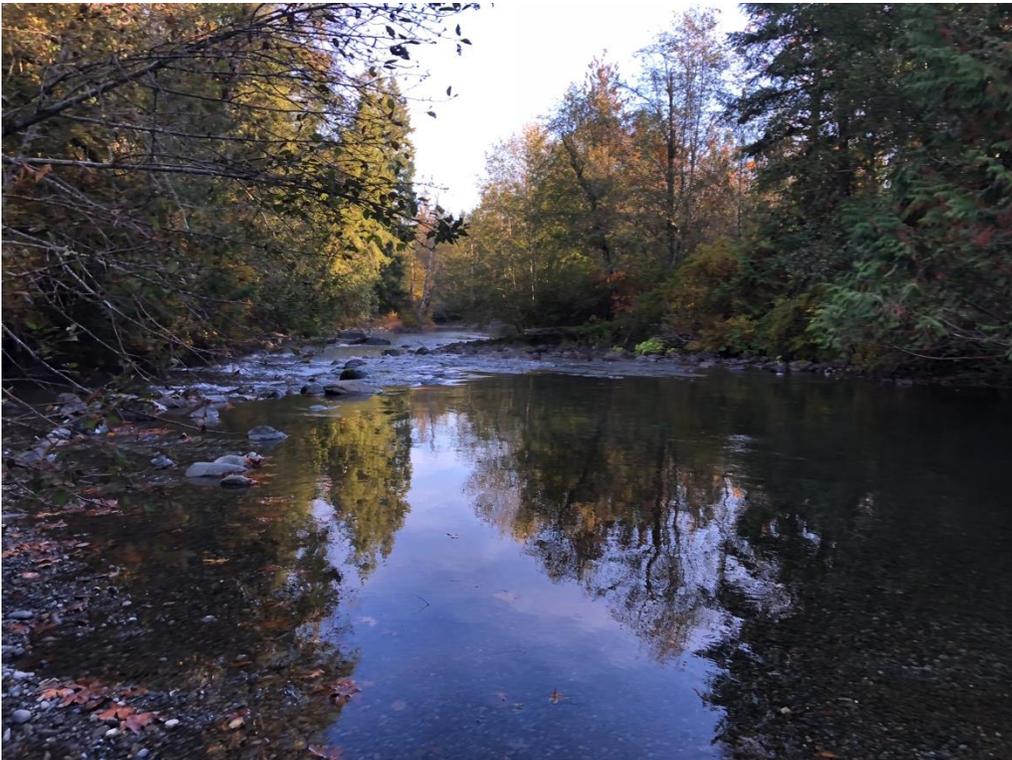
3.) Looking downstream at existing rip rap wall where piles are proposed. Note the clump of Maple Tree may be pruned to lowest live limb to support be installation



4.) Looking west to east across Little Qualicum River directly along bridge alignment.



5.) Looking from below bridge location along western bank bank rip rap and proposed bridge location on the eastern bank.



6.) From below bridge crossing location looking downstream



7.) From western bank looking at exposed till below the bridge crossing location



8.) From bridge crossing location looking downstream at existing gravel bar/overflow channel along west bank



9.) From proposed pile location on east bank looking downstream at existing rip rap wall and riparian vegetation will remain intact.



10.) From the upstream most extent of existing rip rap wall on the eastern bank looking upstream. Note small trees may be removed to improve crane operations.

## APPENDIX

### SUPPLY, FABRICATION AND INSTALLATION OF BEARING ASSEMBLIES

#### 1. General

The details of design and manufacture of bearings shall be in accordance with CAN/CSA-S6-14, Clause 11.6, the Ministry's Supplement to CAN/CSA-S6-14 and the additional requirements specified herein.

Steel fabrication shall be in accordance with SS 422. All exposed steel surfaces shall be galvanized to CAN/CSA-G164-M or metallized to CSA G189. Shop drawings for all bearing assemblies shall be submitted to the Ministry Representative for review prior to fabrication. Shop drawings shall show all details of the bearing assemblies and of the material proposed for use.

Stainless steel shall conform to ASTM A240. The face of the stainless steel in contact with PTFE (polytetrafluorethylene polymer) shall have a bright annealed mirror finish. The roughness of the contact surface shall be less than 0.2  $\mu\text{m}$  arithmetic average for plane surfaces and 0.4  $\mu\text{m}$  arithmetic average for curved surfaces measured in accordance with CSA B95.

The elastomer shall conform to the requirements of CAN/CSA-S614, Section 11.6.6.2.2.

PTFE shall conform to the requirements of CAN/CSA-S6-14, Clause 11.6.3.2.

The Contractor shall submit test results and certificates of compliance to the Ministry Representative for all materials incorporated into the bearings.

#### 2. Unreinforced Elastomeric Bearings

Unreinforced elastomeric bearings and bearings cut from cured rolled stock shall be tested only for durometer hardness.

#### 3. Steel Reinforced Elastomeric Bearings

##### 3.1 General

Fabrication tolerances shall be in accordance with Clause 11.6 of CAN/CSA-S6-14 and the 17<sup>th</sup> edition of the AASHTO Standard Specifications for Highway Bridges, Division II Section 18.5. The requirements of Clause 11.6 of CAN/CSA-S6-14 shall govern in the event of a conflict with those of the AASHTO requirements. For steel reinforced elastomeric bearings the minimum cover of elastomer over the edges of reinforcing plates shall be 5 mm.

The bearing manufacturer shall conduct compression tests as described below, either by or in the presence of an independent certified testing agency. The testing agency shall submit test results to the Ministry Representative.

### 3.2 Nondestructive Testing - Compression Test

Each bearing shall be tested by the Contractor as follows using a concentric compression load:

- (a) The testing machine used shall have platens at least 20 mm greater in both plan dimensions than the bearing under test.
- (b) At least two dial gauge micrometers shall be positioned at the centres of opposite sides of the bearing to measure deformation. When bearings are tested in single vertical stacks, a steel plate shall separate the bearings and a set of dial gauge micrometers shall be installed for each bearing.
- (c) The bearing shall be loaded at the rate of 1.5 MPa/minute to a load of 7.5 MPa multiplied by the gross plan area. The deformations shall be recorded.
- (d) The load shall be reduced at the same rate until the pressure on the bearing is 1.5 MPa, and the deformations recorded.
- (e) The load on the bearing shall be maintained at 1.5 MPa for fifteen minutes, and the deformations shall be recorded.
- (f) The bearing shall be reloaded to 7.5 MPa, and steps (d) to (e) shall be repeated.
- (g) The bearing shall be reloaded to 10 MPa with deformations being recorded after each 1 MPa increment.
- (h) A graph of the pressure versus average deformation with data recorded in (g) shall be developed.

The rates of loading specified in step (c) and (d) also apply to steps (f) and (g).

A bearing shall be rejected based on the following deficiencies:

- (a) If it displays bulging patterns under compression load which indicate laminate placement which does not satisfy design criteria and manufacturing tolerances or poor laminate bond.
- (b) If it has more than two surface cracks which are greater than 2 mm long and 2 mm deep.
- (c) If the compressive deformation exceeds 7% of the total elastomeric thickness of the bearing during the application of the sum of the vertical serviceability loads shown on the Drawings; and
- (d) If it does not meet the specified tolerances.

### 4. Installation

Bearings shall be installed as shown on the Drawings. Bearings shall be set to the dimensions and offsets prescribed by the manufacturer and the Drawings, and shall be adjusted as necessary to take into account the temperature at time of installation and future movements of the bridge due to temperature changes, release of falsework and shortening due to prestressing.

Installation tolerances shall be in accordance with the 17<sup>th</sup> edition of the AASHTO Standard Specification for Highway Bridges, Division II, Section 18.9.

5. Pot and Disc Bearings

The elastomer used in disc bearings shall be 100% polymer urethane. The test required to satisfy the hardness requirements in Clause 11.6.7.2 of CAN/CSA-S6-14 shall be in accordance with ASTM D2240. Tensile testing shall be performed in accordance with ASTM D412, at 500 mm/minute. The tensile stress at 100% elongation shall be at least 14 MPa, and at 200% elongation at least 26 MPa. The ultimate tensile stress shall be at least 34.5 MPa. The ultimate elongation shall be at least 220%. The compression set, when tested according to ASTM D395 for 22 hours at 70°C, shall be 40% maximum.

For pot bearings, the tolerance of fit between the piston and the pot shall be +0.75 mm to +1.25 mm.

Bearings shall be clearly marked to indicate their type and orientation.

All pot and disc bearings shall be plant-assembled and shall not be disassembled without special arrangement with the Ministry Representative. The Contractor shall notify the Ministry Representative at least 7 days before assembly, so that the Ministry Representative can arrange for inspection.

6. Payment

Payment shall include quality control, all necessary materials, shop drawings, submission of test results and certificates of compliance, the supply, fabrication, galvanizing/metallizing and/or painting of steel components as required and installation and grouting of the bearing assemblies and anchor bolts.



# Change Approval and Notification (Changes In and About a Stream)

Tracking Number: 100307611

## Applicant Information

If approved, will the authorization be issued to an Individual or Company/Organization? Company/Organization

What is your relationship to the company/organization? Consultant

## APPLICANT COMPANY/ORGANIZATION CONTACT INFORMATION

Applicant is an Individual or an Organization to whom this authorization Permit / Tenure / Licence will be issued, if approved.

**Name:** Regional District of Nanaimo

**Doing Business As:**

**Phone:** 250-248-4744 ext. 3605

**Fax:**

**Email:** MDobbs@rdn.bc.ca

**BC Incorporation Number:**

**Extra Provincial Inc. No:**

**Society Number:**

**GST Registration Number:**

**Contact Name:** Mark Dobbs

**Mailing Address:** 1490 Springhill Road  
Parksville BC V9P 2T2

## CONSULTANT INFORMATION

Please enter the contact information of the Individual/Organization who is acting on behalf of the applicant.

**Name:** David Robert Clough

**Phone:** 250-714-5416

**Daytime Phone:** 250-390-2901

**Fax:** 250-390-2901

**Email:** drclough@shaw.ca

**Mailing Address:** 6966 Leland Road  
Lantzville BC V0R2H0

**Letter(s) Attached:** Yes (Letter Mark Dobbs.pdf)

## ELIGIBILITY

Please answer the following questions related to your Change Approval/Notification.

Question	Answer	Warning
Is this application to support oil and gas activity that is being authorized by the Oil and Gas Commission?	No	

## TECHNICAL INFORMATION

### GOVERNMENT AND FIRST NATION FEE EXEMPTION REQUEST

Do you belong to, are you applying on behalf of, or are you:

- A provincial government ministry
- The Government of Canada
- A First Nation for water use on reserve land
- A person applying to use water on Treaty Lands
- A Nisga'a citizen
- An entity applying to use water from the Nisga'a Water Reservation?

No

## APPLICATION BY GOVERNMENT

Please indicate if you are someone who works in the government OR you are working on behalf of the government.

Are you, or are you applying on behalf of, a government entity? Yes  
What type of government are you applying for? Local / Regional Government

## TYPE OF WORKS

Please select the type of Notifications/Approvals you want to apply for as part of this application.

**Please select the type of works to be undertaken:**

**Notification**

- Road Crossing Culvert - Construction / Maintenance / Removal
- Clear Span Bridge - Construction / Maintenance / Removal
- Pipeline Crossing – Construction / Maintenance
- Dry Hydrant – Construction / Maintenance
- Pier, Wharf, (including docks) – Construction / Maintenance / Removal
- Cutting of annual vegetation in a stream channel
- Dike or Erosion Protection Works - Repair / Maintenance
- Storm Sewer Outfalls – Construction / Maintenance
- Control of Eurasian Watermilfoil or other invasive aquatic vegetation
- Ice Bridge / Winter Ford or Snowfill - Construction / Maintenance
- Maintenance of minor and routine nature by a public utility
- Removal of a beaver dam (as authorized under the Wildlife Act)
- Construction of a temporary ford
- Construction of a temporary diversion around a worksite

**Notification and may only be undertaken by the Crown in right of either British Columbia or a Municipality, or their agents:**

Stream Channel - Restoration / Maintenance

Notification of the following changes does not require an application. You must report these changes to a habitat officer within 72 hours after making the change. You must comply with any Terms and Conditions specified by the habitat officer that relate to Section 44(2) of the Water Sustainability Regulation.

Clearing of an obstruction from a bridge or culvert during a flood emergency

Construction of placement of erosion protection works or flood protection works during a flood emergency

**Approval:**

- Bank Erosion Protection
- Bridge (other than clear span) - Construction / Maintenance / Removal
- Stream Diversion
- Large Debris Removal by machine - Plan required
- Gravel removal
- Other

Please note that the ultimate decision whether this constitutes a Notification or a Change Approval lies with the Province of British Columbia

## SITES

Click on the Add Sites button to add one or more sites.

### SITE

Location ID: Little Qualicum River Park

### STREAM

Name of the Stream: Little Qualicum River  
Source Flows Into: Salish Sea

---

**PROPOSED WORKS**

**Detailed Description of Works:** Installation of an approximately 35m long clear spanning bridge at the Little Qualicum River Regional Park. This project involves pile driving, rip rap placement at the toe of the slope, and a pour in place concrete bridge deck and headwalls. This bridge is a replacement for the structure which was removed in 2017. It will result in minimal riparian vegetation removal with the exception of a handful of Alder trees on the east bank below the power lines and some salmonberry on the west.

