REQUEST FOR TENDER No.2731

25 Victoria Rd. Partial Building Remediation

CCDC 2 (2008) STIPULATED PRICE CONTRACT

ISSUED: August 24, 2020

Non-Mandatory Pre-Tender Meeting:
Scheduled for September 9th, 2020 at 1:00pm (13:00 hours)
Refer to clause 22 of the instructions to tenderers for additional information

CLOSING LOCATION:
Purchasing Department
2020 Labieux Road
Nanaimo, BC
V9T 6J9

ESTABLISHED CLOSING DATE AND TIME:
Tenders must be received prior to:
September 23rd, 2020 at or before 3:00 PM (15:00 hours) Pacific Time

INQUIRIES:
Mike Strain, Senior Project Manager
mike.strain@nanaimo.ca

Late Submissions will not be considered.
Tenders will not be opened publicly after the closing of this RFT.
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INVITATION TO BID
INVITATION TO BID

Owner: City of Nanaimo

Project: 25 VICTORIA RD. Partial Building Remediation

Reference No: T2731-2020

The Owner Invites Bids for construction of the work, which in general terms, will consist of the demolition and re-construction of north and west facades cladding and windows of the Nanaimo Centre Stage building located at 25 Victoria Road in Nanaimo BC.

The successful Bidder will be required to enter into a CCDC 2 (2008) Stipulated Price Contract.

Sealed bids clearly marked “City of Nanaimo – 25 Victoria Rd. Partial Building Remediation”, will be received prior to September 23rd, 2020 at 3:00 p.m., local time, at the following address and location:

Address: City of Nanaimo
Purchasing Department
2020 Labieux Road
Nanaimo, BC, V9T 6J9

Attention: Jane Rushton, Manager of Purchasing

END OF SECTION
INSTRUCTIONS TO BIDDERS
INSTRUCTIONS TO BIDDERS

1.0 INTRODUCTION

1.1 These Instructions to Bidders apply to and govern the preparation of Bids for the Work, which generally involves the work listed below and which is as set out generally and by inference in the Bid Documents:

- Demolition and re-construction of north and west facades cladding and windows of the Nanaimo Centre Stage building located at 25 Victoria Road in Nanaimo BC.

1.2 For further information, Bidders shall direct all inquiries to:

Name: Mike Strain, Senior Project Manager
City of Nanaimo, Engineering Projects Department
Address: 2020 Labieux Road, Nanaimo, B.C. V9T 6J9
Email: mike.strain@nanaimo.ca

1.3 All italicized terms are as defined in the Definitions and Supplementary Definitions of the Contract.

2.0 SUBMISSION OF BIDS

2.1 Each Bid shall be addressed to the Owner in a sealed envelope clearly marked with the Contractor's name, the Contract name and the Contract Reference Number. The sealed envelope containing the fully executed Stipulated Price Bid Form, and all required documents, shall be delivered before the Bid Closing to the Owner in accordance with the Invitation to Bid and the Instructions to Bidders at the following location:

Address: City of Nanaimo
Purchasing Department
2020 Labieux Road
Nanaimo, B.C, V9T 6J9

Attention: Jane Rushton, Manager of Purchasing

2.2 The time and date for the delivery of Bids shall be prior to:

3:00 p.m. local time September 23rd, 2020
(the "Bid Closing").

2.3 Bids delivered after the Bid Closing shall not be accepted or considered and shall be returned unopened.
2.4 In the event of a dispute or issue about whether or not a Bid complies with the Instructions to Bidders, the Owner reserves the right to retain and open a copy of the Bid in question in order to seek and obtain a legal opinion in relation thereto.

3.0 BID DOCUMENTS

3.1 The Bid Documents consist of all of the documents listed in Article A-3 of the Agreement between the Owner and the Contractor.

4.0 FORM OF BID

4.1 Each Bidder shall submit a complete Bid on the Stipulated Price Bid Form, which forms part of the Bid Documents, with the blank spaces filled in. The Bid Price shall be for a sum in Canadian Dollars including all tariffs, freight, duties, assessments and taxes other than the Value Added Taxes (GST), which are payable with respect to the Work prior to the Bid Closing.

4.2 Any discrepancies between the Stipulated Price Bid Form and a post Bid Closing submission required by the Bid Documents shall be resolved in favor of the Stipulated Price Bid Form.

