



INVITATION TO TENDER ("ITT") No. PS08116

GRANVILLE BRIDGE SHEAR CAPACITY UPGRADES

Tenders will be received in the Purchasing Services Office, 3rd Floor, Suite #320, East Tower, 555 West 12th Avenue, Vancouver, British Columbia, Canada, V5Z 3X7 prior to the Closing Time: 3:00:00 P.M. Vancouver Time (as defined in Note 2 below), Tuesday, December 9, 2008 and registered at 11:00:00 A.M Wednesday, December 10, 2008.

NOTES:

1. Tenders are to be submitted in sealed envelopes or packages marked with the Tenderer's Name, the ITT Title and Number.
2. Closing Time and Vancouver Time will be conclusively deemed to be the time shown on the clock used by the City's Purchasing Services Office for this purpose.
3. The City's Purchasing Services office is open on Monday - Friday 8:30 A.M. to 4:30 P.M. and closed Saturdays, Sundays and Statutory holidays.
4. DO NOT SUBMIT BY FAX OR E-MAIL

All queries related to this ITT shall be submitted
in writing to the attention of:

Wendy Corneau, B.Sc
Contracting Specialist

Fax: 604.873.7057 E-mail: purchasing@vancouver.ca

DOCUMENTS

Pages

Bidding and Contract Requirements

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Design Drawings (Available on Electronic CD)

Not attached

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	Name/Address
Owner:	City of Vancouver 453 West 12th Avenue Vancouver, BC V5Y 1V4 Attention: Dane Doleman, P.Eng.
Engineer:	Buckland & Taylor # 101 188 Harbourside Drive North Vancouver, BC V7P 3R7 Attention: Darrel Gagnon, P.Eng

END OF SECTION 00040 - PROJECT TEAM DIRECTORY

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1.0 INTRODUCTION

- 1.1 The City of Vancouver (hereinafter called the “City or Owner”) invites Tenders on the terms and conditions of these Tender Documents to furnish all materials, Products, labour, services and supervision necessary for the shear capacity upgrades of the concrete girders of the Granville Bridge and all other thing and matters referred to in the Contract Documents and shown on the Drawings (the “Work”).
- 1.2 The Place of the Work is:
- On the underside of the concrete approach spans of the Granville Bridge on both the North and South sides of False Creek, Vancouver, British Columbia (the “Site”) as specified in detail in SC.2.
- 1.3 The successful Tenderer will become the “Contractor” and will be required to sign a contract directly with the Owner, using the Agreement, attached hereto as part of the Contract Documents. Notwithstanding the execution of such Agreement, the successful Tenderer will be bound upon the Owner notifying such Tenderer in writing that his tender has been accepted. Such notification is referred to herein as the “Notice of Award”.
- 1.4 One (1) complete sets of Tender Documents may be obtained by notifying the contact person shown on the cover page of this document.

2.0 INQUIRIES

- 2.1 All inquiries and requests for clarification regarding this Tender shall be submitted in writing to the attention of:

Wendy Corneau, B.Sc.
Contracting Specialist
City of Vancouver
Purchasing Services
Fax: 604.873.7057
E-mail: purchasing@vancouver.ca

3.0 SUBMISSION OF TENDERS

- 3.1 Tenders shall be submitted to the front desk of:

City of Vancouver - Purchasing Services Office
City Square
Suite 320, East Tower, 3rd Floor
555 West 12th Avenue
Vancouver, British Columbia
V5Z 3X7
Attention: Wendy Corneau, Contracting Specialist

no later than the Tender Closing Time set out on the cover page of this ITT.

- 3.2 Tenders should be submitted in a sealed envelope, clearly identified with the Tenderer's name and the name of the project on the outside as follows:

“ITT PS08116 - GRANVILLE BRIDGE SHEAR CAPACITY UPGRADES

Submitted by: _____
[Tenderer's Name]

Date: _____ Time: _____

[To be stamped by the Owner]

DO NOT OPEN PRIOR TO THE TENDER CLOSING TIME”

- 3.3 Telephone or facsimile tenders will NOT be accepted. Tenders may be amended by facsimile up to the Tender Closing Time in accordance with Clause 12.0 of this Section 00050.
- 3.4 The Owner may extend the Tender Closing Time for any reason and, in that event, shall, in writing, advise all parties registered as having received a copy of the Tender Documents of the revised Tender Closing Time. In the event of such extension, the revised date shall thereupon be deemed to be the Tender Closing Time.
- 3.5 The Owner will open the Tenders in public and announce the names of the Tenderers, and their respective Base Price. Separate prices for optional work, alternate prices, unit prices, breakdown of prices and other detailed information will not be announced at the opening of Tenders.
- 3.6 Late Tenders will NOT be accepted or considered, and will be returned unopened.
- 4.0 TENDER DOCUMENTS
- 4.1 The Tender Documents consist of the following:
- a) The Documents and Sections listed in Section 00030 - Table of Contents;
 - b) The Drawings listed in Section 00400 - List of Drawings; and
 - c) Addenda issued.
- 4.2 Any additional information made available to Tenderers prior to the Tender Closing Time by the Owner, such as geotechnical reports or as-built plans, which is not expressly included in the list of Drawings, is not included in the Tender Documents. Such additional information is made available only for the assistance of Tenderers who must make their own judgement about its reliability, accuracy or completeness. Neither the Owner nor any representative of the Owner gives any guarantee or representation that the additional information is reliable, accurate or complete.

- 4.3 Each Tenderer shall conduct a review of the Tender Documents upon their receipt and verify that all documents are included and are complete. In the event documents are missing or incomplete, the recipient shall notify the contact person shown on the cover page of this document. It is the responsibility of the Tenderer to ensure receipt of a complete set of Tender Documents.

5.0 TENDER REQUIREMENTS

- 5.1 A Tender should be on the Form of Tender included in the Tender Documents and be signed by the authorized signatory(s) as follows:

- a) signature(s) should be in original handwriting;
- b) if the Tenderer is a partnership or joint venture then the name of the partnership or joint venture and the name of each partner or joint venturer should be included, and each partner or joint venturer should sign personally; if a partner or joint venturer is a corporation then such corporation should sign as indicated in paragraph 5.1.3 below; and
- c) if the Tenderer is a corporation then the full name of the corporation should be included, together with the names and signatures of all directors and officers and all authorized signatories.

- 5.2 A Tender should be accompanied by the following securities (Tenders that are received by the Owner and are not accompanied by approved bid security may or may not be considered):

- a) a Bid Bond in the amount of ten (10) percent of the Tender Price, issued by a surety licensed to carry on the business of suretyship in British Columbia, in a form reasonably satisfactory to the Owner; and
- b) an Undertaking of Surety in a form included in Schedule J or equivalent form by a Surety Company licensed to carry on the business of suretyship in British Columbia, stating that if the Tenderer is awarded the Contract, bonding will be provided pursuant to Clause 17.0 of this Section 00050.

- 5.3 A Tender must include the following completed forms, all of which comprise the Tender:

- a) Schedule A Breakdown of Tender Price;
- b) Schedule B Unit Prices for Adjustments to Lump Sum Prices;
- c) Schedule C Schedule of Subcontractors and Suppliers;
- d) Schedule D Separate Prices for Optional Work;
- e) Schedule E Tenderer's Experience with Related Work;
- f) Schedule F Hourly Rates for Labour;

- g) Schedule G All Found Hourly Rental Rates for Equipment;
- h) Schedule H Construction Schedule;
- i) Schedule I Proposed Key Project Personnel;
- j) Schedule J Undertaking of Surety;
- k) Schedule K Undertaking of Liability Insurance; and
- l) Schedule L Prime Contractor Agreement Form.

6.0 AWARD

6.1 The Owner reserves the full right, in its sole discretion and according to its own judgment of its best interest, to:

- a) reject any or all Tenders;
- b) consider any Tender that is incomplete, conditional, obscure, or contains alterations and/or irregularities to be non-responsive;
- c) waive any defect or deficiency in a Tender which does not materially affect the Tender or the Tender Price relative to other tenders and accept that Tender; and
- d) accept any Tender it considers advantageous.

The lowest priced tender will not necessarily be accepted.

6.2 The Owner may, prior to and/or after issuance of a Notice of Award, negotiate changes to the scope of the Work, the materials, the specifications or any conditions with the low Tenderer or any one or more of the Tenderers without having any duty or obligation to advise any other Tenderers or to allow them to vary their Tender prices as a result of changes to the scope of the work, the materials, the specifications or any conditions. The Owner shall have no liability to any other Tenderer as a result of such negotiations or modifications.

6.3 Tenderers will not be permitted to alter or amend tendered prices included in a Tender after the Tender Closing Time. If, prior to an award of the Contract, the Owner identifies changes the Owner wishes to make to the Contract Documents, then such changes shall be dealt with after the award of the Contract as Changes, and the provisions of GC.47 - *CHANGES* shall apply.

6.4 Tenders shall be irrevocable and remain open for acceptance by the Owner for a period of sixty (60) calendar days after the Tender Closing Time.

6.5 Owner's guidelines or policies that may be applicable shall not give rise to legal rights on the part of any contractor, subcontractor or others as against the Owner and shall in no case create any liability on the part of the Owner.

6.6 The Owner will notify the successful Tenderer by issuance of a Notice of Award.

7.0 KNOWLEDGE OF SITE

7.1 All Tenderers, either personally or through a representative, are responsible to examine the Place of the Work before submitting a Tender. A Tenderer has full responsibility to be familiar with and make allowance in the Tender for all conditions at the Place of the Work that might affect the Tender, including any overhead utilities and wiring in the Work area, the location of the Work, local conditions, conflicts with other Contractors safety, and access. By submitting a Tender, a Tenderer represents that the Tenderer has examined the Place of the Work, or specifically elected not to do so. No additional payments or time extensions shall be claimable or due because of difficulties relating to conditions at the Place of the Work which were reasonably foreseeable by a Contractor qualified to undertake the Work.

7.2 Neither the Owner nor the Consultant will be responsible for any error or negligence, interpretation or misinterpretation with respect to any discrepancies between actual site conditions and descriptions, or conditions contained in the Tender Documents. As set out in GC.45 the Contractor should confirm locations of all existing utilities visible within the Work area, working directly with the utility companies concerned, including regulatory departments of the City of Vancouver and confirm the requirements for working adjacent these utilities.

7.3 Tenderers should attend a site visit which will be arranged by the Owner, and is scheduled for Wednesday, November 26, 2008 at 9:00 A.M. Location: Tenderers should assemble at the Beach Avenue and Granville Street intersection to review the Work on the North approaches of the Granville Bridge. When completed on the North side, Tenderers should reassemble at the 7th Avenue and Fir Street intersection to review the South approaches.

8.0 APPROVED EQUALS

8.1 Prior to the Tender Closing Time a Tenderer may request the Owner to approve materials, products, or equipment ("Approved Equals") to be included in a Tender in substitution for items indicated in the Contract Documents.

8.2 Applications for an Approved Equals must be in writing, and supported by appropriate supporting information, data, specifications and documentation.

8.3 If the Owner decides in its discretion to accept an Approved Equals, then the Owner will issue an addendum to all Tenderers.

8.4 The Owner is not obligated to review or accept any application for an Approved Equals.

9.0 INTERPRETATION OF TENDER DOCUMENTS

- 9.1 If a Tenderer is in doubt as to the correct meaning of any provision of the Tender Documents, the Tenderer may request (in writing) clarification from the person named in paragraph 2.1 of this Section at least five (5) business days prior to the Closing Time.
- 9.2 If a Tenderer discovers any contradictions or inconsistencies in the Tender Documents or its provisions, the Tenderer shall immediately notify in writing the person named in paragraph 2.1 of this Section 00050.
- 9.3 If the Owner considers it necessary, the Owner may issue written addenda to provide clarification(s) of the Tender Documents.
- 9.4 No oral interpretation or representations from the Owner or any representative of the Owner will affect, alter or amend any provision of the Tender Documents.

10.0 PRICES

- 10.1 The Tender Price will represent the entire cost excluding GST to the Owner of the complete Work based on the Tender Documents, including Addenda. Notwithstanding the generalities of the above, Tenderers shall include in the Tender Price (including unit prices, separate prices, or other forms of pricing) sufficient amount to cover:
 - a) the costs of labour, equipment and material included in or required for the Work, including all items which, while not specifically listed, are included in the Work specifically or by necessary inference from the Tender Documents;
 - b) all assessments payable with respect to labour as required by any statutory scheme such as Workers' Compensation, employment insurance, holiday pay, insurance, CPP and all employee benefits;
 - c) all overhead costs, including head office and on-site overhead costs, and all amounts for the Contractor's profit; and
 - d) the cost of complying with all applicable laws regarding trade or other qualifications of employees performing the Work, and payment of appropriate wages for labour included in or required for the Work.

11.0 TAXES AND DUTIES

- 11.1 The Tender Price and unit prices shall include all Federal and Provincial taxes and all custom and excise duties in force as of the date of the Tender Closing Time, except the Federal Goods and Services Tax ("GST").
- 11.2 The GST is not to be considered an applicable tax for the purposes of this Tender. The Tenderer shall therefore not include any amount in the Tender Price and unit prices for the said GST. The Contractor will indicate on each application for payment as a separate amount the appropriate GST the Owner is legally obliged to pay. This amount will be paid to the Contractor in addition to the amount certified for payment under the Contract and will therefore not affect the Contract Price.

- 11.3 Tenderers are advised that, if they are not residents of Canada, the Income Tax Act of Canada requires that a certain percentage of the monies otherwise payable to the Contractor be withheld by the Owner and remitted to the Receiver-General for Canada. The percentage required to be withheld and remitted varies depending on, among other things, the country of residence, the provisions of any applicable treaties and the nature of the payment. Non-resident Tenderers may contact the Vancouver office of Canada Revenue Agency for further details. The Owner shall receive a credit under the Contract for monies withheld and remitted to the Receiver-General for Canada.

12.0 AMENDMENT OF TENDERS

- 12.1 A Tenderer may amend or revoke a Tender by giving written notice, delivered either by (1) hand to the office referred to in paragraph 3.1 of this Section 00050, or (2) by facsimile or e-mail to the office referred to in paragraph 2.1 of this Section 00050, at any time up until the Tender Closing Time. An amendment or revocation that is received after the Tender Closing Time shall not be considered and shall not affect a Tender as submitted.
- 12.2 An amendment or revocation is to be no more than 10 pages in length and is to be authorized and signed in the same manner as provided by paragraph 5.1 of this Section 00050.
- 12.3 Amendments should not expressly nor by inference disclose the Tenderer's Tender Price or other material element of the Tender, such that the original Tender Price or other material element of the Tender is prematurely disclosed.
- 12.4 If a Tender amendment or revocation is sent by facsimile or e-mail, the Tenderer assumes the entire risk that equipment and staff at the offices referred to in paragraphs 2.1 and 3.1 of this Section 00050 will properly receive the facsimile or e-mail containing the amendment or revocation before the Tender Closing Time. The Owner assumes no risk or responsibility whatsoever that any facsimile or e-mail will be received as required by paragraph 12.1 of this Section 00050 and shall not be liable to any Tenderer if for any reason a facsimile or e-mail is not properly received.

13.0 DURATION OF TENDERS

- 13.1 After the Tender Closing Time, a Tender shall remain valid and irrevocable as set out in paragraph 6.4 of this Section 00050.

14.0 QUALIFICATIONS OF TENDERERS

- 14.1 By submitting a Tender, a Tenderer is representing that it has the competence, qualifications and relevant experience required to do the Work. Tenderers are required to confirm that they have suitable experience in the performance of this type of Work by submitting on Schedule E at least three (3) related projects completed.

15.0 SUBCONTRACTORS

- 15.1 Pursuant to GC.25, the Owner reserves the right to object to any of the Subcontractors and suppliers listed in a Tender. If the Owner objects to a listed Subcontractor(s) then the

Owner will permit a Tenderer to, within five (5) Business Days, propose a substitute Subcontractor(s) acceptable to the Owner. A Tenderer will not be required to make such a substitution and, if the Owner objects to a listed Subcontractor(s), the Tenderer may, rather than propose a substitute Subcontractor(s), consider its tender rejected by the Owner and by written notice withdraw its Tender. The Owner shall, in that event, return the Tenderer's bid security.

16.0 DIVISION OF WORK AND OPTIONAL WORK

- 16.1 If Schedule D to the Form of Tender includes any Separate Prices for Optional Work, then Tenderers should complete all the prices for such Optional Work. Such tender prices shall not include any general overhead costs, or other costs, or profit, not directly related to the Optional Work.
- 16.2 The Owner may elect to proceed with any or all of the Optional Work for which prices are requested. The price for the Optional Work that is selected by the Owner shall be included in the Tender Price.
- 16.3 The prices for any or all of the listed Optional Work will be considered by the Owner for the purpose of price comparison between Tenders.

17.0 BONDS

- 17.1 Within ten (10) Business Days of the Contractor's receipt of Owner's Notice of Award, the Contractor shall at the Contractor's own expense, provide a Performance Bond and a Labour and Material Payment Bond each in the amount of fifty percent (50%) of the Tender Price. Each of such bonds shall be issued by a properly licensed surety company authorized to carry on the business of suretyship in the Province of British Columbia, in a form satisfactory to the Owner.
- 17.2 The cost of the Performance Bond and Labour and Material Payment Bonds shall be the responsibility of the successful Tenderer.

18.0 ADDENDA

- 18.1 The Owner will issue changes and clarifications to the Tender Documents and written Addendum to all parties registered as having received a copy of the Tender Documents and those Addenda shall then form part of the Tender Documents.
- 18.2 In the space provided in the Form of Tender, a Tenderer shall acknowledge that:
- a) he has received the Addenda; and
 - b) his Tender has been prepared in accordance with the Tender Documents, including such Addenda.

19.0 TIME FOR COMPLETION OF THE WORK

- 19.1 The Work shall commence immediately upon receipt of a Notice to Proceed, and must be completed by the completion date set out in Article A-1 of the Agreement and in accordance with the Project Schedule.

20.0 RELEASE, INDEMNITY AND LIMITATION

20.1 Defined Terms

For the purposes of this Clause 20.0:

- a) “Losses” means, in respect of any matter, all:
- i) direct and indirect; as well as
 - ii) consequential,

claims, demands, proceedings, losses, damages, liabilities, deficiencies, costs and expenses (including without limitation, all legal and other professional fees and disbursements, interest, penalties and amounts paid in settlement, whether from a third person or otherwise).

- b) “Tender Contract” means any contract whether simple or by deed formed upon receipt by the Owner of a tender from a Tenderer in response to the Request for Tender.

20.2 Release

The Tenderer now releases the Owner from all liability for any Losses in respect of:

- a) any alleged (or judicially imposed) breach by the Owner or its employees, officers, officials or agents, including the Engineer and any of its employees, directors and officers, of the Tender Contract (it being acknowledged and agreed that to the best of the parties’ knowledge, the Owner has no obligation or duty under the Tender Contract which it could breach (other than obligations or duties merely alleged or imposed judicially));
- b) any unintentional tort of the Owner or its employees, officers, officials or agents, including the Consultant, occurring in the course of conducting this Request for Tender;
- c) the Tenderer preparing and submitting a signed Form of Tender;
- d) the Owner accepting or rejecting the Tenderer’s Tender;
- e) the manner in which a Contract award is made or in which no Contract award is made; and

- f) the Tenderer(s), if any, to whom a Contract award is made.

20.3 Indemnity

The Tenderer now indemnifies and will protect and save the Owner and its employees, officers, officials and agents, including the Engineer and any of its employees, directors and officers, harmless from and against all Losses, in respect of any claim or threatened claim by the Tenderer or any of its Subcontractors, consultants or Suppliers alleging or pleading:

- a) any alleged (or judicially imposed) breach by the Owner or its employees, officers, officials or agents, including the Engineer and any of its employees, directors and officers, of the Tender Contract (it being agreed that, to the best of the parties' knowledge, the Owner has no obligation or duty under the Tender Contract which it could breach (other than obligations or duties merely alleged or imposed judicially));
- b) any unintentional tort of the Owner or its employees, officers, officials or agents, including the Consultant, occurring in the course of conducting this Request for Tender; or
- c) liability on any other basis related to the tendering process, bidding process or the Tender Contract.

20.4 Limitation

In the event that, with respect to anything relating to the tendering process, bidding process or the Tender Contract, the Owner or its employees, officers, officials or agents, including the Engineer and any of its employees, directors and officers, are found to have breached (including fundamentally breached) any duty or obligation of any kind to the Tenderer or its Subcontractors, consultants or Suppliers, whether at law or in equity or in contract or in tort, or are found liable to the Tenderer or its Subcontractors, consultants or Suppliers on any basis or legal principle of any kind, the Owner's liability is limited to a maximum of Five Hundred Dollars (\$500) in Canadian currency, despite any other term or agreement (either expressly stated or implied) to the contrary.

21.0 DISPUTE RESOLUTION

Any dispute relating in any manner to this Invitation to Tender, except only disputes arising between the Owner and any Tenderer to whom the Owner has issued a Notice of Award, will be resolved by arbitration in accordance with the *Commercial Arbitration Act* (British Columbia) amended as follows:

- a) The arbitrator will be selected by the Owner's Manager of Supply Management; and
- b) Clause 20.0 - Release, Indemnity and Limitation above will:
 - i) bind the arbitrator, the Tenderer and the Owner; and

- ii) survive any and all awards made by the arbitrator.

22.0 CONFIDENTIALITY AND PRIVACY

- 22.1 For the purposes of this Clause 22.0, “Information and Privacy Legislation” includes the *Freedom of Information and Protection of Privacy Act* (British Columbia) and all other similar legislation in effect from time to time.
- 22.2 The Tender, once submitted to the Owner, becomes the property of the Owner, which is a public body required under Information and Privacy Legislation to protect or disclose certain types of records according to certain statutory rules. The Tender, upon submission to the Owner, will be received and held in confidence by the Owner unless and to the extent that it is or must be disclosed pursuant to Information and Privacy Legislation or the award and evaluation process adopted by the Owner for this type of Request for Tender or the reporting to the Owner’s City Council in public.

23.0 ENGINEERING CONSULTANT

- 23.1 A contract for the provision of contract administration and inspection has been awarded to the Engineering Consultant Buckland & Taylor Ltd. (herein referred to as the “Engineer”) by the City.
- 23.2 The Engineer has been appointed and shall act as the sole and exclusive agent of the Owner for the purposes of the managing and administering the performance of the Work by the Contractor.

24.0 REFERENCE DRAWINGS OF THE GRANVILLE BRIDGE

- 24.1 The reference drawings listed on drawing number 1832-001 are design and construction drawings of the existing bridge which are available for viewing by the Tenderer at the Structures Branch office at the National Works Yard, 701 National Avenue, Vancouver B.C. Contact Merv Robertson at (604) 873-7321 to arrange a time for viewing. A set of the reference drawings will be supplied to the Contractor after the Award of Contract. The City assumes no responsibility for the correctness of the information shown on the drawings. The Contractor must satisfy itself of their accuracy.

END OF SECTION 00050 - INSTRUCTIONS TO TENDERERS

FORM OF TENDER
FOR
GRANVILLE BRIDGE SHEAR CAPACITY UPGRADES
SUBMITTED BY:

CONTRACTOR'S CONTACT PERSON:

Name: _____

Telephone: _____

Fax: _____

E-Mail: _____

PROJECT: Granville Bridge Shear Capacity Upgrades
TO: City of Vancouver
453 West 12th Avenue
Vancouver, BC V5Y 1V4
Attention: Dane Doleman, P.Eng., Project Manager

FROM: _____
[Insert Name of Contractor]

ADDRESS: _____

[Insert Contractor's Address]

1.0 WE, THE UNDERSIGNED:

1.1 have received and carefully reviewed the Tender Documents listed in the Instructions to Tenderers, and the following Addenda:

(Addenda, if any)

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.

2.0 ACCORDINGLY, WE HEREBY OFFER:

2.1 to perform and complete the Work and to provide all the labour, equipment and material, all as set out in the Tender Documents, in strict compliance with the Tender Documents;

Tenderer's Initials

2.2 to achieve Total Performance of the Work, on or before December 4, 2009 and in accordance with the Construction Schedule, Schedule H of this Form of Tender; and

2.3 to do the Work for fixed tender price of :

_____ dollars

(\$ _____) in Canadian funds (the "Tender Price"), which price includes all applicable taxes and duties in force at this date, but excludes the Federal Goods and Services Tax ("GST"). Said Tender Price is comprised of the component prices set out in Schedule A - Breakdown of Tender Price.

3.0 WE CONFIRM:

3.1 Required Documents Included:

that as required, the following completed forms are attached to and form a part of this Tender:

- a) Schedules A to L inclusive; and
- b) A Bid Bond in the amount of ten percent (10%) of the Tender Price.

3.2 No Conflict of Interest/No Collusion:

- a) that there is no officer, director, shareholder, partner or employee or other person related to the Tenderer (a "person having an interest") or any spouse, business associate, friend or relative of a person having an interest who is:
 - i) an elected official or employee of the Owner; or
 - ii) related to or has any business or family relationship with any elected official or employee of the Owner, such that there would be any conflict of interest or any appearance of conflict of interest in the evaluation or consideration of this Tender by the Owner, except as follows: [Tenderer is to either insert "None" here or list out persons or relationships which might create conflict of interest].
- b) and now also confirms and warrants that,
 - i) the Tenderer has no affiliation, whether legal or financial, with any other entity which is in the business of providing the same type of goods or services which are the subject of this ITT; and
 - ii) the Tenderer is not competing within this ITT process with any entity with which it is legally or financially associated or affiliated, except as follows: [Tenderer is to either insert "None" here or list out persons or relationships which might constitute an exception to this declaration of no collusion].

