



Harvey Creek Intake Upgrade

**MASTER MUNICIPAL CONSTRUCTION DOCUMENTS - 2009
UNIT PRICE AND LUMP SUM CONTRACT**

File No. 13160
July 2017

CREUS Engineering Ltd

610-EAST TOWER, 221 ESPLANADE W, N. VANCOUVER, BC V7M 3J3
P: 604-987-9070 F: 604-987-9071 www.creus.ca

Civil Engineers & Project Managers

Owner: Village of Lions Bay

(NAME OF OWNER)

Contract: Harvey Creek – Weir Intake Upgrade

(TITLE OF CONTRACT)

Reference No. 13160

(OWNER'S CONTRACT REFERENCE NO.)

The Owner invites tenders
for:

- Mobilization
- Shop Drawings and Fabrication
- Erosion / Sediment Control
- Creek Diversion and water management
- Layout
- Select demolition and removals
- Form and pour new reinforced concrete dam
- Install new Edge Cap on weir and intake
- Rock Dowels
- Testing
- Supply and install new sluice gate
- As-builts

Contract Documents are
available during normal
business hours at:

Creus Engineering Ltd
610 – East Tower, 221 Esplanade W
North Vancouver, BC
V7M 3J3

(LIST ADDRESSES FOR DOCUMENT PICKUP)

On payment of a non-refundable amount of \$ 0.00 _____
including GST payable to:

(NAME THAT CHEQUE SHOULD BE PAYABLE TO)

The Contract Documents
are available for viewing at:

Arrange for pick up per above

(ADDRESS WHERE CONTRACT DOCUMENTS CAN BE VIEWED)

A Pretender site
meeting is scheduled for:

Date: Tuesday April 11, 2017
Time: 10:00 a.m
Location: Top of Oceanview Road, Lions Bay, BC

Tenders are scheduled to
close:

Tender Closing Time: 2 : 00 , p m local time

Tender Closing Date: July 25 , 20 17

Address: Creus Engineering Ltd
610 – East Tower, 221 Esplanade W

North Vancouver, BC

V7M 3J3

(ADDRESS WHERE TENDERS MUST BE SUBMITTED)

**NAME OF OWNER'S
REPRESENTATIVE** Kevin Healy

khealy@creus.ca

(PHONE)

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(FOR USE WHEN UNIT PRICES and Lump Sum FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

(TO BE READ WITH "INSTRUCTIONS TO TENDERERS - PART II"
CONTAINED IN THE EDITION OF THE PUBLICATION
"MASTER MUNICIPAL CONSTRUCTION DOCUMENTS" SPECIFIED IN ARTICLE 2.2 BELOW)

Owner: Village of Lions Bay
(NAME OF OWNER)

Contract: Harvey Creek – Weir Intake Upgrade
(TITLE OF CONTRACT)

Reference No. 13160
(OWNER'S CONTRACT REFERENCE NO.)

1.0 Introduction

1.1 These Instructions apply to and govern the preparation of tenders for this *Contract*. The *Contract* is generally for the following *Work*: Form and pour the new mass concrete dam with new edge cap, supply and install new intake grill, supply and install new sluice gate as shown on drawings (except as noted as ongoing by others below) including but not limited to:

- Mobilization
- Shop Drawings and Fabrication
- Erosion / Sediment Control
- Creek Diversion and water management
- Layout
- Select demolition and removals
- Form and pour new reinforced concrete dam
- Install new Edge Cap on weir and intake
- Rock Dowels
- Testing
- Supply and install new sluice gate
- As-builts

Works specifically excluded from the *Contract* and will be on-going by others during the course of the *Contract*:

- Operation of Water system
- Access to water system
- Public Road Use
- Trail Use

1.2 Direct all inquiries regarding the *Contract*, to:
Kevin Healy

swilliamson@Creus.ca

(NAME AND POSITION OF INDIVIDUAL WHO WILL ANSWER INQUIRIES)

Address: Creus Engineering Ltd

610 – East Tower, 221 Esplanade W

North Vancouver, BC V7M 3J3

Phone: 604 987 - 9070 Ext 302

Fax: 604 987 - 9071

2.0 Tender Documents

- 2.1 The tender documents which a tenderer should review to prepare a tender consist of all of the *Contract Documents* listed in Schedule 1 entitled “Schedule of *Contract Documents*”. Schedule 1 is attached to the Agreement which is included as part of the tender package. The *Contract Documents* include the drawings listed in Schedule 2 to the Agreement, entitled “List of *Contract Drawings*”.
- 2.2 A portion of the *Contract Documents* are included by reference. Copies of these documents have not been included with the tender package. These documents are the Instructions to Tenderers - Part II, General Conditions, Specifications and Standard Detail Drawings. They are those contained in the publication entitled “Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings”. Refer to Schedule 1 to the Agreement or, if not specified in Schedule 1, then the applicable edition shall be the most recent edition as of the date of the *Tender Closing Date*. All sections of this publication are by reference included in the *Contract Documents*.
- 2.3 Any additional information made available to tenderers prior to the *Tender Closing Time* by the *Owner* or representative of the *Owner*, such as geotechnical reports or as-built plans, which is not expressly included in Schedule 1 or Schedule 2 to the Agreement, is not included in the *Contract Documents*. Such additional information is made available only for the assistance of tenderers who must make their own judgment about its reliability, accuracy, completeness and relevance to the *Contract*, and neither the *Owner* nor any representative of the *Owner* gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.

3.0 Submission of Tenders

- 3.1 Tenders must be submitted in a sealed envelope, marked on the outside with the above *Contract* Title and Reference No., and must be received by the office of:
- Creus Engineering Ltd.

(TITLE OF POSITION)

on or before:

Tender Closing Time: 2 : 00 , P m local time
Tender Closing Date: July 25 , 20 17

at

Address: Creus Engineering Ltd
610 – East Tower, 221 Esplanade W
North Vancouver, BC V7M 3J3
Fax: 604 987 - 9071

3.2 Late tenders will not be accepted or considered, and will be returned unopened.

**4.0 Additional
Instructions
to Tenderers**

4.1 The award of this *Contract* is subject to the availability of sufficient funds to complete the *Work*. The *Owner* also reserves the right to modify the scope of *Work* to meet the funding made available for the projects specified in these tender documents. The award of this project is subject to finalizing all approvals. The award of this work is subject to reasonable flows in creek and weather.

The *Owner* reserves the right not to accept the lowest or any bid, and to accept the bid which it deems to be in the best interest of the *Owner*.

4.2 The *Owner* will use the following, but not limited to, criteria in the award of this *Contract*:

- Company experience
- Staff experience
- Municipal experience
- Successful experience working in environmentally sensitive areas
- Successful experience with work requiring water diversion
- Successful experience repairing exterior concrete structures
- Total Price
- Unit Rates

4.3 **Instruction to Tenders Part II- add 8.3** "It is imperative that, prior to bidding, the *Contractor* visit, inspect and familiarize themselves with the site and of everything and of every condition affecting the *Works* to be executed so that the execution of the *Contract* by the *Contractor* is founded and based upon his own examination, knowledge and judgment. This shall include access, traffic management, storage, drainage management, temporary *Works* to perform *Works* and constructability of *Work*."

4.4 **Instruction to Tenders Part II- add 10.3** "*Contractor* to review Supplementary Specifications and Special Provisions to receive clarification on how items are paid as well as any conditions on *Owner's* right to remove items from *Works*"

4.5 **Instruction to Tenders Part II add 15.1.6** "The *Owner* may, in its absolute discretion, reject a Tender submitted by the Tenderer if the Tenderer, or any officer or director of a corporate Tenderer, is or has been engaged, either directly or indirectly through another corporation or legal entity, in a legal action against the *Owner* and its elected and appointed officers and employees or any of them in relation to:

a) any other *Contract* or services; or

b) any matter arising from the *Owner's* exercise of its powers, duties or functions under the Local Government Act, the Community Charter or any other enactments; within five years of this Tender Offer.

For purposes of this section, the words "legal action" include, without limitation, a mediation, arbitration, hearing before an administrative tribunal or lawsuit filed in any court.

Without limiting the *Owner's* sole discretion, in determining whether or not to reject a Tender pursuant to this clause, the *Owner* will consider such factors as whether the legal action is likely to affect the Tenderer's ability to *Work* with the *Owner* and its employees, agents, *Contract Administrators* and representatives or any of them and whether the *Owner's* past experience with the Tenderer in the matter that resulted in the legal action indicates that the *Owner* is likely to incur increased staff and legal costs or either of them in the administration of this *Contract* if it is awarded to the Tenderer."

- 4.6 **Additional Instructions To Tender 4.1** change to "Email PDF tenders may be accepted if complete, signed with all relevant schedules including unit price, totals, schedule etc in an attachment. *Contractor* to phone and receive confirmation email has been received. Tender to provide notice of intent to file by email 24 hours in advance of closing. Original tender from company to be supplied original in mail. This form of submission is at discretion and risk of *Contractor*."
- 4.7 **Bonding may** not be required. *Owner* may Delete bid bond from sections 4.1.2 and 5.1.1.a. with no charge and no payment under this item. See supplementary specifications. (SGC1)
- 4.8 **Tender Price** Payment for all *Work* specified in the *Contract Documents*, and as shown on the drawings, will be made at the **TOTAL LUMP SUM TENDER** as shown in the Tender Form. This price shall be the total cost to the *Owner* for the completed *works*, and shall include any applicable Municipal permit fees; layout, utility locates, traffic management, project management, testing, supply of all materials, supervision, PST, labour, and equipment, except as explicitly excluded elsewhere; and allowances for overhead and profit.