**Footprint of Project:** 60 m2

---

**PROPOSED TIMING FOR WORKS**

**Start Date:** Jul 15, 2020  
**End Date:** Sep 15, 2020  
**Is the proposed timing within the approved regional timing window?** Yes

---

**LOCATION OF WORKS**

**Provide a legal description of the land(s) where works are proposed:** Lot 1 Block 359 Newcastle District Plan VIP 69346  
**Geographic Coords of Works:** 49.3273450, -124.5487780  
**Photo of Works Location:**

---

**LAND OWNERSHIP AT THE WORKS**

**Land Ownership:**

- Applicant owns land
- Land is Crown Land but applicant has tenure
- Land is Crown Land but tenured to Ministry of Transportation
- A third Party owns the land but the applicant has lease or tenure
- A third Party owns the land but applicant has written consent
- Land is Crown Land but the applicant does not have a tenure

---

**CONTACTS**

If you are not carrying out the work, indicate contractor/company's name, professional affiliation, mailing address, postal code and telephone numbers. If a different company is designing and supervising the work, please include this information as well

Contact Info	Type of Contact
<b>Name:</b> Herold Engineering Ltd	Design and Supervision
<b>Doing Business As:</b> Engineering Consultant	
<b>Phone:</b> 250-751-8558	
<b>Fax:</b>	
<b>Email:</b> ASadeghi@heroldengineering.com	
<b>BC Inc. Number:</b>	
<b>GST Registration Number:</b>	
<b>Contact Name:</b> Ali Sadeghi	
<b>Mailing Address:</b> 3701 Shenton Road Nanaimo BC V9T2H1	
<b>Cert:</b> P Eng	

---

**LOCATION INFORMATION**

---

**LAND DETAILS**

## DRAWINGS

A Drawing to Scale is required that meets the Application Drawing Standards. Choose one of the options below to submit the required map/drawing.

Additionally, it is recommended that you provide a topographical map showing the general location of the property where the water is proposed to be used and the works constructed in relation to nearby communities, highways, railways and other water sources.

(this additional map will not be necessary if your Drawing to Scale is provided using the Geomark Service or a spatial file such as .KML or .KMZ)

I have map(s) saved to my computer and wish to provide these with my application

## MAP FILES

Do you have a PDF or image file of a drawn map? You can upload it here.

Description	Filename
Bridge Location KMZ	Bridge Location .kmz
Location map	Picture1.jpg

## ATTACHED DOCUMENTS

Document Type	Description	Filename
Engineering Drawings	Design Drawings	2017-068_LQRRP Bridge_Final...
Other	Environmental Protection Plan	Little Qualicum Pedestrian ...

## PRIVACY DECLARATION

### PRIVACY NOTE FOR THE COLLECTION, USE AND DISCLOSURE OF PERSONAL INFORMATION

Personal information is collected by FrontCounter BC under the legal authority of section 26 (c) and 27 (1)(a)(i) of the Freedom of Information and Protection of Privacy Act (the Act).

The collection, use, and disclosure of personal information is subject to the provisions of the Act. The personal information collected by FrontCounter BC will be used to process your inquiry or application(s). It may also be shared when strictly necessary with partner agencies that are also subject to the provisions of the Act. The personal information supplied in the application package may be used for referrals or notifications as required. Personal information may be used by FrontCounter BC for survey purposes. For more information regarding the collection, use, and/or disclosure of your personal information by FrontCounter BC, please contact FrontCounter BC at 1-877-855-3222 or at:

FrontCounter BC Program Director  
FrontCounter BC, Provincial Operation  
441 Columbia Street  
Kamloops, BC V2C 2T3

Check here to indicate that you have read and agree to the privacy declaration stated above.

## REFERRAL INFORMATION

Some applications may also be passed on to other agencies, ministries or other affected parties for referral or consultation purposes. A referral or notification is necessary when the approval of your application might affect someone else's rights or resources or those of the citizens of BC. An example of someone who could receive your application for referral purposes is a habitat officer who looks after the fish and wildlife in the area of your application. This does not apply to all applications and is done only when required.

Please enter contact information below for the person who would best answer questions about your application that may arise from anyone who received a referral or notification.

**Company / Organization:** Herold Engineering Ltd  
**Contact Name:** Ali Sadeghi  
**Contact Address:** 3701 Shenton Road Nanaimo  
**Contact Phone:** 250-751-8558

Contact Email:

ASadeghi@heroldengineering.com

I hereby consent to the disclosure of the information contained in this application to other agencies, government ministries or other affected parties for referral or First Nation consultation purposes.

**IMPORTANT NOTICES**

Please review the "Important Notices" below and then check the declaration at the bottom confirming that everything in this application is complete and accurate.

- I understand that the submission of this application does not provide authority under the Water Sustainability Act to construct works in and about a stream. I also understand that my application must first be investigated and a decision made on the application as to whether an approval may be granted and, as part of that review, additional information may be requested of me.
- The application may be subject to further requirements under the federal Fisheries Act. Please refer to Fisheries and Oceans Canada Projects Near Water webpage (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) for information on how to ensure your project complies with the Fisheries Act.

**DECLARATION**

By submitting this application form, I, declare that the information contained on this form is complete and accurate.

**OFFICE**

Office to submit application to: Nanaimo

**PROJECT INFORMATION**

Is this application for an activity or project which requires more than one natural resource authorization from the Province of BC? No

**APPLICANT SIGNATURE**

Applicant Signature

Date

**OFFICE USE ONLY**

Office Nanaimo	File Number	Project Number
	Disposition ID	Client Number

# civil works contract

**Project:**

Apply a CCDC 18 copyright seal here. The application of the seal demonstrates the intention of the party proposing the use of this document that it be an accurate and unamended form of CCDC 18 – 2001 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.



**Canadian Construction Documents Committee**

## TABLE OF CONTENTS

### AGREEMENT BETWEEN OWNER AND CONTRACTOR

- A-1 THE WORK
- A-2 AGREEMENTS AND AMENDMENTS
- A-3 CONTRACT DOCUMENTS
- A-4 CONTRACT PRICE
- A-5 PAYMENT
- A-6 RECEIPT OF AND ADDRESSES FOR NOTICES
- A-7 LANGUAGE OF THE CONTRACT
- A-8 SUCCESSION

### DEFINITIONS

- 1. Change Directive
- 2. Change Order
- 3. Construction Equipment
- 4. Consultant
- 5. Contract
- 6. Contract Documents
- 7. Contract Price
- 8. Contract Time
- 9. Contractor
- 10. Drawings
- 11. Owner
- 12. Place of the Work
- 13. Product
- 14. Project
- 15. Provide
- 16. Schedule of Prices
- 17. Shop Drawings
- 18. Specifications
- 19. Subcontractor
- 20. Substantial Performance of the Work
- 21. Supplemental Instruction
- 22. Supplier
- 23. Temporary Work
- 24. Unit Price
- 25. Value Added Taxes
- 26. Work
- 27. Working Day

### GENERAL CONDITIONS OF THE CIVIL WORKS CONTRACT

#### PART 1 GENERAL PROVISIONS

- GC 1.1 CONTRACT DOCUMENTS
- GC 1.2 LAW OF THE CONTRACT
- GC 1.3 RIGHTS AND REMEDIES
- GC 1.4 ASSIGNMENT

#### PART 2 ADMINISTRATION OF THE CONTRACT

- GC 2.1 AUTHORITY OF THE CONSULTANT
- GC 2.2 ROLE OF THE CONSULTANT
- GC 2.3 REVIEW AND INSPECTION OF THE WORK
- GC 2.4 DEFECTIVE WORK

#### PART 3 EXECUTION OF THE WORK

- GC 3.1 CONTROL OF THE WORK
- GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS
- GC 3.3 TEMPORARY WORK
- GC 3.4 DOCUMENT REVIEW
- GC 3.5 CONSTRUCTION SCHEDULE
- GC 3.6 SUPERVISION
- GC 3.7 LAYOUT OF THE WORK
- GC 3.8 SUBCONTRACTORS AND SUPPLIERS
- GC 3.9 LABOUR AND PRODUCTS
- GC 3.10 DOCUMENTS AT THE SITE
- GC 3.11 SHOP DRAWINGS
- GC 3.12 USE OF THE WORK
- GC 3.13 CUTTING AND REMEDIAL WORK
- GC 3.14 CLEANUP

### PART 4 ALLOWANCES

- GC 4.1 CASH ALLOWANCES
- GC 4.2 CONTINGENCY ALLOWANCE

### PART 5 PAYMENT

- GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER
- GC 5.2 BASIS OF PAYMENT FOR UNIT PRICE WORK
- GC 5.3 BASIS OF PAYMENT FOR LUMP SUM WORK
- GC 5.4 BASIS OF PAYMENT FOR COST PLUS WORK
- GC 5.5 APPLICATIONS FOR PROGRESS PAYMENT
- GC 5.6 PROGRESS PAYMENT
- GC 5.7 SUBSTANTIAL PERFORMANCE OF THE WORK
- GC 5.8 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK
- GC 5.9 PROGRESSIVE RELEASE OF HOLDBACK
- GC 5.10 FINAL PAYMENT
- GC 5.11 WITHHOLDING OF PAYMENT
- GC 5.12 NON-CONFORMING WORK

### PART 6 CHANGES

- GC 6.1 CHANGES
- GC 6.2 CHANGE ORDER
- GC 6.3 CHANGE DIRECTIVE
- GC 6.4 CONCEALED OR UNKNOWN CONDITIONS
- GC 6.5 DELAYS
- GC 6.6 CLAIMS
- GC 6.7 QUANTITY VARIATIONS

### PART 7 DEFAULT NOTICE

- GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, STOP THE WORK, OR TERMINATE THE CONTRACT
- GC 7.2 CONTRACTOR'S RIGHT TO STOP THE WORK OR TERMINATE THE CONTRACT

### PART 8 DISPUTE RESOLUTION

- GC 8.1 AUTHORITY OF THE CONSULTANT
- GC 8.2 NEGOTIATION, MEDIATION, AND ARBITRATION
- GC 8.3 RETENTION OF RIGHTS

### PART 9 PROTECTION OF PERSONS AND PROPERTY

- GC 9.1 PROTECTION OF WORK AND PROPERTY
- GC 9.2 DAMAGES AND MUTUAL RESPONSIBILITY
- GC 9.3 TOXIC AND HAZARDOUS SUBSTANCES
- GC 9.4 ARTIFACTS AND FOSSILS
- GC 9.5 CONSTRUCTION SAFETY

### PART 10 GOVERNING REGULATIONS

- GC 10.1 TAXES AND DUTIES
- GC 10.2 LAWS, NOTICES, PERMITS, AND FEES
- GC 10.3 PATENT FEES
- GC 10.4 WORKERS' COMPENSATION

### PART 11 INSURANCE AND CONTRACT SECURITY

- GC 11.1 INSURANCE
- GC 11.2 CONTRACT SECURITY

### PART 12 INDEMNIFICATION - WAIVER - WARRANTY

- GC 12.1 INDEMNIFICATION
- GC 12.2 WAIVER OF CLAIMS
- GC 12.3 WARRANTY

CCDC 18 is the product of a consensus-building process aimed at balancing the interests of all parties on the construction project. It reflects recommended industry practices. CCDC 18 can have important consequences. The CCDC and its constituent member organizations do not accept any responsibility or liability for loss or damage which may be suffered as a result of the use or interpretation of CCDC 18.

**AGREEMENT BETWEEN OWNER AND CONTRACTOR**

**This Agreement** made on the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_.

**by and between**

\_\_\_\_\_ hereinafter called the "Owner"

**and**

\_\_\_\_\_ hereinafter called the "Contractor"

The *Owner* and the *Contractor* agree as follows:

**ARTICLE A-1 THE WORK**

The *Contractor* shall:

1.1 perform the *Work* required by the *Contract Documents* for \_\_\_\_\_

\_\_\_\_\_ *insert above the title of the Work*

located at \_\_\_\_\_

\_\_\_\_\_ *insert above the Place of the Work*

for which the Agreement has been signed by the parties, and for which \_\_\_\_\_

\_\_\_\_\_ *insert above the name of the Consultant*

is acting as and is hereinafter called the "*Consultant*" and

1.2 do and fulfill everything indicated by the *Contract Documents*, and

1.3 commence the *Work* by the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_ and, subject to adjustment in *Contract*

*Time* as provided for in the *Contract Documents*, attain *Substantial Performance of the Work*, by the \_\_\_\_\_ day of

\_\_\_\_\_ in the year \_\_\_\_\_

## ARTICLE A-2 AGREEMENTS AND AMENDMENTS

- 2.1 The *Contract* supersedes all prior negotiations, representations, or agreements, either written or oral, relating in any manner to the *Work*, including the bidding documents that are not expressly listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS.
- 2.2 The *Contract* may be amended only as provided in the *Contract Documents*.

## ARTICLE A-3 CONTRACT DOCUMENTS

- 3.1 The following are the *Contract Documents* referred to in Article A-1 of the Agreement - THE WORK:
- Agreement Between *Owner* and *Contractor*
  - Definitions
  - The General Conditions of the Contract
- \*

- \* (Insert here, attaching additional pages if required, a list identifying all other *Contract Documents* e.g.:
- *Supplementary Conditions*;
  - *Schedule of Prices*;
  - *Specifications*, giving a list of contents with section numbers and titles, number of pages, and date;
  - *Drawings*, giving drawing number, title, date, revision date or mark;
  - *Addenda*, giving title, number, date;
  - *Information documents*, or parts thereof, to be incorporated in the *Contract Documents* identifying them by title, date, name of preparer and, if not included in their entirety, the page or sheet numbers to be included).

**ARTICLE A-4 CONTRACT PRICE**

4.1 \* *Unit Prices* form the basis for payment of the *Contract Price*. Quantities in the *Schedule of Prices* are estimated. The estimated *Contract Price*, which is the total extended amount indicated in the *Schedule of Prices*, is:

OR

\* A lump sum stipulated price forms the basis for payment of the *Contract Price*. The *Contract Price* is:

\* *(Manually strike out inapplicable paragraph)*

\_\_\_\_\_  
\_\_\_\_\_/100 dollars \$ \_\_\_\_\_

4.2 All amounts are in Canadian funds and exclude Value Added Taxes.

4.3 These amounts shall be subject to adjustments as provided in the *Contract Documents*.

**ARTICLE A-5 PAYMENT**

5.1 Subject to the provisions of the *Contract Documents*, and in accordance with legislation and statutory regulations respecting holdback percentages and, where such legislation or regulations do not exist or apply, subject to a holdback of \_\_\_\_\_ percent ( \_\_\_\_\_ %), the *Owner* shall in Canadian funds:

- .1 make progress payments to the *Contractor* on account of the *Contract Price* when due in the amount certified by the *Consultant* together with such *Value Added Taxes* as may be applicable to such payment, and
- .2 upon *Substantial Performance of the Work*, pay to the *Contractor* the unpaid balance of the holdback amount when due together with such *Value Added Taxes* as may be applicable to such payment, and
- .3 upon the issuance of the final certificate for payment, pay to the *Contractor* the unpaid balance of the *Contract Price* when due together with such *Value Added Taxes* as may be applicable to such payment.