Tenderer's Initials

4.0 WE AGREE:

- 4.1 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 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:
- a) within ten (10) Business Days of receipt of the written Notice of Award deliver to the Owner:
 - i) a Performance Bond and a Labour and Material Payment Bond, each in the amount of fifty percent (50%) of the Contract Price, 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;
 - ii) a detailed Construction Schedule, as provided by GC.22;
 - iii) ours and our Sub-Contractors’ WorksafeBC registration number(s) and clearance letter(s), as well as our “Prime Contractor Agreement”, “Notice of Project”, and “Pre-Contract Hazard Assessment”, as applicable and if/as required pursuant to GC.7;
 - iv) a certificate of insurance or copy of the insurance policies as required by GC.53 indicating that all such insurance coverage is in place;
 - v) a copy of our business licence issued by the City of Vancouver;
 - b) upon receipt of a Notice to Proceed from the Owner, undertake the Work in accordance with the Project Schedule; and
 - c) execute the Contract upon finalization by the Engineer and Owner within the time specified in Clause 5.0 of this Section.

5.0 WE AGREE:

- 5.1 that, if we receive written Notice of Award and, contrary to Clause 4.0 of this Form of Tender, we:
- a) fail or refuse to deliver the documents as specified by paragraph 4.1.1 of this Form of Tender;
 - b) fail to execute the Contract within seventy-two (72) hours of receipt of such document; or
 - c) 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:

- a) the face value of the Bid Security; and
- b) the amount by which our Tender Price is less than the amount for which the Owner contracts with another party to perform the Work.

6.0 IN WITNESS WHEREOF this Tender is executed on _____, 2008

[Where a Tenderer is a corporation, the corporate seal should be affixed by the person or persons so authorized by the corporation. If the corporation does not have a seal, the name of the corporation should be written in the appropriate space below, together with the signature of the person or persons duly authorized to bind the corporation in this regard. A certified copy of a resolution of the corporation authorizing the execution of this Form of Tender should be submitted to the Owner on demand.]

WHERE THE TENDERER IS A CORPORATION:

The Common Seal of

C/S

was hereunto affixed

in the presence of:

Authorized Signatory

Please print name and title

Authorized Signatory

Please print name and title

WHERE THE TENDERER DOES NOT HAVE A SEAL:

_____.

[Full Name of Corporation]

Per: _____

Authorized Signatory

Please print name and title

Per: _____

Authorized Signatory

Please print name and title

FOR PARTNERSHIP:

[Full Name of Partnership]

Per: _____

Authorized Signatory

Please print name and title

Per: _____

Authorized Signatory

Please print name and title

FOR SOLE PROPRIETORSHIP:

SIGNED, SEALED AND DELIVERED

in the presence of

Signature of Witness

Signature of Individual

Address

Full name of Individual

Occupation

Tenderer's Initials

SCHEDULE A

BREAKDOWN OF TENDER PRICE

The Tenderer submits the following lump sums for the items listed below as a breakdown of the Tender Price. These lump sums will be used to compute interim payment to the Tenderer. The lump sums shall include the supply and installation of all labour, materials, services, supervision, taxes (excluding the GST), and assessments, together with the Tenderer's overhead and profit and shall include all Work under the Contract. Tenderers shall submit one lump sum price only for each item listed below, to be provided in accordance with the drawings, specifications and other pertinent information in the Contract Documents. For items of Work which are not listed, Tenderers shall place the costs for these in the nearest applicable item.

ITEM	DESCRIPTION	ITEM LUMP SUM TENDERED
1	Mobilization (maximum 20% of total Tender price)	
2	Supply, Fabrication & Installation of Shear Straps Type 1C	
3	Supply, Fabrication & Installation of Shear Straps Type 1H	
4	Supply, Fabrication & Installation of Shear Straps Type 2C	
5	Supply, Fabrication & Installation of Shear Straps Type 2H	
6	Supply, Fabrication & Installation of Shear Straps Type S1	
7	Supply, Fabrication & Installation of Shear Straps Type S2	
8	Supply, Fabrication & Installation of Cap Beam Shear Straps	
TOTAL TENDER PRICE (Including All Taxes except GST)		

Tenderer's Initials

SCHEDULE B

SCHEDULE OF UNIT PRICES FOR ADJUSTMENTS TO LUMP SUM PRICES

The Tenderer submits the following unit prices for the items listed below in the units of measurement called for to be used for adjustments to the lump sum prices. These unit prices will be used to compute payment to the Tenderer for additions and deletions to the Contract. The unit prices shall include the supply and installation of all labour, materials, services, supervision, taxes (excluding the GST) and assessments, together with the Tenderer's overhead and profit. The Tenderer shall submit one (1) unit price for additions and deletions for each item listed for Work to be performed in accordance with the drawings, specifications and other pertinent information in the Contract Documents.

ITEM	DESCRIPTION	UNIT OF MEASUREMENT	UNIT PRICE
1	Supply, Fabrication & Installation of Shear Straps Type 1C	ea	
2	Supply, Fabrication & Installation of Shear Straps Type 1H	ea	
3	Supply, Fabrication & Installation of Shear Straps Type 2C	ea	
4	Supply, Fabrication & Installation of Shear Straps Type 2H	ea	
5	Supply, Fabrication & Installation of Shear Straps Type S1	ea	
6	Supply, Fabrication & Installation of Shear Straps Type S2	ea	
7	Supply, Fabrication & Installation of Cap Beam Shear Straps	ea	

Tenderer's Initials

SCHEDULE C

SCHEDULE OF SUBCONTRACTORS AND SUPPLIERS

Pursuant to paragraph 5.3 of the Instructions to Tenderers, the following are the Subcontractors and Suppliers we propose to use for the categories of Work listed hereunder:

1.0 SUBCONTRACTORS

	Work (by Area of Responsibility, Division, or Section, as applicable)	Name, Address, Contact Person, Telephone Number of Subcontractor

2.0 SUPPLIERS

The Tenderer should list all major suppliers and manufacturers (including those suppliers/manufacturers for the items listed in the table below) that it intends to use on this project, including documentation on significant Products, goods, materials and equipment to be used in any portion of the Work.

SUPPLIER	MANUFACTURER	ADDRESS	ITEM

Additional pages may be attached to this page. Each such additional page should be clearly marked "ITT PS08116, FORM OF TENDER - SCHEDULE C", and should be signed by the Tenderer.

 Tenderer's Initials

SCHEDULE D

SEPARATE PRICES FOR OPTIONAL WORK

Pursuant to paragraph 5.3 of the Instructions to Tenderers, the following is a list of items for which Separate Prices were requested. These Separate Prices are not included in our Tender Price. Price quoted includes all overhead, profit and taxes, excluding GST. We understand that the Owner, at its option, may use these prices in comparison of the tenders.

No.	Description of Separate Price Work	Amount (\$)
1.	None Requested	N/A

SCHEDULE E

TENDERER'S EXPERIENCE WITH RELATED WORK

The Tenderer should list any comparable projects which it has undertaken by providing the following information:

Description of Project: No.1 of 3 _____

Location of Project: _____

Contract Value (Canadian Funds): \$ _____

Start and Completion Dates: _____

Completed on Schedule? Yes/No (Circle Correct Response)

Name of Contract Owner: _____

Name of Project Reference: _____

Current Telephone Number and E-mail of Project Reference:

Names of Key Personnel and Subcontractors:

Tenderer's Initials

SCHEDULE E - Continued

TENDERER'S EXPERIENCE WITH RELATED WORK

Description of Project: No. 2 of 3 _____

Location of Project: _____

Contract Value (Canadian Funds): \$ _____

Start and Completion Dates: _____

Completed on Schedule? Yes/No (Circle Correct Response)

Name of Contract Owner: _____

Name of Project Reference: _____

Current Telephone Number and E-mail of Project Reference:

Names of Key Personnel and Subcontractors:

Tenderer's Initials

SCHEDULE E - Continued

TENDERER'S EXPERIENCE WITH RELATED WORK

Description of Project: No.3 of 3 _____

Location of Project: _____

Contract Value (Canadian Funds): \$ _____

Start and Completion Dates: _____

Completed on Schedule? Yes/No (Circle Correct Response)

Name of Contract Owner: _____

Name of Project Reference: _____

Current Telephone Number and E-mail of Project Reference:

Names of Key Personnel and Subcontractors:

Tenderer's Initials

SCHEDULE F

HOURLY RATES FOR LABOUR

Pursuant to paragraph 5.3 of the Instructions to Tenderers, the following is a list of items for which Unit Labour Prices were requested. Unit prices quoted are “all-inclusive” and include without limitation and by way of example only all wages, salaries, union dues, payroll taxes (except GST), fees, overtime premiums, CPP, employment insurance premiums, vacation pay, travel, accommodation, all tools and supplies, administrative expenses, overhead, and profit, but excluding GST.

	Category	Regular Time (\$ Any time permitted by City of Vancouver Noise By-law for the Work.	Premium Time (\$ Limited to only those times, if any, outside of Regular Time, expressly authorized by Owner pursuant to GC.22
1.	General Foreman	\$/hr	\$/hr
2.	Welding Foreman	\$/hr	\$/hr
3.	Laborer	\$/hr	\$/hr
4.	Welder	\$/hr	\$/hr
5,	Manulife Operator	\$/hr	\$/hr
6.		\$/hr	\$/hr
7.		\$/hr	\$/hr

SCHEDULE G

ALL FOUND HOURLY RATES FOR EQUIPMENT

Pursuant to paragraph 5.3 of the Instructions to Tenderers, the following is a list of items for which All Found Unit Equipment Prices are requested. Unit prices quoted are “all-inclusive” and include without limitation and by way of example only, all costs of operating the equipment including operator’s wages etc. as per Schedule F.

	Category	Regular Time (\$ Any time permitted by City of Vancouver Noise By-law for the Work.	Premium Time (\$ Limited to only those times, if any, outside of Regular Time, expressly authorized by Owner pursuant to GC.22
1.		\$/hr	\$/hr
2.		\$/hr	\$/hr
3.		\$/hr	\$/hr
4.		\$/hr	\$/hr
5.		\$/hr	\$/hr
6.		\$/hr	\$/hr
7.		\$/hr	\$/hr

SCHEDULE H

CONSTRUCTION SCHEDULE

Please clearly define time requirements as outlined in SC.4. If necessary, please add an attachment to this Schedule. Each additional page should be clearly marked “ITT PS08116 - SCHEDULE H”, and should be signed by the Tenderer.

WORK DESCRIPTION	Jan/09	Feb/09	Mar/09	Apr/09	May/09	Jun/09	Jul/09	Aug/09	Sept/09	Oct/09	Nov/09	Dec/09

Tenderer's Initials

SCHEDULE I

PROPOSED KEY PROJECT PERSONNEL

Pursuant to paragraph 5.3 of the Instructions to Tenderers, the following are the Key Project Personnel we propose to use for the Work:

		Name
Project Superintendent:		
Project Manager:		
Construction Safety Officer:		
Foreman:		

SCHEDULE J

UNDERTAKING OF SURETY

(To be submitted with Form of Tender)

We, the undersigned, do hereby undertake and agree to become bound unto the City of Vancouver in:

- a) a PERFORMANCE BOND in the amount of fifty percent (50%) of the Tender Price shown on the Form of Tender and drawn up in accordance with the requirements specified in the Tender Documents; and
- b) a LABOUR AND MATERIAL PAYMENT BOND in the amount of fifty percent (50%) of the Tender Price shown on the Form of Tender and drawn up in accordance with the requirements specified in the Tender Documents,

if the Contract is awarded to: _____

Dated this _____ day of _____ 2008

Signature and Corporate Seal of Surety Company licensed to conduct business in the Province of British Columbia:

(C/S)

Name of Surety Company

Authorized Signatory

Print Name and Title

SCHEDULE K

UNDERTAKING OF LIABILITY INSURANCE

(To be Submitted with Form of Tender)

To: City of Vancouver

RE: [_____ PS _____]

Dear Sirs:

We, the undersigned have completed, signed and attached the "Certificate of Existing Insurance" enclosed with this undertaking and now also do hereby, undertake and agree to

- a) insure the Contractor in the amount of \$5,000,000 Project Specific Wrap-up Liability Insurance as outlined in the Tender Documents and agree to:
 - i) name the City of Vancouver, its officers, Consultant, Subconsultants and employees, Contractor, Subcontractors, and all other participants in the Project as Joint Named Insureds;
 - ii) state that such policy applies to each insured in the same manner and to the same extent as if separate policies had been issued to each insured named on the policy;
 - iii) state that the policy cannot be cancelled, lapsed, or materially changed without at least 60 days written notice of cancellation delivered to the City of Vancouver's Project Manager; and
 - iv) state that the coverage provided by such insurance shall protect the Contractor and the City of Vancouver during the performance of the Work specified in the Tender Documents and specifically that the insurance required by such Tender Documents shall be consistent with the requirements therein,

- b) insure the Contractor for the full replacement cost value of the Project with All Risk Course of Construction (Builder's Risk Form) Insurance as outlined in the Tender Documents and agree to:
 - i) name the City of Vancouver as an insured;
 - ii) naming the City of Vancouver as a loss payee stating that proceeds will be payable to the Contractor and City as their interests may appear;
 - iii) containing a waiver of subrogation against the City of Vancouver and all of its officials, officers, employees, and other agents,
 - iv) state that the policy cannot be cancelled, lapsed, or materially changed without at least 60 days written notice of cancellation delivered to the City of Vancouver's Project Manager; and

Initials

- v) state that the coverage provided by such insurance shall protect the Contractor and the City of Vancouver during the performance of the Work specified in the Tender Documents and specifically that the insurance required by such Tender Documents shall be consistent with the requirements therein,
- c) insure the Contractor for the full replacement cost value of the unlicensed mobile equipment owned or leased by the Contractor for use with this Project with Contractor's Equipment Insurance as outlined in the Tender Documents and agree to:
 - i) name the City of Vancouver as an insured;
 - ii) naming the City of Vancouver as a loss payee stating that proceeds will be payable to the Contractor and City as their interests may appear;
 - iii) containing a waiver of subrogation against the City of Vancouver and all of its officials, officers, employees, and other agents,
 - iv) state that the policy cannot be cancelled, lapsed, or materially changed without at least 60 days written notice of cancellation delivered to the City of Vancouver's Project Manager; and
 - v) state that the coverage provided by such insurance shall protect the Contractor and the City of Vancouver during the performance of the Work specified in the Tender Documents and specifically that the insurance required by such Tender Documents shall be consistent with the requirements therein,

if the Contract is awarded to: _____

EXCEPTIONS: _____

Dated at _____, British Columbia, this _____ day of _____ 2008

BY: _____ TITLE: _____

The attached "Certificate of Existing Insurance" should be completed and signed and enclosed with this form which should also be signed by the Insurance Company or an authorized Broker on behalf of the Insurance Company. A SEPARATE FORM (AND CERTIFICATE OF EXISTING INSURANCE) SHOULD BE SIGNED FOR EACH POLICY IF TENDERER HAS MORE THAN ONE INSURER OR BROKER FOR ITS POLICIES.



**CERTIFICATE OF EXISTING INSURANCE
TO BE COMPLETED AND SUBMITTED ALONG WITH
PROPOSAL /TENDER**

Section 2 through 8 – to be completed by the Insurer or its Authorized Representative

1. **THIS CERTIFICATE IS ISSUED TO:** City of Vancouver, 453 W 12th Avenue, Vancouver, BC, V5Y 1V4
And certifies that the insurance policy (policies) as listed herein has been issued to the Named Insured and is in full force and effect as of the effective date of the agreement described below.

NAMED INSURED *(must be the same name as the proponent/bidder and is either an individual or a legally incorporated company)*

BUSINESS TRADE NAME or **DBA DOING BUSINESS AS**

BUSINESS ADDRESS

DESCRIPTION OF OPERATION

3. **PROPERTY INSURANCE (All Risks Coverage including Earthquake and Flood)**

INSURER _____	Insured Values (Replacement Cost) -
TYPE OF COVERAGE _____	Building and Tenants Improvement \$ _____
POLICY NUMBER _____	Contents and Equipment \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____

4. **COMMERCIAL GENERAL LIABILITY INSURANCE (Occurrence Form)**

Including the following extensions:

<input checked="" type="checkbox"/> Personal Injury	INSURER _____
<input checked="" type="checkbox"/> Property Damage including Loss of Use	POLICY NUMBER _____
<input checked="" type="checkbox"/> Products and Completed Operations	POLICY PERIOD From _____ to _____
<input checked="" type="checkbox"/> Cross Liability or Severability of Interest	Limits of Liability (Bodily Injury and Property Damage Inclusive) -
<input checked="" type="checkbox"/> Employees as Additional Insureds	Per Occurrence \$ _____
<input checked="" type="checkbox"/> Blanket Contractual Liability	Aggregate \$ _____
<input checked="" type="checkbox"/> Non-Owned Auto Liability	All Risk Tenant's Legal Liability \$ _____
	Deductible Per Occurrence \$ _____

5. **AUTOMOBILE LIABILITY INSURANCE** for operation of owned and/or leased vehicles

INSURER _____	Limits of Liability -
POLICY NUMBER _____	Combined Single Limit \$ _____
POLICY PERIOD From _____ to _____	<i>If vehicles are insured by ICBC, complete and provide Form APV-47.</i>

6. **UMBRELLA OR** **EXCESS LIABILITY INSURANCE** **Limits of Liability (Bodily Injury and Property Damage Inclusive) -**

INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Self-Insured Retention \$ _____

7. **PROFESSIONAL LIABILITY INSURANCE**

INSURER _____	Limits of Liability
POLICY NUMBER _____	Per Occurrence/Claim \$ _____
POLICY PERIOD From _____ to _____	Aggregate \$ _____
	Deductible Per Occurrence/Claim \$ _____

If the policy is in a "Claims Made Form", please specify the applicable Retroactive Date: _____

8. **OTHER INSURANCE**

TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____
TYPE OF INSURANCE _____	Limits of Liability
INSURER _____	Per Occurrence \$ _____
POLICY NUMBER _____	Aggregate \$ _____
POLICY PERIOD From _____ to _____	Deductible Per Loss \$ _____

SIGNED BY THE INSURER OR ITS AUTHORIZED REPRESENTATIVE

Dated _____

PRINT NAME OF INSURER OR ITS AUTHORIZED REPRESENTATIVE, ADDRESS AND PHONE NUMBER

SCHEDULE L

PRIME CONTRACTOR AGREEMENT FORM

1.0 DEFINITIONS

1.1 Owner

As defined in the Contract, the City of Vancouver as the owner of the Place of the Work, according to the *Workers Compensation Act (Part III, Division1)*.

1.2 Prime Contractor

The Contractor selected by the Owner to be the Prime Contractor on the Place of the Work (the "Work Site") with respect to occupational health and safety only.

2.0 RESPONSIBILITIES

2.1 Prime Contractor Candidate

The candidate for Prime Contractor will provide a copy of its WorkSafeBC "Clearance Letter", a signed copy of this document and all other documents requested to the Owner.

2.2 Prime Contractor

During the Contract, the Prime Contractor will:

- a) notify the Owner of any changes of status with the WorkSafeBC;
- b) ensure the health and safety of the workers on the Work Site;
- c) inform all others on the Work Site that it is the Prime Contractor;
- d) coordinate all occupational health and safety activities for the Work Site;
- e) do everything practicable to establish and maintain a system or process to ensure all employers at the Work Site comply with the *Workers Compensation Act (British Columbia)*, and the *WorkSafeBC Occupational Health and Safety Regulations ("WCB OH&S Regulations")*;
- f) review and complete a "Pre-Job Meeting Form" if requested by the Owner;
- g) submit the Notice of Project to WorkSafeBC;
- h) comply with *WCB OH&S Regulation 20.2* for the general requirements of a Notice of Project;
- i) where workers of two (2) or more employers are working at the same time and the combined workforce is greater than five (5) on the Work Site, identify and designate a Qualified Coordinator to coordinate health and safety activities; and

j) provide the information listed in *WCB OH&S Regulation 20.3(4)* at the Work Site.

2.3 Prime Contractor's Qualified Coordinator (Construction Only)

The Prime Contractor's Qualified Coordinator will comply with the "Duties of the Qualified Coordinator" as listed in *WCB OH&S Regulation 20.3(3)*.

3.0 DESIGNATION

3.1 By signing this agreement, the Tenderer agrees to accept all responsibilities of a Prime Contractor as outlined in Part III of the *Workers Compensation Act*, and *WCB OH&S Regulations*.

As a Contractor signing this agreement with the Owner, the Tenderer agrees that its company and its subcontractors, and their management staff, supervisory staff, employees, workers and agents will comply with Part III of the *Workers Compensation Act*, and *WCB OH&S Regulations*.

Any WorkSafeBC violation by the Prime Contractor may be considered a material breach of contract resulting in possible termination or suspension of the Contract and/or any other actions deemed appropriate at the discretion of the Owner.

Any penalties, sanctions or additional costs levied against the Owner, as a result of the actions of the Prime Contractor, are the responsibility of the Prime Contractor.

I, the undersigned, acknowledge having read and understood the information above. By signing this agreement, I agree as a representative of the Contractor noted below, to accept all responsibilities of the Prime Contractor for this Project.

Date:	
Contractor's Name:	
Qualified Coordinator's Name:	
Authorized Signatory - State Title:	

END OF SECTION 00310 - FORM OF TENDER

DRAWING LIST

The following Drawings bound separately, form part of the Construction Documents:

Drawing No.	Scale	Title	Date
<u>1832-000</u>	<u>N/A</u>	<u>COVER AND DRAWING LIST</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-001</u>	<u>N/A</u>	<u>GENERAL NOTES</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-002</u>	<u>1:500</u>	<u>GENERAL LAYOUT</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-003</u>		<u>NOT USED</u>	
<u>TO</u>			
<u>1832-009</u>		<u>NOT USED</u>	
<u>1832-010</u>	<u>1:50</u>	<u>CONSTANT DEPTH GIRDER - SHEAR STRAP LAYOUT</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-011</u>	<u>1:50</u>	<u>HAUNCHED GIRDER - SHEAR STRAP LAYOUT</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-012</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 1 NORTH GRANVILLE</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-013</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 2 NORTH GRANVILLE</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-014</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 3 SEYMOUR STREET</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-015</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 4 HOWE STREET</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-016</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 5 NORTH GRANVILLE</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-017</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 6 SOUTH GRANVILLE</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-018</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 7 SOUTH GRANVILLE</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-019</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 8 SOUTH GRANVILLE</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-020</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 9 HEMLOCK STREET</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-021</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 10 4th AVENUE / FIR STREET</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-022</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 11 FIR STREET</u>	<u>NOVEMBER 17, 2008</u>

<u>1832-023</u>	<u>1:250</u>	<u>SHEAR STRAP LAYOUT - SEGMENT 12 FIR STREET</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-024</u>		<u>NOT USED</u>	
<u>TO</u>			
<u>1832-029</u>		<u>NOT USED</u>	
<u>1832-030</u>	<u>AS NOTED</u>	<u>SHEAR STRAP TYPES 1C & 1H</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-031</u>	<u>AS NOTED</u>	<u>SHEAR STRAP TYPES 2C & 2H</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-032</u>	<u>AS NOTED</u>	<u>SHEAR STRAP TYPES S1 & S2</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-033</u>		<u>NOT USED</u>	
<u>TO</u>			
<u>1832-039</u>		<u>NOT USED</u>	
<u>1832-040</u>	<u>1:100</u>	<u>CAP BEAM SHEAR STRAP LAYOUT - PIERS S13 AND S14</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-041</u>	<u>1:100</u>	<u>CAP BEAM SHEAR STRAP LAYOUT - PIERS S15 AND S16</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-042</u>	<u>1:100</u>	<u>CAP BEAM SHEAR STRAP LAYOUT - PIERS S17 AND S26</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-043</u>	<u>1:100</u>	<u>CAP BEAM SHEAR STRAP LAYOUT - PIERS N8 AND N9</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-044</u>	<u>1:100</u>	<u>CAP BEAM SHEAR STRAP LAYOUT - PIERS N13 AND N14</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-045</u>	<u>1:100</u>	<u>CAP BEAM SHEAR STRAP LAYOUT - PIERS N15 AND N16</u>	<u>NOVEMBER 17, 2008</u>
<u>1832-046</u>	<u>AS NOTED</u>	<u>CAP BEAM SHEAR STRAP</u>	<u>NOVEMBER 17, 2008</u>

END OF SECTION 00400 - LIST OF DRAWINGS



FORM OF AGREEMENT
FOR
ITT PS08116
GRANVILLE BRIDGE SHEAR CAPACITY UPGRADES

OWNER: CITY OF VANCOUVER

ENGINEER: Buckland & Taylor Ltd.

CONTRACTOR:

CONTRACT WORK: ITT PS08116
GRANVILLE BRIDGE SHEAR CAPACITY UPGRADES

FORM OF AGREEMENT

This AGREEMENT is made as of the day of , 2008

BETWEEN:

CITY OF VANCOUVER,
having an office at 453 West 12th Avenue,
Vancouver, British Columbia, V5Y 1V4

(hereinafter referred to as the "Owner")

OF THE FIRST PART

AND:

(hereinafter referred to as the "Contractor")

OF THE SECOND PART

WHEREAS:

- (A) The Owner has appointed Buckland & Taylor Ltd. (hereinafter referred to as the "Engineer") to act as its sole and exclusive agent for purposes of managing and administering the performance of the Work by the Contractor in accordance with the Specifications and Drawings which form part of the Contract Documents;
- (B) The Contractor has agreed with the Owner to perform the Work and to furnish all plant, tools, equipment, labour, products, material and supervision necessary therefore as hereinafter set forth.

NOW THEREFORE THIS AGREEMENT WITNESSES as follows:

ARTICLE I - ROLE OF THE ENGINEER

The Owner hereby designates and appoints the Engineer as its sole and exclusive agent for the purpose of managing and administering for the Owner under the Contract as set out in the Contract documents. Unless otherwise notified in writing by the Owner to the Contractor, the agency of the Engineer shall continue for the entire duration of this Contract including the period of any guarantees or warranties given by or through the Contractor. In the event of the revocation in writing of the agency of the Engineer by the Owner, the Engineer shall have no further authority under this Contract, except as may be specifically designated in writing by the Owner and agreed to in writing by the Engineer, and all references to the Engineer in this Contract shall thereafter be deemed to be a reference to the Owner or to such other person

designated in writing to the Contractor. The Engineer may from time to time delegate to a representative the performance of or the authority to perform the duties, responsibilities, rights and obligations of the owner in respect of which the Engineer has been designated and appointed its sole and exclusive agent.