Include costs for *Work* and materials not expressly listed in the Schedule of Quantities and Prices, but included in the drawings and/or specifications by either direct mention or implication, in items to which they pertain most closely. All specifications shall apply to these *Works* and referenced items below are additional direction to aid with review of *Contract Documents*.

The lowest or any tender may not necessarily be accepted. The *Owner* unequivocally reserves the right to accept or reject any or all tenders, or part of any tender. The *Owner* will review the amount

and balance of the lump sum and unit rate amounts as well as schedule of *Works* and previous experience in evaluating the tenders. Award of the *Contract* is contingent on meeting the budgetary requirements of the project.

Any claim by the *Contractor* for extra payment on grounds that *Work* performed or materials supplied in accordance with the drawings and/or specifications could not be properly charged to items listed in the Schedule of Quantities and Prices **will be rejected**.

The lump sum prices tendered for the various major components of the *Work* will be used as a guide only in determining the amount of payment due to the *Contractor* as the *Work* progresses. The *Contractor* is responsible for accounting for all *Works* indicated within the payment items indicated.

4.9 **Payment Items** Refer to Tender Form - Schedule 1, Quantities and Prices. The Breakdown of the tender is for the convenience of the *Owner* in comparing bids and assessing progress. The *Contractor* is responsible for including all costs within the categories supplied. The following is intended to aid the *Contractor* in allocating to portions of *Contract* only.

Item 1 Mobilization/demobilization: Payment for mobilization will be made at the lump sum price bid. Payment shall be for all costs which are independent of the quantities of *Work* done and which are not paid for under other items, including gaining access to all areas of the *Work*. This payment shall include all cost for construction and maintenance of the temporary construction access to the site and traffic management requirements. *Contractor* is responsible for all staging areas and staff parking.

Contractor to arrange for BC one call and coordinate with Municipality and verify all adjoining services prior to commencing installation. *Contractor* to confirm existing utility locations prior to starting crossings of existing services. Note that original design drawings are attached to set.

Contractor to also include for mobilization of fire safety equipment as required by the Ministry of Forests "Extreme Measures on Job site in the Interface Zone" and *Work* according to those requirements. It is up to the *Contractor* to prepare a fire preparedness plan and obtain and maintain all necessary approvals from the Ministry of Forests in regards to fire protection and meet all requirements of the Fire Plan. Note all works per conditions of TEMPORARY WEATHER-RELATED OPERATIONAL SHUTDOWN PROCEDURE

HARVEY AND MAGNESIA INTAKES:

Payment of 25% of the lump sum will be authorized when the *Contractor* has provided a construction schedule and *Work* has commenced. Payment of 50% of the lump sum will be made as a series of monthly payments, calculated on the basis of the expected schedule. If the *Work* falls behind or gets ahead of schedule, these payments will be adjusted accordingly. Payment of the remaining 25% will be authorized when the *Work* is completed and the site is cleaned up, as built drawings are submitted and *Works* are to the satisfaction of the Engineer.

The amount of this item is to not exceed 5% of the total value of *Works*.

Item 2 Bonding: Shall be priced to provide 50% labour and material and performance bond including warranty period. The owner reserves the right to delete this item from the contract at no cost to the owner. A bid bond is required.

Item 3 Shop Drawings and Fabrication: Manufacturers' shop drawings shall be submitted by the *Contractor* and reviewed by the *Contractor* and Consultant before construction is commenced on the dam and intake caps and sluice gate. After the *Contractor* has reviewed and placed his approval on the drawings, four copies shall be submitted to the Consultant for review. Review of shop drawings shall not relieve the *Contractor* of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the *Contract Documents*.

Approval of shop drawings will signify an amount not to exceed 5% of the total value of the *Works*. Supply includes delivery of all equipment to site.

Item 4 Erosions/Sediment Control includes creek diversion and Water Management: Payment for this item shall be all inclusive, including all labour, materials and equipment, required to install and continuously maintain erosion and sediment control features including but not limited to silt fence construction, protective fence, check dams, detention ponds and provide and maintain a wheel wash at the access point to project and clean and maintain adjoining roads as required, cleaning and continual maintenance of sediment traps and other features; and all other *Work* incidental thereto and as described in Section 01561 of the MMCD, and works to divert, maintain and control creek flows to maintain 50 mm flow into system and allow for work to proceed to satisfaction of Environmental monitor.

The Environmental Consultant has the authority to stop *Work*

on the site should the *Contractor* fail to comply with the EMP. The stop *Work* order will remain in effect until such time as the Environmental consultant approves. The *Contractor* shall be aware that the drainage *Works* tie into sensitive riparian areas and the *Contractor* shall isolate all *Works* from the Creek.

All *Work* is to be consistent with the requirement of DFO/MLWA requirements including but not limited to "Land Development Guidelines for the protection of Aquatic Habitat. The *Work* shall address all mitigative and protective requirements including but not limited to street sweeping, parking, fuelling, temporary access, sediment fencing, sediment ponds and surface protection. The contractor shall ensure no concrete or concrete by-products are discharged from the work area and the water intake must be secured from any concrete products entering the intake chamber. Cast in place concrete must remain isolated from water inside sealed formed structures until cured (approximately 48-72 hours), as concrete leachate is highly toxic to fish and other aquatic life;

Ensure a carbon dioxide (CO₂) tank with regulator, hose and gas diffuser is readily available during concrete work to neutralize pH levels should a spill occur. Staff must be trained in its proper use. Provide containment facilities for wash-down water from concrete delivery trucks, concrete pumping equipment, and other tools and equipment; immediately report any spills of sediments, debris, concrete fines, wash or contact water of reportable quantities to the Provincial Emergency Program Environmental Emergency Management Plan Incident Reporting Hotline 1-800-663-3456 and DFO's Observe, Record and Report Hotline 1-800-465-4336. Implement emergency mitigation and clean-up measures (such as use of CO₂ and immediate removal of the material)

The *Contractor* shall be responsible for the maintenance of all erosion and sediment control facilities and water management works throughout the term of the contract. In addition, the *Contractor* shall provide any temporary drainage facilities as necessary. Temporary drainage *Works* and sediment control facilities shall be regularly reviewed with the *Contract Administrator* and Environmental Consultant and any necessary adjustments shall be completed as directed. The drawings indicate minimal *Works* required prior to commencing earthworks. It is the responsibility to ensure sediment and erosion control *Works* are adequate and properly maintained. The *Contractor* shall suspend *Works* when heavy rainfall is expected, and sensitive areas shall be protected when *Work* is suspended.

Payment of 50% of the lump sum will be authorized when the *Contractor* installed the sediment control and diversion *Works*. Payment of 40% of the lump sum will be made as a series of monthly payments, calculated on the basis of the expected schedule. If the *Work* falls behind or gets ahead of schedule, these payments will be adjusted accordingly. Payment of the remaining 10% will be authorized when the *Work* is completed and the site is cleaned up and decommissioned to the satisfaction of the *Contract Administrator*.

The *Contractor* shall be required to organize construction operations such that environmental impacts are minimized. The *Work* program shall be managed such that activities may be suspended when heavy rainfall is expected, and sensitive areas shall be protected when *Work* is suspended.

This work is to also include for temporary drainage works to divert flows around the work site. *Contractor* to submit a dewatering and diversion plan for approval by the *Engineer* and Environmental Consultant. Plan can be done in stages but must allow for an overflow contingency plan. Location of intake to reroute and overflow protection to be submitted by *Contractor* and reviewed on site. Harvey Creek will be rerouted by *Contractor* while working in watercourse areas. No deleterious materials shall be discharged back into creek. *Contractor* to monitor weather and adjust contingency plans as required to avoid damage from overflow. The *Contractor* will provide a 50mm overland pipe to tie into 25mm blow off indicated on drawing Key-2 to provide continuous water into the system except when deemed unsafe or unnecessary by VOP and engineer.