4.3 Bids shall be written in English.

4.4 A Bid must include the following:

4.4.1 Schedule A – List of Sub-Contractors
4.4.2 Schedule B – Bidder’s Qualification Statement
4.4.3 Schedule C – Bidder’s Questionnaire
4.4.4 Schedule D – Labour Rates

4.5 The Bid Price shall represent the entire cost, excluding Value Added Taxes (GST), to the Owner of the complete Work. Notwithstanding the generalities of the above, Bidders shall, unless specified otherwise in the Bid Documents, include in the Bid Price sufficient amounts to cover:

4.5.1 the costs of all labour, equipment and materials included in or required for the Work;
4.5.2 all assessments payable with respect to labour as required by any statutory scheme such as Workers’ Compensation, employment insurance, holiday pay, insurance, Canada Pension Plan and all employee benefits;
4.5.3 all overhead costs, including head office and on-site overhead costs, and all amounts for the Bidder’s profit;
4.5.4 all escalation of costs for the Contract Time.

4.6 The Bid Price shall allow for compliance 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.

4.7 Along with the Stipulated Price Bid Form executed in accordance with the terms and conditions of these Instructions to Bidders, a Bidder shall submit, prior to Bid Closing, such further and other documents as required by the Bid Documents.
5.0 VARIATION IN AND INTERPRETATION OF BID DOCUMENTS AND NO IMPLIED OBLIGATIONS

5.1 The Bidder shall carefully examine the *Bid Documents*. If a Bidder is in doubt as to the correct meaning of any provision of the *Bid Documents*, the Bidder may request clarification from the person named in Article 1.2 of the Instructions to Bidders. Any errors, omissions, discrepancies or clauses requiring clarification shall be reported in writing to the person identified in Article 1.2 of the Instructions to Bidders at least five (5) calendar days prior to the *Bid Closing*. Where necessary, the *Owner* shall respond to reported errors, omissions, discrepancies or clauses requiring clarification by way of addenda. However, the Bidder(s) acknowledge and agree that the *Owner* does not have an obligation to provide a response to any written inquiry and that it is in the sole and unfettered discretion of the *Owner* to provide any written response to a written inquiry. Telephone inquiries will not be replied to.

5.2 A Bidder shall immediately notify the person named in Article 1.2 of the Instructions to Bidders if a Bidder becomes aware of any discrepancies between a provision of the *Bid Documents* and conditions at the *Place of the Work*, as observed in an examination under Article 10.1 of the Instructions to Bidders.

5.3 The *Owner* shall be the sole judge as to the intent of the *Bid Documents* should a Bidder fail to report any such errors, omissions, discrepancies or clauses requiring clarification at least five (5) calendar days prior to the *Bid Closing*.

5.4 No implied obligation of any kind by or on behalf of the *Owner* shall arise from anything in the *Bid Documents*, and the express covenants and agreements contained in the *Bid Documents* and made by the *Owner*, are and shall be, the only covenants and agreements that apply.

5.5 Without limiting the generality of Article 5.4 of the Instructions to Bidders, the *Bid Documents* supersede all communications, negotiations, agreements, representations and warranties either written or oral relating to the subject matter of the Bid made prior to the *Bid Closing*, and no changes shall be made to the *Bid Documents* except by written addenda. No oral interpretation or representations from the *Owner* or any representative of the *Owner* will affect, alter or amend any provision of the *Bid Documents*.

6.0 ADDENDA

6.1 Any addenda issued to the Bidder shall form part of the *Bid Documents*, whether or not the receipt of same has been acknowledged by a Bidder, and the cost for doing the *Work* therein shall be included in the *Bid Price*.

Information obtained from any other source is not official and cannot be relied upon. No verbal communication will affect or modify the terms of this RFT.

6.2 Bidders are required to check the City’s website for all information issued up to the Established Closing Date and Time at the following website: [https://www.nanaimo.ca/bid-opportunities/](https://www.nanaimo.ca/bid-opportunities/). It is the responsibility of the Bidder to ensure that it has received any Addenda issued.
7.0 BID

7.1 Submission of a bid by a Bidder gives the Owner the right to require the Bidder to execute the Contract to perform the Work as set out within the Bid Documents.

7.2 Bidders submitting Bids shall be actively engaged in the line of work required by the Bid Documents and shall be able to refer to work of a similar nature performed by them. They shall be fully conversant with the general technical phraseology in the English language of the lines of work covered by the Bid Documents. By submitting a Bid, a Bidder is representing that it has the capacity, competence, qualifications and relevant experience required to do the Work.

7.3 Each Bidder shall review the Bid Documents provided by the Owner and confirm that it is in possession of a full set of Bid Documents when preparing its Bid.