ARTICLE II - WORK TO BE DONE

The Contractor and the Owner hereby agree that the Products to be furnished and the Work to be done by the Contractor are:

Furnish all materials, Products, labour, services and supervision necessary for the shear capacity upgrades, and all other things and matters referred to in the Contract Documents and shown on the Drawings.

ARTICLE III - CONTRACT DOCUMENTS

The following is a list of the constituents of the Contract Documents referred to in Article I of this Agreement. This list is subject to subsequent amendments in accordance with the provisions of the Contract Documents. Terms used in the Contract Documents which are defined in GC.1 - DEFINITIONS shall have the meaning designated in those definitions.

This Agreement, when executed by the Owner and the Contractor	
General Conditions	
Schedule A -	Breakdown of Tender Price
Schedule B -	Schedule of Unit Prices for Adjustments to Lump Sum Prices
Schedule C -	Schedule of Subcontractors and Suppliers
Schedule D -	Separate Price for Optional Work
Schedule E -	Tenderer's Experience with Related Work
Schedule F -	Hourly Rates for Labour
Schedule G -	All Found Hourly Rates for Equipment
Schedule H -	Construction Schedule
Schedule 9 -	Insurance Certificate
Schedule I -	Proposed Key Project Personnel
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Schedule K -	Undertaking of Liability Insurance
Schedule L -	Prime Contractor Agreement Form
Special	

Conditions	
Buckland & Taylor - Specifications	

The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. The intent and spirit of the Contract Documents is that the Contractor is required to construct the Work complete in every detail within the times and for the purposes designated and that the Contractor shall furnish and do any and everything necessary for such purposes notwithstanding any omission from the Contract Documents.

ARTICLE IV - SCHEDULE OF WORK

The Contractor shall begin the Work within five (5) calendar days after the Owner provides the Notice to Proceed and shall carry on in accordance with the construction schedule approved by the Engineer and complete the Work on time in accordance with the Special Conditions Clause SC.4.

ARTICLE V - PAYMENT

(a) Amount to be Paid:

The City agrees, subject to additions and deletions for variation in the Work and to quantities utilized as may be agreed upon in writing and subject to the terms of the Contract Documents, to pay the Contractor the sum of _____

(\$_____) the "Contract Amount", including the Goods and Services Tax (GST), in Canadian funds for the performance of the Work under this Contract.

(b) Application for Payment

(i) During progress of the Work the Contractor may make application to the Engineer for payment, in the form approved by the Engineer, on or before the last day of every month for Work done and materials supplied at or to the site to the date of the application, provided that the Engineer may at any time require as a condition of payment the submission of documentation set out in GC.60.

(ii) On Substantial Performance being certified in accordance with the procedures set out in GC.60 and the value of the certified deficiencies being agreed upon, the Contractor may make application to the Engineer for the balance of all monies then owing under this Contract to the Contractor, less those amounts authorized or required to be deducted pursuant to GC.60 and submitting also such documentation as is required by GC.60.

- (iii) On correction and completion of all deficient work listed on the certificate of Substantial Performance, the Contractor shall submit his application to the Engineer for final payment and issuance of the Final Certificate of Acceptance, accompanied by the documentation required by GC.60.

(c) Payment

Despite any other term of the Contract Documents, the payment for any Work under this Contract which shall be made to the Contractor by the City and the issuance of any certificate, notice or determination by the Engineer, including by way of example only, the issuance of the Certificate of Substantial Performance, Final Certificate of Acceptance and any payment certificates issued in respect of specific milestones, will not be construed as an acceptance of any Work being in accordance with the Contract Documents.

d) Payment and Holdback Procedure

Payments to the Contractor will be made by the City as follows:

- (i) Within 7 calendar days of receiving the Contractor's application for payment, the Engineer will adjust, if necessary, and certify the Contractor's application for payment to the City. Where the Engineer makes any changes to the amount submitted by the Contractor for payment, the Contractor shall be notified in writing within 7 calendar days and shall be given the opportunity to defend his application without delay.
- (ii) Within 14 calendar days of the date the Engineer certifies the Contractor's application for payment, the City will make payment to the Contractor for the amount certified by the Engineer less a *Builders Lien Act* holdback amount equal to ten percent (10%) of such certified value and less the aggregate of any previous payments all in accordance with the Clause GC .60 and with the *Builders Lien Act*.
- (iii) After fifty-five (55) calendar days have elapsed from the date of the Certificate of Substantial Performance, issued in accordance with GC.60 and upon the Engineer's satisfaction that no encumbrance, lawful claim or lien exists, the City will, within a further ten (10) calendar days, make payment to the Contractor of all monies due under this Contract at the date of Substantial Performance, including the release of all remaining *Builders Lien Act* holdback amounts, but retaining all other holdbacks or deductions authorized or required by GC.60.
- (iv) Upon the Engineer's issuance of the Final Certificate of Acceptance pursuant to GC.60 and Article V((b)(iii)) above, the City will make a final payment of all monies owing to the Contractor under the Contract.

(e) Final Certificate of Acceptance

The issuance of the Final Certificate of Acceptance shall constitute a waiver by the Contractor of all claims except those previously made in writing and still unsettled, if any, and specified by the Contractor in his application for final payment pursuant to Article V(b)(iii) above.

(f) Interest on Overdue Payments

Where payment is not made in accordance with the payment provisions contained in paragraph (d) above, the overdue amount shall bear interest at the lending rate of the Bank of Montreal for its prime commercial customers and such interest shall be calculated from and after the date upon which such payment was due and shall accrue until the date that payment of the overdue amount together with interest is made. This interest obligation on the City shall constitute the sole remedy of the Contractor for late payment.

ARTICLE VI - NOTICES

Unless otherwise specifically provided in the Contract Documents, all notices, instructions, orders, or other communications in writing shall be conclusively deemed to have been given to

(a) the Contractor, if delivered (in one of the manners set out below) to the Contractor at the civic, fax, or e-mail address given on the Tender Form (or subsequently replaced by notice under GC17 and/or completing the section below of this Form of Agreement) or to the Contractor's superintendent or foreman (in one of the manners set out below),

(b) the Owner, if delivered (in one of the manners set out below) to the Owner at the civic, fax, or e-mail address set out below or to the Engineer (in one of the manners set out below):

Contractor:

Attention:

Unless otherwise specifically provided in the Contract Documents all notices, requests, claims or other communications by the Contractor shall be in writing and shall be given by personal delivery or by mail addressed to the:

Owner:

CITY OF VANCOUVER
c/o Buckland & Taylor Ltd.
101-788 Harbourside Drive
North Vancouver, B.C.
V7P 3R7

Attention: Mr. Darrel Gagnon, P.Eng. (with a copy to Dane Doleman, P.Eng., Structures Engineer)

Either of the said addresses may be changed from time to time by written notice to the other party.

Notices given by personal or courier delivery are considered given and received only on actual delivery, notices given by fax transmission are considered given and received only when receipt is confirmed to the sender, and notices given by e-mail are considered given and received only when receipt is confirmed to the sender or by the recipient's records except that notices given on a day that is not a Business Day, or given after 4:00 p.m. (Vancouver time) on a Business Day are considered given at 9:00 a.m. on the next following Business Day. Notices sent by regular mail will not be deemed to have been received until 7 Business Days after the date of the postal authorities' post-mark date stamp on same.

ARTICLE VII - LAW OF CONTRACT

The laws of British Columbia will apply to and govern the Contract Documents and the courts of British Columbia will have exclusive jurisdiction over all disputes not resolved by mediation or arbitrations.

ARTICLE VIII - TIME OF THE ESSENCE

Time will be of the essence for all purposes of the Contract Documents and the performance of the Work.

ARTICLE IX - SUCCESSORS AND ASSIGNS

The Contract Documents bind and benefit the City and the Contractor and their successors and permitted assigns.

IN WITNESS TO THE ABOVE the parties have executed and delivered this Form of Agreement as set out below.

CITY OF VANCOUVER

BY: _____ C/S

CONTRACTOR

BY: _____ C/S
Authorized Signatory

Witness

Name, Title

Authorized Signatory

Name, Title

Refer to Council Minutes of _____, 2009

Initials

END OF SECTION 00500 - AGREEMENT

DEFINITIONS AND GENERAL CONDITIONS

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GC.1. DEFINITIONS

Where used in the Agreement, Instructions to Tenderers, Tender Form, Bonds, General Conditions, Special Conditions, Specifications, Drawings, Schedules or Addenda, or any other documents forming part of this Contract:

- a) "Business Day" means any day that is not a Saturday, Sunday or "holiday" (as defined in the *Interpretation Act* B.C.);
- b) "Certificate of Substantial Performance" means, subject to Article V(b) of the Form of Agreement and to the warranty under GC.51, the certificate issued by the Engineer when the Engineer has accepted the Contractor's certification that there has been Substantial Performance of the Contract. Under no circumstances will issuance of the Certificate of Substantial Performance be deemed to mean that the City has accepted the Work as being in compliance with the Contract Documents;
- c) "Change Directive" means a written instruction, in substantially the form set out in the Contract Documents, signed by the Engineer directing the Contractor to proceed with a change in the Work within the general scope of the Contract Documents prior to the Engineer and the Contractor agreeing upon an adjustment in Contract Price and/or Contract Time;
- d) "Change Order" means a written amendment to the Contract, in substantially the form set out in the Contract Documents, signed by the City or Engineer and the Contractor stating their agreement upon:
 - i) a change in the Work;
 - ii) the reason for the change in the Work;
 - iii) the method of adjustment or the amount of the adjustment in the Contract Price, if any; and
 - iv) the extent of the adjustment in the Contract Time, if any,or in the case of a dispute, a written order of the Engineer confirming the foregoing determined under GC47(c)(vi);
- e) "City" or "Owner" means the City of Vancouver (unless the context requires a different meaning);
- f) "City-Caused Event" means an act or omission of the City or the Engineer, which is contrary to the express provisions of the Contract Documents;
- g) "Contract" or "Contract Documents" means the Agreement to do the Work entered into with the Owner and all Contract Documents set out in Article VI therein, Notice to Contractors, Instructions to Tenderers, the Tender Form, Bid Bond, Performance Bond, Labour and Materials Payment Bond, General Conditions, Special Conditions, Drawings, Specifications, Schedules, Addenda and all documents and exhibits referred to or connected with the said Agreement;

- h) “Contract Amount” or “Total Tender Price” or ‘Tender Price” or “Contract Price” is the Contractor’s total compensation for the Work excluding GST, as set out in Clause 2 of the Tender Form;
- i) “Contract Time” means the time stipulated in Article IV (Schedule of Work) of the Agreement from commencement of the Work to Substantial Performance of the Work, as such time may be adjusted by the Engineer as permitted under the Contract;
- j) “Contractor” or a pronoun in place thereof, means the person or persons who have undertaken to carry out the Contract;
- k) “Drawings” means all plans, profiles, drawings, sketches, or copies thereof exhibited, used or prepared for or in connection with the Work embraced under this Contract;
- l) “Engineer” means the City Engineer or his delegate who may be an employee of the City or an independent engineer engaged by the City on its behalf;
- m) “Environmental Laws” means any and all statutes, laws, regulations, orders, by-laws, standards, guidelines, protocols, permits and other lawful requirements of any federal, provincial, regional, municipal or other governmental authority having jurisdiction over the Work now or hereafter in force with respect in any way to the environment, environmental assessment, health, occupational health and safety, protection of any form of plant or animal life or transportation of dangerous goods, including the principles of common law and equity;
- n) “Excusable Event” means an event or circumstance (i) that is beyond the reasonable control of the Contractor, and could not reasonably have been foreseen by the Contractor, and (ii) the impact of which could not have been avoided or substantially avoided by the exercise by the Contractor of commercially reasonable measures, but for greater certainty excludes in any event (iii) any Site Labour Disturbance, and (iv) weather conditions that are not extremely adverse and unseasonable, having regard to long-term meteorological data;
- o) “Final Certificate of Acceptance” means, subject always to Article V(c) of the Form of Agreement and to the warranty under GC.51, a certificate issued by the Engineer accepting the Contractor’s certification that the entire work of the Contract has been performed by the Contractor to the requirements of the Contract Documents. Under no circumstances will issuance of the Final Certificate of Acceptance be deemed to mean that the City has accepted the Work as being in compliance with the Contract Documents;
- p) “Laws and Regulations” means all present and future laws (including Environmental Laws), statutes, by-laws, regulations, treaties, judgments, and decrees, whether or not having the force of law, all official directives, rules, consents, approvals, authorizations, guidelines, and policies of any domestic government, including any federal, provincial, regional, or municipal government, and any government agency, tribunal, commission, or other regulatory authority exercising executive, legislative, judicial, regulatory, or administrative functions in respect of the Work;
- q) “Notice of Award” of the Contract is a letter from the City accepting the Tender and awarding the Contract to the successful Tenderer, thereby obligating the successful

Tenderer/Contractor to submit all required documents as stated in Clause 2 (b) of the Tender Form;

- r) "Notice to Proceed" with the Work is a letter from the City authorizing the Contractor to commence work on the Contract and will be issued within two (2) days of the Contractor's compliance with Clause 2 (b) of the Tender Form;
- s) "Other Contractors" means any person, firm or corporation employed by or having a contract with the Owner and/or associated parties otherwise than through the Contractor;
- t) "Plant" means every temporary or accessory means necessary or required to carry on or complete the Work and extra work, in the time and manner herein provided including, without limiting the generality of the foregoing, all tools, fixed and moveable machinery, engines, motor vehicles, trucks, compressors, all temporary structures such as workshops, sheds, storehouses, shoring forms, trestles and hoardings and all other appliances, apparatus or equipment of every sort, kind and description whatsoever;
- u) "Products" means material, machinery, equipment and fixtures incorporated or to be incorporated in the Work as required by the Contract Documents;
- v) "Site" means the place or places where the Work under the Contract is to be carried out, erected, built or constructed;
- w) "Site Labour Disturbance" means any strike, lock-out or labour disturbance, including those resulting from any jurisdictional or non-affiliation issues, involving employees, whether or not members of a trade union, of the Contractor, any Subcontractor, or any of their respective subcontractors of any tier, which delays or in any way adversely affects the performance and completion of Work at the Site;
- x) "Substantial Performance" means that the Contract has been "completed" as that term is defined in the Builders Lien Act (British Columbia);
- y) "Subcontractor" means the person or persons with whom the Contractor has made an agreement to perform a portion or portions of the Work or to supply materials therefor;
- z) "Supplier" means a Subcontractor who supplies Products to the Contractor for incorporation into the Work;
- aa) "Surety" means the company which executes a bond required by the Contract to be furnished to the Owner;
- bb) "Trade Union Council" means a council or association of trade unions of which employees of the Contractor or a Subcontractor are members;
- cc) "WCB OH&S Regulation" means the Workers Compensation Act (British Columbia) and all regulations enacted pursuant to this Act, including without limitation and by way of example only, the Occupational Health and Safety Regulation, all as amended or re-enacted from time to time;
- dd) "Work" or "works" means (unless the context requires a different meaning) the whole of the works, materials, matters, and things required to be done or supplied, mentioned or

referred to in the Contract including all extra or additional work or materials, matters or things which may be ordered by the Owner or the Engineer as herein provided.

GC.2. INTERPRETATION

Drawings and Specifications are intended to be complementary. Should any difference exist between Drawings and Specifications, or should any errors or inconsistency occur in any or between any of the Drawings and Specifications, the Contractor, before proceeding, shall bring them to the attention of the Engineer.

The Engineer will furnish from time to time such detail drawings and information as he may consider necessary for the Contractor's guidance. These detail drawings shall take precedence over Contract Drawings and shall be considered as explanatory of them and not as indicating changes in the work.

Notwithstanding the foregoing wherever any portion or provision of any Contract Document conflicts or is inconsistent with any other Contract Document, or portion or provision thereof, the Engineer may declare which, in his unfettered opinion, shall prevail and have priority and the same shall prevail and have priority accordingly.

GC.3. INVESTIGATION

a) Investigation Warranted

The Contractor represents and warrants that, before submission of its Tender Form, the Contractor examined carefully all the Contract Documents and investigated to its satisfaction the Site and all conditions that may affect the cost of, and time required for, performing and completing the Work, including access to, and egress from, the Site, the cost and availability of all labour, Products, Plant, permits, consumable, expendable and disposable supplies, and all other services and things necessary for, or incidental to, the performance and completion of the Work described in the Contract Documents or reasonably inferable therefrom, and subject only to GC.3A, all surface and subsurface conditions at or affecting the Site. The Contractor acknowledges that it may not make or enforce any claim against the City, whether for a change in the Contract Amount or other compensation or for an extension of the Contract Time arising from any failure to make any such examination and investigation.

b) Reliance Limited

The Contractor represents and warrants that, in entering into this Contract, the Contractor has not relied upon any representation, warranty or statement made, or information given, to the Contractor by the City, the Engineer, or any other person acting, or purporting to act, on behalf of the City, except only as may be contained in the Contract Documents. The Contractor acknowledges that it may not make or enforce any claim against the City, whether for a change in the Contract Amount or other compensation or for an extension of the Contract Time arising from any such reliance.

GC.3A CONCEALED OR SUBSURFACE CONDITIONS

a) Notice of Differing Concealed/Subsurface Conditions

If the Contractor discovers concealed or subsurface conditions at the Site which existed before the commencement of the Work, could not reasonably have been discovered by proper investigation by the Contractor under GC.3(a), and differ materially from those disclosed in, or reasonably inferable from, the Contract Documents, including any geotechnical report included or referenced in the Contract Documents, then the Contractor may give notice thereof, with reasonable particulars, to the Engineer.

b) Time for Notice

The Contractor must give notice under GC.3A(a) within five (5) Business Days after discovery of the conditions or the time when the Contractor by reasonable diligence could have discovered the conditions, failing which the Contractor may not make or enforce any claim against the City, whether for a change in the Contract Amount or other compensation or for an extension of the Contract Time arising from those conditions.

c) Investigation

The Engineer shall arrange to have the conditions investigated after receipt of notice from the Contractor under GC.3A(a). The Engineer will report to the City and to the Contractor the results of that investigation.

d) Change Directive/Order

If the investigation conducted under GC.3A(c) establishes that the conditions described in GC.3A(a) are satisfied, with the result that the Contractor will incur additional cost and/or require additional time, for the performance and completion of the Work, the difference in conditions will constitute a change in the Work, and the Engineer will issue a Change Directive and/or a Change Order and the change will be valued under GC.47.

GC.4. CONTRACT AMOUNT

Bids shall include all Federal, Provincial and Municipal fees and other taxes, rates and assessments, and the Contractor agrees that the Owner shall not be liable in any manner therefor and the Contractor agrees to indemnify and save harmless at all times the Owner against all claims which shall be made with respect thereto. All such taxes, rates, assessments and fees shall be paid by the Contractor, but if refundable, shall be refunded to the City and shall be the exclusive property of the City.

The Contractor shall include in the Contract Amount all cash allowances mentioned in the Specifications, if any, which allowances shall be expended in the whole or in part as the Engineer shall direct, the Contract Amount being adjusted in conformity therewith. The Contract Amount includes such sums for expenses and profit on account of such cash allowances as the Contractor requires.

GC.5 BONDS REQUIRED

The Contractor at the Contractor's own expense, shall provide to the Engineer within the period

specified in the Instructions to Tenderers clause 17.0, and in any event within ten (10) Business Days of issuance of the Notice of Award, a Performance Bond and a Labour and Material Payment Bond, each in an amount equal to 50% of the Contract Amount.

GC.6. BOND SPECIFICATIONS

Bonds delivered under GC.5. shall name "City of Vancouver" as obligee under the Performance Bond and trustee under the Labour and Material Payment Bond, and shall be issued by a licensed surety authorized to transact the business of suretyship in British Columbia. The bonds shall be in the form of the latest edition of approved CCDC bond forms, or such other forms as may be approved by the City's Director of Legal Services. The bonds shall be maintained in good standing until issuance of the Final Certificate of Acceptance.

GC.7. WORKSAFEBC COVERAGE/PRIME CONTRACTORS DUTIES

- a) The Contractor agrees that it shall at its own expense procure and carry or cause to be procured and carried and paid for, full WorkSafeBC coverage for itself and all workers, employees, servants and others engaged in or upon any work or service which is the subject of this Contract. The Contractor agrees that the Owner has the unfettered right to set off the amount of the unpaid premiums and assessments for such WorkSafeBC coverage against any monies owing by the Owner to the Contractor. The Owner shall have the right to withhold payment under this Contract until the WorkSafeBC premiums, assessments or penalties in respect of work done or services performed in fulfilling this Contract have been paid in full.
- b) The Owner now designates the Contractor as the Prime Contractor, and the Contractor now acknowledges and agrees to its designation as the Prime Contractor, for the purposes of the WCB OH&S Regulation.
- c) Without in any way limiting the Contractor's obligations under the WCB OH&S Regulation, and by way of example only, the Contractor will:
 - i) appoint and provide a qualified coordinator for the purpose of ensuring the coordination of health and safety activities for the Place of the Work;
 - ii) provide and receive and respond to all information required to be given, received or relayed by the Contractor (both as an employer and as the Prime Contractor) pursuant to the WCB OH&S Regulation; and
 - iii) within ten (10) Working Days of the Owner delivering the Notice of Award to the Contractor, sign and deliver to the Owner the "Prime Contractor Agreement", which is attached as Schedule L to the Agreement.
- d) In addition to, and not in lieu of, the Contractor's obligations as the Prime Contractor, the Contractor will have a safety program acceptable to the WorkSafeBC and will ensure that all Owner and WorkSafeBC safety policies, rules and regulations are observed during performance of this Contract, not only by the Contractor but by all Subcontractors, workers, Suppliers and others engaged in the performance of this Contract.
- e) Prior to commencement of construction, the Contractor will:

- i) complete and file a “Notice of Project” with the WorkSafeBC in compliance with Section 20.2 of the WCB OH&S Regulation;
 - ii) post the Notice of Project at the Place of the Work; and
 - iii) provide a copy of the Notice of Project to the Owner and confirm in writing that the Notice of Project has been posted at the Place of the Work.
- f) Within ten (10) Business Days of the Owner delivering the Notice of Award to the Contractor, the Contractor will provide the Owner with the Contractor’s and all Subcontractors’ WorkSafeBC registration numbers.
- g) Within ten (10) Business Days of the Owner delivering the Notice of Award to the Contractor, and concurrently with making any application for payment under this Contract, the Contractor will provide the Owner with written confirmation that the Contractor and all Subcontractors are registered in good standing with the WorkSafeBC and that all assessments have been paid to date of the Notice of Award or date of application for payment, as applicable.
- h) The Contractor may or may not have received, as part of the Contract Documents, a “Pre-Contract Hazard Assessment” prepared by or for the Owner pursuant to the Owner’s statutory obligations under the WCB OH&S Regulation (Section 119 of the Workers’ Compensation Act) as an “owner of a workplace”. Despite the Owner’s statutory obligations, the Prime Contractor now acknowledges and agrees that the Contractor may not rely on the “Pre-Contract Hazard Assessment” and now agrees to assume by the terms of this Contract full responsibility for carrying out the Owner’s obligations under Section 119 of the Workers’ Compensation Act, including, without limitation and by way of example only, conducting all due diligence inquiries of all applicable Owner’s staff and departments in order to ascertain what, if any, information is known or has been recorded by the Owner’s staff about the Place of the Work that is necessary to identify and eliminate or control hazards to the health and safety of persons at the Place of the Work. The Owner now agrees to make all reasonable efforts to assist the Contractor in obtaining timely access to Owner’s staff and Owner’s records for this purpose. Within ten (10) Business Days of the Owner delivering the Notice of Award to the Contractor, the Contractor will start conducting such due diligence inquiries and must complete and deliver written confirmation of the completion of such inquiries to the Consultant prior to the Owner being obligated to issue the Notice to Proceed.
- i) The Contractor will indemnify the Owner and hold harmless the Owner from all manner of claims, demands, costs, losses, penalties and proceedings arising out of or in any way related to:
 - i) unpaid WorkSafeBC assessments of the Contractor or any other employer for whom the Contractor is responsible under this Contract;
 - ii) the acts or omissions of any person engaged directly or indirectly by the Contractor in the performance of this Contract, or for whom the Contractor is liable pursuant to the Contractor’s obligations as the Prime Contractor, and which acts or omissions are or are alleged by WorkSafeBC to constitute a breach of the WCB OH&S Regulation or other failure to observe safety rules, regulations and

practices of WorkSafeBC, including any and all fines and penalties levied by WorkSafeBC; or

- iii) any breach of the Contractor's obligations under this GC.7.

GC.8. LABOUR

a) **Qualified Labour**

The Contractor shall provide and pay for all skilled and unskilled labour required for the proper, safe and timely performance and completion of the Work. All labour assigned to the Work shall be sufficiently qualified, skilled and experienced to enable them to perform safely and effectively the Work assigned.

b) **Removal of Employees**

The Contractor shall preserve good order and discipline among labour employed by it, or by Subcontractors, at the Site. The Engineer, by written notice to the Contractor, may require the removal of any person employed by the Contractor or any Subcontractor at the Site, who in the opinion of the Engineer is disorderly, intoxicated or evidencing apparent substance abuse symptoms, engaging in inappropriate behaviour, including harassment of other persons at or near the Site, intemperate, disruptive or otherwise acting in a manner that is unacceptable to the Engineer. Any person so removed will be replaced promptly by another person having the requisite qualification, skill and experience for the Work assigned. All costs of removal and replacement of such persons will be for the account of the Contractor.

c) **Payroll Liabilities**

The Contractor shall pay as and when due all salaries and wages for salaried personnel and labour employed by it in the performance and completion of the Work. The Contractor shall make all payroll deductions, and all remittances, required in respect of tax, employment insurance, pension plans, or otherwise as required by Laws and Regulations and any applicable employment or collective agreement. The Contractor shall remit when due all assessments payable by it under applicable workers compensation legislation. The Contractor shall provide to the Engineer, at its request at any time and from time to time, evidence satisfactory to the Engineer that the Contractor is in compliance with this GC.8(c).

d) **Compliance with Employment Obligations**

The Contractor shall comply with all Laws and Regulations pertaining to employment matters and with all applicable collective agreements.

e) **"Open Site"**

The Site and adjacent work areas are, or are part of, an "open site" and the Work will be performed on a "no strike/no lockout" basis. Accordingly, the Contractor and its Subcontractors, as well as City and Other Contractors, may employ labour at the Site who are members of a trade union, including a trade union affiliated with a Trade Union Council or who are members of another trade union, or who are not members of a trade

union.

f) **Required for Union Contractors**

If the Contractor, or any Subcontractor, proposes to employ labour at the Site who are members of a trade union, including a trade union that is affiliated with a Trade Union Council authorized to bind its member trade unions, then the Contractor must first submit to the Engineer:

- i) a waiver of all non-affiliation or reservations rights under applicable collective agreements, including renewals or replacements thereof, effective for the duration of the Contract and executed by the Trade Union Council on behalf of all trades, or executed by the particular trade unions whose members will be so employed; and
- ii) an agreement that there will be no Site Labour Disturbance at or affecting the Site and/or the progress of the Work, effective for the duration of the Contract, and executed by the Trade Union Council on behalf of all trades, or executed by the particular trade unions whose members will be so employed.

g) **No Delay/Compensation Claims**

The Contractor may not make or enforce any claim against City, whether for a change in the Contract Price or other compensation or for an extension of the Contract Time arising from a delay or other impact caused by a Site Labour Disturbance.