5.2 In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payments shall be made to the *Contractor* in accordance with the provisions of GC 11.1 - INSURANCE.

5.3 Interest

- .1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by arbitration or court, interest at two percent (2%) per annum above the prime rate on such unpaid amounts shall also become due and payable until payment. Such interest shall be compounded and adjusted on a monthly basis. The prime rate shall be the rate of interest quoted by \_\_\_\_\_ for prime business loans. *(Insert name of chartered lending institution whose prime rate is to be used)*
- .2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.3.1 of this Article on the settlement amount of any claim in dispute that is resolved either pursuant to Part 8 of the General Conditions - DISPUTE RESOLUTION or otherwise, from the date the amount would have been due and payable under the *Contract*, had it not been in dispute, until it is paid.

**ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES**

6.1 Notices in writing between the parties or between them and the *Consultant* shall be considered to have been received by the addressee on the date of delivery if delivered to the individual, or to a member of the firm, or to an officer of the corporation for whom they are intended by hand or by registered post; or if sent by regular post, to have been delivered within 5 *Working Days* of the date of mailing when addressed as follows:

The *Owner* at \_\_\_\_\_

\_\_\_\_\_ *street and number and postal box number if applicable*

\_\_\_\_\_ *post office or district, province or territory, postal code*

The *Contractor* at \_\_\_\_\_

\_\_\_\_\_ *street and number and postal box number if applicable*

\_\_\_\_\_ *post office or district, province or territory, postal code*

The *Consultant* at \_\_\_\_\_

\_\_\_\_\_ *street and number and postal box number if applicable*

\_\_\_\_\_ *post office or district, province or territory, postal code*

**ARTICLE A-7 LANGUAGE OF THE CONTRACT**

7.1 When the *Contract Documents* are prepared in both the English and French languages, it is agreed that in the event of any apparent discrepancy between the English and French versions, the English / French \* language shall prevail.

*\* (Complete this statement by striking out inapplicable term)*

7.2 This Agreement is drawn in English at the request of the parties hereto. La présente convention est rédigée en anglais à la demande des parties.

**ARTICLE A-8 SUCCESSION**

8.1 The *Contract* shall enure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors, and assigns.

**In witness whereof** the parties hereto have executed this Agreement by the hands of their duly authorized representatives.

SIGNED AND DELIVERED  
in the presence of:

**Owner**

\_\_\_\_\_  
*name of Owner*

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name and title of person signing*

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name and title of person signing*

**WITNESS**

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name and title of person signing*

**Contractor**

\_\_\_\_\_  
*name of Contractor*

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name and title of person signing*

**WITNESS**

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name and title of person signing*

- N.B. Where legal jurisdiction, local practice, or Owner or Contractor requirement calls for:*
- (a) proof of authority to execute this document, attach such proof of authority in the form of a certified copy of a resolution naming the representative(s) authorized to sign the Agreement for and on behalf of the corporation or partnership; or*
  - (b) the affixing of a corporate seal, this Agreement should be properly sealed.*

## DEFINITIONS

The following definitions shall apply to all *Contract Documents*.

1. **Change Directive**  
A *Change Directive* is a written instruction prepared by the *Consultant* and signed by the *Owner* directing the *Contractor* to proceed with a change in the *Work* within the general scope of the *Contract Documents* prior to the *Owner* and the *Contractor* agreeing upon an adjustment in *Contract Price* and *Contract Time* .
2. **Change Order**  
A *Change Order* is a written amendment to the *Contract* prepared by the *Consultant* and signed by the *Owner* and the *Contractor* stating their agreement upon:
  - a change in the *Work*;
  - the method of adjustment or the amount of the adjustment in the *Contract Price*, if any; and
  - the extent of the adjustment in the *Contract Time*, if any.
3. **Construction Equipment**  
*Construction Equipment* means all machinery and equipment, either operated or not operated, that is required for preparing, fabricating, conveying, erecting, or otherwise performing the *Work* but is not incorporated into the *Work*.
4. **Consultant**  
The *Consultant* is the person or entity identified as such in the Agreement. The *Consultant* is the Engineer or other entity licensed to practise in the province or territory of the *Place of the Work*. The term *Consultant* means the *Consultant* or the *Consultant's* authorized representative.
5. **Contract**  
The *Contract* is the undertaking by the parties to perform their respective duties, responsibilities, and obligations as prescribed in the *Contract Documents* and represents the entire agreement between the parties.
6. **Contract Documents**  
The *Contract Documents* consist of those documents listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS and amendments agreed upon between the parties.
7. **Contract Price**  
When *Unit Prices* form the basis of payment, the *Contract Price* is the sum of the product of each *Unit Price* stated in the *Schedule of Prices* multiplied by the appropriate actual quantity of each item that is incorporated in or made necessary by the *Work*, plus lump sums, if any, and allowances, if any, stated in the *Schedule of Prices*. When a lump sum stipulated price forms the basis of payment, the *Contract Price* is the amount stipulated in Article A-4 of the Agreement - CONTRACT PRICE.
8. **Contract Time**  
The *Contract Time* is the time stipulated in paragraph 1.3 of Article A-1 of the Agreement - THE WORK from commencement of the *Work* to *Substantial Performance of the Work*.
9. **Contractor**  
The *Contractor* is the person or entity identified as such in the Agreement. The term *Contractor* means the *Contractor* or the *Contractor's* authorized representative as designated to the *Owner* in writing.
10. **Drawings**  
The *Drawings* are the graphic and pictorial portions of the *Contract Documents*, wherever located and whenever issued, showing the design, location, and dimensions of the *Work*, generally including plans, elevations, sections, details, schedules, and diagrams.
11. **Owner**  
The *Owner* is the person or entity identified as such in the Agreement. The term *Owner* means the *Owner* or the *Owner's* authorized agent or representative as designated to the *Contractor* in writing, but does not include the *Consultant*.
12. **Place of the Work**  
The *Place of the Work* is the designated site or location of the *Work* identified in the *Contract Documents*.

- 13. Product**  
*Product or Products* means material, machinery, equipment, and fixtures forming the *Work*, but does not include *Construction Equipment*.
- 14. Project**  
The *Project* means the total construction contemplated of which the *Work* may be the whole or a part.
- 15. Provide**  
*Provide* means to supply and install.
- 16. Schedule of Prices**  
The *Schedule of Prices* is the schedule listed in Article A-3 - CONTRACT DOCUMENTS identifying items of work, estimated quantities, units of measure, and *Unit Prices*.
- 17. Shop Drawings**  
*Shop Drawings* are drawings, diagrams, illustrations, schedules, performance charts, brochures, *Product* data, and other data which the *Contractor* provides to illustrate details of portions of the *Work*.
- 18. Specifications**  
The *Specifications* are that portion of the *Contract Documents*, wherever located and whenever issued, consisting of the written requirements and standards for *Products*, systems, workmanship, and the services necessary for the performance of the *Work*.
- 19. Subcontractor**  
A *Subcontractor* is a person or entity having a direct contract with the *Contractor* to perform a part or parts of the *Work*, or to supply *Products* worked to a special design for the *Work*.
- 20. Substantial Performance of the Work**  
*Substantial Performance of the Work* is as defined in the lien legislation applicable to the *Place of the Work*. If such legislation is not in force or does not contain such definition, or if the *Work* is governed by the Civil Code of Quebec, *Substantial Performance of the Work* shall have been reached when the *Work* is ready for use or is being used for the purpose intended and is so certified by the *Consultant*.
- 21. Supplemental Instruction**  
A *Supplemental Instruction* is an instruction, not involving adjustment in the *Contract Price* or *Contract Time*, in the form of *Specifications*, *Drawings*, schedules, samples, models, or written instructions, consistent with the intent of the *Contract Documents*. It is to be issued by the *Consultant* to supplement the *Contract Documents* as required for the performance of the *Work*.
- 22. Supplier**  
A *Supplier* is a person or entity having a direct contract with the *Contractor* to supply *Products* not worked to a special design for the *Work*.
- 23. Temporary Work**  
*Temporary Work* means temporary supports, structures, facilities, services, and other temporary things, excluding *Construction Equipment*, required for the execution of the *Work* but not incorporated into the *Work*.
- 24. Unit Price**  
A *Unit Price* is the amount payable for a single unit of work as stated in the *Schedule of Prices*.
- 25. Value Added Taxes**  
*Value Added Taxes* means such sum as shall be levied upon the *Contract Price* by the Federal or any Provincial or Territorial Government and is computed as a percentage of the *Contract Price* and includes the Goods and Services Tax, the Quebec Sales Tax, the Harmonized Sales Tax, and any similar tax, the collection and payment of which is by the *Contractor* as imposed by the tax legislation.
- 26. Work**  
The *Work* means the total construction and related services required by the *Contract Documents*.
- 27. Working Day**  
*Working Day* means a day other than a Saturday, Sunday, statutory holiday or statutory vacation day that is observed by the construction industry in the area of the *Place of the Work*.

## GENERAL CONDITIONS OF THE CIVIL WORKS CONTRACT

### PART 1 GENERAL PROVISIONS

#### GC 1.1 CONTRACT DOCUMENTS

- 1.1.1 The intent of the *Contract Documents* is to include the labour, *Products*, and services necessary for the performance of the *Work* by the *Contractor* in accordance with these documents. It is not intended, however, that the *Contractor* shall supply products or perform work not consistent with, not covered by, or not properly inferable from the *Contract Documents*.
- 1.1.2 Except for the provisions of article 12.3.6, nothing contained in the *Contract Documents* shall create any contractual relationship between:
- .1 the *Owner* and a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any of the *Work*.
  - .2 the *Consultant* and the *Contractor*, a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any of the *Work*.
- 1.1.3 The *Contract Documents* are complementary, and what is required by any one shall be as binding as if required by all.
- 1.1.4 Words and abbreviations which have well known technical or trade meanings are used in the *Contract Documents* in accordance with such recognized meanings.
- 1.1.5 References in the *Contract Documents* to the singular shall be considered to include the plural as the context requires.
- 1.1.6 Neither the organization of the *Specifications* nor the arrangement of *Drawings* shall control the *Contractor* in dividing the work among *Subcontractors* and *Suppliers*.
- 1.1.7 If there is a conflict within the *Contract Documents*:
- .1 the order of priority of documents, from highest to lowest, shall be
    - the Agreement between the *Owner* and the *Contractor*,
    - the Definitions,
    - Supplementary Conditions,
    - the General Conditions,
    - the *Specifications*,
    - material and finishing schedules,
    - the *Drawings*.
  - .2 *Drawings* of larger scale shall govern over those of smaller scale of the same date.
  - .3 dimensions shown on *Drawings* shall govern over dimensions scaled from *Drawings*.
  - .4 later dated documents shall govern over earlier documents of the same type.
- 1.1.8 The *Owner* shall provide the *Contractor*, without charge, sufficient copies of the *Contract Documents* to perform the *Work*.
- 1.1.9 *Specifications*, *Drawings*, models, and copies thereof furnished by the *Consultant* are and shall remain the *Consultant's* property, with the exception of the signed *Contract* sets, which shall belong to each party to the *Contract*. All *Specifications*, *Drawings*, and models furnished by the *Consultant* are to be used only with respect to the *Work* and are not to be used on other work. These *Specifications*, *Drawings*, and models are not to be copied or altered in any manner without the written authorization of the *Consultant*.
- 1.1.10 Models furnished by the *Contractor* at the *Owner's* expense are the property of the *Owner*.

#### GC 1.2 LAW OF THE CONTRACT

- 1.2.1 The law of the *Place of the Work* shall govern the interpretation of the *Contract*.

### **GC 1.3 RIGHTS AND REMEDIES**

- 1.3.1 Except as expressly provided in the *Contract Documents*, the duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.
- 1.3.2 No action or failure to act by the *Owner*, *Consultant*, or *Contractor* shall constitute a waiver of any right or duty afforded any of them under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

### **GC 1.4 ASSIGNMENT**

- 1.4.1 Neither party to the *Contract* shall assign the *Contract* or a portion thereof without the written consent of the other, which consent shall not be unreasonably withheld.

## **PART 2 ADMINISTRATION OF THE CONTRACT**

### **GC 2.1 AUTHORITY OF THE CONSULTANT**

- 2.1.1 The *Consultant* will have authority to act on behalf of the *Owner* only to the extent provided in the *Contract Documents*, unless otherwise modified by written agreement as provided in paragraph 2.1.2.
- 2.1.2 The duties, responsibilities, and limitations of authority of the *Consultant* as set forth in the *Contract Documents* shall be modified or extended only with the written consent of the *Owner*, the *Contractor*, and the *Consultant*.
- 2.1.3 If the *Consultant's* employment is terminated, the *Owner* shall immediately appoint or reappoint a *Consultant* against whom the *Contractor* makes no reasonable objection and whose status under the *Contract Documents* shall be that of the former *Consultant*.

### **GC 2.2 ROLE OF THE CONSULTANT**

- 2.2.1 The *Consultant* will provide administration of the *Contract* as described in the *Contract Documents* during construction until issuance of the final certificate for payment, and subject to GC 2.1 - AUTHORITY OF THE CONSULTANT and with the *Owner's* concurrence, from time to time until the completion of any correction of defects as provided in paragraph 12.3.3 of GC 12.3 - WARRANTY.
- 2.2.2 The *Consultant* may provide at the *Place of the Work*, one or more project representatives to assist in carrying out the *Consultant's* responsibilities. The duties, responsibilities, and limitations of authority of such project representatives shall be as set forth in writing to the *Contractor*.
- 2.2.3 The *Consultant* will review the *Work* at intervals appropriate to the progress of construction to:
  - .1 become familiar with the progress and quality of the *Work*,
  - .2 determine if the *Work* is proceeding in general conformity with the *Contract Documents*, and
  - .3 verify quantities of *Work* performed under a *Schedule of Prices*.
- 2.2.4 Based on the *Consultant's* observations and evaluation of the *Contractor's* applications for payment, the *Consultant* will determine the amounts owing to the *Contractor* under the *Contract* and will issue certificates for payment as provided in Article A-5 of the Agreement - PAYMENT, GC 5.6 - PROGRESS PAYMENT, and GC 5.10 - FINAL PAYMENT.
- 2.2.5 The *Consultant* will not be responsible for and will not have control, charge, or supervision of construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs required in connection with the *Work* in accordance with the applicable construction safety legislation, other regulations, or general construction practice. The *Consultant* will not be responsible for the *Contractor's* failure to carry out the *Work* in accordance with the *Contract Documents*. The *Consultant* will not have control over, charge of, or be responsible for the acts or omissions of the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or any other persons performing portions of the *Work*.