- Item 5** Layout: Contractor to verify existing grades and elevations in field and notify Engineer immediately if any discrepancies. Contractor to do necessary survey to facilitate shop drawings. All survey to be done to UTM coordinates and shall reference Benchmark as provided by Engineer.
- Item 6** **Select Demolition and Removals:** *Contractor* to use saw and coring to remove select elements of existing dam to ensure no degradation of existing dam face that is to remain or to intake. *Contractor* to hand scale all areas being tied into and pressure wash to remove organics. Contractor to use care when removing existing plate on dam uphill face to allow for reuse.
- Item 7.1** **Form and Pour New Reinforced Concrete Dam Facing:** Removal of existing damaged section of weir and edge cap as per Contract Drawings. Installation of forming, reinforcing and concrete work including curing and slump, air and cylinder testing. *Contractor* to coordinate rebar placement with dowling work and bolting for sluice gate. Concrete work per supplemental specs

- Item 7.2** **Prepare and place as directed Sika Quick VOH:** Removal of existing damaged section of weir and edge cap as directed by engineer and Installation of forming, reinforcing and concrete work including preparation per manufacturers recommendations.
- Item 8** **Supply and Install New Edge Cap on Weir and intake:** This includes the supply and installation of a new steel edge cap on Weir and the upstream side of the intake structure as per the Contract Drawings including shop drawing review and approval. Includes welding to existing steel, Hilti bolts, anchors and re and re of existing plate.
- Item 9** **Rock Dowels:** This includes the supply and installation of epoxy dywidag rock dowels as indicated on drawings. *Contractor* to lay out proposed dowel location consistent with drawings and get approval from *Engineer*. Installation as per manufacturer's recommendations.
- Item 10** **Supply and Install New Sluice Gate:** This includes all necessary labour, material and equipment for the supply and installation of a new sluice gate including shop drawing submittal and approval. Sluice gate shall be installed so that no portion of the unit is above the top elevation of the new weir to protect from debris. The gate may be aligned on an angle to the weir face. The contractor shall perform concrete coring to provide access for an actuating key to the sluice gate gearbox. Sawcutting/Coring will be required to provide sluiceway to the sluice gate including grizzly bar at entrance. This shall include angle iron on walkway as shown on drawings.
- Item 11** **As-Builts:** Per the requirements of the Supplementary General Conditions. As built will be a requirement of substantial completion. As built are to be per item 21 of the Supplementary Specifications including inverts of existing services and manholes. This shall include all operation and maintenance manuals.

4.10 **Schedule of Quantities** If additions or deletions are made to the *Work*, as directed by the *Contract Administrator* through the issuance of written Change Orders, the *Contract* price may be adjusted upward or downward as the case may be, depending on the nature of the change in *Work*.

Unit prices tendered for additions and deletions **may** be used at the discretion of the *Contract Administrator* in valuation of Change Orders. These will be applied only where a change is duly authorized by the *Contract Administrator* and the unit rates are the approved method of payment.

Prices tendered for additions and deletions are excluded from the

Total Lump Sum Tender Price but may be taken into consideration in the evaluation of tenders.

AD 1 Concrete, Supply and Place beyond contract drawings:

All in cost for supply, delivery and placing of Concrete, unformed including excavator placement.

AD 2 Install 25mm Dowels:

This item is to pay for installation of 25mm Dowels not required for construction of *Works* shown on the *Contract Drawings*. This price shall include the supply of all labour, equipment and materials to supply, place and epoxy anchor and all other incidental *Work* thereto.

AD 3 25 tonne Excavator w/ Hammer

This item is to pay for fuelled and maintained machine and operator at an hourly rate for any additional rock/concrete removal not shown or required to complete the works as shown on the contract drawings as directed by the Engineer.

AD 4 Labourer

All in cost for pipe layer including general pipe laying tools and access to site. All hourly rates not to exceed Provincial Blue book rates

AD 5 Foreman

All in cost for pipe layer including general pipe laying tools and access to site. All hourly rates not to exceed Provincial Blue book rates

AD 6 25 tonne Offroad Rock Truck

This item is to pay for a fuelled and maintained machine and operator at an hourly rate for additional works that may arise that are not shown on the Contract Drawings.

AD 7 330 Size Excavator

This item is to pay for a fuelled and maintained machine and operator for a fuelled and maintained machine at an hourly rate for additional works that may arise that are not shown on the Contract Drawings.

AD 8 Tandem Dump Truck with Rock Box

This item is to pay for a fuelled and maintained machine and operator at an hourly rate for additional works that may arise that are not shown on the Contract Drawings.

AD 9 Additional Sawcutting not in contract as directed by Engineer.

(FOR USE WHEN UNIT PRICES FORM THE BASIS OF PAYMENT TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.)

BETWEEN *OWNER* AND *CONTRACTOR*

This agreement made in duplicate this

_____ day of _____, 20 17.

Contract:

Reference No. 13160: Harvey Creek Intake Upgrade
(OWNER'S CONTRACT REFERENCE NO.)

BETWEEN:

The Village of Lions Bay

(NAME OF OWNER)

(the "*Owner*")

AND:

(NAME AND OFFICE ADDRESS OF CONTRACTOR)

(the "*Contractor*")

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

**Article 1 The *Work*
Start /
Completion
Dates**

- 1.1 The *Contractor* will perform all *Work* and provide all labour, equipment and material and do all things strictly as required by the *Contract Documents*.
- 1.2 The *Contractor* will commence the *Work* in accordance with the *Notice to Proceed*. The *Contractor* will proceed with the *Work* diligently, will perform the *Work* generally in accordance with the construction schedules as required by the *Contract Documents* and will achieve *Substantial Performance* of the *Work* on or before 6 weeks of notice to proceed subject to
(INSERT DATE OF SUBSTANTIAL PERFORMANCE)
the provisions of the *Contract Documents* for adjustments to the *Contract Time*.

- 1.3 Time shall be of the essence of the *Contract*.
- Article 2 Contract Documents**
- 2.1 The "Contract Documents" consist of the documents listed or referred to in Schedule 1, entitled "Schedule of Contract Documents", which is attached and forms a part of this Agreement, and includes any and all additional and amending documents issued in accordance with the provisions of the Contract Documents. All of the Contract Documents shall constitute the entire *Contract* between the *Owner* and the *Contractor*.
- 2.2 The *Contract* supersedes all prior negotiations, representations or agreements, whether written or oral, and the *Contract* may be amended only in strict accordance with the provisions of the Contract Documents.
- Article 3 Contract Price**
- 3.1 The price for the *Work* ("Contract Price") shall be the sum in Canadian dollars of the following
- 1.1.1 the product of the actual quantities of the items of *Work* listed in the Schedule of Quantities and Prices which are incorporated into or made necessary by the *Work* and the unit prices listed in the Schedule of Quantities and Prices; plus
- 1.1.2 all lump sums, if any, as listed in the Schedule of Quantities and Prices, for items relating to or incorporated into the *Work*; plus
- 1.1.3 any adjustments, including any payments owing on account of *Changes* and agreed to Extra Work, approved in accordance with the provisions of the Contract Documents.
- The Contract Price shall be the entire compensation owing to the *Contractor* for the *Work* and this compensation shall cover and include all profit and all costs of supervision, labour, material, equipment, overhead, financing, and all other costs and expenses whatsoever incurred in performing the *Work*.
- Article 4 Payment**
- 4.1 Subject to applicable legislation and the provisions of the Contract Documents, the *Owner* shall make payments to the *Contractor*.
- 4.2 If the *Owner* fails to make payments to the *Contractor* as they become due in accordance with the terms of the Contract Documents then interest calculated at 2% per annum over the prime commercial lending rate of the Royal Bank of Canada on such unpaid amounts shall also become due and payable until payment. Such interest shall be calculated and added to any unpaid amounts monthly.
- Article 5 Rights and Remedies**
- 5.1 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.

5.2 Except as specifically set out in the Contract Documents, no action or failure to act by the *Owner*, Contract Administrator or *Contractor* shall constitute a waiver of any of the parties' rights or duties afforded under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach under the *Contract*.

Article 6 Notices

6.1 Communications among the *Owner*, the Contract Administrator and the *Contractor*, including all written notices required by the Contract Documents, may be delivered by hand, or by fax, or by pre-paid registered mail to the addresses as set out below:

The *Owner*:

Village of Lions Bay

400 Centre Road

Lions Bay, BC, V0N 2E0

Fax: 604-921-6643

Attention: Nai Jaffer

The *Contractor*:

Fax: _____

Attention: _____

The Contract Administrator:

Creus Engineering Ltd

610 – East Tower, 221 Esplanade W

North Vancouver, BC, V7M 3J3

Fax: 604-987-9071

Attention: Steve Williamson

6.2 A communication or notice that is addressed as above shall be considered to have been received

1.1.4 immediately upon delivery, if delivered by hand; or

1.1.5 immediately upon transmission if sent by fax and received in hard copy; or

1.1.6 after 5 Days from date of posting if sent by registered mail.

- 6.3 The *Owner* or the *Contractor* may, at any time, change its address for notice by giving written notice to the other at the address then applicable. Similarly if the *Contract Administrator* changes its address for notice then the *Owner* will give or cause to be given written notice to the *Contractor*.
- 6.4 The sender of a notice by fax assumes all risk that the fax is received in hard copy.