GC.9. COMMENCEMENT AND COMPLETION OF THE WORK

The Contractor shall not commence the Work or procure any material until it has received the Notice to Proceed on the Contract from the Owner. Forthwith after the receipt of Notice of Award of the Contract, the Contractor shall at once begin and continuously carry on to completion (subject as herein provided) and shall complete the Work within the Contract Time, unless a longer period shall be allowed in writing by the Engineer in which case it shall be carried on to completion and possession given to the Owner within the additional time so allowed. No progress or interim estimate or certificate shall release the Contractor or its surety from any responsibility or shall be taken as evidence of any such release, or as an acceptance of any Work or material, or as a waiver of any condition herein. The whole Work and every portion and detail thereof shall, at the time of completion, be put and left by the Contractor in good and satisfactory condition, finished in all respects and at the time must be fully up to the requirements of the Drawings and Specification in every particular; all surplus and refuse material and rubbish removed from the vicinity of the Work; the premises left in a neat and tidy condition; all damage to adjacent property, including pavements, foot walks, boulevards, sodding, trees, shrubs and plants, or other things injured or interfered with by the Contractor made good; all wages paid, and every other requirement of the Contract complied with. In case of the Contractor's failure to finish the Work properly and fully, and as required, or in case of the Work or any part thereof being undertaken by the City, as provided in these General Conditions, the Owner may proceed to finish the Work for the Contractor as his agent in this respect and at the Contractor's expense or proceed as provided in GC.62.

When the defects or omissions, if any, have been made good to the satisfaction of the Engineer, the Engineer will issue a Final Certificate of Acceptance, subject to the warranty

conditions. The date of this Certificate shall be taken as the date of total completion for warranty purposes.

GC.10. DELAYS

a) Delay Claims Limited

The Contractor shall be entitled to an extension of the Contract Time and/or an adjustment to the Contract Amount or other compensation for delay, howsoever caused, if and to the extent only expressly permitted under this GC.10 or in respect of a change in the Work, in each case as authorized only by a Change Order.

b) Excusable Event

If the Contractor is delayed in the performance or completion of the Work by an Excusable Event, then, subject to GC.23 and the conditions of this GC.10, the Contract Time shall be extended for such reasonable time as the Engineer determines, after consultation with the Contractor, as being required to accommodate the anticipated impact on the Contract Schedule of the Excusable Event. Any such time extension shall be confirmed by Change Order under GC.47. The Contractor shall not be entitled to make or enforce any claim against the City for any change in the Contract Amount or other compensation as a result of an Excusable Event.

c) City-Caused Event

If the Contractor is delayed in the performance or completion of the Work by a City-Caused Event, then subject to GC.23 and the conditions of this GC.10, the Contract Time shall be extended for such reasonable time as the Engineer determines, after consultation with the Contractor, as being required to accommodate the anticipated impact on the Contract Schedule of the City-Caused Event, and the Contract Amount shall be adjusted to compensate the Contractor for the reasonable direct costs incurred, or anticipated to be incurred, by it as a result of the delay.

d) Claim Conditions

The right of the Contractor to an extension of the Contract Time, and/or an adjustment of the Contract Amount under this GC.10 is subject to the conditions that:

- i) **Timely Notice:** the Contractor gives the Engineer prompt written notice of the delay, the nature of the Excusable Event or the City-Caused Event, as the case may be, and its intent to submit a claim for time extension and/or adjustment of the Contract Amount, and in any event, such notice must be given not later than five (5) Business Days after the occurrence of the Excusable Event or the City-Caused Event;
- ii) **Claim Details:** the Contractor promptly gives the Engineer details of its claim, including the time required to accommodate the anticipated impact on the Contract Schedule, and if applicable, the costs incurred, or anticipated to be incurred, by the Contractor as a result of the delay, and in any event such details must be given not later than fourteen (14) Business Days after the occurrence of the Excusable Event or the City-Caused Event;

- iii) **Mitigation Measures:** the Contractor has taken, and continues to take, all reasonable measures, including those, if any, recommended by the Engineer to minimize the impact of the delay on the Contract Schedule, and in the case of a claim for adjustment of the Contract Amount, all reasonable measures, including those, if any, recommended by the Engineer, to minimize the costs incurred, or anticipated to be incurred, by the Contractor as a result of the delay;
- iv) **Critical Path Impacted:** no extension of time and/or adjustment of the Contract Amount or other financial compensation will be granted, unless the Excusable Event or the City-Caused Event, as the case may be, has an adverse impact on the critical path established by the Contract Schedule;
- v) **Concurrent Delays:** if there are concurrent delays and impacts, some of which entitle the Contractor to relief under this GC.10 and some of which do not, then the Contractor shall be entitled to an extension of the Contract Time, and if applicable an adjustment of the Contract Amount in respect of the City-Caused Event, but only to the extent that the delays entitling the Contractor to relief under this GC.10 exceed those that do not so entitle the Contractor to such relief; and
- vi) **No Cumulative Impact Claims:** each claim under this GC.10 based in whole or in part on a particular event must be submitted and will be considered and assessed separately, and the Contractor may not make or enforce any claim under this GC.10 or otherwise for the cumulative impact on schedule or on cost of two or more such events.

GC.11. SPECIFICATIONS AND DRAWINGS

The Contractor shall keep in its field office and available to the Engineer a complete set of the Specifications and Drawings, and of any further drawings which may from time to time be supplied or approved by the Engineer. The Contractor shall be supplied with five (5) sets of Specifications.

Wherever standard Specifications are referred to, they shall be the latest edition of those Specifications and they shall be considered to be a part of the Contract.

The Contractor will be supplied with five (5) prints of each of the Drawings and must satisfy its self as to the accuracy of the said copies in every detail. Any additional copies desired will be furnished by the Engineer at cost to the Contractor.

The Drawings forming part of the Contract are intended to show the position and extent of the works, the general features of the design and construction, and the dimensions and proportions of all principal parts, but neither they nor the Specifications are guaranteed to show or describe every part or detail of the Work; anything omitted from the Drawings and Specifications, which may fairly be considered to be necessary for the proper execution and completion of the Work, shall be deemed to be included in the Contract.

Anything whatever which may be imperfectly specified or imperfectly shown on the Drawings, must be taken, considered and done as if it were shown and specified.

The Engineer may from time to time issue further drawings or revised drawings as he deems necessary and such drawings shall be deemed to form part of the Contract. All sets of Drawings

and Specifications shall be kept up to date at all times utilizing the Engineer's revised drawings and other documents issued to the Contractor.

All Drawings, Specifications, model and copies thereof furnished by the Engineer are and shall remain City property. Such documents and models are to be used only with respect to the Work, are not to be copied or revised in any manner without the written authorization of the City and are to be returned to the City on request at the completion of the Work.

GC.12. SHOP DRAWINGS

- a) The Contractor shall submit, with such promptness so as to cause no delay in the Work, or that of any Other Contractor, one (1) sepia and one (1) copy of all shop or setting drawings and schedules required for the Work of the Contractor, and the Engineer shall review and provide directions on them with reasonable promptness. The Contractor shall make any corrections required by the Engineer, file with him one (1) sepia and one (1) copy.
- b) The Engineer's review of shop drawings or schedules shall not relieve the Contractor from responsibility for deviations from Drawings and Specifications unless he has in writing called the Engineer's attention to such deviation at the time of submission, nor shall it relieve the Contractor from the responsibility for errors of any sort in shop drawings or schedules.

GC.13. RECORD PLANS

The Contractor shall supply the Engineer with one (1) complete set of Drawings of the Work, as constructed, on or before the date the Contractor makes application to the Engineer for a Final Certificate of Acceptance.

GC.14. ENGINEER SOLE JUDGE

Should any discrepancies appear or difference of opinion or misunderstanding arise as to the meaning of the Contract Documents, or as to any omissions therefrom, or misstatements therein, in any respect, or as to quality or dimensions or sufficiency of materials, Products, Plant or Work, or any part thereof, or as to the due and proper execution of the Work, or as to the measurement of quantity or valuation of any Work executed or to be executed under the Contract or as to extras thereupon, or deductions therefrom, or as to any other questions or matters arising out of the Contract, the same shall be determined by the Engineer who shall have the right at all reasonable times to visit, enter and inspect any buildings, factories, workshops or works of the Contractor or others wherever any materials or Products are being prepared, manufactured or treated or stored, or other Work is being done in connection with the Contract, and the Engineer's decisions shall be final and binding upon all parties concerned, and from it there shall be no appeal; and the Contractor shall immediately, when ordered by the Engineer, proceed with and execute the Work, or any part thereof, forthwith, according to such decision, and with such additions to or deductions from the Contract Amount as are provided under the terms of the Contract, without making any claim for any extension of time in completing the Contract or the Work, unless arranged for in writing with the Engineer as provided herein.

In all cases of misunderstanding and disputes, oral arrangements will not be considered, and the Contractor must produce written authority in support of its contentions, and shall advance no claim in the absence of such written authority, or use, or attempt to use, any conversation with any

person whomsoever against the Engineer or the City or in prosecuting any claim against any of them.

GC.15. ENGINEER'S ABSENCE

In the absence of the Engineer, any of his assistants whom he may designate to supervise the Work, shall have (subject to the instructions of the Engineer) full power to decide as to the manner of conducting and executing the Work in every particular, and the Contractor shall follow the instructions or orders of the person so designated.

GC.16. ACCESS AND ASSISTANCE

The Contractor shall furnish the Engineer and any of the Engineer's assistants at all times with convenient means of access to all parts of the Work, and also with all required assistance, to facilitate thorough examination of the same, and inspection, culling or removal of doubtful or defective material or Products and for any other purpose required in connection with the Work, or in the discharge of their respective duties, for which service no additional allowance will be made.

GC.17. NOTICES TO CONTRACTOR

During the continuance of the Work, the Contractor shall maintain an office within the Greater Vancouver area equipped with a telephone and shall have in this office on all Business Days between 8:30 a.m. and 4:30 p.m. an official of the Contractor.

Before commencement of construction, the Contractor shall provide the Engineer with a list of at least three (3) persons who have authority to act on behalf of the Contractor in times of emergency. At least one on the list shall be available at all times beyond the normal working hours of the City's project representative (8:30 a.m. to 5:00 p.m., on all Business Days).

The Contractor shall within the time prescribed in the Tender Form, and in any event within ten (10) Business Days of receipt of the Notice of Award, advise the Engineer in writing of one local address at which it can receive correspondence from the Engineer or the Owner, including fax and email addresses for the office.

In any written or printed notice to the Contractor in respect of general, special or other repairs, or of any Work of any nature required to be done under any of the provisions of the Contract, or of any other matter, it shall not be obligatory upon the Engineer to specify minutely or in detail everything required, or to specify by measurement the exact extent thereof, or the precise spot or spots where the Work, material or products may be defective or faulty, or where any of the requirements of the Specifications have not been observed; but a reference in such notice to the clause or clauses bearing upon the matter, and a description of the locality in general terms and sufficiently clear, in the Engineer's opinion, to indicate where the defects or trouble exists, shall be deemed to be and shall be ample notice.

GC.18. SUPERVISION:

a) Qualified Supervision

The Contractor shall provide all supervision necessary for the successful performance and completion of the Work. Supervisory personnel shall be competent and experienced and in attendance at the Site at all times when Work is being performed.

b) Key Personnel

The Contractor shall assign to supervisory positions the Key Personnel, if any. Key Personnel shall not be changed, except in the case of termination of employment, disability or death, or with the consent of the Engineer. Any replacement Key Personnel are subject to the prior approval of the Engineer.

c) Removal of Superintendents

The Contractor shall remove from the superintendence of the Work promptly after notice thereof from the Engineer, any person to which the Engineer reasonably objects based upon lack of adequate planning, management or control of the Work, inadequate safety programs and measures, inadequate discipline of persons employed in the performance of the Work, deficient quality of the Work, or delay in the performance of the Work. Any person so removed will be replaced immediately with a person acceptable to the Engineer. The Contractor shall provide to the Engineer a full curriculum vitae for any proposed replacement. Any costs incurred by the Contractor in connection with removal and replacement of any person under this GC.18(c) is for the account of the Contractor.

GC.19. INSPECTION OF WORK

The Engineer may appoint inspectors or surveyors to inspect all materials used, Products made and all work done. Such inspections may extend to any or all parts of the Work and to the preparation or manufacture of the Products to be used whether on Site or elsewhere. Inspectors and surveyors are not authorized to revoke, alter, enlarge or accept any portion of the Work or to issue instructions contrary to the Drawings and Specifications.

Before any Work is accepted and paid for, the Contractor shall notify the Engineer in writing that it is ready for inspection. Upon receipt of the notifications, the Engineer will arrange to give the Work a minute and thorough inspection, either in person or through a competent representative.

Any defects or omissions noted during this inspection must be made good by the Contractor without extra charge before the Work will be accepted.

GC.20. DAILY REPORT

The Engineer may maintain, in detail, a daily report to record progress of the Work, the number of personnel at the Site, the materials delivered to the Site, and all such other items which he deems necessary to record. The daily reports will be kept in the Engineer's Site Office and the Contractor or its representative shall be required to read and sign each report. In case of differences of opinion between the Engineer and the Contractor regarding the particulars stated in the daily report, the Contractor shall, within seven (7) days, give notice in writing to the Engineer expounding such difference.

GC.21. WEEKLY MEETINGS

The Contractor may be required to meet weekly with the Engineer on the Site to discuss work done in the previous week, and work proposed to be done in the week just starting.

GC.22. CONSTRUCTION SCHEDULE

Time shall be of the essence for the performance of the Work under this Contract within the Contract Time and in accordance with the Construction Schedule.

The Contractor shall submit to the Engineer within the time set out in the Tender Form, but in any event within ten (10) Business Days of the issuance of the Notice of Award, a complete construction schedule (the "Construction Schedule") indicating the various subdivisions of the Work and the dates of commencing and finishing each. The Construction Schedule must be consistent with the Contract milestone schedule initially set out by the Contractor in Schedule H of the Tender Form and other time-related provisions of the Contract Documents, and shall provide sufficient detail of critical activities and events and their inter-relationship to demonstrate that the Work will be performed within the Contract Time. The Contract Schedule, as approved by the Engineer, will not be amended, except in the case of a change in the Contract Time confirmed by Change Order, in which case the Contractor shall prepare and submit an amended schedule. The Construction Schedule, and all revisions thereof, are subject to the written approval of the Engineer. The Engineer shall give the Contractor notice of approval, or reasons for disapproval, promptly after each submission. In the case if disapproval, the Contractor shall promptly revise the schedule to address the reasons for disapproval and submit the revised schedule to the Engineer.

On the last day of each calendar month, a copy of the schedule shall be submitted to the Engineer with particulars indicating the percentage completed of each division of the Work to that date.

The Contractor shall immediately advise the Engineer of any proposed changes in his submitted construction program. If, in the opinion of the Engineer, the construction program as submitted is inadequate to ensure the completion of the Work within the time limited therefor, or is otherwise not in accordance with the Specifications or if the Work is not being adequately or properly prosecuted in any respect, the Engineer, without derogating from the Owner's rights under the Contract, shall have the right to require the Contractor to submit a new construction schedule providing for proper and timely completion of the Work, and the Contractor shall be entitled to no claim for extension of time on account of such requirement.

GC.23. MAINTENANCE/ACCELERATION/SUSPENSION OF CONSTRUCTION SCHEDULE

a) Work Delayed by Contractor

The Contractor shall at all times provide a sufficient number of skilled personnel to maintain the progress of the Work and compliance with the master schedule, and if in the opinion of the Engineer the Contractor delays the progress of the works of Other Contractors then he shall be responsible for all loss and damage, including, without limitation, that of Other Contractors for stand-by and/or delay occasioned thereby.

If, in the opinion of the Engineer, the Contractor delays or is about to delay the Work or the progress of any portion of the Work as shown by the Construction Schedule, then upon the written notification by the Engineer, the Contractor shall use such additional overtime work or shifts as may be necessary to catch up and/or maintain the general progress of the Construction Schedule and the cost and expenses incurred by use of said overtime work or shift shall be borne entirely by the Contractor.

b) Notice

The Contractor shall give the Engineer notice of any delay in the performance of the Work, howsoever caused, and any event or circumstance that could reasonably be expected to cause such delay. The notice shall be given promptly after the delay, event or circumstance is known to the Contractor. The notice shall be accompanied by details of the Contractor's plan to avoid or mitigate the duration and adverse impact of the delay.

c) Acceleration Order

If there is a delay, or threatened delay, in the performance of the Work, or if the City wishes to accelerate the Work for its convenience, the Engineer, after consultation with the Contractor, may order the Contractor to accelerate the Work, including by way of the provision of additional labour, including overtime work, and Plant. Each acceleration order must be in writing and signed by the Engineer. The Contractor shall comply promptly with any order given under this GC.23(c).

d) Cost Allocation

If the delay, or threatened delay, in respect of which an order is made under GC.23(c) does not entitle the Contractor to an extension of the Contract Time under GC.10, including any delay or threatened delay caused by the Contractor, or any Subcontractor, Supplier or other person for whose acts and omissions the Contractor is responsible under the Contract, then all costs incurred by the Contractor in complying with the order will be for the Contractor's account. Where the City wishes to accelerate the Work for its convenience, or where the delay, or threatened delay, would entitle the Contractor to an extension of the Contract Time under GC.10, then the Engineer in lieu of granting such extension in whole or in part, shall issue a Change Directive and/or a Change Order under GC.47, and the Contract Price will be adjusted by reimbursing the Contractor for the following:

- i) the direct out-of-pocket costs of substantiated extra wages incurred by the Contractor on account of the extra shifts and overtime work performed by the Contractor's personnel solely for the purpose of accelerating the Work;
- ii) the direct out-of-pocket costs of substantiated extra wages incurred by the Contractor on account of the extra supervision performed by the Contractor's superintendents and foremen solely for the purpose of accelerating the Work; and
- iii) an amount equal to ten percent (10%) of the amounts in (a) and (b) above on account of the Contractor's opportunity costs, profit, administrative, overhead, and all other expenses incurred as a direct or indirect result of accelerating the Work.

The Contractor will deliver individual time sheets (duly signed by each person for whose time is claimed on same) briefly describing the Work performed and the times during which it was performed and covering all such accelerated Work to the Engineer daily for review and approval.

e) Suspension of the Work

The City, at any time and from time to time, may suspend the performance of the Work, in whole or in part, for a period not exceeding 90 days as to any one suspension, by notice to

the Contractor. The Contractor shall comply promptly with any notice given under this GC.23(e), and shall resume full performance of the Work promptly on notice from the City to do so. The City shall pay to the Contractor the documented costs reasonably incurred by it as a consequence of the suspension, such cost to include the incremental costs of demobilization and remobilization, Plant rental or standby charges, Products storage, bonding and insurance costs, overhead and similar costs payable by the Contractor to Subcontractors, but excluding any allowance for profit or loss of profit, all such costs to be certified by the Engineer and confirmed by Change Order. The Contractor shall use all commercially reasonable efforts to avoid or minimize such costs, including following any reasonable written directions given by the Engineer for that purpose.

f) Work Out-of-Sequence

The Contractor shall at no additional cost perform its Work as to operation or location out-of-sequence as and when directed by the Engineer.

g) Execution of Other Works or Contract

The Contractor shall afford all facilities for the execution of any other works which may be undertaken by the Owner or by such parties as may be employed by them, so that such works may be properly and conveniently completed, and the Engineer shall have full authority to make and enforce such regulations as he may deem necessary for the conduct of the works; and the Contractor shall proceed in such manner with and complete in such order such portions of the Work as the Engineer may require, and the Engineer shall be the sole judge as to what facilities are due and proper, and can be afforded without any undue interference with the execution of the Contract.

The Contractor shall at all times give free access and every reasonable facility to the employees of the Owner and to Other Contractors, to such portion of the works and adjoining land as may be necessary to enable them to execute and maintain works of any description; such accommodation and access being regulated and directed by the Engineer and no inconvenience or alleged inconvenience arising therefrom shall form any ground for claims, losses or damages, compensation or otherwise, by the Contractor against the Owner.

GC.24. EMERGENCIES

The Engineer has the authority in an emergency to stop the progress of the Work whenever in his opinion such stoppage may be necessary to ensure the safety of life, or the Work or neighbouring property. This includes authority to make changes in the Work, and to order, assess and award the cost of work extra to the Agreement or otherwise, as may in the Engineer's opinion be necessary. The Engineer shall within two (2) working days confirm in writing any such instructions.

GC.25. SUBCONTRACTORS

a) Subcontracts

The Contractor shall preserve and protect the rights of the parties under the Contract with respect to any Work to be performed by Subcontractors. The Contractor shall enter into written contracts with Subcontractors that require them to perform their part of the Work in accordance with, and subject to, the terms and conditions of this Contract.

b) Responsibility for Subcontractors

The Contractor is fully responsible to the City for the acts and omissions of Subcontractors and for persons directly or indirectly employed by them in the same manner as the Contractor is responsible under this Contract for its own acts and omissions and those of persons employed by it.

c) Subcontractors to be Bound by Prime Contract Terms

The Contractor shall incorporate the terms and conditions of this Contract in to all subcontracts that it enters into with Subcontractors to the extent applicable to the Work to be performed under the relevant subcontract.

d) Copies of Subcontracts

The Contractor shall give the Engineer within three (3) Business Days of request a copy of each subcontract entered into by the Contractor with a Subcontractor, together with a copy of any bond furnished to the Contractor by a Subcontractor.

e) Nominated Subcontractors

The Contractor shall enter into subcontracts with those Subcontractors, if any, specified in Schedule D [Schedule of Sub-contractors and Suppliers] of the Tender as Subcontractors, and shall not terminate or change such Subcontractors without the prior written consent of the Engineer.

f) Other Subcontractors

The Contractor shall give the City prior notice of the proposed engagement of any Subcontractor, other than a Subcontractor specified in Schedule C [Schedule of Sub-contractors and Suppliers] of the Tender. The Contractor shall not engage any such Subcontractor to which the City reasonably objects by notice to the Contractor. The Contractor shall not be required to engage any Subcontractor, other than a Subcontractor specified in Schedule C [Schedule of Subcontractors and Suppliers] of the Tender, to whom it reasonably objects.

g) Payment of Accounts

The Contractor shall pay as and when due all accounts incurred by it to Subcontractors. The Contractor, at the request of the Engineer at any time and from time to time, shall give the Engineer evidence satisfactory to it that all such accounts have been paid as and when due. The Contractor acknowledges that the Engineer may make enquiries at any time and from time to time of any Subcontractor to confirm due payment of its accounts. The Engineer may provide to any Subcontractor information as to the percentage of the Subcontractor's work, which has been certified for payment.

GC.26. CONTRACTOR'S PLANT AND UTILITIES

The Contractor shall at its own expense supply, maintain and remove its field office and whatever electric or telephone facilities required for its Plant for either domestic or construction purposes.

The Contractor must provide and properly maintain, in clean and sanitary condition, suitable and convenient privy or toilet accommodation for the Contractor's employees so that they shall not be a source of inconvenience, complaint or nuisance to the public or to others in the vicinity of the Site.

Contractors shall make all necessary arrangements with the Engineering Department of the City for obtaining water from the City.

GC.27. PLANT, LABOUR AND MATERIALS

Except as otherwise provided in the Specifications the Contractor at its own expense shall provide all necessary temporary buildings and storage grounds and shall furnish all necessary labour, materials and plant together with all proper and required facilities for moving and transporting the same, so that the Contract and all Work required to be done under it can and will be carried on in a workmanlike manner, properly, satisfactorily, continuously and expeditiously, to completion, to the Engineer's satisfaction in all respects. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of good quality.

Should any Plant, equipment, appliance, materials or workmanship which the Engineer may deem to be inferior or unfit for use in or on the works be brought on the ground or used, the same shall be wholly removed therefrom within twenty-four (24) hours after notification to that effect from the Engineer, and in the case of failure or neglect on the part of the Contractor to remove the same the Engineer may cause the same to be taken away at the Contractor's expense, and deposited, wasted or otherwise disposed of in any locality, place or way the Engineer considers convenient or proper, and the Contractor shall forthwith pay to the Owner on demand, all expenses incurred including storage, if any, or the same may be deducted or collected by the Owner as provided in GC.58.