- 2.2.6 The *Consultant* will be, in the first instance, the interpreter of the requirements of the *Contract Documents* and shall make findings as to the performance thereunder by both parties to the *Contract*, except with respect to GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER. Interpretations and findings of the *Consultant* shall be consistent with the intent of the *Contract Documents*. When making such interpretations and findings the *Consultant* will not show partiality to either the *Owner* or the *Contractor*.
- 2.2.7 Matters in question relating to the performance of the Work or the interpretation of the *Contract Documents*, except for GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER, shall be referred initially to the *Consultant* by notice in writing given to the *Consultant* and to the other party for the *Consultant's* interpretation and finding which will be given by notice in writing to the parties within a reasonable time. With respect to claims, the *Consultant* will make findings as set out in GC 6.6 - CLAIMS, paragraph 6.6.5.
- 2.2.8 The *Consultant* will have authority to reject work which in the *Consultant's* opinion does not conform to the requirements of the *Contract Documents*. Whenever the *Consultant* considers it necessary or advisable, the *Consultant* will have authority to require inspection or testing of work, whether or not such work is fabricated, installed, or completed. However, neither the authority of the *Consultant* to act nor any decision either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the *Consultant* to the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or other persons performing any of the *Work*.
- 2.2.9 During the progress of the *Work* the *Consultant* will furnish *Supplemental Instructions* to the *Contractor* with reasonable promptness or in accordance with a schedule for such instructions agreed to by the *Consultant* and the *Contractor*.
- 2.2.10 The *Consultant* will review and take appropriate action upon such *Contractor's* submittals as *Shop Drawings*, *Product data*, and samples, as provided in the *Contract Documents*.
- 2.2.11 The *Consultant* will prepare *Change Orders* and *Change Directives* as provided in GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.
- 2.2.12 The *Consultant* will conduct reviews of the *Work* to determine the date of *Substantial Performance of the Work* as provided in GC 5.7 - SUBSTANTIAL PERFORMANCE OF THE WORK.
- 2.2.13 All certificates issued by the *Consultant* will be to the best of the *Consultant's* knowledge, information, and belief. By issuing any certificate, the *Consultant* does not guarantee the *Work* is correct or complete.
- 2.2.14 The *Consultant* will receive and review written warranties and related documents required by the *Contract* and provided by the *Contractor* and will forward such warranties and documents to the *Owner* for the *Owner's* acceptance.

### **GC 2.3 REVIEW AND INSPECTION OF THE WORK**

- 2.3.1 The *Owner* and the *Consultant* shall have access to the *Work* at all times. The *Contractor* shall provide sufficient, safe, and proper facilities at all times for the review of the *Work* by the *Consultant* and the inspection of the *Work* by authorized agencies. If parts of the *Work* are in preparation at locations other than the *Place of the Work*, the *Owner* and the *Consultant* shall be given access to such work whenever it is in progress.
- 2.3.2 If work is designated for tests, inspections, or approvals in the *Contract Documents*, or by the *Consultant's* instructions, or the laws or ordinances of the *Place of the Work*, the *Contractor* shall give the *Consultant* reasonable notice of when the work will be ready for review and inspection. The *Contractor* shall arrange for and shall give the *Consultant* reasonable notice of the date and time of inspections by other authorities.
- 2.3.3 The *Contractor* shall furnish promptly to the *Consultant* two copies of certificates and inspection reports relating to the *Work*.
- 2.3.4 If the *Contractor* covers, or permits to be covered, work that has been designated for special tests, inspections, or approvals before such special tests, inspections, or approvals are made, given or completed, the *Contractor* shall, if so directed, uncover such work, have the inspections or tests satisfactorily completed, and make good covering work at the *Contractor's* expense.

- 2.3.5 The *Consultant* may order any portion or portions of the *Work* to be examined to confirm that such work is in accordance with the requirements of the *Contract Documents*. If the work is not in accordance with the requirements of the *Contract Documents*, the *Contractor* shall correct the work and pay the cost of examination and correction. If the work is in accordance with the requirements of the *Contract Documents*, the *Owner* shall pay the cost of examination and restoration.
- 2.3.6 The *Contractor* shall pay the cost of making any test or inspection, including the cost of samples required for such test or inspection, if such test or inspection is designated in the *Contract Documents* to be performed by the *Contractor* or is designated by the laws or ordinances of the *Place of the Work*.
- 2.3.7 The *Contractor* shall pay the cost of samples required for any test or inspection to be performed by the *Consultant* or the *Owner* if such test or inspection is designated in the *Contract Documents*.

#### **GC 2.4 DEFECTIVE WORK**

- 2.4.1 The *Contractor* shall promptly remove from the *Place of the Work* and replace or re-execute defective work that has been rejected by the *Consultant* as failing to conform to the *Contract Documents* whether or not the defective work has been incorporated in the *Work* and whether or not the defect is the result of poor workmanship, use of defective products, or damage through carelessness or other act or omission of the *Contractor*.
- 2.4.2 The *Contractor* shall make good promptly other contractors' work destroyed or damaged by such removals or replacements at the *Contractor's* expense.
- 2.4.3 If in the opinion of the *Consultant* it is not expedient to correct defective work or work not performed as provided in the *Contract Documents*, the *Owner* may deduct from the amount otherwise due to the *Contractor* the difference in value between the work as performed and that called for by the *Contract Documents*. If the *Owner* and the *Contractor* do not agree on the difference in value, they shall refer the matter to the *Consultant* for a determination.

### **PART 3 EXECUTION OF THE WORK**

#### **GC 3.1 CONTROL OF THE WORK**

- 3.1.1 The *Contractor* shall have total control of the *Work* and shall effectively direct and supervise the *Work* so as to ensure conformity with the *Contract Documents*.
- 3.1.2 The *Contractor* shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for co-ordinating the various parts of the *Work* under the *Contract*.

#### **GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS**

- 3.2.1 The *Owner* reserves the right to award separate contracts in connection with other parts of the *Project* to other contractors and to perform work with own forces.
- 3.2.2 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Owner* shall:
  - .1 provide for the co-ordination of the activities and work of other contractors and *Owner's* own forces with the *Work* of the *Contract*;
  - .2 assume overall responsibility for compliance with the applicable health and construction safety legislation at the *Place of the Work*;
  - .3 enter into separate contracts with other contractors under conditions of contract which are compatible with the conditions of the *Contract*;
  - .4 ensure that insurance coverage is provided to the same requirements as are called for in GC 11.1 - INSURANCE and co-ordinate such insurance with the insurance coverage of the *Contractor* as it affects the *Work*; and
  - .5 take all reasonable precautions to avoid labour disputes or other disputes on the *Project* arising from the work of other contractors or the *Owner's* own forces.

- 3.2.3 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Contractor* shall:
- .1 afford the *Owner* and other contractors reasonable opportunity to introduce and store products and use the *Owner's* or other contractor's construction equipment to execute their work;
  - .2 cooperate with other contractors and the *Owner* in reviewing their construction schedules; and
  - .3 where part of the *Work* is affected by or depends upon for its proper execution the work of other contractors or *Owner's* own forces, promptly report to the *Consultant* in writing and prior to proceeding with that part of the *Work*, any apparent deficiencies in such work
- 3.2.4 Where the *Contract Documents* identify the work to be performed by other contractors or the *Owner's* own forces, the *Contractor* shall coordinate and schedule the *Work* with the work of other contractors and the *Owner's* own forces and interface as specified in the *Contract Documents*.
- 3.2.5 Where a change in the *Work* is required as a result of the co-ordination and interface of the work of other contractors or *Owner's* own forces with the *Work*, the changes shall be authorized and valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 3.2.6 Disputes, and other matters in question between the *Contractor* and other contractors shall be dealt with as provided in Part 8 of the General Conditions - DISPUTE RESOLUTION provided the other contractors have reciprocal obligations. The *Contractor* shall be deemed to have consented to arbitration of any dispute with any other contractor whose contract with the *Owner* contains a similar agreement to arbitrate.

### **GC 3.3 TEMPORARY WORK**

- 3.3.1 The *Contractor* shall have the sole responsibility for the design, erection, operation, maintenance, and removal of *Temporary Work*.
- 3.3.2 The *Contractor* shall engage and pay for registered professional engineering personnel skilled in the appropriate disciplines to perform those functions referred to in paragraph 3.3.1 where required by law or by the *Contract Documents* and in all cases where such *Temporary Work* is of such a nature that professional engineering skill is required to produce safe and satisfactory results.
- 3.3.3 Notwithstanding the provisions of GC 3.1 - CONTROL OF THE WORK, paragraph 3.3.1, and paragraph 3.3.2 or provisions to the contrary elsewhere in the *Contract Documents* where such *Contract Documents* include designs for *Temporary Work* or specify a method of construction in whole or in part, such designs or methods of construction shall be considered to be part of the design of the *Work* and the *Contractor* shall not be held responsible for that part of the design or the specified method of construction. The *Contractor* shall, however, be responsible for the execution of such design or specified method of construction in the same manner as for the execution of the *Work*.

### **GC 3.4 DOCUMENT REVIEW**

- 3.4.1 The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency, or omission the *Contractor* may discover. Such review by the *Contractor* shall be to the best of the *Contractor's* knowledge, information, and belief and in making such review the *Contractor* does not assume any responsibility to the *Owner* or the *Consultant* for the accuracy of the review. The *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the *Contract Documents*, which the *Contractor* did not discover. If the *Contractor* does discover any error, inconsistency, or omission in the *Contract Documents*, the *Contractor* shall not proceed with the work affected until the *Contractor* has received corrected or missing information from the *Consultant*.

### **GC 3.5 CONSTRUCTION SCHEDULE**

- 3.5.1 The *Contractor* shall:
- .1 prepare and submit to the *Owner* and the *Consultant* prior to the first application for payment, a construction schedule that indicates the timing of the major activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time*;
  - .2 monitor the progress of the *Work* relative to the construction schedule and update the schedule on a monthly basis or as stipulated by the *Contract Documents*; and
  - .3 advise the *Consultant* of any revisions required to the schedule as the result of extensions of the *Contract Time* as provided in Part 6 of the General Conditions - CHANGES IN THE WORK.

### **GC 3.6 SUPERVISION**

- 3.6.1 The *Contractor* shall provide all necessary supervision and appoint a competent representative who shall be in attendance at the *Place of the Work* while the *Work* is being performed. The appointed representative shall not be changed except for valid reason.
- 3.6.2 The appointed representative shall represent the *Contractor* at the *Place of the Work* and notices and instructions given to the appointed representative by the *Consultant* shall be held to have been received by the *Contractor*.

### **GC 3.7 LAYOUT OF THE WORK**

- 3.7.1 The *Owner* shall, in consultation with the *Contractor*, establish reference points for construction which are necessary for the *Contractor* to proceed with the *Work*.
- 3.7.2 The *Contractor* shall be responsible for laying out the *Work*, shall preserve and protect the established reference points, and shall not change or relocate the established reference points without the approval of the *Consultant*.
- 3.7.3 The *Contractor* shall advise the *Consultant* whenever any established reference point is lost, destroyed, damaged, or requires relocation as a result of the *Contractor's* operations. The cost to reestablish any reference point that is lost, destroyed, damaged, or requires relocation as a result of the *Contractor's* operations, shall be at the *Contractor's* expense.

### **GC 3.8 SUBCONTRACTORS AND SUPPLIERS**

- 3.8.1 The *Contractor* shall preserve and protect the rights of the parties under the *Contract* with respect to work to be performed under subcontract, and shall:
- .1 enter into contracts or written agreements with *Subcontractors* and *Suppliers* to require them to perform their work as provided in the *Contract Documents*;
  - .2 incorporate the terms and conditions of the *Contract Documents* into all contracts or written agreements with *Subcontractors* and *Suppliers*; and
  - .3 be as fully responsible to the *Owner* for acts and omissions of *Subcontractors*, *Suppliers*, and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Contractor*.
- 3.8.2 The *Contractor* shall indicate in writing, at the request of the *Owner*, those *Subcontractors* or *Suppliers* whose bids have been received by the *Contractor* which the *Contractor* would be prepared to accept for the performance of a portion of the *Work*. Should the *Owner* not object before signing the *Contract*, the *Contractor* shall employ those *Subcontractors* or *Suppliers* so identified by the *Contractor* in writing for the performance of that portion of the *Work* to which their bid applies.
- 3.8.3 The *Owner* may, for reasonable cause, at any time before the *Owner* has signed the *Contract*, object to the use of a proposed *Subcontractor* or *Supplier* and require the *Contractor* to employ one of the other subcontract bidders.
- 3.8.4 If the *Owner* requires the *Contractor* to change a proposed *Subcontractor* or *Supplier*, the *Contract Price* and *Contract Time* shall be adjusted by the differences occasioned by such required change.

- 3.8.5 The *Contractor* shall not be required to employ as a *Subcontractor* or *Supplier*, a person or firm to which the *Contractor* may reasonably object.
- 3.8.6 The *Owner*, through the *Consultant*, may provide to a *Subcontractor* or *Supplier* information as to the percentage of the *Subcontractor's* or *Supplier's* work which has been certified for payment.

### **GC 3.9 LABOUR AND PRODUCTS**

- 3.9.1 The *Contractor* shall provide and pay for labour, *Products*, tools, *Construction Equipment*, water, heat, light, power, transportation, and other facilities and services necessary for the performance of the *Work* in accordance with the *Contract*.
- 3.9.2 *Products* provided shall be new. *Products* which are not specified shall be of a quality consistent with those specified and their use acceptable to the *Consultant*.
- 3.9.3 The *Contractor* shall maintain good order and discipline among the *Contractor's* employees engaged on the *Work* and shall not employ on the *Work* anyone not skilled in the tasks assigned.