Article 7 General

- 7.1 This *Contract* shall be construed according to the laws of British Columbia.
- 7.2 The *Contractor* shall not, without the express written consent of the *Owner*, assign this *Contract*, or any portion of this *Contract*.
- 7.3 The headings included in the *Contract Documents* are for convenience only and do not form part of this *Contract* and will not be used to interpret, define or limit the scope or intent of this *Contract* or any of the provisions of the *Contract Documents*.
- 7.4 A word in the *Contract Documents* in the singular includes the plural and, in each case, vice versa.
- 7.5 This agreement shall ensure to the benefit of and be binding upon the parties and their successors, executors, administrators and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first written above.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

Owner:

Village of Lions Bay

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

(INCLUDE IN LIST ALL DOCUMENTS INCLUDING, IF ANY, SUPPLEMENTARY GENERAL CONDITIONS, SUPPLEMENTARY SPECIFICATIONS, SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

Schedule 1 Schedule of Contract Documents

The following is an exact and complete list of the Contract Documents, as referred to in Article 2.1 of the Agreement.

NOTE: The documents noted with “*” are contained in the “Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings”, edition dated 2009. All sections of this publication are included in the Contract Documents.

- 8.1 Agreement, including all Schedules;
- 8.2 Supplementary General Conditions (Creus: Supplementary General Conditions);
- 8.3 General Conditions*;
- 8.4 Supplementary Specifications (Creus: Supplementary Specifications and Basis of Payment);
- 8.5 Specifications*;
- 8.6 Supplementary Standard Detail Drawings (if any, insert title and edition date);
- 8.7 Standard Detail Drawings*;
- 8.8 Executed Form of Tender, including all Appendices;
- 8.9 Contract Documents listed in Schedule 2 to the Agreement – “List of Contract Documents”;
- 8.10 Instructions To Tenderers - Part I;
- 8.11 Instructions To Tenderers - Part II;
- 8.12 TEMPORARY WEATHER-RELATED OPERATIONAL SHUTDOWN PROCEDURE HARVEY AND MAGNESIA INTAKES:

The following Addenda:

(ADDENDA, IF ANY)

(COMPLETE LISTING OF ALL DRAWINGS, PLANS AND SKETCHES WHICH ARE TO FORM A PART OF THE CONTRACT,
OTHER THAN STANDARD DETAIL DRAWINGS AND SUPPLEMENTARY STANDARD DETAIL DRAWINGS.)

**Schedule 2 List of
Contract
Documents**

TITLE	DRAWING NO.	DATE	REVISION NO.	REVISION DATE
Cover				
Key Plan Context	KEY-1	Nov.04.14	7	July 5.17
Key Plan Intake	KEY-2	Nov.04.14	5	July 5.17
Site Sections– Intake:A,C,D, Settling Chamber	XS S-1	Nov.04.14	4	July 5.17
Site Sections – Intake: B	XS S-2	Nov.04.14	4	July 5.17
Site Sections – Intake: E, Dam Face Remediation	XS S-3	Nov.04.14	4	July 5.17
Standard Details	DET-1	Nov.04.14	4	July 5.17
Web Engineering Ltd. – Waterworks	RT1-149-131	Apr/84	B	Feb/85

FOR USE WHEN UNIT PRICES and lump sum FORM THE BASIS OF PAYMENT - TO BE USED ONLY WITH THE GENERAL CONDITIONS AND OTHER STANDARD DOCUMENTS OF THE UNIT PRICE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS.

FORM OF TENDER

Owner: Village of Lions Bay
(NAME OF OWNER)

Contract: Harvey Creek – Weir Intake Upgrade
(TITLE OF CONTRACT)

Reference No. 13160
(OWNER'S CONTRACT REFERENCE NO.)

To Owner:

**WE, THE
UNDERSIGNED:**

- 1.1 have received and carefully reviewed all of the *Contract Documents*, including the Instructions to Tenderers, the specified edition of the "Master Municipal Construction Documents - General Conditions, Specifications and Standard Detail Drawings" and the following Addenda:

_____ ;
(ADDENDA, IF ANY)

**ACCORDINGLY WE
HEREBY OFFER**

- 1.2 have full knowledge of the *Place of the Work*, and the *Work* required; and
- 1.3 have complied with the Instructions to Tenderers; and
- 2.1 to perform and complete all of the *Work* and to provide all the labour, equipment and material all as set out in the *Contract Documents*, in strict compliance with the *Contract Documents*; and
- 2.2 to achieve Substantial Performance of the *Work* on or before 6 weeks of notice to proceed; and
(WORK DURATION OR DATE)
- 2.3 to do the *Work* for the price, which is the sum of the products of the actual quantities incorporated into the *Work* and the appropriate unit prices set out in Appendix 1, the "*Schedule of Quantities and Prices*", plus any lump sums or specific prices and adjustment amounts as provided by the *Contract Documents*. For the purposes of tender comparison, our offer is to complete the *Work* for the "*Tender Price*" as set out on Appendix 1 of this Form of Tender. Our *Tender Price* is based on the estimated quantities listed in the *Schedule of Quantities and Prices*, and excludes GST.

- WE CONFIRM:** 3.1 that we understand and agree that the quantities as listed in the *Schedule of Quantities and Prices* are estimated, and that the actual quantities will vary.
- WE CONFIRM:** 4.1 that the following appendices are attached to and form a part of this tender:
- 4.1.1 the appendices as required by paragraph 5.3 of the Instructions to Tenderers – Part II; and
 - 4.1.2 the *Bid Security* as required by paragraph 5.2 of the Instructions to Tenderers – Part II.
- WE AGREE:** 5.1 that this tender will be irrevocable and open for acceptance by the *Owner* for a period of 60 calendar days from the day following the *Tender Closing Date and Time*, even if the tender of another tenderer is accepted by the *Owner*. If within this period the *Owner* delivers a written notice (“*Notice of Award*”) by which the *Owner* accepts our tender we will:
- 5.1.1 within 15 *Days* of receipt of the written *Notice of Award* deliver to the *Owner*:
 - .1 a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the *Contract Price*, covering the performance of the *Work* including the *Contractor’s* obligations during the *Maintenance Period*, issued by a surety licensed to carry on the business of suretyship in the province of British Columbia, and in a form acceptable to the *Owner*;
 - .2 a Baseline Construction Schedule, as provided by GC 4.6.1;
 - .3 a “clearance letter” indicating that the tenderer is in Worksafe BC compliance; and
 - .4 a copy of the insurance policies as specified in GC 24 indicating that all such insurance coverage is in place and;
 - 5.1.2 within 2 *Days* of receipt of written “*Notice to Proceed*”, or such longer time as may be otherwise specified in the *Notice to Proceed*, commence the *Work*; and
 - 5.1.3 sign the *Contract Documents* as required by GC 2.1.2.

WE AGREE:

- 6.1 that, if we receive written *Notice of Award* of this *Contract* and, contrary to paragraph 5 of this Form of Tender, we:
- 6.1.1 fail or refuse to deliver the documents as specified by paragraph 5.1.1 of this Form of Tender; or
- 6.1.2 fail or refuse to commence the *Work* as required by the *Notice to Proceed*,
then such failure or refusal will be deemed to be a refusal by us to enter into the *Contract* and the *Owner* may, on written notice to us, award the *Contract* to another party. We further agree that, as full compensation on account of damages suffered by the *Owner* because of such failure or refusal, the *Bid Security* shall be forfeited to the *Owner*, in an amount equal to the lesser of:
- 6.1.3 the face value of the *Bid Security*; and
- 6.1.4 the amount by which our *Tender Price* is less than the amount for which the *Owner* contracts with another party to perform the *Work*.

**OUR ADDRESS IS AS
FOLLOWS:**

Phone: _____
Fax: _____
Attention: _____

This Tender is executed this _____ day of _____, 20 17.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

See paragraph 5.3.1 of the Instructions to Tenderers – Part II
See paragraph 5.3.1 of the Instructions to Tenderers – Part II
All prices and *Quotations* including the Contract Price shall include all Taxes, but shall not include GST. GST shall be shown separately.

	DESCRIPTION	UNIT OF MEASURE	QTY	UNIT PRICE	AMOUNT
1.0	Mobilization/demobilization	l.s.	1		
2.0	Bid Bond (may be removed by owner at no cost)	l.s.	1		
3.0	Shop Drawings and Fabrication	l.s.	1		
4.0	Erosion / Sediment Control and Creek Diversion and Water Management	l.s.	1		
5.0	Layout	l.s.	1		
6.0	Select Demolition and Removals	l.s.	1		
7.1	Form and pour new reinforced concrete dam	l.s.	1		
7.2	Break out loose concrete and repair with SikaQuick® VOH	litres	36		
8.0	Install new Edge Cap on Weir and Intake	l.s.	1		
9.0	Install 25 mm Rock Dowels	l.m.	56		
10.0	Supply and install new sluice gate	l.s.	1		
11.0	As-Builts	l.s.	1		
A. Subtotal Tender					

TENDER PRICE	\$ _____
GST	\$ _____
TENDER PRICE Including GST	\$ _____

SCHEDULE OF UNIT RATE

(See paragraph 5.3.1 of the Instructions to Tender - Part II)

If additions or deletions are made to the *Work*, as directed by the Consultant through the issuance of written Change Orders, the contract price **may** be adjusted upward or downward as the case may be, depending on the nature of the change in *Work*.

Unit prices tendered for additions and deletions **may** be used at the discretion of the Consultant in valuation of Change Orders. These will be applied only where a change is duly authorized by the *Engineer* and the unit rates are the approved method of payment.