GC.28. PRODUCTS SUPPLIED BY THE CONTRACTOR

a) Products Supply

The Contractor shall provide and pay for all Products required for the proper, safe and timely completion of the Work.

b) Quality

Products shall be new, conform to the Specifications, or if not specified shall be of a quality consistent with those specified and suitable for the intended purpose, except only as otherwise stated in the Contract Documents with respect to particular Products. The use of unspecified Products is subject to the prior approval of the Engineer.

c) Supply Contracts

The Contractor shall give the City on its request a copy of each Products supply contract entered into by the Contractor with a Supplier, together with a copy of any bond furnished to the Contractor by a Supplier.

d) Approved Suppliers

The Contractor shall enter into Products supply contracts with those Suppliers, if any, specified in Schedule C [Schedule of Subcontractors and Suppliers] of the Tender as

Products Suppliers, and shall not terminate or change such Suppliers without the prior written consent of the Engineer.

e) Other Supplier

The Contractor shall give the City prior written notice of the proposed engagement of any Supplier, other than a previously approved Supplier. The Contractor shall not engage any such Supplier to which the City reasonably objects by written notice to the Contractor. The Contractor shall not be required to engage any Supplier, other than a Supplier specified in Schedule C [Schedule of Subcontractors and Suppliers] of the Tender to whom it reasonably objects.

f) Payment of Accounts

The Contractor shall pay as and when due all accounts incurred by it to Suppliers. The Contractor, at the request of the Engineer at any time and from time to time, shall give the Engineer evidence satisfactory to it that all such accounts have been paid as and when due. The Contractor acknowledges that the Engineer may make enquiries at any time and from time to time of any Supplier to confirm due payment of its accounts. The Contract Administrator may provide to any Supplier information as to the percentage of the Supplier's work, which has been certified for payment.

g) Alternative Products

Material and equipment supplied by the Contractor shall be as specified. If the Contractor wishes to supply and install items other than specified, he shall apply for and must receive written permission from the Engineer before incorporating such items into the Work. Descriptive literature and price schedules covering such alternative items shall be supplied to the Engineer if requested.

h) Products Samples

The Contractor shall furnish for the approval of the Engineer as the Engineer may reasonably require samples of any material of any kind to be used in the Work and no material shall be used which is in any way inferior to the approved samples; but it is understood that the approval of any material shall not subject the Owner or the Engineer to pay for the same nor prevent the rejection afterwards of any portion thereof which is found in the Engineer's judgement to be unsound or unfit to be used, or shall such approval be considered as any waiver of objection to the Work at any subsequent period on account of the unsoundness or imperfection of the materials used.

GC.29. MATERIAL IN METRIC UNITS

Where manufactured materials that are specified in Imperial units are not available, materials manufactured to metric units may be substituted, provided the Contractor can satisfy the Engineer that the substitute materials are at least equivalent to those specified.

GC.30. SUPPLY OF PRODUCTS BY THE CITY

The Contractor's responsibility for Products supplied by the City shall begin upon the Contractor's acceptance at the points of supply to the Site. All such materials shall be examined and the

Contractor shall advise the Engineer in writing of any defective or damaged material. Any Product supplied by the City which is lost, stolen or damaged after acceptance by the Contractor shall be replaced or repaired by the Contractor at its own expense.

All Products supplied by the City whether or not required for the Work shall remain vested in the City at all times and any surplus Products shall be neatly stored at the point of original supply.

GC.31. TEMPORARY STRUCTURES

Temporary structures erected by the Contractor shall remain its property and be removed from the site on completion of the Work.

The Contractor shall be responsible for the design, adequacy, safety and efficiency of all false work, temporary structures and construction processes required in connection with the completion of the Contract. All such designs and plans shall be prepared and sealed by a Professional Engineer licensed to practice in British Columbia and submitted to the Engineer for review and comment, but such review shall not relieve the Contractor of any responsibility. The Contractor shall make good at its expense immediately all defects arising from its faulty design, equipment or application thereof.

GC.32. WORK AREAS AND CONTRACT LIMITS

The Contractor shall be responsible for establishing and maintaining all lines, levels and centres as required to carry out the Work.

The Contractor shall, as far as is practicable, confine its operations to the Site. Any land or property outside Site boundaries which the Contractor requires during construction shall be acquired by the Contractor at its own expense, and the Contractor shall make its own arrangements for the use of such land or property and for the compensation of its owners. Site boundaries shall be determined by the Engineer if not shown on the Drawings

GC.33. OFFICE FACILITIES FOR THE ENGINEER

The Owner may provide and maintain a field office for the use of the Engineer within the Contractors storage area. The Contractor shall cooperate in the location, access and parking for the field office.

GC.34. STORAGE AREAS

Working and storage areas will be allocated by the Engineer for use by the Contractor. The Contractor shall be responsible for the maintenance and clean-up of the allotted areas.

GC.35. HOURS OF WORK

The attention of the Contractor is drawn to by-law regulations governing noise-generating activities in residential areas. The Contractor shall keep the Engineer advised on the proposed hours of Work so that inspection can be co-ordinated. Work without inspection shall not be permitted.

The Owner's forces work between the hours of 7:30 a.m. and 3:30 p.m. on Business Days. The Contractor shall not expect any work to be performed by the Owner's crews outside these hours except by special arrangement agreed to by the Engineer or in case of emergency.

GC.36. TRAFFIC CONTROL

The Contractor shall ensure that the proposed methods of traffic control are in general acceptable to the Engineer before submitting his tender.

The Contractor shall conform to the requirements of the "Traffic Control Manual for Work on Roadways" (Second Edition) published by the British Columbia Ministry of Transportation and Highways.

The Contractor shall provide, install and maintain to the satisfaction of the Engineer, all necessary barricades, cones, signs, flashing and other lights, and such other devices as are necessary for the safe and efficient control of vehicular and pedestrian traffic on all streets affected by the construction both within and outside the Site limits. Diverting traffic to new lanes during rush hour shall not be permitted.

GC.37. PUBLIC CONVENIENCE

In carrying out the Work, or any portion thereof, the convenience of the public must always be specially considered and provided for by the Contractor, who must not obstruct any street, thoroughfare or sidewalk longer or to any greater extent than is absolutely necessary in the Engineer's opinion. The Contractor shall not deposit any material upon any street, sidewalk, boulevard, grass plot, or other City or public property, without the Engineer's permission nor shall the Contractor allow the same to remain thereon longer than necessary but must remove all rubbish and other material, clean and thoroughly restore all such places to as good and as tidy a condition as the Contractor found them, as speedily as possible, from time to time as the Work progresses, or as directed. Unless material and rubbish are removed within four (4) days after the completion of the Work and without previous notice to the Contractor the Engineer will proceed to do whatever is necessary to restore such places to as good and as tidy a condition as before the commencement of the Work and charge the cost thereof against the Contractor. Where the Contractor obstructs more of the street, roadway or place than is ordered or sanctioned by the Engineer in writing, then the Engineer may cause such obstructions to be removed at the expense of the Contractor.

GC.38. ACCESS TO EXISTING STRUCTURES

The Contractor shall at all times maintain satisfactory pedestrian access to buildings and private property. The Contractor shall provide suitable notice to affected property owners prior to changes in access. Interruption of access to any entrance shall be kept to a minimum.

The Contractor shall maintain fire exits from existing buildings as required by the Fire Department.

GC.39. PROTECTION OF WORK AND PROPERTY

The Contractor shall maintain continuously adequate protection of all his Work from damage and shall protect the Owner's property from all injury arising in connection with the Contract. The Contractor shall make good any such damage or injury. The Contractor shall protect adequately adjacent property as required by law and the Contract.

GC.40. FIRE, SECURITY AND SAFETY REGULATIONS

- a) Fire and Security

The Contractor shall comply and he shall enforce compliance by all his agents, employees, subcontractors and suppliers with any and all fire regulations which have been or may be established from time to time by the Engineer and anybody having jurisdiction over such matters.

All security regulations which have or may be promulgated by the Engineer or other authorized representatives of the Owner shall be complied with. Watchmen for the buildings and grounds may be provided by the Owner at his discretion. However, neither the Owner nor the Engineer will be responsible for any loss or damage to the property of the Contractor whether or not watchmen are provided by the Engineer. The Contractor will furnish such security as he feels necessary for the protection of his equipment and Products stored or used on Site.

b) Loss Control

The Contractor will provide a Loss Control Program, satisfactory to the Owner to meet WorkSafeBC and other requirements.

c) Safety

When required by WorkSafeBC Regulations, first aid facilities, including an attendant, shall be provided on the Site at all times during working hours by the Contractor. Such facilities will be completely equipped in accordance with the requirements of WorkSafeBC.

The Contractor shall be fully responsible for taking all necessary precautions for the safety of his workers on the Site or of complying with all applicable safety laws and regulations, particularly those regulations pursuant to the Workers' Compensation Act to prevent accidents or injury to persons on about or adjacent to the Site.

The Contractor shall provide all safeguards required directly for or as a result of the Work as referred to in GC.39 and in the scope of work described in the Contract Documents.

GC.41. OVERLOADING

No part of the Work shall be loaded during the construction with a load greater than it is calculated to bear safely. Should any damage or accident occur through the violation of this requirement, the Owner will hold the Contractor solely answerable and liable.

GC.42. DRAINAGE

The Contractor shall keep all portions of the Work well, properly and efficiently drained during construction and until completion, and the Contractor will be held responsible for all damage which may be caused or result from water backing up or flowing over, through, from or along any part of the Work, or which any of the Contractor's operations may cause to flow elsewhere.

GC.43. CLEANING UP

The Contractor shall at all times keep the premises free from accumulations of waste material or rubbish caused by its employees or work, and at the completion of the Work, it shall remove all its rubbish from and about the site and all its tools, scaffolding and surplus materials, and shall leave its Work "broom clean" or the equivalent, unless more exactly specified. In case of dispute, the

Engineer may remove the rubbish and charge the cost to the several contractors as the Engineer shall determine to be just.

GC.44. SAFEGUARDING EXISTING PROPERTY

Existing property, buildings, fences or other improvements of any kind shall be protected by the Contractor during the life of the Contract. The Contractor shall make good to the satisfaction of the Engineer any damage done to the existing property, buildings, fences or other improvements. This applies to areas of private property incorporated in the Work area.

Where removal of existing improvements such as pavement, fences, structures, sewers and ducts is necessary during the course of the Work, the same shall be re-established by the Contractor to the satisfaction of the Engineer. The cost of protection and rehabilitation shall be borne by the Contractor.

GC.45 EXISTING UTILITIES

The Contractor will be responsible for the care of all public utilities and in the event of any of these requiring to be removed, raised or lowered permanently, this will be done either by the City or by the utility company interested and at the expense of the City. If temporary alteration of location is required for purposes of the construction, such work shall be done by the City or by the utility company interested at the expense of the Contractor. The Contractor, however, will be held responsible for, and will have to bear the cost due to any damage done to utility services through its operations.

Reasonable notice must be given to the Engineer of any change required in utility services.

Existing utilities are shown on the Drawings. These, however, are shown for convenience only and the Owner assumes no responsibility for improper locations, or failure to show utility locations on the construction plans. The Contractor shall prove its locations by obtaining relevant City of Vancouver plans and uncovering the utilities on site at no extra cost to the Owner.

The Contractor shall provide adequate barricades and lighting around and adjacent to any open excavation or potentially dangerous location or other locations designated by the Engineer.

The Contractor shall at all times ensure that the fire hydrants are not obstructed.

GC.46 DUST CONTROL

The Contractor shall at all times control the generation of dust by its operations by water sprinkling or by other methods approved by the Engineer.

GC.47 CHANGES:

- a) Changes
 - i) Authority to Make Changes: The City, through the Engineer, without invalidating the Contract, may make:
 - changes in the Work consisting of additions, deletions, or other revisions to the Work by Change Order or Change Directive, and

- changes to the Contract Time, or any part thereof, by Change Order.
- ii) **Change Order/Directive:** The Contractor shall not perform a change in the Work without a Change Order or a Change Directive.
- b) **Change Order**
- i) **Notice and Claim:** When a change in the Work or the Contract Time is proposed or required, the Engineer will provide written notice to the Contractor describing the proposed change. The Contractor shall present, in a form acceptable to the Engineer, a method of adjustment or an amount of adjustment of the Contract Amount, if any, and the adjustment in the Contract Time, if any, for the proposed change.
- ii) **Valuation:** The method of adjustment of the Contract Amount presented by the Contractor may be:
- 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,
 - a lump sum or unit price quotation, or
 - the cost plus method set out in GC.54(c).
- iii) **Change Order:** When the Engineer and Contractor agree to the adjustments in the Contract Amount and/or 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 in substantially the form prescribed by the Contract Documents, signed by the City and by the Contractor. The value of the Work performed as the result of a Change Order shall be included in applications for progress payments. A Change Order that involves no material change in the *scope* of the Work, or any change in the Contract Amount or the Contract Time may be signed, on behalf of the City, by the Engineer.
- c) **Change Directive**
- i) **Authority to Issue Change Directive:** If the City requires the Contractor to proceed with a change in the Work prior to the Engineer and the Contractor agreeing upon the adjustment in Contract Amount and Contract Time, the Engineer shall issue a Change Directive in substantially the form prescribed by the Contract Documents.
- ii) **Limitation:** A Change Directive shall only be used by the Engineer to direct a change in the Work that is within the general scope of the Contract Documents.
- iii) **Contractor to Proceed:** Upon receipt of a Change Directive, the Contractor shall proceed promptly with the change in the Work.
- iv) **Valuation:** Subject to GC.47(c)(vii), the adjustment in the Contract Amount for a

change in the Work carried out by way of a Change Directive shall be on the basis of the Contractor's actual and properly documented 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.54(c). 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. If a change in the Work results in both expenditures and savings, overhead and profit on the Work shall be payable only on the net increase in expenditures, if any, with respect to that change in the Work.

- v) **Progress Payments:** 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.
- vi) **Dispute Resolution:** If the Engineer and the Contractor do not agree on the proposed adjustment in the Contract Amount or the Contract Time, or the method of determining either or both of them, the adjustment shall be determined by the Engineer, acting reasonably.
- vii) **Change Order:** If at any time after the start of the Work directed by a Change Directive, the Engineer and the Contractor reach agreement on the adjustment to the Contract Amount and to the Contract Time, this agreement shall be recorded in a Change Order signed by the Contract Administrator, on behalf of the City, and by the Contractor.

d) **Quantity Variations**

- i) **No Unit Price Adjustments:** The Unit Prices, if any, set out in the Schedule of Prices are firm and fixed, and shall not be subject to adjustment as a result of any difference between the estimated quantities shown in such schedule and the corresponding actual quantities.

GC.48. ERRORS BY CONTRACTOR

Changes, errors or mistakes made by the Contractor or his subcontractors, workmen or employees, and all settlements, washouts and defects, shall be rectified by the Contractor at its expense.

GC.49. TESTING OF MATERIALS

Except where otherwise specified, testing of materials will be carried out by the Contractor and paid for by the Contractor.

GC.50. DEFECTIVE WORK

The Contractor shall at any time when so required by the Engineer during construction or by the Owner during the period of warranty, make such openings, and to such extent, through any part of the Work, as the Engineer or the Owner, as the case may be, may direct, which it shall forthwith make good again to the satisfaction of the Engineer or the Owner respectively. Should the Work so opened up be found to be, in the opinion of the Engineer or the Owner, as the case may be, faulty in any respect, the whole of the expenses incurred shall be defrayed by the Contractor; otherwise by the Owner. All defective work or Products discovered by this or any other means must be

forthwith wholly removed and made good by the Contractor at its own expense to the Engineer's or Owner's satisfaction, as the case may be.

GC.51. WARRANTY

The Contractor shall perform the Work in a proper and workmanlike manner and in accordance with the requirements of the Contract Documents and maintain the Work against any defects arising from faulty installation, material or workmanship during the period of twelve (12) months from the date of issuance of the Final Certificate of Acceptance and make good in a permanent manner satisfactory to the Owner any defects arising from any of these causes. Whether the Contractor should replace defective Products or work, or repair the same, shall be determined by the Owner. Should the Contractor fail to make good defects as aforesaid when ordered by the Owner, then the Owner at its option, after giving the Contractor twenty-four (24) hours' written notice, may do so and the whole costs, charges and expenses so incurred may be deducted or collected by the Owner as provided in GC.58. The decision of the Owner shall be final as to the necessity of repairs or of any work done or required to be done under the provisions of the Contract and for the amounts expended thereunder.

GC.52. CONTRACTOR'S LIABILITY

All Products and Work and the title to them vest automatically and irrevocably in the City upon installation. However, all risk of loss or damage remains with the Contractor and will not transfer to the City until the date of issuance of the Final Certificate of Acceptance (or cancellation of the Contract, whichever is sooner).

The Contractor shall be liable for any and all damages, or claims for damages, for injuries or accident to person or property done or caused by the Contractor, his subcontractors or employees, or resulting from the prosecution of the Work or any of its operations, or caused by reason of the existence or location or condition of the Work, or of any materials, Products or Plant used therein or thereon, or which may happen by reason thereof, or arising from any failure, neglect or omission on his part, or on the part of his subcontractors or employees, to do or perform any or all of the several acts or things required to be done by the Contractor or them under and by the Contract, and the Contractor covenants and agrees to indemnify and save harmless at all times the Owner against all such damages and claims for damages whatsoever arising out of or in connection therewith, and in the event of any such action being brought by any person against the Owner, either directly or indirectly, or by reason of the execution of the Contract, the Owner may enforce payment by the Contractor of all such loss, costs, damages and expenses as a debt due to them.

In the case of the Contractor's failure, neglect or omission to observe and perform faithfully and strictly all the provisions of the Contract, the Owner may either with or without notice (except where in this Contract notice is specially provided for, and then upon giving the notice therein provided for), take such steps, procure such material, equipment, trucks, and men, and do such work or things as it may deem advisable towards carrying out and enforcing the same, and any and all expenses so incurred may be deducted or collected by the Owner under the provisions of GC.58.

Any such action taken by the Owner under this General Condition as it is herein empowered to take shall not in any way relieve the Contractor or its sureties from any liability under the Contract.

GC.53. INSURANCE BY THE CONTRACTOR

a) ALL RISK COURSE OF CONSTRUCTION INSURANCE

i) Coverage

"All Risks" of physical loss or damage up to the Full Value of the Work or Contract Amount including but not limited to the "Property Insured" as described under clause b) below..

ii) Property Insured

- At Site

All materials, equipment and machinery, labour and supplies of any nature whatsoever, Work in progress, including property of the Insured or of others for which the Insured may have assumed responsibility, to be used in or incidental to the Site preparations, demolition or existing structures, erection and/or fabrication and/or reconstruction and/or repair of the project insured, commencing when the property becomes at the Insured's risk, at the Site, and while there awaiting, during and subsequent to erection and/or fabrication and/or repair and/or testing. Earthquake insurance is required for underpass and retaining wall structures.

- Transit

Property to enter into and form a part of the project insured, from the commencement of loading at the original point of shipment anywhere in Canada or the Continental United States of America, but excluding such property in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.

- Off Site

Off Site cover shall apply to property to enter into and form a part of the project insured, anywhere in Canada or the Continental United States of America, but excluding such property while in transit or in the course of manufacturing or processing within buildings at the manufacturer's or supplier's site.

iii) Insureds

The Owner, the Engineer, the Contractor, and all Sub-contractors, and their employees and agents.

iv) Term

During the period of the construction operations and also during any period in which the property insured is being prepared for occupancy and while partially occupied provided all coverage shall cease when the Work has been formally accepted as complete by the Owner, whichever shall first occur.

v) Limit and Deductibles at Site

- Limit of Liability: Full Value of the Work
- Deductible not to exceed \$5,000.00.

b) PROJECT SPECIFIC WRAP UP LIABILITY INSURANCE

i) Coverage and Insureds

The coverage shall be Third party coverage for all participants in the activities related to the design, construction and commissioning of the Work, including losses arising from personal injury, death, and property damage, including loss of property, with the Owner, the Engineer, the Contractor, and all Sub-contractors, and their employees and agents as insureds.

ii) Limits

Bodily Injury Liability and Property Damage Liability including aggregate products and completed operations: not less than \$5,000,000 each occurrence.

iii) Extensions of Coverage (as required)

- Broad form property damage
- Occurrence property damage
- Collapse, underpinning and excavation
- Products and completed operations
- Personal injury
- Contingent employer's liability
- Non-owned automobile insurance
- Premises, property and operations
- Contractual liabilities
- Broad form completed operations
- Owner's and Contractor's protective
- Loading and unloading of automobiles
- Unlicensed and specially licensed vehicles
- Operation of attached machinery

- Employees as additional insureds
- Contingent employers liability
- Standard IBC pollution exclusion with hostile, fire exception

iv) Deductibles

Not to exceed \$10,000.00 for each occurrence.

v) Cross Liability

The insurance shall apply to any action brought against any one of the Insureds by any other Insured in the same manner as though separate policies were issued to each.

vi) Term

Period of construction or completion of the Work, whichever shall first occur, plus twenty-four (24) months for completed operations liability thereafter.

vii) Waiver Of Subrogation

The Contractor or subcontractor, as the case may be, shall have the following clause included in the Insurance policies for GC.53.1 (All risk course of construction), GC.53.2 (Liability), and GC.53.4 (Contractor's equipment):

It is understood and agreed that in the event of a loss and upon payment of claim hereunder, the Insurer will waive his right of subrogation against the Owner, the Engineer and all architects, engineers or consultants engaged in or connected with the construction and Site preparation and related operations of the Work and any of their servants, agents, employees, parent, subsidiary, affiliated or associated firms.

c) AUTOMOBILE INSURANCE

A standard owner's form automobile policy for licensed vehicles providing third party liability and accident benefits insurance as provided by the Insurance Corporation of British Columbia (Autoplan) in accordance with the Insurance (Motor Vehicle) Act, the minimum limits as follows:

Bodily injury and property damage (third party limit) inclusive limit \$3,000,000.

d) CONTRACTOR'S EQUIPMENT INSURANCE

"All Risk" insurance with Insurers acceptable to the Owner, covering all construction equipment, owned or rented, or for which the Contractor or any of his subcontractors may be responsible. In the event of loss or damage to the said construction equipment, or any part thereof, the Contractor or the subcontractor, as the case may be, shall, if so requested by the Owner in writing, forthwith replace such damaged or destroyed construction equipment.

e) GENERAL

- i) All insurance coverage described in this General Condition shall be issued by an insurance carrier or agent acceptable to the Owner and licensed to conduct business in the Province of British Columbia.
- ii) Contractors and subcontractors shall be required to file with the Owner within the time set out in the Tender Form (and in any event within 10 Business Days of issuance of the Notice of Award), certified copies of all policies and endorsements indicated in this General Condition (unless a Certificate of Insurance satisfactory to the City's Director of Risk Management is received and accepted in lieu of same).
- iii) Contractors and their subcontractors shall be required to furnish evidence of the renewal of policies described in this General Condition by renewal certificate, endorsement or certified copy to be received by the owner at least fifteen (15) days prior to the expiry date of the policy.
- iv) If the Contractor fails to obtain and maintain insurance as required hereunder, or if the Owner does not approve any insurance policy or policies submitted to the Owner and the Contractor thereafter does not meet the requirements of the Owner as to terms and conditions of the insurance policy, the Owner shall have the right to place and maintain such insurance in the name of the Contractor. The cost thereof shall be payable by the Contractor to the Owner on demand, and the Owner may deduct the cost thereof from any monies which are due or may become due to the Contractor. If coverage should lapse, all work by the Contractor shall be stopped until satisfactory evidence of renewal is produced.
- v) Each policy described in this General Condition shall be required to be endorsed as follows:
 - Notice: "It is understood and agreed that this policy will not be cancelled, reduced, materially altered or changed without the Insurer giving at least thirty (30) days prior written notice by registered mail to the City of Vancouver."
- vi) Subject to the provisions of Section 1, each Contractor and each of its subcontractors shall provide at his own cost any additional insurance which he is required by law to provide or which he considers necessary.
- vii) Deductibles
 - All deductibles shall be for the account of and be paid by the Contractor upon demand by the City.
 - The Owner shall have the right to deduct amounts for which the Contractor is responsible under this Section from any monies which are due or may become due to the Contractor.
- viii) All insurance shall contain a clause that waives the insurer's right of subrogation against the City or its officers, employees, servants or agents.

GC.54 BASIS FOR PAYMENT

- a) Basis of Payment for Unit Price Work
- i) Unit Price Work: Payment for Unit Price Work, if any, shall be based on the Unit Prices set out in the Schedule of Prices.
 - ii) Measurement: The Contractor shall measure the Work and the Engineer will verify such measurements to determine payment to the Contractor in accordance with the measurement provisions of the Contract Documents.
- b) Basis of Payment for Lump Sum Work
- i) Lump Sum Work: Payment for Lump Sum Work, if any, shall be based on the Lump Sum Prices set out in the Schedule of Prices.
- c) Basis of Payment for Cost Plus Work
- i) Cost Plus Work: Payment for Cost Plus Work, if any, shall be based on the cost of such Work, as provided in GC.54(c)(ii), plus a fixed fee or percentage fee calculated as a percentage of the cost of such Work, for the Contractor's overhead and profit. The fixed fee or percentage fee shall be as provided in the Schedule of Prices, except in the case of the valuation of changes in the Lump Sum Work on a cost-plus basis, in which case the applicable percentages shall be limited to the percentages stipulated in GC.54(c)(vii). In any event, any percentage fee, whether specified in the Schedule of Prices or in this GC.54(c)(i) shall not be applied to the cost of Construction Equipment/Plant for which rates are provided in the Schedule of Construction Equipment/Plant Rates or labour for which rates are provided in the Schedule of Labour Rates, unless such cost is expressly stated in the Schedule of Construction Equipment/Plant Rates not to include the Contractor's overhead and profit.
 - ii) Cost of the Work: The cost of Cost Plus Work and Work done under a Change Directive or Change Order on a cost-plus basis, except as otherwise specified in the Contract Documents, shall be at rates prevailing in the locality of the Site and, subject to GC.54(c)(viii), shall include the following cost elements as applicable to such Work:
 - 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 Engineer and the Contractor;
 - 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;
 - contributions, assessments, or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada 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 the above two bullets;
- travel and subsistence expenses of the Contractor's personnel described in the above two bullets;
 - the cost of all Products, including the cost of transportation thereof;
 - the cost of Plant and hand tools not owned by the workers, including transportation, and maintenance thereof, which are consumed in the performance of the Work, at cost less salvage value on such items used but not consumed, which remain the property of the Contractor;
 - the cost of all tools and Plant, 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;
 - deposits lost;
 - the amounts of all subcontracts;
 - the cost of quality assurance such as independent inspection and testing services;
 - charges levied by authorities having jurisdiction at the Site;
 - any adjustment in premiums for all bonds and insurance which the Contractor is required by the Contract Documents to purchase and maintain;
 - any adjustment in taxes and duties, other than taxes on income or capital, for which the Contractor is liable;
 - charges for long distance telephone and facsimile communications, courier services, expressage, and petty items incurred in relation to the performance of the Work;
 - the cost of removal and disposal of waste products and debris; and
 - cost incurred due to emergencies affecting the safety of persons or property.
- iii) Approval Required: The Contractor shall obtain the Engineer's approval prior to subcontracting or entering into other agreements for Cost Plus Work or Work done under a Change Directive or Change Order on a cost-plus basis.
- iv) Rejection of Costs: The Engineer 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.