### **GC 3.10 DOCUMENTS AT THE SITE**

- 3.10.1 The *Contractor* shall keep one copy of current *Contract Documents*, submittals, reports, and records of meetings at the *Place of the Work*, in good order and available to the *Owner* and the *Consultant*.

### **GC 3.11 SHOP DRAWINGS**

- 3.11.1 The *Contractor* shall provide *Shop Drawings* as required in the *Contract Documents*.
- 3.11.2 The *Contractor* shall review all *Shop Drawings* prior to submission to the *Consultant*. The *Contractor* represents by this review that:
- .1 the *Contractor* has determined and verified all field measurements, field construction conditions, materials, *Product* requirements, catalogue numbers, and similar data or will do so; and
  - .2 the *Contractor* has checked and co-ordinated each *Shop Drawing* with the requirements of the *Contract Documents*.
- 3.11.3 The *Contractor* shall confirm the review of each shop drawing by stamp, date, and signature of the person responsible for the review. At the time of submission the *Contractor* shall notify the *Consultant* in writing of any deviations in the *Shop Drawings* from the requirements of the *Contract Documents*.
- 3.11.4 The *Contractor* shall submit *Shop Drawings* to the *Consultant* to review in orderly sequence and sufficiently in advance so as to cause no delay in the *Work* or in the work of other contractors. Upon request of the *Contractor* or the *Consultant*, they jointly shall prepare a schedule of the dates for submission and return of *Shop Drawings*. *Shop Drawings* which require approval of any legally constituted authority having jurisdiction shall be submitted to such authority by the *Contractor* for approval.
- 3.11.5 The *Contractor* shall submit *Shop Drawings* in the form specified or as the *Consultant* may direct. The *Consultant* will review and return *Shop Drawings* in accordance with the schedule agreed upon, or otherwise with reasonable promptness so as to cause no delay. The *Consultant's* review is for conformity to the design concept and for general arrangement only. The *Consultant's* review shall not relieve the *Contractor* of responsibility for errors or omissions in the *Shop Drawings* or for meeting all requirements of the *Contract Documents* unless the *Consultant* expressly notes the acceptance of a deviation on the *Shop Drawings*.
- 3.11.6 Upon the *Consultant's* request, the *Contractor* shall revise and resubmit *Shop Drawings* which the *Consultant* rejects as inconsistent with the *Contract Documents* unless otherwise directed by the *Consultant*. The *Contractor* shall notify the *Consultant* in writing of any revisions to the resubmission other than those requested by the *Consultant*.

### **GC 3.12 USE OF THE WORK**

- 3.12.1 The *Contractor* shall confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and operations of employees to limits indicated by laws, ordinances, permits, or the *Contract Documents* and shall not unreasonably encumber the *Place of Work* with *Products*.
- 3.12.2 The *Contractor* shall not load or permit to be loaded any part of the *Work* with a weight or force that will endanger the safety of the *Work*.

### **GC 3.13 CUTTING AND REMEDIAL WORK**

- 3.13.1 The *Contractor* shall do the cutting and remedial work required to make the several parts of the *Work* come together properly.
- 3.13.2 The *Contractor* shall co-ordinate the *Work* to ensure that this requirement is kept to a minimum.
- 3.13.3 Should the *Owner*, the *Consultant*, other contractors or anyone employed by them be responsible for ill-timed work necessitating cutting or remedial work to be performed, the cost of such cutting or remedial work shall be valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 3.13.4 Cutting and remedial work shall be performed by specialists familiar with the *Products* affected and shall be performed in a manner to neither damage nor endanger the *Work*.

### **GC 3.14 CLEANUP**

- 3.14.1 The *Contractor* shall maintain the *Work* in a safe and tidy condition and free from the accumulation of waste products and debris, other than that caused by the *Owner*, other contractors or their employees.
- 3.14.2 Before applying for *Substantial Performance of the Work* as provided in GC 5.7 - SUBSTANTIAL PERFORMANCE OF THE WORK, the *Contractor* shall remove waste products and debris, other than that resulting from the work of the *Owner*, other contractors or their employees, and shall leave the *Work* clean and suitable for use or occupancy by the *Owner*. The *Contractor* shall remove products, tools, *Construction Equipment* and *Temporary Work* not required for the performance of the remaining work.
- 3.14.3 Prior to application for the final certificate for payment, the *Contractor* shall remove any remaining products, tools, *Construction Equipment*, *Temporary Work*, and waste products and debris, other than those resulting from the work of the *Owner*, other contractors or their employees.

## **PART 4 ALLOWANCES**

### **GC 4.1 CASH ALLOWANCES**

- 4.1.1 The *Contract Price* includes the cash allowances, if any, stated in the *Contract Documents*. The scope of work or costs included in such cash allowances shall be as described in the *Contract Documents*.
- 4.1.2 The *Contract Price*, and not the cash allowances, includes the *Contractor's* overhead and profit in connection with such cash allowances.
- 4.1.3 Expenditures under cash allowances shall be authorized by the *Owner* through the *Consultant*.
- 4.1.4 Where costs under any cash allowance exceed the amount of the allowance, the *Contractor* shall be compensated for the excess incurred and substantiated plus an amount for overhead and profit on the excess as set out in the *Contract Documents*. Where costs under any cash allowance are less than the amount of the allowance, the *Owner* shall be credited for the unexpended portion of the cash allowance, but not for the *Contractor's* overhead and profit on such amount. Multiple cash allowances shall not be combined for the purpose of calculating the foregoing.
- 4.1.5 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the actual cost and each cash allowance.

- 4.1.6 The value of the work performed under a cash allowance is eligible to be included in progress payments.
- 4.1.7 The *Contractor* and the *Consultant* shall jointly prepare a schedule that shows when the *Consultant* and *Owner* must authorize ordering of items called for under cash allowances to avoid delaying the progress of the *Work*.

#### **GC 4.2 CONTINGENCY ALLOWANCE**

- 4.2.1 The *Contract Price* includes the contingency allowance, if any, stated in the *Contract Documents*.
- 4.2.2 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 4.2.3 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.2.2 and the contingency allowance.

### **PART 5 PAYMENT**

#### **GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER**

- 5.1.1 The *Owner* shall, at the request of the *Contractor*, before signing the *Contract*, and promptly from time to time thereafter, furnish to the *Contractor* reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*.
- 5.1.2 The *Owner* shall notify the *Contractor* in writing of any material change in the *Owner's* financial arrangements during performance of the *Contract*.

#### **GC 5.2 BASIS OF PAYMENT FOR UNIT PRICE WORK**

- 5.2.1 Payment for *Unit Price* work shall be based on the *Unit Prices* in the *Contract*.
- 5.2.2 The *Contractor* shall measure the *Work* and the *Consultant* will verify such measurements to determine payment to the *Contractor* in accordance with the measurement provisions of the *Contract Documents*.

#### **GC 5.3 BASIS OF PAYMENT FOR LUMP SUM WORK**

- 5.3.1 Payment for lump sum work shall be based on the stipulated price(s) in the *Contract*.

#### **GC 5.4 BASIS OF PAYMENT FOR COST PLUS WORK**

- 5.4.1 Payment for cost plus work shall be based on the cost of such work, as provided in paragraph 5.4.2, plus a fee calculated as a percentage of the cost of such work, for the *Contractor's* overhead and profit. The percentage amount shall be as provided in the *Contract Documents* but shall not be applied to the cost of *Construction Equipment* when such cost is based on rates which already include the *Contractor's* overhead and profit.
- 5.4.2 The cost of cost plus work shall be at rates prevailing in the locality of the *Place of the Work* and shall include the following cost elements as applicable to such work:
- .1 wages and benefits paid for labour in the direct employ of the *Contractor* under applicable collective bargaining agreements, or under a salary or wage schedule agreed upon by the *Owner* and *Contractor*;
  - .2 salaries, wages, and benefits of the *Contractor's* personnel, when stationed at the field office, in whatever capacity employed; or personnel at shops or on the road, engaged in expediting the production or transportation of materials or equipment;
  - .3 contributions, assessments, or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan, insofar as such cost is based on wages, salaries, or other remuneration paid to employees of the *Contractor* and included in the cost of the *Work* as provided in paragraphs 5.4.2.1 and 5.4.2.2;
  - .4 travel and subsistence expenses of the *Contractor's* personnel described in paragraphs 5.4.2.1 and 5.4.2.2;
  - .5 the cost of all *Products* including cost of transportation thereof;

- .6 the cost of materials, supplies, *Construction Equipment*, *Temporary Work*, and hand tools not owned by the workers, including transportation, and maintenance thereof, which are consumed in the performance of the *Work*; and cost less salvage value on such items used but not consumed, which remain the property of the *Contractor*;
  - .7 the cost of all tools and *Construction Equipment*, exclusive of hand tools used in the performance of the *Work*, whether rented from or provided by the *Contractor* or others, including installation, minor repairs and replacements, dismantling, removal, transportation and delivery cost thereof;
  - .8 deposits lost;
  - .9 the amounts of all subcontracts;
  - .10 the cost of quality assurance such as independent inspection and testing services;
  - .11 charges levied by authorities having jurisdiction at the *Place of the Work*;
  - .12 royalties, patent license fees, and damages for infringement of patents and cost of defending suits therefor subject always to the *Contractor's* obligations to indemnify the *Owner* as provided in paragraph 10.3.1 of GC 10.3 - PATENT FEES;
  - .13 any adjustment in premiums for all bonds and insurance which the *Contractor* is required, by the *Contract Documents*, to purchase and maintain;
  - .14 any adjustment in taxes and duties for which the *Contractor* is liable;
  - .15 charges for long distance telephone and facsimile communications, courier services, expressage, and petty items incurred in relation to the performance of the *Work*;
  - .16 the cost of removal and disposal of waste products and debris; and
  - .17 cost incurred due to emergencies affecting the safety of persons or property.
- 5.4.3 The *Contractor* shall obtain the *Owner's* approval prior to subcontracting or entering into other agreements for cost plus work.
- 5.4.4 The *Consultant* may refuse to certify payment for all or part of the cost of any item under any cost element, where the item in question was unsuitable, unnecessary or the cost was otherwise improperly incurred in the performance of the *Work*.
- 5.4.5 The *Contractor* shall keep full and detailed accounts and records necessary for the documentation of the cost of cost plus work and shall provide the *Consultant* with copies thereof when requested.
- 5.4.6 The *Owner* shall be afforded reasonable access to all of the *Contractor's* books, records, correspondence, instructions, drawings, receipts, vouchers, and memoranda related to the cost of cost plus work, and for this purpose the *Contractor* shall preserve such records for a period of one year from the date of *Substantial Performance of the Work*.

## **GC 5.5 APPLICATIONS FOR PROGRESS PAYMENT**

- 5.5.1 Applications for payment on account as provided in Article A-5 of the Agreement - PAYMENT may be made monthly as the *Work* progresses.
- 5.5.2 Applications for payment shall be dated the last day of the agreed monthly payment period and the amount claimed shall be for the value, proportionate to the amount of the *Contract*, of work performed and *Products* delivered to the *Place of the Work* at that date.
- 5.5.3 Where the basis of payment of the *Contract Price* is *Unit Prices*, applications for payment shall include quantity measurements and any other data requested by the *Consultant* to assist the *Consultant* in evaluating the application and verifying quantity measurements.
- 5.5.4 Where the basis of payment of the *Contract Price* is a lump sum stipulated price:
- .1 the *Contractor* shall submit to the *Consultant*, at least 10 *Working Days* before the first application for payment, a schedule of values for the parts of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of applications for payment;
  - .2 the schedule of values shall be made out in such form and supported by such evidence as the *Consultant* may reasonably direct and when accepted by the *Consultant*, shall be used as the basis for applications for payment, unless it is found to be in error; and
  - .3 the *Contractor* shall include a statement based on the schedule of values with each application for payment.

- 5.5.5 Where the basis of payment for a portion of the *Work* is cost plus, applications for payment shall be based on the cost of the work performed plus the amount of the fee earned, in accordance with GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK.
- 5.5.6 Applications for payment for *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall be supported by such evidence as the *Consultant* may reasonably require to establish the value and delivery of the *Products*.

#### **GC 5.6 PROGRESS PAYMENT**

- 5.6.1 The *Consultant* will issue to the *Owner*, no later than 5 *Working Days* after the receipt of an application for payment from the *Contractor* submitted in accordance with GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT, a certificate for payment in the amount applied for or in such other amount as the *Consultant* determines to be properly due. If the *Consultant* amends the application, the *Consultant* will promptly notify the *Contractor* in writing giving reasons for the amendment.
- 5.6.2 The *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement - PAYMENT no later than 5 *Working Days* after the date of a certificate for payment issued by the *Consultant*.
- 5.6.3 Where the basis of payment of the *Contract Price* is *Unit Prices*, quantities for progress payments shall be considered approximate until final verification of quantities by the *Consultant*. A certificate for progress payment shall not be construed as the *Consultant's* final verification of quantities. Final verification of quantities will be made after all work of an item is completed.

#### **GC 5.7 SUBSTANTIAL PERFORMANCE OF THE WORK**

- 5.7.1 When the *Contractor* considers that the *Work* is substantially performed, or if permitted by the lien legislation applicable to the *Place of the Work* a designated portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Contractor* shall prepare and submit to the *Consultant* a comprehensive list of items to be completed or corrected and apply for a review by the *Consultant* to establish *Substantial Performance of the Work* or substantial performance of the designated portion of the *Work*. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.
- 5.7.2 No later than 15 *Working Days* after the receipt of the *Contractor's* list and application, the *Consultant* will review the *Work* to verify the validity of the application and notify the *Contractor* whether the *Work* or the designated portion of the *Work* is substantially performed.
- 5.7.3 The *Consultant* will state the date of *Substantial Performance of the Work* or designated portion of the *Work* in a certificate.
- 5.7.4 Immediately following the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor*, in consultation with the *Consultant*, shall establish a reasonable date for finishing the *Work*.

#### **GC 5.8 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK**

- 5.8.1 After the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor* shall:
- .1 submit an application for payment of the holdback amount,
  - .2 submit a sworn or affirmed statement that all accounts for labour, subcontracts, *Products*, *Construction Equipment*, and other indebtedness which may have been incurred by the *Contractor* in the *Substantial Performance of the Work* and for which the *Owner* might in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or as an identified amount in dispute.
- 5.8.2 After the receipt of an application for payment from the *Contractor* and the sworn or affirmed statement as provided in paragraph 5.8.1, the *Consultant* will issue a certificate for payment of the holdback amount.