Prices tendered for additions and deletions are excluded from the Total Lump Sum Tender Price but may be taken into consideration in the evaluation of tenders.

(All prices and *Quotations* including the *Contract Price* shall include all *Taxes*, but shall not include *HST*. *HST* shall be shown separately.)

ITEM #	DESCRIPTION	UNIT OF MEASURE	UNIT PRICE
AD1	Concrete supply and place beyond contract dwgs	m3	
AD2	Install additional 25m rebar dowels not in contract drawings	lm	
AD3	20 tonne Excavator c/w hammer	hr	
AD4	Labourer	hr	
AD5	Foreman	hr	
AD6	25 tonne off road truck	hr	
AD7	330 Excavator	hr	
AD8	Tandem dump truck with rock box	hr	
AD9	Additional Sawcutting	lm	

Appendix 2: Preliminary Construction Schedule

See paragraph 5.3.2 of the Instructions to Tenderers – Part II.

Indicate Schedule with bar chart with major item descriptions and time.

MILESTONE
DATES: _____

ACTIVITY	CONSTRUCTION SCHEDULE									
	1	2	3	4	5	6	7	8	9	10
Weeks										
Mobilization										
Layout										
Shop Drawings and Fabrication										
Erosion and Sediment Control including Creek Diversion and Water Management										
Select Demolition and Removals										
Sika repairs										
Form and Pour new reinforced concrete dam										
Install new edge cap on Weir and Intake										
Install Rock Dowels										
Supply and Install New Sluice Gate										
As Builts										

Tenderer's Initials _____

Appendix 3: Experience of Superintendent

Note: Experience of Superintendent much show previous experience working in environmentally sensitive zones and working on projects with diversion of creeks around work

See paragraph 5.3.3 of the Instructions to Tenderers – Part II.

Name: _____

Experience: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Dates: _____

Project Name: _____

Responsibility: _____

References: _____

Tenderer's Initials _____

Tenderer's Initials _____
Appendix 5: Subcontractors

See paragraph 5.3.5 of the Instructions to Tenderers – Part II.

TENDER ITEM	TRADE	SUBCONTRACTOR NAME	PHONE NUMBER
Rebar			
Concrete			
Doweling			
Steel Work			

Tenderer's Initials _____

Harvey Creek – Weir Intake Upgrade

Supplementary General Conditions

SUPPLEMENTARY GENERAL CONDITIONS

This contract is based on the 2009 MMCD Contract document but is a lump sum and unit rate contract as laid out in Table of Values.

SGC 24 Insurance

Add clause 24.1.7 “The contractor to issue a certificate listing the Owner, Municipality, and Creus Engineering Ltd. as co-insured”.

SGC 3.3 Contract Administration (Survey Layout)

Delete the first sentence in Clause 3.3.5 in its entirety and substitute:

The *Contractor* will provide all layout surveys required for the *Work*. The *Contractor* shall protect and preserve survey monuments and control points as long as they are required for the *Work*.

SGC 4.2 Safety

Add Clause 4.2.2 Emergency Contact Numbers

Before commencing any *Work* at the *Place of the Work*, the *Contractor* shall provide the *Contract Administrator* with a list of at least three persons who have authority to act on behalf of the *Contractor* in an emergency. At least one of the persons shall be available outside normal working hours of the *Owner* (Monday to Friday, 8:30 a.m. to 4:30 p.m.).

Add Clause 4.2.3 Additional Safety Requirements

The *Owner* will require written certification of the following safety related items:

- .1 The successful *Contractor* will be designated the “*Prime Contractor*” for this project under the regulations of the Workers Compensation Act and Occupational Health and Safety Regulations and must fulfil all of the obligations required of a *Prime Contractor*. While on the designated sites of the *Work*, all persons at the *Work* sites must adhere to the *Contractor’s* safety requirements.
- 2 The *Contractor* shall designate, in writing, an authorized and qualified safety coordinator in charge of the *Contractor’s* safety program, plus designate an alternate should this individual not be available.
- .3 The *Contractor* shall provide written assurances that the *Contractor* has complied with Part 3, Rights and Responsibilities, Occupational Health and Safety Programs of the WCB, BC Regulation 296/97, as amended by BC Regulation 185/99. The assurances shall include the following:

Harvey Creek – Weir Intake Upgrade

Supplementary General Conditions

- a. The *Contractor* shall provide an Occupational Health and Safety Program in accordance with Part 3, Section 3.3 of the Occupational Health and Safety Regulations.
 - b. The *Contractor* shall ensure that all *Subcontractors* also comply with Part 3 of the Occupational Health and Safety Regulation. The *Contractor* shall coordinate the daily on-site safety activities of all *Subcontractors*.
 - c. The *Contractor* shall provide copies to the *Contract Administrator* of Occupational Health and Safety Committee meeting minutes and any Accident Investigation Reports during the course of the *Contract*.
4. The *Contractor* shall provide first aid coverage for each and every site that a crew is working. An employee with Level 1 First Aid (the employee must have a valid card in possession) is required at each location where 2 or more employees are working, along with an approved Level 1 first aid kit. The *Contractor* shall ensure that all *Subcontractors* also meet these requirements.

SGC 4.3 Protection of Work, Property and the Public

“In the prosecution of the work, care shall be taken not to move without consent of the proper parties any structure, and in crossing or running parallel with said structures, they shall be secured in place until the work is completed. Any damage to structures of any kind caused by neglect to attend to such structures shall be paid for by the contractor. It is the contractor’s responsibility to determine the location of existing utilities.”

SGC 18.5 Payment

Revise the first paragraph of Clause 18.5.1 to read as follows:

On or before the 30th Day after the issuance of the *Payment Certificate*

HARVEY CREEK – WEIR INTAKE UPGRADE

Supplementary Specifications and Basis of Payment

Supplemental Specifications:

The following are clarifications of technical specifications and should be read in conjunction with the Municipal Specifications, MMCD specs, regulatory authority specifications, drawings, details and other contract documents. If discrepancy is noted by the Contractor, they are to seek resolution from the Engineer.

- 1. Technical Specifications**-A portion of the Contract Documents is included by reference. Copies of these documents have been referenced in the tender package. It is the Contractor's responsibility to ensure that current relevant copies of all contract documents are forwarded to surveyors, testing agencies, subcontractors, superintendents, estimators, project managers, site staff and any other relevant parties. Contractor confirms they have reviewed same prior to submitting tender.
- 2. Administration of the Contract** -Sub-Contractors shall not communicate or rely on communication with the Engineers or Owner directly on any contractual or technical issue. They shall direct their issues to the Contractor directly whose responsibility it to deal with these issues on their behalf with the Engineer.

Review and approval of any contractual matter including Progress Payment, Change Order, Payment of Holdback, Final Payment, Insurance and Warranty, etc. shall directed to the Engineer. Contractor must only take direction from the Engineer in regards to changes to design or extra works.

Contractor to review progress of project on a monthly basis with Engineer. A progress certificate, in a form approved by the Engineer, to be submitted for review by the Contractor to the Engineer on the 25th of the month and Contractor to provide invoice to match approved progress certificate by the 30th along with Work Safe BC clearance and update of certificate of insurance if required. Payment to be per MMCD the following month. A statutory declaration will be required for all holdback release requests and invoices after the first draw.

Contractor shall initiate communication with the Regulatory Authority or other regulatory agencies directly only for required permits on the job and copy the Engineer on any correspondence to or from the regulatory agencies. If input is need from Regulatory Authority, the Contractor shall request same through the Engineer.

Review and approval of any technical matter shall be dealt with by Engineer.

The Engineer will provide drawings to the Contractor at initiation of contract and possibly for major changes to the design. Site Instruction may be issued from time to time that alter the drawings and contract requirements as well as clarifications in meeting minutes and emails. It is the Contractors responsibility to ensure that all survey and works reflect the most up to date drawings, specifications, site instructions and direction and that copies of the most current contract documents are forwarded to surveyors, testing agencies, subcontractors, superintendents and site staff and any other relevant parties.

For the purposes of Worksafe BC, the Contractor is to be considered prime contractor as detailed in GC 21.2. The contractor is to set up an orientation program and ensure all

HARVEY CREEK – WEIR INTAKE UPGRADE

Supplementary Specifications and Basis of Payment

employees, subcontractors, suppliers, consultants and regulatory authorities attending the site are adequately orientated to the site. Contractor to have approved procedures for all work and be able to demonstrate the workers are adequately trained to fulfill Work Safe requirements for doing works.

- 3. Layout and Survey-** the Contractor shall layout on the ground whatever lines and grades are necessary to construct the work to the lines, elevations and grades shown on the drawings. A bench mark is noted on the drawings from which to base layout. Contractor to provide stakes on site with markings indicating station, offset and elevation. Engineer will provide digital baseplan upon request; however it is Contractor's responsibility to coordinate baseplan with paper prints. It is the Contractor's responsibility to provide survey and coordinate with same. Contractor to include for all costs relating to survey for layout and as constructed works. The Engineer is not responsible for checking Contractor layout.