7.4 Bids should be properly executed in full compliance with the following requirements:

7.4.1 The signatures of persons executing the Bid must be in their respective handwriting; and

7.4.2 If the Bid is made by a limited company, the full name of the company shall be accurately printed immediately above the signatures of its duly authorized officers and the corporate seal shall be affixed;

7.4.3 If the Bid is made by a partnership, the firm name or business name shall be accurately printed above the signature of the firm and the Bid shall be signed by a partner or partners who have authority to sign for the partnership;

7.4.4 If the Bid is made by an individual carrying on business under the name other than its own, its business name together with its name shall be printed immediately above its signature or

7.4.5 If the Bid is made by a sole proprietor who carries on business in its own name, the proprietor shall print its name immediately below its signature.

7.5 Bids received from agents representing principals shall be accompanied by a Power of Attorney signed by the said principals showing that the agents are duly authorized to sign and submit the Bid and have full power to execute the Contract on behalf of their principals. The execution of the Contract shall bind the principals and have the same effect as if it were duly signed by the principals.

8.0 BID DEPOSIT

8.1 The Bidder shall submit with its Bid a bid bond in a form acceptable to the Owner, or in lieu of a bid bond, a Bidder may submit a certified cheque or an irrevocable letter of credit in favor of the Owner equal to 10% of the Bid Price as a guarantee that, if awarded the Contract for the Work, the Bidder shall execute a Contract and submit the Performance Bond and the Labour and Materials Payment Bond referred to in Article 9.0 of the Instructions to Bidders within the specified time frames.
8.2 The *Bid Deposit* of the unsuccessful Bidders shall be returned as soon as possible after the Contract has been duly executed by the *Successful Bidder*.

8.3 The *Owner* will not pay any interest on money furnished as security.

8.4 The bid bond shall be issued by a Surety Company licensed in the Province of British Columbia and satisfactory to the *Owner*.

8.5 The Bidder shall submit with its Bid a Consent of Surety from a recognized bonding company licensed to issue surety bonds in the province of British Columbia for a contract *Performance Bond* and a *Labour and Materials Payment Bond*, each for fifty percent (50%) of the Total Bid Price.

9.0 PERFORMANCE AND LABOUR AND MATERIAL PAYMENT BONDS

9.1 The *Successful Bidder* shall be required to furnish at its own expense a *Performance Bond* and a *Labour and Materials Payment Bond*. For the purposes of this Article, both of these bonds shall be referred to as the "Bonds".

9.2 The Bonds are to be issued by a Surety Company licensed in the Province of British Columbia, satisfactory to the *Owner* and each in the amount of 50% of the *Contract Price*.

9.3 The *Performance Bond* shall remain in force as a maintenance Bond for the Warranty period as defined in the *Contract*.

9.4 The form of the Bonds shall be in accordance with the latest edition of CCDC 221 and CCDC 222.

10.0 INSPECTION OF THE PLACE OF THE WORK

10.1 The Bidder shall be responsible for inspecting the *Place of the Work* and for making whatever inquiries or arrangements necessary for it to become fully informed of the nature of the *Place of the Work*, including information regarding the subsurface conditions as made available by the *Owner* and topography of the site, and of the *Work* to be performed and all matters which may in any way affect the *Work*. Without limiting the foregoing, by the submission of its Bid, the Bidder acknowledges that it has investigated and satisfied itself as to:

10.1.1 the nature of the *Work*;

10.1.2 the location and all conditions relating to the location of the *Work* including, but not limited to, accessibility, general character, surface and sub-surface conditions, information regarding the subsurface conditions as made available by the *Owner*, utilities, road, uncertainties of seasonal weather and all other physical, topographical, geological and geographic conditions;

10.1.3 the conditions, laws and restrictions applicable to the *Work* that might affect the performance of the *Work*;

10.1.4 all environmental risks, conditions, laws and restrictions applicable to the *Work* that might affect the *Work*; and
10.1.5 the magnitude of the construction work required to execute and complete the Work.

10.2 The Bidder shall be fully responsible for obtaining all information required for the preparation of its Bid and for the execution of the Work. The Owner shall not be responsible for undertaking any investigations to assist the Bidder. The Non-Bid Information forms no part of this Bid. The Owner and the Consultant assume no responsibility of any kind whatsoever arising from or relating to its failure to include or refer to such Non-Bid Information. Bidder’s who obtain or rely upon such Non-Bid Information or other documents do so entirely at their own risk. Such additional information is made available only for the assistance of Bidders who must make their own judgment about its reliability, accuracy, completeness and relevance to the Work, and neither the Owner nor any representative of the Owner, including the Consultant, gives any guarantee or representation that the additional information is reliable, accurate, complete or relevant.