- 5.8.3 Where the holdback amount required by the applicable lien legislation has not been placed in a separate holdback account, the *Owner* shall, 5 *Working Days* prior to the expiry of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*, place the holdback amount in a bank account in the joint names of the *Owner* and the *Contractor*.
- 5.8.4 In the common law jurisdictions, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable on the day following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*. Where lien legislation does not exist or apply, the holdback amount shall be due and payable in accordance with other legislation, industry practice, or provisions which may be agreed to between the parties. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any liens against the *Work* or, if permitted by the lien legislation applicable to the *Place of the Work*, other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.
- 5.8.5 In the Province of Quebec, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable no later than 30 days after the issuance of the certificate. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

#### **GC 5.9 PROGRESSIVE RELEASE OF HOLDBACK**

- 5.9.1 In the common law jurisdictions, where legislation permits and where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, on the first *Working Day* following the expiration of the holdback period for such work stipulated in the lien legislation applicable to the *Place of the Work*.
- 5.9.2 In the Province of Quebec, where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, no later than 30 days after such certification by the *Consultant*. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.
- 5.9.3 Notwithstanding the provisions of the preceding paragraph, and notwithstanding the wording of such certificates, the *Contractor* shall ensure that such subcontract work or *Products* is protected pending the issuance of a final certificate for payment and be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when such certificates were issued.

#### **GC 5.10 FINAL PAYMENT**

- 5.10.1 When the *Contractor* considers that the *Work* is completed, the *Contractor* shall submit an application for final payment.
- 5.10.2 The *Consultant* will, no later than 15 *Working Days* after the receipt of an application from the *Contractor* for final payment, review the *Work* to verify the validity of the application and notify the *Contractor* that the application is valid or give reasons why it is not valid.
- 5.10.3 When the *Consultant* finds the *Contractor's* application for final payment valid, the *Consultant* will promptly issue a final certificate for payment.
- 5.10.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the *Place of the Work*, the *Owner* shall, no later than 5 *Working Days* after the issuance of a final certificate for payment, pay the *Contractor* as provided in Article A-5 of the Agreement - PAYMENT.

## **GC 5.11 WITHHOLDING OF PAYMENT**

- 5.11.1 If because of climatic or other conditions reasonably beyond the control of the *Contractor*, there are items of work that cannot be performed, payment in full for that portion of the *Work* which has been performed as certified by the *Consultant* shall not be withheld or delayed by the *Owner* on account thereof, but the *Owner* may withhold, until the remaining portion of the *Work* is finished, only such an amount that the *Consultant* determines is sufficient and reasonable to cover the cost of performing such remaining work.

## **GC 5.12 NON-CONFORMING WORK**

- 5.12.1 No payment by the *Owner* under the *Contract* nor partial or entire use or occupancy of the *Work* by the *Owner* shall constitute an acceptance of any portion of the *Work* or *Products* which are not in accordance with the requirements of the *Contract Documents*.

## **PART 6 CHANGES**

### **GC 6.1 CHANGES**

- 6.1.1 The *Owner*, through the *Consultant*, without invalidating the *Contract*, may make:
- .1 changes in the *Work* consisting of additions, deletions, or other revisions to the *Work* by *Change Order* or *Change Directive*, and
  - .2 changes to the *Contract Time* for the *Work*, or any part thereof, by *Change Order*.
- 6.1.2 The *Contractor* shall not perform a change in the *Work* without a *Change Order* or a *Change Directive*.

### **GC 6.2 CHANGE ORDER**

- 6.2.1 When a change in the *Work* or the *Contract Time* is proposed or required, the *Consultant* will provide notice in writing to the *Contractor* describing the proposed change. The *Contractor* shall present, in a form acceptable to the *Consultant*, a method of adjustment or an amount of adjustment of the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change.
- 6.2.2 The method of adjustment of the *Contract Price* presented by the *Contractor* may be:
- .1 *Unit Prices* listed in the *Schedule of Prices* that are applicable to the change in the *Work* or, if *Unit Prices* listed in the *Schedule of Prices* are not directly applicable, by unit prices deduced or extrapolated from such *Unit Prices*,
  - .2 a lump sum or unit price quotation, or
  - .3 the cost plus method as provided in GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK.
- 6.2.3 When the *Owner* and *Contractor* agree to the adjustments in the *Contract Price* and *Contract Time* or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a *Change Order*, signed by *Owner* and *Contractor*. The value of the work performed as the result of a *Change Order* shall be included in applications for progress payment.

### **GC 6.3 CHANGE DIRECTIVE**

- 6.3.1 If the *Owner* requires the *Contractor* to proceed with a change in the *Work* prior to the *Owner* and the *Contractor* agreeing upon the adjustment in *Contract Price* and *Contract Time*, the *Owner*, through the *Consultant*, shall issue a *Change Directive*.
- 6.3.2 A *Change Directive* shall only be used by the *Owner* to direct a change in the *Work* that is within the general scope of the *Contract Documents*.
- 6.3.3 Upon receipt of a *Change Directive*, the *Contractor* shall proceed promptly with the change in the *Work*.

- 6.3.4 The adjustment in the *Contract Price* for a change in the *Work* carried out by way of a *Change Directive* shall be on the basis of the *Contractor's* actual expenditures and savings attributable to the change. If a change in the *Work* results in expenditures only, the change in the *Work* shall be valued as cost plus work in accordance with GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK.
- 6.3.5 If a change in the *Work* results in savings only, the amount of the credit shall be the actual cost savings to the *Contractor*, without deduction for overhead or profit.
- 6.3.6 If a change in the *Work* results in both expenditures and savings, the change in the *Work* shall be valued as specified in GC 6.3.4 and GC 6.3.5, except that overhead and profit on the cost plus work shall be payable only on the net increase, if any, with respect to that change in the *Work*.
- 6.3.7 Pending determination of the final amount of a *Change Directive*, the undisputed value of the work performed as the result of a *Change Directive* is eligible to be included in progress payments.
- 6.3.8 If the *Owner* and *Contractor* do not agree on the proposed adjustment in the *Contract Time* or the method of determining it, the adjustment shall be referred to the *Consultant* for determination.
- 6.3.9 If at any time after the start of the work directed by a *Change Directive*, the *Owner* and the *Contractor* reach agreement on the adjustment to the *Contract Price* and to the *Contract Time*, this agreement shall be recorded in a *Change Order* signed by *Owner* and *Contractor*.

#### **GC 6.4 CONCEALED OR UNKNOWN CONDITIONS**

- 6.4.1 If the *Owner* or the *Contractor* discover conditions at the *Place of the Work* which are:
  - .1 subsurface or otherwise concealed physical conditions which existed before the commencement of the *Work* which differ materially from those indicated in the *Contract Documents*; or
  - .2 physical conditions, other than conditions due to weather, that are of a nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the *Contract Documents*;
 then the observing party shall notify the other party in writing before conditions are disturbed and in no event later than 5 *Working Days* after first observance of the conditions.
- 6.4.2 The *Consultant* will promptly investigate such conditions and make a finding. If the finding is that the conditions differ materially and this would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Consultant*, with the *Owner's* approval, will issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 - CHANGE DIRECTIVE.
- 6.4.3 If the *Consultant* finds that the conditions at the *Place of the Work* are not materially different or that no change in the *Contract Price* or the *Contract Time* is justified, the *Consultant* will report the reasons for this finding to the *Owner* and the *Contractor* in writing.
- 6.4.4 The *Contractor* shall not be entitled to an adjustment in the *Contract Price* or the *Contract Time* if such conditions were reasonably apparent prior to the time of bid closing.

#### **GC 6.5 DELAYS**

- 6.5.1 If the *Contractor* is delayed in the performance of the *Work* by an action or omission of the *Owner*, *Consultant*, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.
- 6.5.2 If the *Contractor* is delayed in the performance of the *Work* by a stop work order issued by a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or any person employed or engaged by the *Contractor* directly or indirectly, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.

- 6.5.3 If the *Contractor* is delayed in the performance of the *Work* by
- .1 labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors' association, of which the *Contractor* is a member or to which the *Contractor* is otherwise bound),
  - .2 fire, unusual delay by common carriers or unavoidable casualties,
  - .3 abnormally adverse weather conditions, or
  - .4 any other cause beyond the *Contractor's* control, other than one resulting from a default of or breach of *Contract* by the *Contractor*,
- then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the *Contractor* agrees to a shorter extension. The *Contractor* shall not be entitled to payment for costs incurred by such delays unless such delays result from actions by the *Owner*.
- 6.5.4 No extension shall be made for delay unless notice in writing of the cause of delay is given to the *Consultant* not later than 10 *Working Days* after the commencement of delay, providing however, that in the case of a continuing cause of delay only one notice shall be necessary.
- 6.5.5 If no schedule is made under paragraph 2.2.9 of GC 2.2 - ROLE OF THE CONSULTANT, then no request for extension shall be made because of failure of the *Consultant* to furnish instructions until 10 *Working Days* after demand for such instructions has been made and not then, unless the request is reasonable.

## **GC 6.6 CLAIMS**

- 6.6.1 If the *Contractor* intends to make a claim for additional payment, or if the *Owner* intends to make a claim for a credit to the *Contract Price* or for damages of any kind, the party that intends to make the claim shall give notice in writing of intent to claim to the other party and to the *Consultant* as soon as practicable, but no later than 10 *Working Days* after commencement of the event or series of events giving rise to the claim. Failure to provide such notification shall invalidate the claim.
- 6.6.2 Upon commencement of the event or series of events giving rise to the claim, the party intending to make a claim shall:
- .1 take all reasonable measures to mitigate any loss or damage which may be incurred as a result of such event or series of events, and
  - .2 keep such records as may be necessary to support the claim.
- 6.6.3 Within 30 *Working Days* after commencement of the event or series of events giving rise to the claim, or such other reasonable time as may be agreed by the *Consultant*, the party making the claim shall submit to the *Consultant* a detailed account of the amount claimed and the grounds upon which the claim is based.
- 6.6.4 Where the event or series of events giving rise to the claim has a continuing effect, the detailed account submitted under paragraph 6.6.3 shall be considered to be an interim account and the party making the claim shall, at such intervals as the *Consultant* may reasonably require, submit further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. The party making the claim shall submit a final account with 30 *Working Days* after the end of the effects resulting from the event or series of events.
- 6.6.5 The *Consultant's* findings, with respect to a claim made by either party, will be given by notice in writing to the other party within 30 *Working Days* after receipt thereof by the *Consultant*, or such other time period as may be agreed by the parties. If such finding is not acceptable to both parties, the claim shall be settled in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION.

## **GC 6.7 QUANTITY VARIATIONS**

- 6.7.1 The *Owner* or the *Contractor* may request an adjustment to a *Unit Price* contained in a *Schedule of Prices* included in the *Contract* provided that the actual quantity of the item in the *Schedule of Prices* exceeds or falls short of the estimated quantity by more than 15%.
- 6.7.2 Where the actual quantity exceeds the estimated quantity by more than 15%, a *Unit Price* adjusted pursuant to paragraph 6.7.1 shall apply only to the quantity that exceeds 115% of the estimated quantity.

- 6.7.3 Where the actual quantity falls short of the estimated quantity by more than 15%, a *Unit Price* adjusted pursuant to paragraph 6.7.1 shall not exceed the *Unit Price* that would cause the extended amount to equal the original extended amount derived from the original *Unit Price* and estimated quantity.
- 6.7.4 If either party requests adjustment of a *Unit Price*, both parties shall make all reasonable efforts to agree on a revised *Unit Price*. The agreed revised *Unit Price* shall be recorded in a Change Order.
- 6.7.5 If agreement on a revised *Unit Price* is not reached, the matter shall be subject to final determination in accordance with Part 8 - DISPUTE RESOLUTION. Pending determination of the revised *Unit Price*, payment for the *Work* performed shall be included in progress payments based on the unrevised *Unit Price*.

## **PART 7 DEFAULT NOTICE**

### **GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, STOP THE WORK, OR TERMINATE THE CONTRACT**

- 7.1.1 If the *Contractor* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Contractor's* insolvency, or if a receiver is appointed because of the *Contractor's* insolvency, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, by giving the *Contractor* or receiver or trustee in bankruptcy notice in writing, terminate the *Contract*.
- 7.1.2 If the *Contractor* neglects to prosecute the *Work* properly or otherwise fails to comply with the requirements of the *Contract* to a substantial degree and if the *Consultant* has given a written statement to the *Owner* and *Contractor* that sufficient cause exists to justify such action, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, notify the *Contractor* in writing that the *Contractor* is in default of the *Contractor's* contractual obligations and instruct the *Contractor* to correct the default in the 5 *Working Days* immediately following the receipt of such notice.
- 7.1.3 If the default cannot be corrected in the 5 *Working Days* specified, the *Contractor* shall be in compliance with the *Owner's* instructions if the *Contractor*:
- .1 commences the correction of the default within the specified time, and
  - .2 provides the *Owner* with an acceptable schedule for such correction, and
  - .3 corrects the default in accordance with such schedule.
- 7.1.4 If the *Contractor* fails to correct the default in the time specified or subsequently agreed upon, without prejudice to any other right or remedy the *Owner* may have, the *Owner* may:
- .1 correct such default and deduct the cost thereof from any payment then or thereafter due the *Contractor* provided the *Consultant* has certified such cost to the *Owner* and the *Contractor*, or
  - .2 terminate the *Contractor's* right to continue with the *Work* in whole or in part or terminate the *Contract*.
- 7.1.5 If the *Owner* terminates the *Contractor's* right to continue with the *Work* as provided in paragraphs 7.1.1 and 7.1.4, the *Owner* shall be entitled to:
- .1 take possession of the *Work* and *Products* delivered to the *Place of the Work*, subject to the rights of third parties, and finish the *Work* by whatever method the *Owner* may consider expedient, but without undue delay or expense, and
  - .2 withhold further payment to the *Contractor* until a final certificate for payment is issued, and
  - .3 charge the *Contractor* the amount by which the full cost of finishing the *Work* as certified by the *Consultant*, including compensation to the *Consultant* for the *Consultant's* additional services and a reasonable allowance as determined by the *Consultant* to cover the cost of corrections to work performed by the *Contractor* that may be required under GC 12.3 - WARRANTY, exceeds the unpaid balance of the *Contract Price*; however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* the difference, and
  - .4 on expiry of the warranty period, charge the *Contractor* the amount by which the cost of corrections to the *Contractor's* work under GC 12.3 - WARRANTY exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the *Contractor* the difference.
- 7.1.6 The *Contractor's* obligation under the *Contract* as to quality, correction, and warranty of the work performed by the *Contractor* up to the time of termination shall continue in force after such termination.