The Contractor shall take precautions to ensure the legal survey pins and posts are not disturbed during construction. The cost of replacement of willfully or carelessly disturbed legal survey pins or posts will be charged to the Contractor unless the Engineer had authorized their removal. The Contractor shall inform the Engineer of any legal survey markers disturbed and the Engineer shall arrange for their replacement.

- 4. Drainage-** Drainage facilities must be maintained by the Contractor for the duration of the contract. Any damage caused to the owners of adjacent properties resulting from failure of the drainage system will be restored to its original condition at the expense of and by the Contractor. Contractor shall not alter existing drainage patterns without the approval of the Engineer.

- 5. Inspections and Approvals-** the Contractor will construct ALL works to the satisfaction of the inspectors from the Regulatory Authority and the Engineer. If applicable additionally, the Telus works under the direction and to the satisfaction of the Telus inspector, hydro works to satisfaction of the BC Hydro inspector, Fortis BC works to satisfaction of the Fortis inspector, Shaw works to satisfaction of the Shaw inspector. The Contractor will forward to the Engineer certification of acceptance or approval from the above noted inspectors on completion of the work. Electrical works, if applicable to also be under permit with BC Electrical Safety Branch with a copy of permit and sign off to be forwarded to the Engineer. Contractor to give timely notice to relevant inspector to allow for inspection on works and update Engineer on same.

- 6. Adjacent Properties-** the Contractor shall consult and cooperate with the owners of the adjacent properties whose driveways, gardens, fences etc. require alteration during construction. Under no circumstances shall the Contractor permit his forces, materials, and/or equipment to encroach on private properties without the express consent of the owner of the property and the Engineer. Contractor to provide Engineer copies of all correspondence with adjacent property owners. The area encroached upon will be restored to its original condition to the satisfaction of the owners of the properties affected.

- 7. Approvals-** the Engineer has endeavored to obtain all approvals from the approving agencies involved in this project. No claims or penalties shall be made against the owner or Engineer for any delays occurring as a result of approvals not being received by the Engineer. The Contractor is responsible for obtaining all relevant permits except where noted otherwise.

HARVEY CREEK – WEIR INTAKE UPGRADE

Supplementary Specifications and Basis of Payment

8. **Order of Works-** Prior to commencing the work, the Contractor, after consultations with the Engineer, shall provide a progress schedule for review, input and approval by the Engineer and which may be revised during the course of the work only if agreed to in writing by the Engineer. The Contractor shall state for the consideration of the Engineer, the order in which he proposed to execute the work and then at any future time when required to do so, provide revisions to and resubmittal of the progress schedule which will upon acceptance by the Engineer form part of the contract documents. The owner's critical items are indicated on the tender schedule. Contractor is expected to manage works to maximize ability to complete the works in timely manner in coordination with the owner.

9. Testing-

The Contractor will perform at his own cost all testing required by the Regulatory Authority, Municipality, MOTI, MMCD and the Engineer. Testing shall be done by an independent specialty testing firm. Contractor to give Engineer notice on all testing. Copies of tests to be forwarded directly by the testing firm to Engineer and Geotechnical Engineer by email. The testing shall include, but not be limited to the following:

- i Sieve test of SGSB and CBC including documentation of source material testing per Municipal requirement
- ii compaction testing on road subgrade, subbase and base (at 20 metre intervals at various lane placements);
- iii Proof Roll of Subgrade: notice to be given to Geotech and Engineer 48 hours in advance
- iv compaction testing of trench backfill (at 20 metre intervals) at various elevations in the fill
- v Testing of asphalt during placement in accordance with the Master Municipal Specifications including density testing, Marshall testing and 100 mm core (two per lane in each direction per paving sequence and/or one per lane per 500 m, whichever is greater).
- vi Pressure testing of sanitary and water mains. Contractor to give Engineer, and if required, the municipal authority, 48 hour notice of tests.
- vii Chlorine and bacteriological testing of the water system per MMCD. Contractor to give Engineer, and if required, the municipal authority, 48 hour notice of tests.
- viii Video inspection of sanitary and storm gravity sewer mains and services with manholes at each end. The Contractor will arrange and pay for the above noted inspection of all storm and sanitary sewer mains installed. ABC Pipe Cleaning Services Ltd. and Mar-Tech Municipal Pipe Services Ltd. are approved by the Engineer for this work. Should the Contractor wish to use another testing laboratory the Engineer's requirements for the video inspection report is as follows:
 - ◆ Supply of 2 copies of DVD disc showing video inspection of all sanitary and storm sewers installed during the contract.
 - ◆ Supply of a bound report complete with photos of pertinent items of interest i.e. broken pipes, ponding, pulled joints, cracks, etc. The report is to include the stations of all wye locations and problem areas. The report is to comment on the cleanliness, alignment, grade and general condition of the pipe.
 - ◆ If the report is not up to the above noted requirements, the Engineer will arrange for ABC Pipe Cleaning Services or Mar-Tech Municipal Pipe Services Ltd. to retest all of the sewer mains. All costs incurred during the retest will be paid for by the Contractor.

10. Stripping

This item shall be all inclusive, including excavation of all nonstructural fill encountered within the work on the site and as required to perform the Works, including separating, hauling and

HARVEY CREEK – WEIR INTAKE UPGRADE

Supplementary Specifications and Basis of Payment

stockpiling within site area or removal as indicated elsewhere in contract documents; and all other incidental work thereto.

11. **Rough Grading**

This item shall be all inclusive, including all survey, layout, access, excavation, separating, hauling, stockpiling, placing, compacting and sieve, proctor and compaction testing of suitable excavated and filling of all types of material encountered on the and disposal on site as directed unsuitable or surplus materials; and all other incidental work thereto to achieve subgrade level.

Contractor to have detailed layout at commencement of rough grading and place and compact rockfill to required grades and specifications. Contractor to select materials to be 300 mm minus in upper metre of fill and ensure that materials are not gap graded leading to large voids in the fill. Vibratory compaction to be done to achieve compaction and integration of works. Contractor to arrange for a proofroll of subgrade.

This shall include all necessary slope protection works and water management required. All building areas to be compacted to 100% standard proctor. All roads and trails to be compacted to 95% modified proctor unless specified otherwise. Contractor to provide consistent testing on a layer by layer basis to confirm density levels. Contractor to provide finished survey stakes with elevations of corners of subgrade to confirm achieving required subgrade levels

12. **Rock Stack**

Rock stack walls are to be built according to the drawings, details and sections including Geotechnical Engineering Drawings with founding of the rock 0.5 metres below grade on competent subgrade. If the Contractor encounters conditions that do not allow for construction according to the cross sections, they are to notify the Engineer. The Contractor to provide survey information of the revised toe of any rock stack where the Engineer has confirmed the change is acceptable. Payment will not be made for work that is a change from the drawings, which is undertaken without the prior express direction of the Engineer.

Contractor to give 48 hours notice of intent to start on Rock Stack works to Engineer and Geotechnical Consultant. A preconstruction meeting to be held with all 3 parties to review schedule, testing requirements, notifications for inspection and procedures. Compacting testing for rock stack to be consistent with section 8 above

13. **Stockpile of merchantable stack rock and rip rap**

The Contractor will stockpile separately rock stack and rip rap rock in the area as directed by the Engineer.

14. **Blasting-**

Blasting will be permitted only after securing the approval of the Engineer, the Regulatory Authority and only when proper precautions are taken for the protection of persons and property. The hours of blasting will be determined by the Regulatory Authority. Any damage caused by blasting shall be repaired by the Contractor at his own expense. Contractor may wish to do a preblast survey of adjoining building to confirm preexisting conditions to clarify preconditions otherwise Contractor to address all concerns brought forward. The Contractor's method shall conform to the Federal and Provincial Laws and Municipal Ordinances. The Contractor will be

HARVEY CREEK – WEIR INTAKE UPGRADE

Supplementary Specifications and Basis of Payment

responsible for obtaining any permits required for blasting operations.

After stripping and removal of all soil that can be removed without drilling and blasting in excavation to subgrade, the Contractor shall notify the Engineer to review extent of Rock. The Contractor to prepare a survey of the top of rock encountered and submit to the Engineer as a point file. The volume of rock required to meet subgrade will be calculated using AutoCAD.