10.3 The Bidder’s obligation to become familiar with the information described in Article 10.1 of the Instructions to Bidders is not lessened or discharged by reason of any technical reports, including soils reports or data, test hole drilling reports or other soils information, made available or supplied in conjunction with the bidding process. Any technical reports so provided are for information only and neither the Owner nor the Consultant accept or assume any responsibility for the contents or accuracy of such technical reports and the Bidder agrees that the Owner and the Owner’s consultants and their representatives shall not be liable in any way to the Bidder in respect of such technical reports. The Bidder further agrees that it shall not rely upon any oral information provided to it by the Owner, the Consultant or their representatives.

11.0 AMENDMENT OF BID

11.1 Bids shall not be revoked, amended, or clarified after being delivered in accordance with the Bid Documents unless such revocation, amendment or clarification is made in writing and actually received by the person named in Article 2.1 of the Instructions to Bidders prior to the Bid Closing.

11.2 An amendment or revocation that is received after the Bid Closing shall not be considered and shall not affect a Bid as submitted.

11.3 Any amendment that expressly or by inference discloses the Bidder’s Bid Price or other material element of the Bid such that in the opinion of the Owner the confidentiality of the Bid is breached, shall invalidate the entire Bid.

11.4 Bid amendment or revocation by fax will not be accepted.

11.5 Email revisions must comply with Article 11.1. Bid amendment or revocation by email must be received as a new email by the person named in Article 2.1 of the Instructions to Bidders prior to the Bid Closing. The bidder assumes all responsibility for the timely and effective delivery of any emailed revision.

12.0 DURATION OF BID

12.1 The Bid shall be irrevocable and open for acceptance by the Owner for sixty (60) calendar days following the end of the day of the Bid Closing.
13.0 BID SELECTION

13.1 As it is the purpose of the Owner to obtain the Bid most suitable and most advantageous to the interests of the Owner, notwithstanding anything else contained within the Bid Documents, the Owner reserves the right, in its sole and unfettered discretion, to reject or accept any Bid, including the right to reject all Bids.

13.2 Without limiting the generality of the foregoing, any Bid which:

- 13.2.1 is incomplete, obscure, irregular, unrealistic or not completed in accordance with these Instructions to Bidders;
- 13.2.2 is non-compliant in a trivial/immaterial or substantial/material manner, or conditional;
- 13.2.3 has erasures or corrections;
- 13.2.4 omits a price on any one or more items in the Bid;
- 13.2.5 fails to complete the information required in the Bid;
- 13.2.6 is accompanied by insufficient Bid Deposit,

may at the Owner's sole and unfettered discretion be rejected or accepted.

13.3 Further, a Bid may be rejected or accepted on the basis of the Owner's unfettered assessment of its best interest, which includes, but is not limited to, the Owner's unfettered assessment as to a Bidder's past work performance for the Owner or for anyone else or as to a Bidder's financial capabilities, completion schedule, or ability to perform the Work, or the Owner's desire to reduce the number of different contractors on the location of the Project at any given time.

13.4 The Owner reserves the right to negotiate after Bid Closing with the Bidder that the Owner deems has provided the most advantageous Bid in all circumstances, including, but not limited to, when the Bid Price exceeds the Owner's budget. In no event shall the Owner be required to offer any modified terms to any other Bidder prior to entering into a Contract with the Successful Bidder and the Owner shall incur no liability to any other Bidder as a result of such negotiation or modification.

13.5 In no event shall the Owner be liable for a Bidder's costs of preparing a Bid.

13.6 In the event of an obvious uneven bid, the Owner reserves the right to attain clarification from the bidder.

13.7 The Owner may accept or waive a minor an inconsequential irregularity, or where applicable to do so, the Owner may, as a condition of the acceptance of the Tender; request a Bidder to correct a minor or inconsequential irregularity with no change in the Tender. The determination of what is or is not a minor bid irregularity, the determination of whether to accept, waive, or require correction of an irregularity and the final determination of the validity, will be the sole discretion of the Owner.
INSTRUCTIONS TO BIDDERS

14.0 AWARD

14.1 Award of Contract by the Owner occurs once the Bidder receives a Notice of Award duly executed by an authorized signing officer or agent of the Owner after the authorized officer of the Owner has been duly and legally authorized by the Owner to send such Notice of Award.

14.2 The Successful Bidder shall, within fifteen (15) calendar days of receipt of the written Notice of Award, be required to deliver to the Owner the following items:

   14.2.1 a Construction schedule as provided by GC 3.5 - CONSTRUCTION SCHEDULE of the General Conditions of the Contract;

   14.2.2 a letter of account indicating the Successful Bidder is in compliance with the applicable requirements of WorkSafe BC. This letter is to be current and dated within 14 calendar days prior to the Bid Closing;

   14.2.3 a copy of the insurance policies as specified in GC 11.1- INSURANCE of the General Conditions of the Contract indicating that all such insurance coverage is in place;

   14.2.4 such bond(s) as set out in Article 9.0 of the Instructions to Bidders;

   14.2.5 such further and other documents as required by the Bid Documents.