## **GC 7.2 CONTRACTOR'S RIGHT TO STOP THE WORK OR TERMINATE THE CONTRACT**

- 7.2.1 If the *Owner* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Owner's* insolvency, or if a receiver is appointed because of the *Owner's* insolvency, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, by giving the *Owner* or receiver or trustee in bankruptcy notice in writing, terminate the *Contract*.
- 7.2.2 If the *Work* is stopped or otherwise delayed for a period of 20 *Working Days* or more under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or of anyone directly or indirectly employed or engaged by the *Contractor*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, by giving the *Owner* notice in writing, terminate the *Contract*.
- 7.2.3 The *Contractor* may notify the *Owner* in writing, with a copy to the *Consultant*, that the *Owner* is in default of the *Owner's* contractual obligations if:
- .1 the *Owner* fails to furnish, when so requested by the *Contractor*, reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*, or
  - .2 the *Consultant* fails to issue a certificate as provided in GC 5.3 PROGRESS PAYMENT, or
  - .3 the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Consultant* or awarded by arbitration or court, or
  - .4 the *Owner* violates the requirements of the *Contract* to a substantial degree and the *Consultant*, except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, confirms by written statement to the *Contractor* that sufficient cause exists.
- 7.2.4 The *Contractor's* notice in writing to the *Owner* provided under paragraph 7.2.3 shall advise that if the default is not corrected within 5 *Working Days* following the receipt of the notice in writing, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, stop the *Work* or terminate the *Contract*.
- 7.2.5 If the *Contractor* terminates the *Contract* under the conditions set out above, the *Contractor* shall be entitled to be paid for all work performed including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Contract*.

## **PART 8 DISPUTE RESOLUTION**

### **GC 8.1 AUTHORITY OF THE CONSULTANT**

- 8.1.1 Differences between the parties to the *Contract* as to the interpretation, application or administration of the *Contract* or any failure to agree where agreement between the parties is called for, herein collectively called disputes, which are not resolved in the first instance by findings of the *Consultant* as provided in GC 2.2 - ROLE OF THE CONSULTANT, shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION.
- 8.1.2 If a dispute arises under the *Contract* in respect of a matter in which the *Consultant* has no authority under the *Contract* to make a finding, the procedures set out in paragraph 8.1.3 and paragraphs 8.2.3 to 8.2.8 of GC 8.2 - NEGOTIATION, MEDIATION, AND ARBITRATION, and in GC 8.3 - RETENTION OF RIGHTS apply to that dispute with the necessary changes to detail as may be required.
- 8.1.3 If a dispute is not resolved promptly, the *Consultant* will give such instructions as in the *Consultant's* opinion are necessary for the proper performance of the *Work* and to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by so doing neither party will jeopardize any claim the party may have. If it is subsequently determined that such instructions were in error or at variance with the *Contract Documents*, the *Owner* shall pay the *Contractor* costs incurred by the *Contractor* in carrying out such instructions which the *Contractor* was required to do beyond what the *Contract Documents* correctly understood and interpreted would have required, including costs resulting from interruption of the *Work*.

## GC 8.2 NEGOTIATION, MEDIATION, AND ARBITRATION

- 8.2.1 In accordance with the latest edition of the Rules for Mediation of Construction Disputes as provided in CCDC 40, the parties shall appoint a Project Mediator
- .1 within 20 *Working Days* after the *Contract* was awarded, or
  - .2 if the parties neglected to make an appointment within the 20 *Working Day* period, within 10 *Working Days* after either party by notice in writing requests that the Project Mediator be appointed.
- 8.2.2 A party shall be conclusively deemed to have accepted a finding of the *Consultant* under GC 2.2 - ROLE OF THE CONSULTANT and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 *Working Days* after receipt of that finding, the party sends a notice in writing of dispute to the other party and to the *Consultant*, which contains the particulars of the matter in dispute and the relevant provisions of the *Contract Documents*. The responding party shall send a notice in writing of reply to the dispute within 10 *Working Days* after receipt of the notice of dispute setting out particulars of this response and any relevant provisions of the *Contract Documents*.
- 8.2.3 The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, frank, candid and timely disclosure of relevant facts, information, and documents to facilitate these negotiations.
- 8.2.4 After a period of 10 *Working Days* following receipt of a responding party's notice in writing of reply under paragraph 8.2.2, the parties shall request the Project Mediator to assist the parties to reach agreement on any unresolved dispute. The mediated negotiations shall be conducted in accordance with the latest edition of the Rules for Mediation of Construction Disputes as provided in CCDC 40.
- 8.2.5 If the dispute has not been resolved within 10 *Working Days* after the Project Mediator was requested under paragraph 8.2.4 or within such further period agreed by the parties, the Project Mediator shall terminate the mediated negotiations by giving notice in writing to both parties.
- 8.2.6 By giving a notice in writing to the other party, not later than 10 *Working Days* after the date of termination of the mediated negotiations under paragraph 8.2.5, either party may refer the dispute to be finally resolved by arbitration under the latest edition of the Rules for Arbitration of Construction Disputes as provided in CCDC 40. The arbitration shall be conducted in the jurisdiction of the *Place of the Work*.
- 8.2.7 On expiration of the 10 *Working Days*, the arbitration agreement under paragraph 8.2.6 is not binding on the parties and, if a notice is not given under paragraph 8.2.6 within the required time, the parties may refer the unresolved dispute to the courts or to any other form of dispute resolution, including arbitration, which they have agreed to use.
- 8.2.8 If neither party requires by notice in writing given within 10 *Working Days* of the date of notice requesting arbitration in paragraph 8.2.6 that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.2.6 shall be
- .1 held in abeyance until
    - (1) *Substantial Performance of the Work*,
    - (2) the *Contract* has been terminated, or
    - (3) the *Contractor* has abandoned the *Work*,whichever is earlier, and
  - .2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.2.6.

## GC 8.3 RETENTION OF RIGHTS

- 8.3.1 It is agreed that no act by either party shall be construed as a renunciation or waiver of any rights or recourses, provided the party has given the notices required under Part 8 of the General Conditions - DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.3.

- 8.3.2 Nothing in Part 8 of the General Conditions - DISPUTE RESOLUTION shall be construed in any way to limit a party from asserting any statutory right to a lien under applicable lien legislation of the jurisdiction of the *Place of the Work* and the assertion of such right by initiating judicial proceedings is not to be construed as a waiver of any right that party may have under paragraph 8.2.6 to proceed by way of arbitration to adjudicate the merits of the claim upon which such a lien is based.

## **PART 9 PROTECTION OF PERSONS AND PROPERTY**

### **GC 9.1 PROTECTION OF WORK AND PROPERTY**

- 9.1.1 The *Contractor* shall protect the *Work* and the *Owner's* property and property adjacent to the *Place of the Work* from damage which may arise as the result of the *Contractor's* operations under the *Contract*, and shall be responsible for such damage, except damage which occurs as the result of:
- .1 errors in the *Contract Documents*;
  - .2 acts or omissions by the *Owner*, the *Consultant*, other contractors, their agents and employees.
- 9.1.2 Before commencing any work, the *Contractor* shall determine the location of all known underground utilities and structures indicated in the *Contract Documents* or that are reasonably apparent in an inspection of the *Place of the Work*.
- 9.1.3 Should the *Contractor* in the performance of the *Contract* damage the *Work*, the *Owner's* property, or property adjacent to the *Place of the Work*, the *Contractor* shall be responsible for the making good such damage at the *Contractor's* expense.
- 9.1.4 Should damage occur to the *Work* or *Owner's* property for which the *Contractor* is not responsible, as provided in paragraph 9.1.1, the *Contractor* shall make good such damage to the *Work* and, if the *Owner* so directs, to the *Owner's* property. The *Contract Price* and *Contract Time* shall be adjusted as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.

### **GC 9.2 DAMAGES AND MUTUAL RESPONSIBILITY**

- 9.2.1 If either party to the *Contract* should suffer damage in any manner because of any wrongful act or neglect of the other party or of anyone for whom the other party is responsible in law, then that party shall be reimbursed by the other party for such damage. The reimbursing party shall be subrogated to the rights of the other party in respect of such wrongful act or neglect if it be that of a third party.
- 9.2.2 If the *Contractor* has caused damage to the work of another contractor on the *Project*, the *Contractor* shall upon due notice in writing settle with the other contractor by negotiation or arbitration. If the other contractor makes a claim against the *Owner* on account of damage alleged to have been so sustained, the *Owner* shall notify the *Contractor* in writing and may require the *Contractor* to defend the action at the *Contractor's* expense. The *Contractor* shall satisfy a final order or judgment against the *Owner* and pay the costs incurred by the *Owner* arising from such action.
- 9.2.3 If the *Contractor* becomes liable to pay or satisfy a final order, judgment, or award against the *Owner*, then the *Contractor*, upon undertaking to indemnify the *Owner* against any and all liability for costs, shall have the right to appeal in the name of the *Owner* such final order or judgment to any and all courts of competent jurisdiction.

### **GC 9.3 TOXIC AND HAZARDOUS SUBSTANCES**

- 9.3.1 For the purposes of applicable environmental legislation, the *Owner* shall be deemed to have control and management of the *Place of the Work* with respect to existing conditions.
- 9.3.2 Prior to the *Contractor* commencing the *Work*, the *Owner* shall:
- .1 take all reasonable steps to determine whether any toxic or hazardous substances are present at the *Place of the Work*, and
  - .2 provide the *Consultant* and the *Contractor* with a written list of any such substances that are known to exist and their locations.

- 9.3.3 The *Owner* shall take all reasonable steps to ensure that no person suffers injury, sickness, or death and that no property is damaged or destroyed as a result of exposure to, or the presence of, toxic or hazardous substances which were at the *Place of the Work* prior to the *Contractor* commencing the *Work*.
- 9.3.4 Unless the *Contract* expressly provides otherwise, the *Owner* shall be responsible for taking all necessary steps, in accordance with legal requirements, to dispose of, store or otherwise render harmless toxic or hazardous substances which were present at the *Place of the Work* prior to the *Contractor* commencing the *Work*.
- 9.3.5 If the *Contractor*
- .1 encounters toxic or hazardous substances at the *Place of the Work*, or
  - .2 has reasonable grounds to believe that toxic or hazardous substances are present at the *Place of the Work*, which were not disclosed by the *Owner*, as required under paragraph 9.3.2, or which were disclosed but have not been dealt with as required under paragraph 9.3.4, the *Contractor* shall
  - .3 take all reasonable steps, including stopping the *Work*, to ensure that no person suffers injury, sickness, or death and that no property is damaged or destroyed as a result of exposure to or the presence of the substances, and
  - .4 immediately report the circumstances to the *Consultant* and the *Owner* in writing.
- 9.3.6 If the *Contractor* is delayed in performing the *Work* or incurs additional costs as a result of taking steps required under paragraph 9.3.5.3, the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the *Contractor* shall be reimbursed for reasonable costs incurred as a result of the delay and as a result of taking those steps.
- 9.3.7 Notwithstanding paragraphs 2.2.6 and 2.2.7 of GC 2.2 - ROLE OF THE CONSULTANT, or paragraph 8.1.1 of GC 8.1 - AUTHORITY OF THE CONSULTANT, the *Consultant* may select and rely upon the advice of an independent expert in a dispute under paragraph 9.3.6 and, in that case, the expert shall be deemed to have been jointly retained by the *Owner* and the *Contractor* and shall be jointly paid by them.
- 9.3.8 The *Owner* shall indemnify and hold harmless the *Contractor*, the *Consultant*, their agents and employees, from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or resulting from exposure to, or the presence of, toxic or hazardous substances which were at the *Place of the Work* prior to the *Contractor* commencing the *Work*. This obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity set out in GC 12.1 - INDEMNIFICATION or which otherwise exist respecting a person or party described in this paragraph.
- 9.3.9 GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES shall govern over the provisions of paragraph 1.3.1 of GC 1.3 RIGHTS AND REMEDIES or GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

#### **GC 9.4 ARTIFACTS AND FOSSILS**

- 9.4.1 Fossils, coins, articles of value or antiquity, structures, and other remains or things of scientific or historic interest discovered at the *Place or Work* shall, as between the *Owner* and the *Contractor*, be deemed to be the absolute property of the *Owner*.
- 9.4.2 The *Contractor* shall take all reasonable precautions to prevent removal or damage to discoveries as identified in paragraph 9.4.1, and shall notify the *Consultant* immediately upon discovery of such items.
- 9.4.3 The *Consultant* will investigate the impact on the *Work* of the discoveries identified in paragraph 9.4.1. If conditions are found that would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Consultant*, with the *Owner's* approval, shall issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 - CHANGE DIRECTIVE.

#### **GC 9.5 CONSTRUCTION SAFETY**

- 9.5.1 Subject to paragraph 3.2.2.2 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, the *Contractor* shall be solely responsible for construction safety at the *Place or the Work* and for compliance with the rules, regulations, and practices required by the applicable construction health and safety legislation and shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the *Work*.

## **PART 10 GOVERNING REGULATIONS**

### **GC 10.1 TAXES AND DUTIES**

- 10.1.1 The *Contract Price* shall include all taxes and customs duties in effect at the time of the bid closing except for *Value Added Taxes* payable by the *Owner* to the *Contractor* as stipulated in Article A-4 of the Agreement - CONTRACT PRICE.
- 10.1.2 Any increase or decrease in costs to the *Contractor* due to changes in such included taxes and duties after the time of bid closing shall increase or decrease the *Contract Price* accordingly.