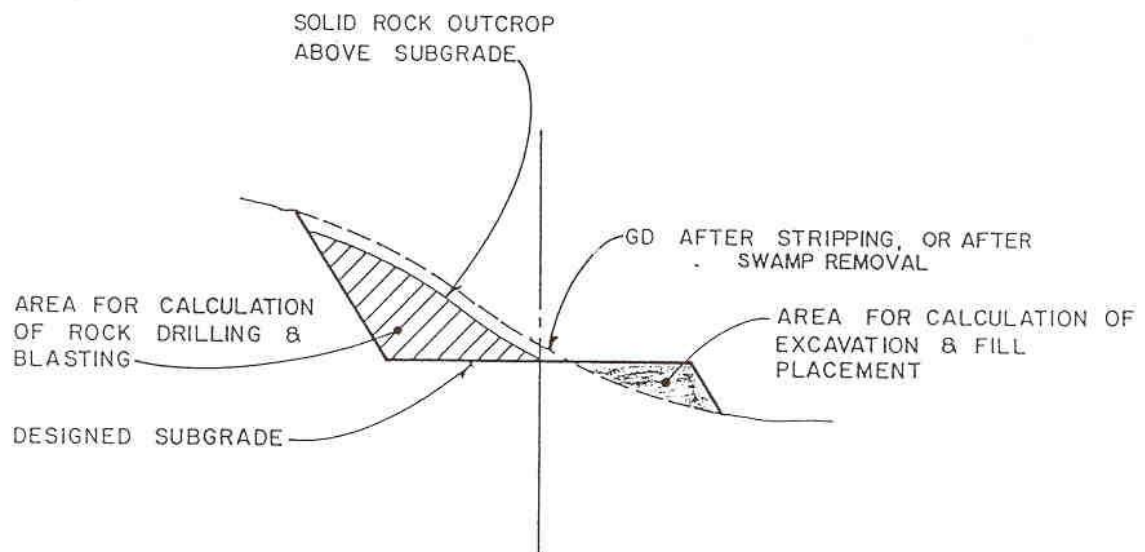
The Engineer recognizes that stripping, excavation prior to blasting, and drilling and blasting could be going on at the same time. The Contractor therefore must ensure that the surveys noted above are completed by the Engineer prior to proceeding to the next phase. **PAYMENT WILL NOT BE MADE FOR WORK THAT IS UNDERTAKEN WITHOUT THE REQUIRED SURVEYS.**

i Drilling & Blasting Subgrade

Work includes the drilling and blasting required to allow grading to designed subgrade of the road.

Measurement shall be by the end area method using the cross-sections noted in Supplementary General Condition No. 1. The area calculated at each section will be that lying between the solid rock outcrop above subgrade section and designed subgrade section for roads and driveways. (See Typical Sections below).

Payment will be made at the unit price bid per cubic metre as measured by the Engineer in the manner noted above. Overbreak should be kept to a minimum and no measurement of payment will be made for rock overbreak.



ii Drilling & Blasting Trench Rock

HARVEY CREEK – WEIR INTAKE UPGRADE

Supplementary Specifications and Basis of Payment

Work includes drilling and blasting of all rock found in the main and service trenches that occur below subgrade and extend one metre beyond all terminations. It also includes drilling and blasting for all appurtenances e.g. manholes, catchbasins, hydrants and streetlight bases.

When rock is encountered during the servicing installation in service trenches outside the areas where rock outcrops above subgrade, the Contractor will notify the Engineer and they will review and determine the extent of rock required to clean lines to subgrade. Measurement will be made using the survey information using the end area method.

The volume of trench rock for all mains and services and appurtenances except storm and sanitary mains and manholes will be calculated as follows.

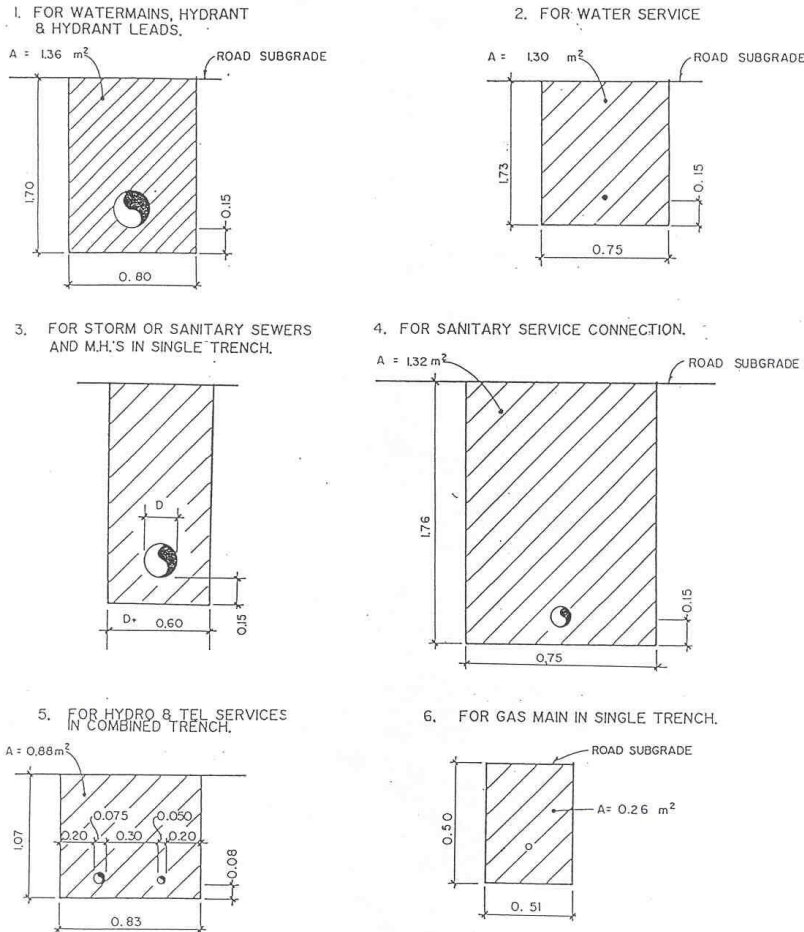
In areas where solid rock is present above the road subgrade, the depth below the subgrade and the width shown on the typical trench section will be multiplied by the horizontal distance shown on the design drawings;

In areas where rock is present below the road subgrade or below ground level outside the road R.O.W. the width shown on the typical trench section will be multiplied by the area enclosed by the surveyed profile of the top of trench rock and the designed bottom of trench profile.

HARVEY CREEK – WEIR INTAKE UPGRADE

Supplementary Specifications and Basis of Payment

TRENCH DETAILS



iii Boulders

If boulders are encountered during excavation to subgrade or trenching that are in excess of 1.5 m³, Contractor to notify Engineer. Boulders are to be split or removed as resolved by Engineer and Contractor and removed to location designated elsewhere in these documents. Compensation is based on volume of boulder and shall include restitution of excavation and replacement fill.

15. Roadworks

Roadworks shall be constructed as per MMCD or MUNICIPALITY as further indicated in the contract documents. Payment for this item shall be all inclusive, including all labour, materials and equipment, layout, utility locates, traffic control etc. required to construct the subbase, base sidewalks, curbs and paving to the limits indicated. The breakdown is strictly for the evaluation of works and the Contractor is to ensure that the total value for this item covers all costs associated with these works.

HARVEY CREEK – WEIR INTAKE UPGRADE

Supplementary Specifications and Basis of Payment

i Subbase, Base, Curb

Roadworks shall be constructed as per Municipal specifications. Contractor is to give Engineer 48 hrs. notice prior to performing a proofroll on the subgrade surface. This item shall be all inclusive, including all labour, materials and equipment required to complete the subbase, base, curb and sidewalk subgrade for the lump sum price bid.

ii Roadworks- Prime and First Lift Asphalt

Roadworks asphalt shall be constructed as per Municipal specifications. This item shall be all inclusive, including all labour, primer, materials and equipment required to complete the first lift of asphalt paving and prime coat for the lump sum price bid. Scheduling of paving will be as approved by the engineer.

iii Roadworks – Second Lift Asphalt Paving

Roadworks asphalt shall be constructed as per Municipal specifications.

iv Signage and Linepainting. Contractor to provide shop drawings for all signs and bases. Sign installation to be per drawings, details and Municipal requirements unless referenced otherwise. For line painting materials, refer to Linepainting notes. Contractor to ensure surfaces are clean of all deleterious material prior to applying lines. Layout for line painting to be per drawings, any deviations or issues to be reviewed with Engineer for approval prior to painting. Contractor to address all traffic control and protection of works. Contractor to clean up layout lines as required.

v Barrier installation to be per design, details and Municipal requirements. All barriers to be new, clean and free from defects or damage after installation installed. Contractor to layout extents of barrier and review with engineer prior to proceeding with installation. Contractor to review with Engineer the number of barriers with scuppers after layout and prior to ordering units. Units to be from an approved supplier, Contractor to provide shop drawings for review and approval.

These items shall be all inclusive, including all labour, materials and equipment required to complete the second lift of asphalt paving and prime coat for the lump sum price bid. Pavement markings shall be included in this pay item.

16. Waterworks

i Waterworks are to be built per the more onerous of the drawings, general notes, details, municipal regulatory authority and MMCD requirements.

ii Testing per item 8 **Order of Works-** Prior to commencing the work, the Contractor, after consultations with the Engineer, shall provide a progress schedule for review, input and approval by the Engineer and which may be revised during the course of the work only if agreed to in writing by the Engineer. The Contractor shall state for the consideration of the Engineer, the order in which he proposed to execute the work and then at any future time when required to do so, provide revisions to and resubmittal of the progress schedule which will upon acceptance by the Engineer form part of the contract documents. The owner's critical items are indicated on the tender schedule. Contractor is expected to manage works to maximize ability to complete the works in timely manner in coordination with the owner.

iii **Testing-**

iv Contractor to protect and maintain operations of existing watersystem during works

v Works outside of road ROW to also be consistent with BC Building Code requirements.

vi All works to be consistent with Ministry of Health requirements.

vii Contractor to install, test, flush, chlorinate, achieve residual chlorine levels, achieve successful bacteriological tests for watermain per dates included in milestones.