- v) **Records:** The Contractor shall keep full and detailed accounts and records necessary for the documentation of the cost of Cost Plus Work and Work done under a Change Directive or Change Order on a cost-plus basis, and shall provide the Engineer with copies thereof when requested.
- vi) **Access to Records:** The City and the Engineer 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 Work done under a Change Directive or Change Order on a cost-plus basis, and for this purpose the Contractor shall preserve such records for a period of one year after the date of Substantial Performance.
- vii) **Cost Plus Contract Rates and Mark Ups:** When Cost Plus Work is performed or a change in the Work is valued on a cost-plus basis, then:
- the costs of labour will be determined by the labour rates specified in the Schedule of Labour Rates, without mark up, unless otherwise specified therein;
 - the costs of Construction Equipment/Plant will be determined by the construction equipment rates specified in the Schedule of Construction Equipment/Plant Rates, without mark up, unless otherwise specified therein;
 - in the case of changes in Lump Sum Work valued on a cost-plus basis, the amount of subcontracts specified will be subject to a mark up of 5% for overhead and profit; and
 - in the case of changes in Lump Sum Work valued on a cost-plus basis, all other costs specified in GC.54(c)(ii) will be subject to a mark up of ten (10%) percent.
- viii) **Cost Plus Maximum under Change Order:** When a change in Lump Sum Work is valued on a cost plus basis, the Engineer may require that the aggregate amount incurred under the corresponding Change Order shall not exceed a maximum amount acceptable to the City, acting reasonably, and specified in the Change Order, as such amount may be revised from time to time by subsequent written authorization of the Engineer. The Contractor shall not be entitled to payment in excess of such applicable maximum amounts in respect of any such Change Orders.
- ix) **Daily Records for Cost Plus Work under Change Order:** When a change in Lump Sum Work is valued on a cost plus basis, the Contractor shall prepare and submit to the Engineer on a daily basis a report of costs incurred in performing Work under the corresponding Change Orders. The report must identify all such open Change Orders, and summarize on a current basis costs incurred, allocated to the cost of labour, Products and Plant, and otherwise in such reasonable detail as the

Engineer may direct.

GC.55 CLAIMS FOR WAGES

The Owner may settle any claim for damages, and pay all wages overdue or the price of any materials or the amount due and payable by the Contractor to any subcontractor, for which payment is in arrears, and the amount thereof shall be debt due by the Contractor to the Owner, as and for money paid by them for the contractor and shall be deducted or collected by them as provided in GC.58, but they do not assume any liability in this respect; nor shall the persons to whom such wages or payments are paid become, by such payments, the employees or servants of the Owner.

GC.56 LIENS

The Contractor hereby agrees to make payment and take all other steps which may be necessary to ensure that all Contract monies, and the Work, and every part thereof, shall be and remain at all times free from and not liable to any lien or charge at law or in equity, or to any claim of liability under the Builders Lien Act, or to any attachment for debt, garnishee process or otherwise, and the Contractor and his sureties, as well as its respective executors, administrators, successors and assigns, shall fully indemnify and save

harmless the Owner and all its officers, servants and employees from any and all such liability, and shall, on demand, immediately cause any such lien, charge, claim or attachment to be removed or released from the records of any Land Title Office or Court in which the same may appear.

Notwithstanding anything to the contrary contained in the Contract Document, the Owners shall not be obliged to pay any monies to the Contractor if and for so long as any liens exist against the Works or the Site.

GC.57. PATENT INFRINGEMENT

The Contractor shall fully indemnify the Owner against and from all suits or actions arising from the claim of any person or persons who are or claim to be patentees of any process used in connection with the Work or of any material, Products, Plant, machinery, tool or appliance used therein or thereon, or in any way therewith.

GC.58. MONIES DUE THE OWNER

All monies payable to the Owner by the Contractor may be retained out of any monies then due, or which may become due from them to the Contractor under this or any other contract with the Owner, or otherwise howsoever, or may be recovered from the Contractor and its sureties, or any of either of them, in any Court of competent jurisdiction, as a debt due to them; and the Engineer shall have full power to withhold any estimate or certificate, if circumstances arise which may indicate to him the advisability of so doing, until the Engineer is satisfied that the Work and material so far done or furnished are in accordance with the Contract and that the Contractor is otherwise entitled thereto, though the sum to be retained may be unascertained.

GC.59. ASSIGNMENT

The Contractor shall not, without the consent in writing of the Owner first had and obtained, assign or transfer any sum or sums, or any part thereof, due or to become due to the Contractor under

the Contract, or assign, transfer or sublet and portion of the Contract or of the Work but must carry out the Work with its own men or subcontract under the Contractor's supervision. This section however does not apply to the furnishing of material for the different parts of the Work, for which material, however, the Contractor will be held strictly responsible, and no excuse for the quality of the material or for the non-delivery in good time by any subcontractor, as affecting the progress of the Work, will be entertained, not will the Owner's consent to the assigning, transferring or subletting of any portion of the Work relieve the Contractor from any of its obligations or liabilities under the Contract. No assignment, transfer or subletting hereinbefore mentioned, except if the same is made in accordance herewith, shall be in any manner valid or binding on the Owner.

GC.60. CERTIFICATES AND PAYMENTS

- a) Subject to the provisions of the Builder's Lien Act (British Columbia), and the Contract Documents, the Engineer will fulfil the role of payment certifier, and prepare monthly payment certificates based on the Inspector's measurements of work in place and the Contractor's invoices received by the Engineer. Materials supplied will only be included in any Payment Certificate on the basis of delivery slips signed by the Inspector; unsigned delivery slips will not be accepted for inclusion in the Payment Certificate. The Engineer may withhold any Payment Certificate if in his opinion, it is in the interest of the Engineer to do so, until the

Engineer is satisfied that the work and material so far done is in accordance with the Contract and that the Contractor is entitled thereto, though the amount to be retained may be unascertained. Upon issuance of each Payment Certificate, the Engineer will promptly deliver same to the City for payment.

- b) The issuance of a Payment Certificate, Certificate of Substantial Performance, Final Certificate of Acceptance, Partial Payment Certificate or Partial Certificate of Substantial Performance by the Engineer is a representation that to the best of the Engineer's knowledge, information and belief, the Work has progressed to the point indicated, (subject to an evaluation of the Work for conformance with the Contract Documents upon completion, to the results of any subsequent tests called for in the Contract Documents, to the correction of any defects in the Work not observed or discovered by the Engineer nor pointed out to the Engineer by the Contractor, to minor deviations from the Contract Documents correctable prior to completion and to any qualifications stated by the Engineer certificate) and that the Engineer shall not thereby be deemed to represent that he has made exhaustive or continuous on-site inspections to check the quality or quantity of the Work or that he has reviewed the construction means, methods, techniques, sequences or procedures or that he had made any examination to determine how or for what purposes any contractor has used the money paid on account of the Contract Amount.
- c) The Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation or certification of any progress or final payment by the Engineer, nor the issuance of any certificate, nor any payment by the City to the Contractor under the Contract, nor any use or occupancy of the Work or part thereof by the City, nor any act of acceptance by the City, nor any failure to do so, nor any correction of defective Work by the City shall constitute acceptance of work or products which are not in accordance with the Contract or a release of the Contractor's obligation to perform the Work in accordance with the Contract.

- d) The City will pay the Contractor within fourteen (14) days of receipt of each Engineer's Payment Certificate, less all stipulated forfeitures and deductions and less a Builder's Lien Act holdback in the amount of ten percent (10%) of the certified payment sum.
- e) Unless otherwise directed by the Engineer, no Payment Certificate shall be issued or progress payment made until the expiry of thirty (30) days from the commencement of the Work, and until the Contractor has submitted a Statutory Declaration, sworn by an officer of the Contractor and verifying that the accounts of all workers, materials and equipment engaged on, or supplied to the Work, together with all statutory or regulatory assessments or deductions, have been paid in full to the date of the last progress payment; provided however that in the case of Subcontractors, the Statutory Declaration will be acceptable if it indicates that ninety percent of the
- Subcontractors accounts have been paid to the date of the last progress payment. Only one progress payment shall be made in any one thirty (30) day period.
- f) Upon Substantial Performance of the Work, or as soon as practical thereafter, the Engineer shall issue a Certificate of Substantial Performance which certificate will also operate as the Payment Certificate authorizing payment of the amount (if any) necessary to complete payment of the whole amount due under the Contract less:
- i) Builders Lien Holdback in the amount of ten percent (10%) of the certified payment sum,
 - ii) a holdback for defects and deficiencies in the amount of two hundred percent (200%) of a reasonable value as estimated by the Engineer for corrections to defective or deficient work. This holdback shall be retained by the City without interest until such defect or deficiency is remedied by the Contractor, or if remedied by the City, applied pursuant to GC.50 Defective Work,
 - iii) a holdback in the amount of 100 percent (100%) of the value as estimated by the Engineer to complete incomplete work. This holdback shall be retained by the City without interest until such work is completed by the Contractor, or if remedied by the City, applied pursuant to GC.51 Warranty and GC.58 Monies Due the Owner,
 - iv) a holdback to cover the value of claims or liens filed or reasonable evidence indicating probable filing of claims or liens. This holdback shall be retained by the City without interest until such claims or liens are cleared and discharged, and
 - v) a holdback to cover the value of repairing damage to existing property, and/or damage to any Other Contractor's work which has not been settled. This holdback shall be retained by the City without interest until such damage is corrected.
 - vi) For the purposes of the Builder's Lien Act, the Certificate of Substantial Performance and the date thereof, shall serve as the Contracts certificate of completion and completion date.
 - vii) Fifty-five (55) days following the date of the Certificate of Substantial Performance, and subject to the provisions of the Contract, a Certificate for Payment shall be issued for release of the Builder's Lien holdback. Other holdback

amounts (if any) will be released upon clearance of those items as listed herein.

- viii) The Engineer will also be the payment certifier under any sub-contract with any Subcontractor.
- ix) In the event of a delay of the type described in GC.10, a Partial Certificate of Substantial Performance for the projects completed may be issued at the Engineer's discretion. The other provisions of this Clause with respect to holdback amounts and release of holdbacks will apply to any Partial Certificate of Substantial Performance.
- x) In the event of any circumstance which in the Contractor's opinion entitles him to additional compensation and which are not fully provided for herein, the Contractor shall immediately upon discovery of such circumstance, notify the Engineer in writing regarding the particulars of the circumstance and the amount of additional compensation the Contractor intends to claim therefor. Otherwise, the Contractor shall have no claim in respect thereof. All claims of every nature which the Contractor may have in respect of this Contract must be submitted in writing to the Engineer within thirty (30) days of the completion of that particular work, and the Contractor shall make no claim of any nature thereafter. Any claim submitted later than thirty (30) calendar days after completion of that work may be disallowed by the Engineer.
- xi) Upon full and complete performance of all obligations of the Contractor required to be performed prior to issuance of the Final Certificate of Acceptance, and upon the Engineer's verification of same pursuant to Clauses (a), (b) and (c) above, the Engineer will issue the Final Certificate of Acceptance, subject always to Clauses (a), (b) and (c) above, as well as, all other terms of the Contract Documents which are intended to survive the issuance of the Final Certificate of Acceptance.
- xii) The Contractor's acceptance of payment upon issuance of Final Certificate of Acceptance shall constitute a waiver of all claims by the Contractor against the City.
- xiii) Other Documentation
- The Engineer may as a further condition to any payment, at any time require the Contractor to furnish such or other detailed information as may be necessary to establish to their satisfaction the compliance by the Contractor with the conditions of the Contract.
 - At the time of the application for payment following the Engineer's Certificate of Substantial Performance, the Contractor shall deliver up to, and to the complete satisfaction of the Engineer, the As-Built record prints required by GC.13 and a release in form satisfactory to the Engineer of any and all claims for liens pursuant to the Builders Lien Act of British Columbia executed by all Subcontractors and Suppliers to the Contractor.
- xiv) Books Open for Inspection

- The Contractor's payrolls, time-books, books of account, invoices, receipt and statements relating to his Work under the Contract shall be at all times open for inspection and extract by the Engineer and the Owner and any authorized representative of them.

GC.61. TERMINATION OF CONTRACT WITHOUT DEFAULT OF CONTRACTOR

The Engineer may, as agent for and on behalf of the Owner, at his discretion terminate the Contract at any time upon written notice to the Contractor notwithstanding the fact that the Contractor may not then be in default, in which event the Owner shall be liable to the Contractor only for a reasonable amount for Work done and materials delivered at or to the Site up to the date of the termination.

Upon payment of the aggregate of the aforesaid sums, the Owner, the Engineer and the Contractor shall be released from their liabilities or obligations under the Contract save and except that the liabilities and obligations of the Contractor shall continue with respect to deficiencies and warranties in the portion of the Work completed prior to termination.

GC.62. TERMINATION OF CONTRACT FOR CONTRACTOR'S DEFAULT

- a) Despite any other term of the Contract Documents, the Engineer as agent for and on behalf of the Owner, without prejudice to any other right, may elect to terminate the Contract forthwith upon notice to the Contractor if:
 - i) the Contractor shall neglect or refuse to sign the Drawings and execute the Contract or furnish the 50% Performance Bond and 50% Labour and Materials Payment Bond, or provide certified copies of the Contractor's Insurance, Construction Schedule, traffic control plan, WCB Notice of Project, WCB proof of registration and good standing and the Prime Contractor Agreement Form within seven (7) days after issuance of the Notice of Award, or
 - ii) the Contractor neglects or fails to commence work within five (5) days after the Notice to Proceed by the Owner, or
 - iii) the Contractor commits an act of bankruptcy or becomes a bankrupt or makes a general assignment for the benefit of his creditors, or
 - iv) a receiver is appointed for the Contractor's business, or
 - v) the Contractor fails, on reasonable notice from the Engineer, to supply enough proper workmen or Products, or
 - vi) the Contractor does not pay promptly his employees, subcontractors or suppliers, or
 - vii) the Contractor persistently or substantially breaches any provision of this Contract.
- b) On such termination the Engineer may arrange for the performance of the Work by whatever method the Engineer deems expedient but without undue delay or expense.

- c) The Engineer may take possession of all Products, equipment, tools, structures and appliances belonging to or provided by the Contractor located on the Site which the Engineer deems necessary to prosecute the Work which possession the Contractor hereby pledges to the Engineer as agent for and on behalf of the Owner, as security for the performance of the Contract and the Work, provided that upon completion of the Work the Engineer shall return to the Contractor or his legal representative any such chattels so taken in possession in their original condition (ordinary wear and tear excepted) if not incorporated in the Work, without any compensation for use thereof.
- d) In case the Work or any part thereof is taken out of the hands of the Contractor, as herein provided, it shall in no way affect the relative obligations of the Owner and the Contractor or its sureties in respect of his or their obligation, or in respect of the remainder of the Work (if any), as the Engineer may consider reasonable. The Contractor and its sureties in every case shall be liable for such damages, expenditures and extra expenditures, and for all additional cost of the Work which may be incurred by reason of termination of the Contract pursuant to this GC.62, together with the penalties, if any, from the date fixed for the completion of the Work, and the same may be deducted or collected by the Owner as provided by GC.58.
- e) All the powers of the Engineer with respect to the determination of any doubts, disputes and differences, and the determination of the sum or sums, or balance of money to be paid to or received from the Contractor, and otherwise in respect of the Contract shall nevertheless continue in force.
- f) The fulfilment by the Contractor of any stipulation in the Contract may be enforced by legal proceedings and judgement, or order of Court, without prejudice to any other remedy herein contained. Neither the Owner nor any of its officers or employees shall be liable or accountable to the Contractor in any way for the manner in which, or the price at which the Work, or any portion thereof, may have been or may be done or completed by the Owner.
- g) No proceeding taken pursuant to this GC.62 or pursuant to any other provision of the Contract, shall at any time be deemed to be an assignment of the Contract or of any portion thereof, unless otherwise agreed to in writing.

GC.63. FAIR WAGE POLICY

The Contractor shall pay or cause to be paid to every person employed on the Works or engaged in the performance of this Contract not less than wages or remuneration generally accepted as current at the time.

GC.64. SUBMITTALS

The Contractor shall submit product data and samples to the Engineer for review on request. The Contractor's responsibility for deviation in submissions is not relieved by the Engineer's review unless the Engineer gives written acceptance of specific deviations from the requirements of the Contract Documents. The Contractor shall make any changes in submissions which the Engineer may request consistent with the Contract Documents and shall resubmit as directed by the Engineer. The Contractor shall not proceed with work until relevant submittals have been reviewed by the Engineer. The Contractor shall co-ordinate submittals with the requirements of

the Contract Documents and shall allow fourteen (14) days for the Engineer's review.

GC.65. NON-RESIDENT WITHHOLDING TAX

If the Contractor is, at any time, a non-resident of Canada, within the meaning of the Income Tax Act of Canada as amended, then, and the Contractor hereby so agrees, the City may deduct from all monies payable under the contract and remit to the Receiver-General of Canada, the Government of Canada or Revenue Canada, Taxation sums not greater than the greater of:

- a) Twenty-five percent (25%) of all monies payable under the contract; and
- b) Sums required to be withheld and remitted by the Income Tax Act of Canada as amended.

The City shall receive a further credit under the contract for monies withheld as of and from the date of the withholding (regardless of when or whether remitted) and no interest shall be payable by the City on sums withheld, not remitted as aforesaid and later paid directly to the Contractor.

GC.66 NO PROMOTION OF RELATIONSHIP

- a) The Contractor shall not disclose or promote its relationship with the Owner, including by means of any verbal declarations, announcements, sales, marketing or other literature, letters, client lists, press releases, brochures or other written materials (collectively, the "Communications") without the express prior written consent of the Owner (except as may be necessary for the Contractor to perform the Contractor's obligations under the terms of the Contract).
- b) Furthermore, the Contractor undertakes not to disclose or promote its relationship with the Owner in any Communications in a manner which could suggest or create an association, express or implied, between the Contractor and the International Olympic Committee, the 2010 Olympic and Paralympic Winter Games, the Olympic Movement or the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games (also known as "VANOC"). Without limiting the generality of the foregoing, the Contractor shall not refer to "VANOC", "Vancouver 2010", the "2010 Games", the "Games", "Host City" or "Olympics", and shall not use any official emblem, logo or mascot of the 2010 Olympic and Paralympic Winter Games, in any Communications, without the express prior written consent of the Owner.

END OF SECTION 00600 - DEFINITIONS AND GENERAL CONDITIONS

SPECIAL CONDITIONS

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SC.1 SCOPE OF WORK

- (a) The Work to be done under this Contract is as shown on the Design Drawings listed in the ITT and as set out in the Contract Documents and consists of the shear capacity upgrades on all the concrete girder spans and twelve (12) of the concrete bent pier caps on the approach spans of the Granville Bridge and includes the following without being limited thereto:
 - i) supply, fabrication and installation of shear straps to concrete girders; and
 - ii) supply, fabrication and installation of shear straps to concrete pier caps.
- (b) The Contractor shall provide all plant, tools, equipment, labour, products, and supervision necessary to complete the work in accordance with the Contract Documents.
- (c) A general layout of the Work required is provided on Drawing No. 1832-002.

SC.2 LOCATION

- (a) The Place of Work is located in Vancouver, B.C. on the underside of the concrete girder approach spans of the Granville Bridge, comprising:
 - (i) concrete girders on the north and south Granville St. approaches, Howe St. approach (on ramp), Seymour St. approach (off ramp), Hemlock St. approach (on ramp) and the Fir St. and 4th Avenue approaches (off ramps) in order of priority set out in SC.20;
 - (ii) bents S13, S14, S15, S16, S17 and S26 on the south Granville St. approach; and
 - (iii) bents N8, N9, N13, N14, N15 and N16 on the north Granville St. approach.
- (b) The Granville Bridge crosses over False Creek and over properties owned by the City and designated as road, and also over properties owned by the City and leased to tenants.

SC.3 FIELD OFFICE

- (a) The Contractor, at its cost, shall provide a lock up office in the Contractor's site trailer or field office for the sole use of the Engineer. The office shall be dry, windproof and weatherproof and provided with ample window area and ventilation. The office shall be located as directed by the Engineer and shall measure not less than 3 meter by 3.5 meter in size. The Contractor shall furnish heat, light, small appliance power, telephone or cell phone and a desk and/or a drafting table 1 meter by 1.5 meter in size with a chair and/or a drafting stool.
- (b) The Contractor shall, during the term of the Contract, regularly clean and properly maintain the office.
- (c) The office and contents shall be removed and disposed of by the Contractor at the conclusion of the contract to the Engineer's satisfaction.

SC.4 COMMENCEMENT, COMPLETION & SCHEDULE

- (a) Construction shall commence upon the issuance to the Contractor of the Notice to Proceed by the Owner. The Contractor shall commence the Work within five (5) calendar days after issuance of the Notice to Proceed.
- (b) Subject to the Owner's extension rights set out in GC.47 (Changes), the date for Total Performance of the Work shall be Friday, December 4, 2009.
- (c) The girder straps over Anderson Street, 3rd Avenue, Lamey's Mill Road and 4th Avenue at the entrance to Granville Island must be performed between January 2009 and the end of April 2009 to minimize traffic disruption to Granville Island.
- (d) The Award of Contract is subject to Council approval which is expected to occur in January 2009. The Notice to Proceed is expected to be given shortly after Council approval. Mobilization for the Contractor is expected to occur towards the end of January.
- (e) The Contractor shall be expected to assemble as many personnel and crews as required to be completed by December 4, 2009.
- (f) The Contractor shall prepare a construction schedule in Schedule H of the Form of Tender indicating the time required for the various items of construction, and setting out the dates of starting and completing the items, and confirming that the Work will be complete by the above date.

SC.5 DRAWINGS

- (a) Details of the Work are shown on Drawings Numbered 1832-000 to 1832-002, 1832-010 to 1832-024, 1832-030 to 1832-032 and 1832-040 to 1832-046 inclusive, which shall form an integral part of this Contract Document. A complete drawing list is shown on Drawing No. 1832-000.
- (b) Clause 2.2 of Drawing No. 1832-001 contains a list of Reference Drawings of the existing bridge structure. After the award of Contract, the Contractor will be supplied with a copy of these design and construction drawings of the existing bridge for his reference. These drawings shall be kept at the site office and returned to the City after completion of the Work. These drawings are FOR INFORMATION ONLY and the City and Engineer assume no responsibility for the correctness of the information shown.
- (c) All dimensions on the drawings, except as noted, are shown in metric units.
- (d) The Engineer may from time to time issue further drawings or amended drawings as he deems necessary in pursuance of the Contract.

SC.6 DATUM AND LAYOUT OF THE WORK

- (a) Elevations shown on the drawings are referred to City Datum (Geodetic 1958).
- (b) The Contractor shall establish alignment and elevations for the Work. Dimensions given on the contract drawings are based on the original construction drawings and must be verified in the field prior to fabrication of details that depend upon as-built dimensions.

- (c) The Contractor shall assume full responsibility for the alignment and dimensions of each and every part of the work and their mutual agreement. Where holes are drilled in existing concrete, the Contractor shall locate existing reinforcing steel prior to layout of the nearby holes, and shall obtain approval of the Engineer for any relocation required to avoid drilling into existing reinforcing steel.
- (d) The Engineer may check the Contractor's layout and elevations during construction of the work, but this check shall in no way relieve the Contractor from full responsibility for the accuracy of the work.

SC.8 EXISTING UTILITIES & APPURTENANCES

- (a) Before commencement of any Work, the Contractor shall identify the precise locations of the utility lines and conduits within the work area. The Contractor shall be responsible for locating, exposing, supporting and protecting all utilities in any area where construction is required.
- (b) Existing within the work area above ground attached to the underside of the Granville Bridge are drain pipes attached to the crossbeams and columns of the bridge and TransLink trolley overhead cables. Also within the Work area are BC Hydro poles and overhead wiring strung between poles and to the bridge. The Contractor shall satisfy himself as to the location of all utilities and appurtenances before commencing any Work. The Contractor shall protect all utilities and notify the utility company, the City Engineer and the Engineer should any unexpected utility be located in the Work.
- (c) The City assumes no responsibility for the accuracy of the utility information shown on any of the drawings. The Contractor shall contact the utility companies directly and take whatever precautions those are necessary to locate, expose and work adjacent to all utilities prior to commencing the Work.
- (d) Any damage to utilities caused by the Contractor's operations shall be made good to the satisfaction of the Engineer and the Utility Company concerned at the Contractor's expense.

SC.9 EXISTING BRIDGE STRUCTURE

- (a) The Contractor shall ensure that none of his operations will adversely affect any part of the existing bridge structure. Any temporary load or stress caused by the Contractor's operations or by the modifications to the structure shall be under the Contractor's control and responsibility and shall not exceed the allowable loads for the location based on the latest edition of CAN/CSA-S6-06.
- (b) In the event that the Contractor intends to support any part of the work from the existing bridge, he shall submit a written plan and sequence of the operation including drawings sealed by the Contractor's Professional Engineer for review by the Engineer at least two weeks prior to the work. The plan shall indicate loads and details of their application to the bridge and no work shall commence until written permission has been received from the Engineer.

- (c) No alterations to the existing structure shall be permitted except as shown on the Contract Drawings.

SC.10 ALTERNATIVE DETAILS & WORKING DRAWINGS

- (a) All details shall conform to those shown on the drawings unless specifically approved as alternatives. Alternative details may be substituted to facilitate the Contractor's procedures and to suit his standard detailing practice, provided such alternative details comply in all respects to the Contract Specifications and have been submitted to the Engineer for review and have been reviewed without objections by the Engineer.
- (b) All such alternative details shall be shown on a set of shop or erection drawings and shall bear such information as is necessary to clarify its purpose. Any work that falls under the definition of the practice of Professional Engineering, such as erection plans, falsework and formwork design, or procedures involving structural loads, shall bear the seal of a Registered Professional Engineer who shall inspect the work during construction.