### **GC 10.2 LAWS, NOTICES, PERMITS, AND FEES**

- 10.2.1 The laws of the *Place of the Work* shall govern the *Work*.
- 10.2.2 Except for the permits and fees, including those required under paragraph 10.2.3, which the *Contract Documents* specify as the responsibility of the *Contractor*, the *Owner* shall obtain and pay for all necessary approvals, permits, permanent easements, and rights of servitude.
- 10.2.3 The *Contractor* shall obtain and pay for permits, licenses, inspections and certificates necessary for performance of the *Work* and customarily obtained after signing of the *Contract*.
- 10.2.4 The *Contractor* shall give the required notices and comply with the laws, ordinances, rules, regulations, or codes which are or become in force during the performance of the *Work* and which relate to the *Work*, to the preservation of the public health, and to construction safety.
- 10.2.5 The *Contractor* shall not be responsible for verifying that the *Contract Documents* are in compliance with the applicable laws, ordinances, rules, regulations, or codes relating to the *Work*. If the *Contract Documents* are in variance therewith, or if, subsequent to the time of bid closing, changes are made to the applicable laws, ordinances, rules, regulations, or codes which require modification to the *Contract Documents*, the *Contractor* shall notify the *Consultant* in writing requesting direction immediately upon such variance or change becoming known. The *Consultant* will make the changes required to the *Contract Documents* as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 10.2.6 If the *Contractor* fails to notify the *Consultant* in writing; and fails to obtain direction as required in paragraph 10.2.5; and performs work knowing it to be contrary to any laws, ordinances, rules, regulations, or codes; the *Contractor* shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses, and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations, or codes.
- 10.2.7 If, subsequent to the time of bid closing, changes are made to applicable laws, ordinances, rules, regulations, or codes of authorities having jurisdiction which affect the cost of the *Work*, either party may submit a claim in accordance with the requirements of GC 6.6 - CLAIMS.

### **GC 10.3 PATENT FEES**

- 10.3.1 The *Contractor* shall pay the royalties and patent licence fees required for the performance of the *Contract*. The *Contractor* shall hold the *Owner* harmless from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention by the *Contractor* or anyone for whose acts the *Contractor* may be liable.
- 10.3.2 The *Owner* shall hold the *Contractor* harmless against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention in executing anything for the purpose of the *Contract*, the model, plan, or design of which was supplied to the *Contractor* as part of the *Contract Documents*.

## **GC 10.4 WORKERS' COMPENSATION**

- 10.4.1 Prior to commencing the *Work*, *Substantial Performance of the Work*, and the issuance of the final certificate for payment, the *Contractor* shall provide evidence of compliance with workers' compensation legislation at the *Place of the Work*, including payments due thereunder.
- 10.4.2 At any time during the term of the *Contract*, when requested by the *Owner*, the *Contractor* shall provide such evidence of compliance by the *Contractor* and *Subcontractors*.

## **PART 11 INSURANCE AND CONTRACT SECURITY**

### **GC 11.1 INSURANCE**

- 11.1.1 Without restricting the generality of GC 12.1 - INDEMNIFICATION, the *Contractor* shall provide, maintain, and pay for the insurance coverages specified in GC 11.1 - INSURANCE. Unless otherwise stipulated, the duration of each insurance policy shall be from the date of commencement of the *Work* until the date of the final certificate for payment. Prior to commencement of the *Work* and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the *Contractor* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements.
- .1 General Liability Insurance:  
General liability insurance shall be in the joint names of the *Contractor*, the *Owner*, and the *Consultant*, with limits of not less than \$2,000,000 per occurrence and with a property damage deductible not exceeding \$2,500. The insurance coverage shall not be less than the insurance required by IBC Form 2100, or its equivalent replacement, provided that IBC Form 2100 shall contain the latest edition of the relevant CCDC endorsement form. To achieve the desired limit, umbrella, or excess liability insurance may be used. All liability coverage shall be maintained for completed operations hazards from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, on an ongoing basis for a period of 6 years following *Substantial Performance of the Work*. Where the *Contractor* maintains a single, blanket policy, the addition of the *Owner* and the *Consultant* is limited to liability arising out of the *Work* and all operations necessary or incidental thereto. The policy shall be endorsed to provide the *Owner* with not less than 30 days notice in writing in advance of any cancellation, and of change or amendment restricting coverage.
  - .2 Automobile Liability Insurance:  
Automobile liability insurance in respect of licensed vehicles shall have limits of not less than \$2,000,000 inclusive per occurrence for bodily injury, death, and damage to property, covering all licensed vehicles owned or leased by the *Contractor*, and endorsed to provide the *Owner* with not less than 15 days notice in writing in advance of any cancellation, change or amendment restricting coverage. Where the policy has been issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.
  - .3 Aircraft and Watercraft Liability Insurance:  
Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft if used directly or indirectly in the performance of the *Work*, including use of additional premises, shall be subject to limits of not less than \$2,000,000 inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof and limits of not less than \$2,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*. The policies shall be endorsed to provide the *Owner* with not less than 15 days notice in writing in advance of cancellation, change, or amendment restricting coverage.

.4 Property and Boiler and Machinery Insurance:

- (1) "All risks" property insurance shall be in the joint names of the *Contractor*, the *Owner*, the *Consultant*, and all *Subcontractors*, insuring not less than the sum of the amount of the *Contract Price* and the full value, as stated in the Supplementary Conditions, of *Products* that are specified to be provided by the *Owner* for incorporation into the *Work*, with a deductible not exceeding \$2,500. The insurance coverage shall not be less than the insurance required by IBC Form 4042 or its equivalent replacement, provided that IBC Form 4042 shall contain the latest edition of the relevant CCDC endorsement form. The coverage shall be maintained continuously until 5 *Working Days* after the date of the final certificate for payment.
- (2) Boiler and machinery insurance shall be in the joint names of the *Contractor*, the *Owner*, and the *Consultant* for not less than the replacement value of the boilers, pressure vessels, and other insurable objects forming part of the *Work*. The insurance provided shall not be less than the insurance provided by the "Comprehensive Boiler and Machinery Form" and shall be maintained continuously from commencement of use or operation of the property insured and until 5 *Working Days* after the date of the final certificate for payment.
- (3) The policies shall allow for partial or total use or occupancy of the *Work*. If because of such use or occupancy the *Contractor* is unable to provide coverage, the *Contractor* shall notify the *Owner* in writing. Prior to such use or occupancy the *Owner* shall provide, maintain, and pay for all risk property and boiler insurance insuring the full value of the *Work*, as in sub-paragraphs (1) and (2), including coverage for such use or occupancy and shall provide the *Contractor* with proof of such insurance. The *Contractor* shall refund to the *Owner* the unearned premiums applicable to the *Contractor's* policies upon termination of coverage.
- (4) The policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. The *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to such reasonable extension of *Contract Time* relative to the extent of the loss or damage as the *Consultant* may recommend in consultation with the *Contractor*.
- (5) The *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount at which the *Owner's* interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds and as provided in GC 5.5 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.6 - PROGRESS PAYMENT. In addition the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor's* interest in the restoration of the *Work*.
- (6) In the case of loss or damage to the *Work* arising from the work of another contractor, or *Owner's* own forces, the *Owner*, in accordance with the *Owner's* obligations under paragraph 3.2.2.4 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, shall pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as provided in GC 5.5 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.6 - PROGRESS PAYMENT.

.5 Contractors' Equipment Insurance:

"All risks" contractors' equipment insurance covering *Construction Equipment* used by the *Contractor* for the performance of the *Work*, including boiler insurance on temporary boilers and pressure vessels, shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. The policies shall be endorsed to provide the *Owner* with not less than 15 days notice in writing in advance of cancellation, change, or amendment restricting coverage. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance, the *Owner* agrees to waive the equipment insurance requirement.

11.1.2 The *Contractor* shall be responsible for deductible amounts under the policies except where such amounts may be excluded from the *Contractor's* responsibility by the terms of GC 9.1 - PROTECTION OF WORK AND PROPERTY and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

11.1.3 Where the full insurable value of the *Work* is substantially less than the *Contract Price*, the *Owner* may reduce the amount of insurance required or waive the course of construction insurance requirement.

- 11.1.4 If the *Contractor* fails to provide or maintain insurance as required by the *Contract Documents*, then the *Owner* shall have the right to provide and maintain such insurance and give evidence to the *Contractor* and the *Consultant*. The *Contractor* shall pay the cost thereof to the *Owner* on demand or the *Owner* may deduct the amount which is due or may become due to the *Contractor*.
- 11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*.

## **GC 11.2 CONTRACT SECURITY**

- 11.2.1 The *Contractor* shall, prior to commencement of the *Work* or within the specified time, provide to the *Owner* any contract security specified in the *Contract Documents*.
- 11.2.2 If the *Contract Documents* require surety bonds to be provided, such bonds shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the *Place of the Work* and shall be maintained in good standing until the fulfillment of the *Contract*. The form of such bonds shall be in accordance with the latest edition of the CCDC approved bond forms.

## **PART 12 INDEMNIFICATION — WAIVER — WARRANTY**

### **GC 12.1 INDEMNIFICATION**

- 12.1.1 The *Contractor* shall indemnify and hold harmless the *Owner* and the *Consultant*, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings (hereinafter called "claims"), by third parties that arise out of, or are attributable to, the *Contractor's* performance of the *Contract* provided such claims are:
- .1 attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, and
  - .2 caused by negligent acts or omissions of the *Contractor* or anyone for whose acts the *Contractor* may be liable, and
  - .3 made in writing within a period of 6 years from the date of *Substantial Performance of the Work* as set out in the certificate of *Substantial Performance of the Work*, or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work*.
- The *Owner* expressly waives the right to indemnity for claims other than those stated above.
- 12.1.2 The obligation of the *Contractor* to indemnify hereunder shall be limited to \$2,000,000 per occurrence from the commencement of the *Work* until *Substantial Performance of the Work* and thereafter to an aggregate limit of \$2,000,000.
- 12.1.3 The *Owner* shall indemnify and hold harmless the *Contractor*, the *Contractor's* agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the *Place of the Work*.
- 12.1.4 GC 12.1 - INDEMNIFICATION shall govern over the provisions of paragraph 1.3.1 of GC 1.3 - RIGHTS AND REMEDIES or GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

### **GC 12.2 WAIVER OF CLAIMS**

- 12.2.1 Waiver of Claims by *Owner*
- As of the date of the final certificate for payment, the *Owner* expressly waives and releases the *Contractor* from all claims against the *Contractor* including without limitation those that might arise from the negligence or breach of contract by the *Contractor* except one or more of the following:
- .1 those made in writing prior to the date of the final certificate for payment and still unsettled;
  - .2 those arising from the provisions of GC 12.1 - INDEMNIFICATION or GC 12.3 - WARRANTY;
  - .3 those arising from the provisions of paragraph 9.3.5 of GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS and arising from the *Contractor* bringing or introducing any toxic or hazardous substances and materials to the *Place of the Work* after the *Contractor* commences the *Work*.

In the Common Law provinces GC 12.2.1.4 shall read as follows:

- .4 those made in writing within a period of 6 years from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work* and arising from any liability of the *Contractor* for damages resulting from the *Contractor's* performance of the *Contract* with respect to substantial defects or deficiencies in the *Work* for which the *Contractor* is proven responsible. As used herein "substantial defects or deficiencies" means those defects or deficiencies in the *Work* which affect the *Work* to such an extent or in such a manner that a significant part or the whole of the *Work* is unfit for the purpose intended by the *Contract Documents*.

In the Province of Quebec GC 12.2.1.4 shall read as follows:

- .4 those arising under the provisions of Article 2118 of the Civil Code of Quebec.

#### 12.2.2 Waiver of Claims by *Contractor*

As of the date of the final certificate for payment, the *Contractor* expressly waives and releases the *Owner* from all claims against the *Owner* including without limitation those that might arise from the negligence or breach of contract by the *Owner* except:

- .1 those made in writing prior to the *Contractor's* application for final payment and still unsettled; and
- .2 those arising from the provisions of GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES or GC 10.3 - PATENT FEES.

12.2.3 GC 12.2 - WAIVER OF CLAIMS shall govern over the provisions of paragraph 1.3.1 of GC 1.3 - RIGHTS AND REMEDIES, GC 6.6 - CLAIMS, and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

### **GC 12.3 WARRANTY**

- 12.3.1 Except for extended warranties as described in paragraph 12.3.6, the warranty period under the *Contract* is one year from the date of *Substantial Performance of the Work*.
- 12.3.2 The *Contractor* shall be responsible for the proper performance of the *Work* to the extent that the design and *Contract Documents* permit such performance.
- 12.3.3 Subject to paragraph 12.3.2, the *Contractor* shall correct promptly, at the *Contractor's* expense, defects or deficiencies in the *Work* which appear prior to and during the warranty periods specified in the *Contract Documents*.
- 12.3.4 The *Owner*, through the *Consultant*, shall promptly give the *Contractor* notice in writing of observed defects and deficiencies which occur during the one-year warranty period.
- 12.3.5 The *Contractor* shall correct or pay for damage resulting from corrections made under the requirements of paragraph 12.3.3.
- 12.3.6 Any extended warranties required beyond the one-year warranty period, as described in paragraph 12.3.1, shall be as specified in the *Contract Documents*. Extended warranties shall be issued by the warrantor to the benefit of the *Owner*. The *Contractor's* responsibility with respect to extended warranties shall be limited to obtaining any such extended warranties from the warrantor. The obligations under such extended warranties are solely the responsibility of the warrantor.



Canadian Construction Documents Committee

CCDC Copyright 2001

Must not be copied in whole or in part without the written permission of the CCDC.

The Canadian Construction Documents Committee is a joint committee composed of owners and representatives appointed by:

The Association of Consulting Engineers of Canada  
The Canadian Construction Association  
Construction Specifications Canada  
The Royal Architectural Institute of Canada

Committee policy and procedures are directed and approved by the constituent organizations.

This document has been endorsed by each of the above organizations.

Enquiries should be directed to:

The Secretary  
Canadian Construction Documents Committee  
400 - 75 Albert Street  
Ottawa, Ontario K1P 5E7  
Tel: (613) 236-9455  
Fax: (613) 236-9526  
[www.ccdc.org](http://www.ccdc.org)