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17. Drainage

- i Storm and drainage works are to be built per the more onerous of the drawings, general notes, details, municipal regulatory authority and MMCD requirements.
- ii Testing per item 8 **Order of Works-** Prior to commencing the work, the Contractor, after consultations with the Engineer, shall provide a progress schedule for review, input and approval by the Engineer and which may be revised during the course of the work only if agreed to in writing by the Engineer. The Contractor shall state for the consideration of the Engineer, the order in which he proposed to execute the work and then at any future time when required to do so, provide revisions to and resubmittal of the progress schedule which will upon acceptance by the Engineer form part of the contract documents. The owner's critical items are indicated on the tender schedule. Contractor is expected to manage works to maximize ability to complete the works in timely manner in coordination with the owner.
- iii **Testing-**
- iv Contractor to protect and maintain operations of existing storm system during works
- v Contractor to install, test, flush, per dates included in milestones.
- vi The Contractor must maintain drainage facilities for the duration of the contract. The Contractor will restore any damage caused to the owners of adjacent properties resulting from failure of the drainage system to its original condition at the expense of the Contractor and to the satisfaction of the Engineer.
- vii Contractor to install all infiltration, exfiltration, bioswales and storm management devices included within the work area indicated.
- viii Contractor to schedule work in regards to outlets and work close to sensitive areas in conjunction with the Environmental Consultant.

18. Sanitary System

- i Sanitary system is to be built per the more onerous of the drawings, general notes, details, municipal regulatory authority and MMCD requirements.
- ii Testing per item 8 **Order of Works-** Prior to commencing the work, the Contractor, after consultations with the Engineer, shall provide a progress schedule for review, input and approval by the Engineer and which may be revised during the course of the work only if agreed to in writing by the Engineer. The Contractor shall state for the consideration of the Engineer, the order in which he proposed to execute the work and then at any future time when required to do so, provide revisions to and resubmittal of the progress schedule which will upon acceptance by the Engineer form part of the contract documents. The owner's critical items are indicated on the tender schedule. Contractor is expected to manage works to maximize ability to complete the works in timely manner in coordination with the owner.
- iii **Testing-**
- iv Contractor to protect and maintain operations of existing sanitary system during works
- v Works outside of road ROW to also be consistent with BC Building Code requirements.
- vi Contractor to install, test, flush, per dates included in milestones.

19. Hydro and Telus and Shallow Utilities

- iv Construction of standard BC Hydro, Shaw and Telus underground systems are considered inclusive within the phase per the Hydro, Telus and Shaw Drawings. Work is to be to the approval of BC Hydro, Telus, Shaw and Terasen. The Contractor shall load and transport

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to the job site all materials supplied by BC Hydro, Telus, Shaw or Terasen Gas.

- v Contractor to immediately contact appropriate utilities to obtain PIC numbers and coordinate works in a timely manner. Contractor to coordinate and update utilities so that work by utilities can be coordinated with works.
- vi Hydro will be supplying concrete vaults, lids and risers, Telus to provide concrete vaults, lids and risers as well as 1 duct along the Broadwell Road Section. Shaw will provide all duct, vaults and service boxes
- vii A warning tape must be brightly colored yellow and marked with, "CAUTION BURIED ELECTRIC LINE BELOW" shall be installed as per Utility requirements.
- i If indicated, preducting of gas mains at road crossings is to be performed by the Contractor. Carrier pipe to be P.V.C. with minimum 0.6 metre cover. Ends of ducts are to extend one metre minimum beyond gutter line and marked with 2' x 4's designating end of gas crossing.

20. Concrete remediation work

- i Contractor to ensure shop drawings are provided in a complete and timely manner to allow adequate time for full review.
- ii Concrete work - shall conform to CSA - A23.1, 2 and referenced documents
- iii Cement shall be Portland Cement type 10, U.N.O. concrete shall be stone concrete with a unit weight of 23.6 kN/m³ (150 PCF), water cement ratios for exposure classes as CSA-A23.1, 5-8% air contents for exposure classes and aggregate sizes as CSA-A23.1, Exposure Class F1, slump tolerances - 1 1/2" for slumps less than 3 1/2", otherwise 3/4", strength 30 MPa 28day,
- iv All bottom edges of exposed slabs and beams, and exposed column and wall edges to be beveled 3/4" x 3/4" as is top unless noted otherwise.
- v Reinforcement shall be billet steel conforming to the following standards:
 - a. C.S.A. G30.18 - grade 400 MPa – 10m and larger.
 - b. ASTM A185-02 - welded wire mesh.
 - c. C.S.A. G30.18 weldable - all reinforcing that will be welded.
- vi Concrete cover shall be 75mm unless clearly designated otherwise
- vii All welding to be in accordance with C.S.A. W59. Fabrication shop to have full approval of C.W.B. to the requirements of C.S.A. W47. All welders to have passed within the preceding six months the qualification test as set forth within C.S.A. W47.
- viii General contractor shall assure that concrete achieves the required strength as stipulated on the structural drawings. Any structural modifications required to compensate for lower than required strengths will be done on a time basis and charged to the general contractor.

21. Streetlighting

- i Streetlighting is to be built per the more onerous of the drawings, general notes, details, specifications, municipal regulatory authority, electrical consultant drawings and MMCD requirements
- ii Contractor to verify delivery timelines for equipment and reflect in tender schedule or a separate line below if there are concerns on delivery of some items.
- iii Contractor to coordinate with operating authority and address implementation and commissioning coordination with authority operating system;
- iv Contractor to have all electrical and duct works installed by qualified and approved personnel
- v Contractor to provide copies of permit prior to commencing works. Contractor to give 48 hours' notice of intent to start on streetlighting to Engineer and Electrical Consultant. A

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preconstruction meeting to be held with all 3 parties to review schedule, testing requirements, notifications for inspection and procedures.

vi Contractor to provide Shop Drawings for review and approval on a timely basis with allowance for review and comment to meet time schedule.

vii Contractor to provide copies 3 copies of O & M Manuals and give notice of commissioning of system

22. Layout and As Constructed Information

i The provision of accurate and complete as-constructed information by the Contractor is of prime importance. The Contractor's B.C.L.S. or P.Eng. will record as-constructed information on a clean copy of the relevant design drawings as follows:

- ◆ Road centerline & gutter grades & locations at 20 m intervals
- ◆ Extents of rock stack
- ◆ Tie in points to existing services
- ◆ Inverts and extents of stormwater features
- ◆ Location, invert and diameters of all pipes running in and out of the manholes.
- ◆ Location, invert and diameter of service connections at mains
- ◆ Location, invert and diameter of all service connection locations at property line and termination points
- ◆ Locations & inverts of inlet/outlet structures
- ◆ Catchbasins - the distance from the downstream manhole to the catchbasin lead wye. (e.g. wye 0+103.5)
- ◆ The horizontal location and inverts of the watermain at changes in grade.
- ◆ The location of hydrants, blow-offs & air valves.

ii The successful tenderer will be issued two sets of relevant design drawings together with an example of how the as-constructed information is to be recorded on the design drawings following contract award. The Contractor's B.C.L.S. or P.Eng. will prepare the drawings immediately following substantial completion and certify each drawing as to its completeness and accuracy.

iii As built to be provided as .dwg and paper mark up

TEMPORARY WEATHER-RELATED OPERATIONAL SHUTDOWN PROCEDURE HARVEY AND MAGNESIA INTAKES

This Temporary Weather-related Operational Shutdown Procedure applies to all Village crews, staff, and contracted workers authorized by the Village to enter the Harvey and/or Magnesia Intake area for cleanup and maintenance activities.

1. IMMEDIATE WORK SHUT DOWN AND EVACUATION

All works at the Harvey and/or Magnesia Intakes must immediately cease when the following conditions exist:

- a. Sudden muddy water in the creek (i.e. the creek is brown)
- b. Sudden lack of flow in the creek
- c. Cracks appearing in the soil or concrete at the site and/or intake
- d. Small sloughs of soil occurring at the site

2. OPERATIONAL WET WEATHER SHUTDOWN

All areas past the Harvey and/or Magnesia intake gates are considered “unstable terrain upslope” areas. No works will begin, and all ongoing work will cease in the area if any of the following conditions are observed:

- a. Extremely heavy or prolonged rainfall; specifically:
 - i. Over 10mm in a 12-hour time period; and/or
 - ii. Over 20mm in a 24-hour time period; and/or
 - iii. Over 30mm in a 48-hour time period; and/or
 - iv. Over 40mm in a 72-hour time period
- b. New and/or excessive groundwater noted on the access road
- c. New springs/waterfalls noted on slopes; or sudden increases in volume of existing springs/waterfalls

3. DURATION OF SHUTDOWN

Work shutdown for any of the above will be a minimum of one day, and will continue if rainfall continues to exceed the rainfall limits noted above in section 2(a).

4. RECOMMENCEMENT OF OPERATIONS

Operations will resume after the minimum one-day shutdown noted in section 3, when measured rainfall drops below the limits noted above in section 2(a).