SC.11 HOURS OF WORK & NOISE CONTROL BY-LAW

- (a) The Contractor shall keep the Engineer advised on the proposed hours of work so that inspection can be coordinated. Work without inspection shall not be permitted.
- (b) The attention of the Contractor is drawn to the City's Noise Control By-Law No. 6555 governing noise-generating activities in residential areas. The bylaw requires all construction related activities to be completed between the hours of 7:00 am and 8:00 pm on any weekday and Saturday, and between the hours of 10:00 am and 8:00 pm on any Sunday.
- (c) All work performed by the Contractor shall conform to the requirements of said Noise Control By-Law, which is available for inspection at City Hall, and with all other applicable noise related Laws and Regulations.

SC.12 TRAFFIC CONTROL

- (a) For all Work on City streets, lanes, sidewalks and City owned leased property, all traffic control shall be provided by the Contractor, at the Contractor's expense. The Contractor shall adhere to the standard procedures and practices prescribed in the Ministry of Transportation and Highways "Traffic Control Manual for Work on Roadways" (Second Field Edition).
- (b) The Contractor shall also provide, at the Contractor's expense, erect and maintain all requisite barriers, fences or other proper protection and must provide and maintain such flagpersons, watchpersons and lights as may be necessary or as may be ordered by the Engineer, in order to ensure safety to the public as well as to those engaged about the premises or Works, and must (where it is practicable in the Engineer's opinion) keep any roadway open for the use of the public, or for some restricted use specified by the Engineer, for such width as the Engineer may direct.
- (c) The Contractor shall submit a detailed Traffic Management Plan for the Engineer's approval prior to commencement.

- (d) When any work is carried out at night, the Contractor must supply, at the Contractor's expense, a sufficient number of electric or other approved lights to enable the work to be done in an efficient and satisfactory manner, and the Engineer shall have the right to order additional lights at the Contractor's expense if, in the Engineer's opinion, they are or may be required.
- (e) For the information of the Contractor, the Parking Enforcement Branch or the Vancouver City Police are the only designated authorities approved to call tow trucks. The Contractor shall be responsible for obtaining all the necessary permits to clear parking for their work zone. 3 days should be allocated upon receipt of the permit to allow for City Crews to install the temporary special zone. All temporary closures are to be arranged 5 days in advance with the City's Traffic Management Branch, and any closures on the bridge decks must be arranged with the Bridge Crew and the Traffic Management Branch.
- (f) Provision of Pedestrian and Vehicle Access
- (g) The Contractor's Work shall be carried out in accordance with the following requirements:
 - (i) maintaining safe and continuous pedestrian access at all times to all businesses within proximity of the Work Site.
 - (ii) closing only one sidewalk at a time (no closure of parallel sides simultaneously) while maintaining safe and continuous pedestrian access across the closed sidewalk by providing a safe pedestrian corridor alongside the roadway adjacent to the closed sidewalk.
 - (iii) closing only one crosswalk within an intersection at any time, and maintaining safe and continuous access to at least three pedestrian crossings within an intersection at all times.
 - (iv) maintaining one lane northbound and one lane southbound vehicular traffic access to Granville Island at all times.
 - (v) coordination with Granville Island stakeholders to allow for full capacity during special events.
 - (vi) individual site specific traffic plans required for works impacting arterial roadways, such as W. 4th Ave, Pacific Blvd, and any clover leaf on/off ramps.
 - (vii) limited impacts to the arterial streets during peak rush hours - "peak rush hours" means Week Days between 7:00 a.m. and 9:30 a.m. and 3:00 p.m. and 6:00 p.m.
 - (viii) Work within arterial intersections may be limited to weekends only, as to the discretion of the Traffic Management Branch.
 - (ix) from February 17 - 22, 2009, Granville Island has a winter festival called Winterruption, with the busiest times between February 20 - 22, 2009. The Contractor shall work around these dates.

SC.13 PUBLIC CONVENIENCE AND SAFETY

- (a) In carrying out the Work, or any portion thereof, the convenience of the public must always be specially considered and provided for by the Contractor, who must not obstruct any street, thoroughfare or sidewalk longer or to any greater extent than is absolutely necessary in the Engineer's opinion. This clause also applies to the property under the Bridge that is owned by the City of Vancouver and leased out to tenants.
- (b) The Contractor shall not deposit any material upon any street, sidewalk, boulevard, grass plot, or other City or public property, without the Engineer's permission nor shall the Contractor allow the same to remain thereon longer than necessary but must remove all rubbish and other material, clean and thoroughly restore all such places to as good and as tidy a condition as the Contractor found them, as speedily as possible, from time to time as the Work progresses, or as directed. Where the Contractor obstructs more of the street, roadway or place than is ordered or sanctioned by the Engineer in writing, then the Engineer may cause such obstructions to be removed at the expense of the Contractor.
- (c) The Contractor shall effectively warn and protect the public from any danger as a result of the Work being done.
- (d) The Contractor shall be fully responsible for all safety measures and precautions and for ensuring that the public safety and the safety of all are ensured at all times. In the event of an accident or a claim, the City and/or the Engineer shall not be liable in any way.
- (e) No material or equipment shall be placed nor any operation undertaken where it will interfere with the free safe passage of vehicular and pedestrian traffic, or in such a manner that it creates a hazard to the public.
- (f) Where the Contractor is lifting materials over public areas including protective hoarding, working platforms or steelwork, vehicular or pedestrian traffic shall not be allowed during the lift until the materials are secure.
- (g) If pedestrian and/or vehicle traffic can not be rerouted around the area where the Contractor will be working over vehicular and pedestrian traffic, a protective hoarding or suitable alternative shall be designed, installed, and maintained over the traffic by the Contractor for the protection of the vehicles and pedestrians. In particular, the Contractor shall ensure that the public is fully protected from falling materials. The Contractor shall ensure that the hoarding is designed by a Professional Engineer to adequately and safely protect the traffic below, and to safely carry whatever loads to which the Contractor subjects the hoarding.
- (h) Working drawings showing the layout and detail of protective hoarding and supporting members shall be submitted to the Engineer for review at least fourteen (14) days before the protection is required. These drawings shall be sealed by a Professional Engineer registered in the Province of British Columbia. Erection of those parts of the structure for which protection is required shall not proceed until the drawings have been reviewed. After review, any change to the plans for access and protection of public areas shall be reviewed by the Engineer prior to implementation. Notwithstanding the above, the Engineer may require modifications of the protection system before or during any stage of the work if a potentially dangerous situation is evident.

- (i) The Contractor shall provide adequate barricades and lighting meeting WCB regulations around and adjacent to openings, excavations, overhead operations, and equipment, and to the satisfaction of the Engineer.
- (j) The Contractor shall at all times ensure that fire hydrants are not obstructed.

SC.14 ACCESS, WORK AREAS AND STORAGE AREA

- (a) Access to the Work areas will be as required. The Contractor shall confine his operations to one bay (from column to column) where relocation of vehicles and material is required to perform the Work at a time for Work on the south side of the bridge as this area is very congested and it will be more problematic for the City to relocate vehicles and materials to provide a Work area for the Contractor. There are more options for relocating vehicles on the north side of the bridge but the Contractor shall confine his operations to one bay at a time on each of the ramps.
- (b) Refer to Special Conditions Clause SC.19 for further information about Work on City owned leased properties under the bridge.
- (c) The Contractor will be supplied with a storage area as follows:
 - (i) Portion of the area on the east side of Granville Street north of Beach Avenue will be provided to the Contractor for storage use.
- (d) The area used by the Contractor shall be restored by the Contractor, at its sole cost, to its original condition when the Work is completed.

SC.15 PERMITS

- (a) Building or demolition permits from the City of Vancouver are not required for this Work.

SC.16 HYDRANTS AND WATER

- (a) The Contractor shall make any necessary arrangements with the City of Vancouver Engineering Services, at the Client Service Counter, Ground Floor of City Hall and obtain a permit and pay any fees required for obtaining water from City hydrants, (about \$175.00 with a \$500 deposit) and shall provide the necessary double check valve assembly which must be used for the purpose of obtaining water from the City hydrants. The Contractor shall not use any hydrant key which has not been supplied by Engineering Services. The Contractor will need to supply the exact location of the hydrant he intends to use. A test report for the Contractor's backflow prevention device will also be required.

SC.17 PAYMENT

- (a) This is a lump sum Contract and payment will be made on the basis of the breakdown in the lump sum tender price given in Schedule A of the Tender. The prices tendered shall include all costs necessary for the completion of the work specified.
- (b) Progress payments for the Work will be made on the basis of the breakdown in the lump sums in Schedule A of the Tender, and on the percentage of completed strap installations incorporated into the work as determined by the Engineer. A *Builders Lien Act* holdback of

10% will be retained.

- (c) Payment for additions and deletions to the Contract will be made at the unit prices bid for the items appearing in Schedule B - Schedule of Unit Prices for Adjustments to Lump Sum Prices. (See Clause SC.18)
- (d) No separate payment will be made for the provision of samples for testing, or for the interruption to the work that sampling or in-place testing may cause; or for the supply of mill certificates. The cost of the performance of product quality control tests shall be included in the appropriate lump sums bid. The cost of all testing initiated or performed by the Engineer unless otherwise noted shall be paid for by the City.
- (e) Any work called for in these Specifications or shown on the drawings, or which is necessary for the completion of the work called for in these Specifications, which is not specifically listed as a separate item in Schedule A shall be deemed incidental to the general purpose of the Contract. The Cost of any such incidental work shall be included in the lumps sums bid for the various items appearing in Schedule A, and no separate payment will be made on account of any such work.

SC.17.1 Mobilization

- (a) Payment for Mobilization will be made at the lump sum price bid, for the mobilization and demobilization of all equipment and labour, access to all parts of the work, the supply and erection of all temporary works, the supply of office space for the Engineer, supply of materials and relocation for signs, drains, ladders, and lights and all overhead and other costs which are not specifically covered in each of the lump sums of Schedule A of the Tender.
- (b) Payment of thirty percent (30%) of the lump sum bid will be made when office, equipment, and labour are on site and work has commenced. Payment of forty percent (40%) of the total will be made in proportion to the progress on the project as a series of monthly payments. Payment of the remaining thirty percent (30%) will be made upon completion of cleanup and removal of all temporary work to the satisfaction of the Engineer.
- (c) The lump sum bid for Mobilization shall not exceed twenty percent (20%) of the total Tender amount. If the bidder quotes a sum in excess of twenty percent (20%) of the total Tender amount, the city will reduce the lump sum for this item to the maximum allowable, and the new figure shall prevail both for the determination of the low Tender and for payment to the Contractor.

SC.17.2 Supply, Fabrication & Installation of Shear Straps Type 1C

- (a) Payment for shear straps type 1C shall be at the lump sum bid for the supply, fabrication and installation of shear straps type 1C. Lump sum shall include: preparation of shop drawings, preparation of erection and welding procedures, materials, access, tools, equipment, labour, and

supervision.

- (b) Payment under Schedule B will be made for the units added or deleted, and shall be full compensation for everything supplied and done to provide the added or deleted item.

SC.17.3 Supply, Fabrication & Installation of Shear Straps Type 1H

- (a) Payment for shear straps type 1H shall be at the lump sum bid for the supply, fabrication and installation of shear straps type 1H. Lump sum shall include: preparation of shop drawings, preparation of erection and welding procedures, materials, access, tools, equipment, labour, and supervision.
- (b) Payment under Schedule B will be made for the units added or deleted, and shall be full compensation for everything supplied and done to provide the added or deleted item.

SC.17.4 Supply, Fabrication & Installation of Shear Straps Type 2C

- (a) Payment for shear straps type 2C shall be at the lump sum bid for the supply, fabrication and installation of shear straps type 2C. Lump sum shall include: preparation of shop drawings, preparation of erection and welding procedures, materials, access, tools, equipment, labour, and supervision.
- (b) Payment under Schedule B will be made for the units added or deleted, and shall be full compensation for everything supplied and done to provide the added or deleted item.

SC.17.5 Supply, Fabrication & Installation of Shear Straps Type 2H

- (a) Payment for shear straps type 2H shall be at the lump sum bid for the supply, fabrication and installation of shear straps type 2H. Lump sum shall include: preparation of shop drawings, preparation of erection and welding procedures, materials, access, tools, equipment, labour, and supervision.
- (b) Payment under Schedule B will be made for the units added or deleted, and shall be full compensation for everything supplied and done to provide the added or deleted item.

SC.17.6 Supply, Fabrication & Installation of Shear Straps Type S1

- (a) Payment for shear straps type S1 shall be at the lump sum bid for the supply, fabrication and installation of shear straps type S1. Lump sum shall include: preparation of shop drawings, preparation of erection and welding procedures, materials, access, tools, equipment, labour, and supervision.
- (b) Payment under Schedule B will be made for the units added or deleted,

and shall be full compensation for everything supplied and done to provide the added or deleted item.

SC.17.7 Supply, Fabrication & Installation of Shear Straps Type S2

- (a) Payment for shear straps type S2 shall be at the lump sum bid for the supply, fabrication and installation of shear straps type S2. Lump sum shall include: preparation of shop drawings, preparation of erection and welding procedures, materials, access, tools, equipment, labour, and supervision.
- (b) Payment under Schedule B will be made for the units added or deleted, and shall be full compensation for everything supplied and done to provide the added or deleted item.

SC.17.8 Supply, Fabrication & Installation of Cap Beam Shear Straps

- (a) Payment for cap beam shear straps shall be at the lump sum bid for the supply, fabrication and installation of cap beam shear straps. Lump sum shall include: preparation of shop drawings, preparation of erection and welding procedures, materials, access, tools, equipment, labour, and supervision.
- (b) Payment under Schedule B will be made for the units added or deleted, and shall be full compensation for everything supplied and done to provide the added or deleted item.

SC.18 PAYMENT FOR ADDITIONS AND DELETIONS

- (a) In accordance with GC.47 of the General Conditions, the Owner shall have the right to make or order any alterations and changes.
- (b) The extent of the Work is shown on the Drawings, and the lump sum tendered for each item is fixed. Where additions or deletions are made to the Work, the difference in cost will be compensated for in the final payment based on the unit prices tendered in Schedule B of the Tender.
- (c) The unit prices bid in Schedule B of the Tender shall include for all Work required by these specifications to be included for in the lump sum quotation in Schedule A of the Tender for the same item.
- (d) The cost of adjustments to the Contract shall be paid at the unit price bid in Schedule B of the Tender, or done as extra work on a force account basis as described in GC.54(c) whichever is deemed the best value to the City as determined by the Engineer.

SC.19 CITY PROPERTY UNDER THE BRIDGE LEASED TO TENANTS

- (a) There are a number of lots under the Granville Bridge which are owned by the City of Vancouver and are leased to tenants for storage of cars, motorcycles and materials, and some are used for parking. Some properties have buildings under and adjacent to the bridge.

- (b) The City of Vancouver Real Estate Services personnel will coordinate with the Contractor and with the tenants of these properties for the relocation of vehicles and materials to provide access to the Work areas.
- (c) The Contractor shall coordinate and schedule its Work in order to minimize the disruption to these tenants. In most cases the Contractor will be provided with access to one whole bay under the bridge (from one column to the next). There will be cases however where the Contractor will be provided with a minimum of only one half of a bay.
- (d) Real Estate Services personnel will arrange with the tenants of the properties to provide access to the Contractor as required. The Contractor shall provide at least two (2) weeks notice prior to accessing a bay in order for the Real Estate Services personnel to make the appropriate arrangements with the tenant.

SC.20 PRIORITY OF THE WORK

- (a) Upon receipt of the Notice to Proceed the Contractor shall perform the Work on Segments 1 to 12, as shown on Drawing No. 1832-002, in the following order of priority:
 - (i) Priority 1: Work required on Segments 1 to 9, inclusive; and
 - (ii) Priority 2: Work required on Segments 10, 11 and 12.
- (b) The Work on the Priority 1 segments shall be fully completed before the Contractor shall commence Work on the Priority 2 segments, unless otherwise directed by the Engineer.

SC.21 MATERIALS SUPPLIED BY THE CITY

- (a) Due to the delivery time required, the City will, at its cost, pre-order from a supplier and supply to the Contractor the following material in order for the Contractor to commence the project earlier than having to get the Contractor to order the material after the Notice to Proceed:
 - Hilti HAD Anchors - HAD-PF-M16-190/60 Quantity - 800 anchors
- (b) The City will endeavour to provide the anchors to the Contractor by January 31st, 2009 to allow the Contractor commence the installation of the straps at the earliest opportunity. After the Contractor receives the Notice to Proceed, the Contractor shall immediately order and purchase the remaining anchors required for the project.

SC.22 PCB HAZARD WARNING

- (a) The moving bearings of the steel truss spans of the Granville Bridge (Piers M1 to M8) were lubricated in an oil bath in the bearing boxes which contained Poly-Chlorinated Biphenols (PCBs). The PCB laden oil has been removed but residual amounts of PCBs are still present. This material has been determined to constitute a health hazard and is controlled by the Laws and Regulations related to protection of workers and the environment.
- (c) The Work of this project is not within the steel truss spans of the bridge but two of the

Piers on which Work is to be done is adjacent to the piers on either end of the steel truss spans. Pier S26 of the concrete spans is adjacent to Pier M1 of the steel span and Pier N8 of the concrete spans is adjacent to Pier M8.

- (d) The Contractor shall refrain from entering the steel truss spans and shall avoid any contact with the M1 and M8 pier caps, bearing boxes, the concrete berms around the bearing boxes and the water within the bearing boxes. The Contractor is required to make itself familiar with the hazards posed by the PCB material and all applicable Laws and Regulations applicable to PCBs. The Contractor shall comply with applicable Laws and Regulations and ensure that no hazardous operations occur and that no discharge of PCB material shall occur. The Contractor shall be responsible for all liabilities and costs that may be associated with the cleanup of discharged PCB material where his operations have resulted in the discharge, and hereby indemnifies the City for any and all claims and actions that may be related thereto.

END OF SECTION 00700 - SPECIAL CONDITIONS

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1.0 SCOPE OF WORK

- (a) The work to be done under this contract is as shown on the Design Drawings listed in the ITT and as set out in the Contract Documents and consists of the shear capacity upgrades on all the concrete girder spans and twelve (12) of the concrete bent cap beams on the approach spans of the Granville Bridge and includes the following without being limited thereto:
 - (i) supply, fabrication and installation of shear straps to concrete girders; and
 - (ii) supply, fabrication and installation of shear straps to concrete piercaps.
- (b) The Contractor shall provide all plant, tools, equipment, labour, products, and supervision necessary to complete the work in accordance with the Contract Documents.

2.0 SHEAR STRAPS FOR CONCRETE GIRDERS AND CAP BEAMS

2.1 SCOPE

- (a) This section shall apply to the supply, fabrication, and erection of the new shear straps for the concrete girders and the pier bent cap beams as shown on the Drawings.

2.2 MATERIALS

- (a) Supply, fabrication, and erection of new steelwork shall be in accordance with the attached Appendix A - "Supply, Fabrication and Erection of Structural Steelwork" unless otherwise noted in these Specifications.
 - (i) Steel shall conform to CSA G40.21 Grade 350W or 300W as indicated on the Drawings. Steel components shall be hot-dip galvanized as specified in Section 2.3.
 - (ii) Nuts and washers shall be $\frac{3}{4}$ -10 Heavy Hex Grade 2H for girder straps and 1-1/8"-7 Heavy Hex Grade 2H for cap beams in accordance with ASTM A194. Nuts and washers shall be hot-dip galvanized, as specified in Section 2.3.
 - (iii) 20M deformed bars shall be Grade 400W in accordance with CAN/CSA G30.18. One end of the deformed bars shall be threaded to accommodate the $\frac{3}{4}$ -10 Heavy Hex nuts. Subsequent to threading but prior to the application of the Griptec couplers, the deformed bars shall be hot-dip galvanized, as specified in Section 2.3.
 - (vi) 28 mm diameter bars - GSA G40.21 Grade 300W threaded to accommodate 1-1/8"-7 nuts.
 - (v) Anchor bolts installed into the underside of the bridge deck at the tops of the shear straps shall be Hilti HDA-PF M16X190/60 anchors or approved equal.

- (vi) Couplers shall be Griptec type by Dextra America Inc. or approved equal. The couplers shall accommodate 20M threaded deformed bars on one end and the Hilti HDA-PF M16X190/60 anchors on the other end. Subsequent to installation onto the 20M deformed bars, the exterior surfaces of couplers shall be shop coated with a zinc rich paint (Zinga or approved equal) applied in accordance with the manufacturer's written instructions.
- (vii) Hilti HIT-RE 500 Epoxy Adhesive anchoring system or approved equal shall be used to install the 20M bars into the cored holes for shear straps types 2C, 2H, S1 and S2
- (viii) ½" or ¾" anchors shall be type Hilti Kwikbolt 3 with a hot-dip galvanized coating.
- (ix) Grout shall be Sikagrout 212 or approved equal.
- (x) Caulking shall be Sikaflex 1a or approved equal.

2.3 HOT-DIP GALVANIZING

- (a) All new steelwork, including washers and nuts, shall be hot-dip galvanized. Hot-dip galvanizing of new steelwork shall be in accordance with the latest version of CSA Standard G164 - "Hot Dip Galvanizing of Irregularly Shaped Articles".
- (b) Minimum mass of zinc coating for all steelwork shall be 610 g/m² except washers, and nuts. For washers, and nuts, the minimum mass of zinc coating shall be 460 g/m².
- (c) After the completion of erection, areas where the zinc coat is scarred shall be touched-up with Zinga applied in accordance with the manufacturer's written instructions.

2.4 CONFIRMATION OF EXISTING DIMENSIONS

- (a) The dimensions indicated on the drawings are based on the information provided on the original bridge design drawings and actual dimensions may vary. Prior to fabrication of shear strap components, the Contractor shall conduct measurements to determine or confirm the dimensions of the concrete girders or pier bent cap beams at the location of each shear strap. Based on these measurements, the Contractor shall determine the required length of deformed bars and width of strap plates required for each shear strap location.

2.5 INSTALLATION OF GIRDER SHEAR STRAPS

2.5.1 Location of Shear Straps

- (a) Shear straps shall be positioned on the girders as indicated on the drawings unless obstructions are present. Obstructions can be other bridge components or external attachments that interfere with the installation or final position of the shear strap. If obstructions are present the following actions shall be taken by the Contractor:
 - (i) The Contractor may relocate the shear strap to a clear location along the length of the girder within 100 mm of the indicated position. Contractor shall record any shear strap relocations on the record drawings.
 - (ii) If a relocation of greater than 100 mm is required, the Contractor shall contact the Engineer for direction.
 - (iii) If the obstruction is an attachment to the structure that does not interfere with the final placement of the strap, the Contractor, with the approval of the Engineer, shall remove (loosen) and restore the attachment to allow instruction of the strap.

2.5.2 Installation of Hilti HDA Anchors

- (a) Hilti HDA anchors shall be installed in accordance with the manufacturer's written instructions. The vertically of the anchors installation shall be such that the lower end of the vertical strap bars are within 25 mm of the openings in the strap plate.
- (b) Drills shall be used to install the holes for the Hilti HDA anchors. If reinforcement is encountered the Contractor shall contact the Engineer for approval to use a diamond core bit or to relocate the shear strap. Strap relocations or use of a diamond core bit to complete drill holes due to reinforcement interference shall be considered incidental to the contract price.
- (c) All spoils from the coring operation are to be contained at the coring location and removed from the site. Any spillage of water or waste from drilling or coring operations shall be cleaned up to the satisfaction of the Engineer.

2.5.3 Installation of 20M Deformed Bars with Griptec Couplers

- (a) All components of the Griptec couplers shall be installed on the galvanized 20M deformed bars in the fabricators shop. All components of the couplers shall be fully threaded together prior to installation onto the HDA anchors. To provide visual confirmation of full engagement of the HDA anchor into the coupler, the threads of the HDA anchor rod shall be marked to indicate when full engagement into the coupler has been achieved.
- (b) The Contractor shall arrange for testing of three Griptec coupler assemblies at his cost by an independent reputable testing agency subject to the Engineer's approval. The Griptec coupler assemblies, fully installed

on the 20M deformed bars, shall be tested in tension and provide an ultimate capacity of at least one hundred and twenty percent (120%) of the specified yield strength of the 20M deformed bars.

2.5.4 Installation of 20M Deformed Bars with Adhesive Anchorage

- (a) Adhesive anchors required for Shear Strap types 2C, 2H, S1 and S2 shall be galvanized 20M deformed bars installed with a Hilti Hit-RE 500 Epoxy Adhesive anchoring system.
- (b) Holes for the adhesive anchors shall be located to prevent damage to existing longitudinal reinforcement in the lower portions of the concrete girders. Probing with a 25 mm drill bit shall be used to identify spaces between the longitudinal reinforcement. Once drilling has identified a clear space between the reinforcement, the holes in the existing concrete girders shall be completed using diamond coring with a 25 mm diameter bit. The coring shall be performed to a horizontal accuracy of 25 mm along the vertical length of the core, and shall provide a straight hole for the installation of the 20M deformed bar.
- (c) All spoils from the coring operation are to be contained at the coring location and removed from the site. Any spillage of water or waste from drilling or coring operations shall be cleaned up to the satisfaction of the Engineer.
- (d) The 20M deformed bars shall be installed into the core holes using Hilti Hit-RE 500 Epoxy Adhesive following the manufacturer's written instructions for cleaning of holes and installation of anchors. Restraints shall be supplied by the Contractor to prevent the 20M bars from sliding out of the core holes until the adhesive is fully cured.

2.5.5 Installation of KwikBolt Anchors

- (a) Anchor bolts installed through the strap plates on the bottoms of the girders shall be Hilti KwikBolt Type 2 or Type 3 as specified on the drawings. The anchors shall be installed following the manufacturer's written instructions.
- (b) Positions for the Kwikbolt Type 3 anchors shall be determined by temporarily installing the strap plate onto the 20M deformed bars. Once the general location of the anchor is established, a drill shall be used to probe for a clear space for installation of the anchor in a clear space between longitudinal reinforcement in the girders.
- (c) Positions for the Kwikbolt Type 2 anchors shall be determined by first locating a clear space between the girder reinforcement for the installation of the anchor then field drilling a corresponding hole in the strap plate to suit the anchor location.

2.5.6 Installation and Grouting of Strap Plates

- (a) Strap plates with dry pack grout shall be installed onto the 20M deformed bars and Kwikbolts as shown on the drawings.
- (b) Grout shall be a premixed, non-shrink, non-bleeding, non-metallic grout. Grout shall be Sikagrout 212 or approved equals installed in accordance with the manufacturer's written instructions. It shall develop a minimum strength of 40 MPa at 28 days (average of three cubes) tested in accordance with CAN3-A23.2-1B. The Contractor shall arrange for testing of the proposed grout at his cost by an independent reputable testing agency subject to the Engineer's approval. Testing of grout shall occur prior to the initial strap installation and then weekly during grouting operations until deemed otherwise by the Engineer.
- (c) All spoils from the grouting operation are to be contained at the work area and prevented from falling to the ground below. Any spillage of water or waste from the grouting operations shall be cleaned up to the satisfaction of the Engineer.
- (d) Once the grout has attained a minimum strength of 25 MPa, the nuts on the 20M deformed bars shall be tightened as described on the drawings. Threads on the 20M bars shall be damaged after tightening of the nuts sufficiently to prevent loosening of the nuts. Touch-up affected areas of the galvanized coating on the threads using Zinga or approved equal.

2.6 INSTALLATION OF BENT CAP BEAM SHEAR STRAPS

2.6.1 Location of Shear Straps

- (a) Shear straps shall be positioned on the concrete bent cap beams as indicated on the drawings unless obstructions are present. Obstructions can be other bridge components or external attachments that interfere with the installation or final position of the shear strap. If obstructions are present the following actions shall be taken by the Contractor:
 - (i) The Contractor may relocate the shear strap to a clear location along the length of the cap beam within 100 mm of the indicated position. Contractor shall record any shear strap relocations on the record drawings.
 - (ii) If a relocation of greater than 100 mm is required, the Contractor shall contact the Engineer for direction.
 - (iii) If the obstruction is an attachment to the structure that does not interfere with the final placement of the strap, the Contractor, with the approval of the Engineer, shall remove (loosen) and restore the attachment to allow installation of the strap.

2.6.2 Installation of Core Holes on Edges of Cap Beams

- (a) Core holes in the edges of the cap beams shall be located as indicated on

the drawings. Diamond core drilling with a 35 mm diameter core bit shall be used to complete the holes. The coring shall be performed to a horizontal accuracy of 6 mm along the vertical length of the core, and shall provide a straight hole for the installation of the strap bars.

- (b) All spoils from the coring operation are to be contained at the coring location and removed from the site. Any spillage of water or waste from drilling or coring operations shall be cleaned up to the satisfaction of the Engineer.

2.6.3 Installation of Kwik Bolt Anchors

- (a) Anchor bolts installed through the strap plates on the bottoms of the haunched portions of the cap beams shall be Hilti KwikBolt 3 type. The anchors shall be installed following the manufacturer's written instructions.
- (b) Positions for the Kwikbolt anchors shall be determined by temporarily installing the strap plate onto the cap beams. Once the general location of the anchor is established, a drill shall be used to probe for a clear space for installation of the anchor in a clear space between longitudinal reinforcement in the girders.

2.6.4 Installation and Grouting of Strap Plates

- (a) Strap plates with dry pack grout shall be installed onto the cap beams as shown on the drawings.
- (b) Grout shall be a premixed, non-shrink, non-bleeding, non-metallic grout. Grout shall be Sikagrout 212 or approved equals installed in accordance with the manufacturer's written instructions. It shall develop a minimum strength of 40 MPa at 28 days (average of three cubes) tested in accordance with CAN3-A23.2-1B. The Contractor shall arrange for testing of the proposed grout at his cost by an independent reputable testing agency subject to the Engineer's approval. Testing of grout shall occur prior to the initial strap installation and then weekly during grouting operations until deemed otherwise by the Engineer.
- (c) All spoils from the grouting operation are to be contained at the work area and prevented from falling to the ground below. Any spillage of water or waste from the grouting operations shall be cleaned up to the satisfaction of the Engineer.
- (d) Once the grout has attained a minimum strength of 25 MPa, the nuts on the strap bars shall be tightened as described on the drawings. Threads on the bars shall be damaged after tightening of the nuts sufficiently to prevent loosening of the nuts. Touch-up affected areas of the galvanized coating on the threads using Zinga or approved equal.

3.0 SUPPLY, FABRICATION AND ERECTION OF STRUCTURAL STEELWORK

3.1. GENERAL

- (a) This section shall apply to the supply, fabrication and erection of all major structural steel elements, including, but not limited to, columns, trusses, girders, floor beams, stringers and bracing.
- (b) All shop connections shall, in general, be welded and all field connections high - strength bolted.
- (c) Except as otherwise specified herein, steelwork shall be fabricated and erected in accordance with the AASHTO Standard Specification for Highway Bridges, Division 2, Section 10. Welding and associated work shall be in accordance with the latest edition of CSA Standard W59 - Welded Steel Construction.

3.2. ALTERNATIVE DETAILS

- (a) All details shall, in general, conform to those shown on the drawings. Any proposed variation shall be submitted to the Engineer in writing, with the reason for the variation, and any cost saving or extra cost. The Engineer may require the submission of drawings prepared and sealed by a professional engineer registered with the APEGBC.
- (b) If, in the opinion of the Engineer, the variation represents a clear improvement, it may be accepted without any price adjustment.
- (c) If the variation results in a product of equivalent quality, it may be accepted, at the discretion of the Engineer. In this case any saving in cost to the Contractor (as determined by the Engineer) shall be passed on as a credit to the City.

3.3. WORKING DRAWINGS

- (a) Working drawings shall consist of shop detail drawings, erection diagrams and procedures and other working drawings showing details, dimensions, sizes of material and other information necessary for the complete fabrication and erection of the steelwork.
- (b) Erection procedures shall show in detail all falsework, crane placement and equipment to be used for the erection of steelwork; and a detailed sequence of operations.
- (c) Erection procedures shall be prepared and sealed by a professional engineer registered with the APEGBC. Erection will not be allowed to proceed without the Engineer's review of the method proposed.
- (d) Working drawings shall be in the same system of units as the design drawings.
- (e) Working drawings shall be on sheets approximately 600 mm by 850 mm (one drawing per sheet). Lettering for notes and dimensions shall be at least 2.5 mm, for headings 4 mm. Drawings shall be legible when half-sized or microfilmed.

- (f) DETAIL DRAWINGS WILL NOT BE REVIEWED WITHOUT THE ERECTION DRAWINGS APPLICABLE TO THE MEMBERS IN QUESTION.
- (g) Review of shop drawings shall not relieve the Contractor of any responsibility for the adequacy of the steelwork or for carrying out the work in full accordance with the drawings and specifications.
- (h) Estimated time for review of working drawings and returning a marked up set to the Contractor is two to three weeks from the time that the working drawings are received by the Engineer. The contractor shall schedule his work accordingly.

3.4. INSPECTION

- (a) The Contractor shall notify the Engineer at least fourteen (14) days before fabrication is to commence, so that the Engineer can arrange for inspection.
- (b) All materials, welding procedures, shop drawings, and steelwork fabrication may be inspected by the Engineer to ascertain compliance with the Contract Specifications and Drawings.
- (c) All phases of fabrication and erection including cutting to size of plates, edge preparation of welded joints, weldment assembly and welding, painting, shipping, erection and bolting may be subject to visual examination by the Engineer.
- (d) At the Engineer's discretion and at the City's expense, the Engineer may test any completed or partially completed weld by nondestructive testing methods, in accordance with CSA Standard W59. Generally, fillet welds may be tested by the dry powder magnetic particle method and butt welds by radiography, but this does not preclude the use of any other method of testing deemed necessary by the Engineer.
- (e) The extent of nondestructive testing may usually be as follows:

Butt Welds	100%
Primary Fillet Welds	100%
Secondary Fillet Welds	25%
- (f) It is desirable that the inspection of welds is carried out as soon as possible after the completion of welding.
- (g) The Contractor shall be prepared to move and support the pieces being inspected so that, in general, the inspection can be done on the flat and so that a minimum of 1.25 m of headroom is available.
- (h) The Engineer may attempt to schedule nondestructive testing operations so as not to interfere with the progress of the work. However, the Contractor is expected to cooperate with the Engineer in the satisfactory expedition of inspection procedures.

- (i) The Contractor shall bear the cost of reinspection of welds found to be defective after defects are repaired.
- (j) The Engineer may inspect bolted connections in accordance with the current AASHTO Specification, Division II, Section I0.17.5.
- (k) The Engineer shall be notified of any defects found in the work. No repair shall be made until agreed to by the Engineer. In the case of minor or routine corrections, approval to proceed may be given verbally by the Engineer's inspector. In the case of such corrections as repairs to base metal, repair of major cracks or a revised design to compensate for deficiencies, the means of correction shall be prepared and sealed by a registered professional engineer, and shall be submitted in writing, with adequate sketches, to the Engineer for review.
- (l) Each erection unit shall not be shipped from the shop unless it has been certified as acceptable by the Engineer's inspector. This certification shall not relieve the Contractor of responsibility for subsequent damage or for defects which become apparent before the work is finally accepted by the Engineer.

3.5. QUALITY AND DETAILS OF WELDS

- (a) The quality and details of welds shall be in accordance with CSA W59. Welds shall have no cracks, inadequate penetration or lack of fusion, and shall have no other defects exceeding the limits in size and frequency of occurrence as specified in CSA W59.
- (b) Undercut at the toe of the fillet weld will not be allowed.

3.6. DESIGN SPECIFICATIONS

- (a) CSA Standard S6 (current edition) shall be used in the design of alternative details and calculating the effect of stresses incurred in fabrication and erection.
- (b) No overstress shall be permitted for erection conditions or any other conditions.

3.7. QUALIFICATIONS AND EQUIPMENT

3.7.1 CONTRACTOR

- (a) The Contractor shall produce evidence that his plant is currently fully approved by the CWB to the requirements of CSA Specification W47.1 Div. 2.1 or better and has been so for a continuous period of not less than five (5) years immediately prior to the award of this contract.
- (b) The Contractor shall also produce evidence of satisfactory experience in the fabrication of heavy structural steelwork. The requirements of 5 years of CWB approval and/or experience in heavy structural steelwork may be waived by the Engineer provided the Contractor's plant has been accepted by the Engineer prior to bidding. Acceptance of a plant may be at the discretion of the Engineer based upon his assessment of the

Contractor's organization, personnel, and equipment and past performance.

- (c) The Contractor shall be responsible for quality control.
- (d) The Contractor shall employ or retain a registered professional engineer experienced in steel bridge fabrication, to provide guidance throughout the work.
- (e) A qualified welding supervisor shall be employed on each shift where welding is done on the work.
- (f) Prior to fabrication, the Contractor shall submit to the Engineer the names of the welding engineer, the engineer experienced in steel bridge fabrication, the individual(s) responsible for quality control and the welding supervisors who are to be employed on the work.

3.7.2 OPERATORS

- (a) The Contractor shall produce evidence that all welding operators to be employed on the work are currently qualified by the CWB at the time of fabrication and in the processes in which they are to be employed on the work. Such qualification shall have been issued within 2 years of the commencement of fabrication.
- (b) The Contractor shall also produce evidence relative to each operator, that he has been executing satisfactory welding in the required processes within the 6 month period previous to the award of this contract.

3.7.3 WELDING EQUIPMENT

- (a) All equipment to be used in the work shall be in good working order and shall be subject to the inspection of the Engineer.
- (b) For any arrangement of automatic weldings, the Engineer may require that a preliminary test run of the equipment be made, without welding, over the length of the joint, to prove that the disposition of the equipment and the method and accuracy of travel are satisfactory.

3.8. WELDING PROCEDURES

- (a) The Fabricator shall submit copies of the welding procedures which he intends to use, for examination and review by the Engineer.
- (b) Where the submerged arc or gas metal arc process is to be used, the Engineer may order that each operator make a weld specimen not less than 1 metre in length for fillet welds and 150 mm in length for butt welds. Steel of the same specifications and thicknesses as that to be used in the work shall be used in the specimen welds.

- (c) No welding shall be done on the work until the operators' qualifications are established to the satisfaction of the Engineer.
- (d) Welding procedures shall be accompanied by documentary proof that they have been qualified previously by the Canadian Welding Bureau at the plant where the work is to be carried out.
- (e) The procedures shall include the following information:- joint type, welding process, welding position, base metal specification, welding consumable specification and size, preheat requirements, amperage and voltage requirements, speed, polarity, and welding equipment, including a description of travel for automatic welding.

3.9. BUTT JOINTS

- (a) Except as called for on the drawings, butt joints will not be permitted.
- (b) The fabricator may submit an alternative butt joint design provided that such design has been prequalified by the Canadian Welding Bureau.

3.10. ASSEMBLY AND WELDING SEQUENCES

- (a) If requested by the Engineer, the Contractor shall supply full details of the proposed assembly and welding sequence of any particular weldment.

3.11. MATERIALS

3.11.1 STRUCTURAL STEEL

- (a) Steel shall conform to the requirements of CSA Standards G40.20 and G40.21, and shall be of the grades called for on the drawings. Plates provided from coils shall not be used. Prior to fabrication, the Contractor shall supply to the Engineer manufacturer's mill certificates giving details of all chemical and physical properties of steel to be used in the work. Such certificates (or separate certificates) shall include the results of the ultrasonic examinations required by this section.
- (b) Steel shall be supplied free of surface defects and internal discontinuities, with due regard for the end use of the steel in the work.
- (c) Edges of all plates may be subject to inspection by the Engineer. Any discontinuities will be explored and may be accepted, subject to ASTM A435.
- (d) In addition to the above, plates 32 mm and greater in thickness shall be inspected for discontinuities by the manufacturer at his plant, by the procedures described in ASTM A435. Discontinuities in excess of those stipulated in Clause 5.1 of ASTM A435 will result in rejection of the plate, and repairs of such discontinuities will not be considered by the Engineer.

- (e) The Contractor shall supply the Engineer with a record of all observed discontinuities.
- (f) Repairs to defective plates shall not proceed until the Contractor's proposed repair method has been reviewed and is to the Engineer's satisfaction.

3.11.2 WELDING CONSUMABLES

- (a) All electrodes shall match the base metal specified in accordance with Table I2.1 of CSA Standard W59. The deposited weld metal shall provide strength, ductility, impact toughness and corrosion resistance equivalent to the base metal.
- (b) Welding consumables for all processes shall be certified by the Canadian Welding Bureau as complying with the requirements of the following specifications:
 - i) Manual, shielded metal arc welding (SMAW) - All electrodes for manual shielded metal arc welding shall conform to CSA Specifications W48.1-M.
 - ii) Flux-cored arc welding (FCAW) - electrodes shall conform to CSA W48.5-M.

Shielding gas shall be welding grade with a dew-point of -40°C or lower. Gas metal arc welding shall not be used without the express consent of the Engineer.
 - iii) Submerged arc welding (SAW) - Welding electrodes and fluxes used in the submerged arc welding process shall conform to CSA specification W48.6-M.

3.11.3 HIGH-STRENGTH BOLTS

- (a) Unless otherwise specified on the drawings, high-strength bolts, nuts and washers shall conform to the requirements of ASTM Specification A325, Type I.

3.12. MATERIAL STORAGE AND CARE

3.12.1 STEEL

- (a) Structural material, either plain or fabricated, shall be stored above the ground in an upright and shored position upon platforms, skids, or other supports. It shall be kept free from dirt and other foreign matter, and shall be protected as far as practical from corrosion. Long members shall be supported on skids placed near enough together to prevent injury from deflection.

- (b) Prior to fabrication, all steel shall be marked for identification by heat number and specification by a marking system approved by the Engineer.

3.12.2 WELDING CONSUMABLES

- (a) Electrodes and fluxes shall be stored and kept in condition as required by CSA W59 Section 5.2.
- (b) Gas for gas metal arc welding shall be stored in marked steel bottles and shall not be subjected to temperatures in excess of 50°C nor temperatures of less than 0°C.

3.13. FABRICATION

- (a) Prior to fabrication commencing the operator's qualifications, the shop drawings, welding procedures, mill certificates and welding consumable certificates shall be submitted to the Engineer for review.
- (b) No fabrication or welding of steelwork shall commence until permission to do so has been received from the Engineer.

3.14. PREPARATION OF MATERIAL

3.14.1 STRAIGHTENING MATERIAL

- (a) Prior to being used in fabrication all structural steel shall be straight and free from kinks or bends. The flatness tolerance of plate in excess of 900 mm wide shall be in accordance with the tolerances of the finished product as specified in CSA Standard W59.
- (b) If straightening is necessary, it shall be done by methods that will not injure the metal. The steel shall not be heated unless permission is given by the Engineer. In no case shall the temperature of the steel exceed 620°C. After straightening, the surfaces of the metal shall be carefully inspected for evidence of fracture and if necessary, the material shall be replaced or repaired to the satisfaction of the Engineer. Sharp kinks and bends will be cause for rejection of the steel.

3.14.2 EDGE PREPARATION

- (a) Steel may be cut to size by sawing, shearing or flame cutting. All steel before cutting shall be marked by a method agreed to by the Engineer so that its specification may be immediately identified.
- (b) All cut edges shall be smooth and regular, free from fins cracks, tears and notches. Freehand cutting shall be done only where approved by the Engineer. Roughness of cut surfaces shall not exceed the U. S. Standards Institute B46.1 value of 1000. Roughness exceeding this value shall be removed by machining or grinding. Occasional gouges will be tolerated only at the discretion of the Engineer representative and shall be repaired in accordance with his instruction.

- (c) Sheared edges of plates more than 16 mm in thickness shall be planed to a depth of 6 mm.
- (d) Re-entrant flame cuts shall be filletted to a radius of not less than 20 mm.
- (e) All exposed sharp corners of members which are to be painted shall be around to a minimum radius of 1.6 mm.
- (f) All corners of oxygen-cut edges shall be ground to a minimum radius of 1.6 mm.
- (g) Surfaces to be welded shall be free from loose scale, slag, rust, grease, moisture or other material that will prevent proper welding. Surfaces within 55 mm of any weld location shall be free from any paint or other material that would prevent proper welding or produce objectionable fumes while welding.
- (h) Edges of material thicker than specified in the following list shall be trimmed if and as required to produce a satisfactory welding edge wherever a weld along the edge is to carry calculated stress:
 - Sheared edges of material thicker than 12 mm
 - Rolled edges of plates (other than Universal Mill Plates) thicker than 10 mm
 - Toes of angles or rolled shapes (other than wide flange sections) thicker than 16 mm
 - Universal Mill Plates or edges of flanges of wide flange section thicker than 25 mm

3.14.3 DIRECTION OF ROLLING

- (a) Steel plates shall be cut and fabricated so that the direction of rolling is parallel to the direction of the primary stresses.

3.14.4 BOLT HOLES

- (a) Standard holes for high tensile bolts shall be either punched, sub-punched and reamed, or drilled, and shall be of a nominal diameter not more than 2 mm in excess of the nominal bolt diameter, except that the following bolt/hole combinations will be permitted:
 - i) either 3/4-inch or M20 bolts in 22-mm holes.
 - ii) either 7/8-inch or M22 bolts in 24-mm holes.

- iii) either 1-inch or M24 bolts in 27-mm holes.
- (b) Oversize or slotted bolt holes will be allowed only in special circumstances.
- (c) Punched holes shall be clean cut, without torn or ragged edges. The diameter of the die shall not exceed the diameter of the punch by more than 2 mm. If a punched hole must be enlarged to admit a high tensile bolt, it shall be reamed.
- (d) Reamed holes shall be cylindrical and perpendicular to the member. Where practicable, reamers shall be directed by mechanical means. Reaming shall be done with twist drills.
- (e) Drilling shall be done with twist drills. Burrs on the outside surfaces shall be removed.
- (f) Poor matching of holes will be cause of rejection.

3.15. MARKING

- (a) Prior to fabrication, all steel shall be marked for identification by heat number and specification by a marking system approved by the engineer. Steel which is unidentified shall not be used in the work.

3.16. ASSEMBLY OF WELDMENTS

- (a) The shop assembly of the various components of the weldments shall be executed in accordance with CSA W59.
- (b) Tack welding shall be done by qualified operators, using the smallest size weld required to hold the components of the assembly together. Tack welds shall not be less than 100 mm in length and shall be incorporated in the final weld. Both ends of tack welds shall be cleaned and prepared by grinding.

3.17. PREHEAT AND INTERPASS TEMPERATURES

- (a) No welding shall be done when the temperature of the base metal is lower than -18°C . At temperatures below 0°C , the steel shall be preheated to a temperature of at least 10°C in excess of that stated in Table 5.3 CSA W59.
- (b) Preheat shall be applied to all steel to be welded so that the steel within 75 mm of the weld is heated to the temperature shown in Table 5.3, CSA W59.
- (c) Preheat shall be applied in such a manner that moisture from the heating equipment does not penetrate the joint.
- (d) Preheat temperatures above the minimum shown in Table 5.3, CSA W59 may be required for highly restrained joints if designated by the Engineer.
- (e) Preheat temperature shall in no case exceed 200°C .

- (f) Preheat requirements for tack welds shall be as in the above table except that where single pass tack welds are used and are to be incorporated and consumed in a weld made by the submerged arc process, preheat is unnecessary.

3.18. WELDING

- (a) Welding shall be done by the manual, shielded metal arc, flux-cored arc or submerged arc processes in accordance with the reviewed procedures and CSA W59, Section 5, Technique.
- (b) All welding shall be done under cover and, in the case of flux-cored arc welding, shall be done in an area free from wind or draft.
- (c) Where the submerged arc process is to be used, the Engineer may order that:
 - (i) A preliminary test run of the procedure be made over the length of the joint to prove that the disposition of the equipment, the handling of hoses, and the method and accuracy of travel are satisfactory.
 - (i) Each operator shall make a weld specimen not less than 1200 mm in length for fillet welds and 150 mm in length for butt welds. Steel of the same specification and thickness as that to be used in the work shall be used in the specimen welds. No welding shall be done on the work until such a specimen is satisfactory to the Engineer.
- (d) Butt welds shall be extended beyond the edges of the parts to be joined by means of start and run-off tabs providing sufficient thickness to avoid the weld burning through and with a joint preparation similar to that on the main material. For manual shielded metal arc welding the width of the tabs shall be not less than the thickness of the thicker part being joined or 75 mm, whichever is greater. For submerged arc welding the width of the tabs shall be not less than 75 mm. Each weld pass shall be carried far enough beyond the edge of the parts being joined to ensure sound welds in the joint. Tabs shall be removed upon completion and cooling of the weld without damage to the parent plate and the end of the weld made smooth and flush with the edges of the abutting parts.
- (e) In flux-cored arc welding the equipment shall be capable of sustaining a gas flow rate of from 0.85 to 1.25 m³/hhhhh.

3.19. HIGH-STRENGTH BOLTS

- (a) Installation of high-strength bolts shall be in accordance with the latest edition of the AASHTO Specification, Division II, Section 10.17.4.
- (b) Heads of bolts shall be placed on the outsides of members, and generally on the more conspicuous side, if any, of any connection.

3.20. BENT PLATES

- (a) When bending plates, the plates shall be so taken from the stock plates that the bend line will be at right angles to the direction of rolling. The radius of the bend

measured inside shall be not less than the thickness of the plate. Before bending, the corners of the plate shall be rounded to a radius of 2 mm throughout that portion of the plate at which bending is to occur.

3.21. DIMENSIONAL TOLERANCES

- (a) The dimensions of the completed pieces shall comply with the appropriate dimensional tolerances as specified in CSA Standard W59 Welded Steel Construction.
- (b) Warpage is defined as the distance by which any point deviates from a plane defined by the other through points. This warpage shall not exceed 1/200 of the width of the member, or 3 mm, whichever is greater.

3.22. MARKING AND SHIPPING

- (a) Each member shall be marked, by a method agreed to by the Engineer, with an erection mark, corresponding to the mark shown on the erection diagram. Each member with a mass of over 1 tonne shall also be marked with the mass.
- (b) Members shall be loaded on trucks or cars in such a manner that they can be transported to and unloaded at their destination without being damaged.

3.23. FIELD ASSEMBLY

- (a) The parts shall be accurately assembled as shown on the drawings and any matchmarks shall be followed. Hammering which will injure or distort the members shall not be done. Bearing surfaces and surfaces to be in permanent contact shall be cleaned before the members are assembled. Field connections shall have one half of the holes filled with bolts and cylindrical erection pins (half bolts and half pins) before final bolting. Fitting-up bolts shall be the same nominal diameter as the high tensile bolts, and cylindrical erection pins shall be 1 mm larger.

3.24. STRAIGHTENING BENT MATERIAL AFTER FABRICATION

- (a) The straightening of plates and angles or other shapes shall be done by methods that will not produce fracture or other injury. The metal shall not be heated unless permitted by the Engineer, in which case the heating shall not be to a higher temperature than that producing a "dark cherry red" colour. After heating, the metal shall be cooled as slowly as possible.
- (b) Following the straightening of a bend or buckle, the surface of the metal shall be carefully inspected for evidence of fracture, and if necessary, replaced or repaired to the satisfaction of the Engineer.

3.25. MISFITS

- (a) The correction of minor misfits involving harmless amounts of reaming, cutting and chipping will be considered a legitimate part of erection. However, any error in shop fabrication which prevents the proper assembling and fitting-up of parts by

the moderate use of drift pins or by a moderate amount of reaming and slight chipping or cutting, shall be reported immediately to the Engineer's Representative and his approval of the method of correction obtained. The cost of correcting any such errors shall be paid for by the Contractor.

3.26. ERECTION TOLERANCES

- (a) Unless otherwise specified, erected work shall be plumb, level, square, straight, and misalignment shall not exceed 1 in 500.