14.3 Upon the Successful Bidder complying with the requirements of Articles 14.2 and 14.5 of the Instructions to Bidders, the Bid Deposit shall be returned to the Successful Bidder.

14.4 If the Successful Bidder fails to comply with any of the requirements of Articles 14.2 and 14.5 of the Instructions to Bidders, the Bid Deposit shall be forfeited to the Owner as compensation for damages the Owner may suffer. The forfeiture of a Successful Bidder’s Bid Deposit shall not be construed as a waiver of any rights or remedies which the Owner may have against such Bidder for loss or damages incurred or suffered in excess of the amount of such Bid Deposit.

14.5 Within fifteen (15) calendar days of receipt of the written Notice of Award, the Successful Bidder shall execute the Contract Documents.

14.6 Within two (2) calendar days of receipt of written Notice to Proceed, or such longer time as may be otherwise specified in the Notice to Proceed, the Successful Bidder shall commence the Work.

15.0 SUBCONTRACTORS

15.1 The Owner reserves the right to object to any of the Subcontractors listed in a Bid. If the Owner objects to a listed Subcontractor(s) then the Owner shall permit a Bidder to, within five (5) calendar days, propose a substitute Subcontractor(s) acceptable to the Owner.
provided that there is no resulting adjustment in the Bid Price or the Substantial Performance date set out in the Stipulated Price Bid Form. A Bidder shall not be required to make such a substitution and, if the Owner objects to a listed Subcontractor(s), shall consider its Bid rejected by the Owner and by written notice withdraw its Bid. The Owner shall, in that event, return the Bidder’s Bid Deposit.

17.0 BIDS EXCEEDING BUDGET

17.1 If the Bid Price of every Bidder exceeds the amount the Owner has budgeted for the Work, the Owner may reject all Bids.

18.0 LAW AND FORUM OF BID

18.1 The law to be applied in respect of the Bid Documents and the Contract shall be the law of the Province of British Columbia and all civil actions commenced in relation to the Bid Documents or Contract shall be adjudicated by the Courts of the Province of British Columbia and by submitting Bids, Bidders are taken to have agreed to attorn to the jurisdiction of the Courts of the Province of British Columbia.

19.0 THE FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT

19.1 All documents submitted to the Owner will be subject to the protection and disclosure provisions of the Province of British Columbia Freedom of Information and Protection of Privacy Act ("FOIP"). FOIP allows persons a right of access to records in the Owner's custody or control. It also prohibits the Owner from disclosing the Bidder's personal or business information where disclosure would be harmful to the Bidder's business interests or would be an unreasonable invasion of personal privacy as defined in Part 3, Division 1 and Division 2 of FOIP. Bidders are encouraged to identify what portions of their submissions are confidential and what harm could reasonably be expected from its disclosure. However, the Owner cannot assure Bidders that any portion of the Bidder’s documents can be kept confidential under FOIP. Questions about the collection of your personal information may be referred to the Legislative Services Department at (250) 755-4405, or via email at foi@nanaimo.ca.

20.0 ALTERNATIVE PRICE

20.1 The Bidder may submit an Alternative Price as follows:

20.1.1 For an Alternate submitted at the Bidder’s election, and which has not been specified by the Owner in the Stipulated Price Bid Form, and which varies the materials, Products, designs or equipment from those approved under the Contract Documents, or approved by the Owner as Approved Equals as the case may be, or;
INSTRUCTIONS TO BIDDERS

20.1.2 For an Alternate specified by the Owner in the Stipulated Price Bid Form for which materials, Products, designs or equipment are provided in the Contract Documents.

20.2 An Alternative Price submitted in accordance with Articles 20.1.1 or 20.1.2 of the Instructions to Bidders must be in addition to, and not in substitution for, a Bid which conforms to the requirements of the Contract Documents, irrespective of whether the Alternative Price is in response to Articles 20.1.1 or 20.1.2 of the Instructions to Bidders.

20.3 The Owner may, at its sole discretion, accept any Alternate requested in accordance with Article 20.1.2 of the Instructions to Bidders.

20.4 An Alternative Price submitted at the Bidder's election in accordance with Article 20.1.1 of the Instructions to Bidders may be accepted by the Owner only if it has been submitted by a Bidder whose Bid would have been accepted by the Owner in preference to other conforming Bids, if no Alternative Prices had been submitted in accordance with Article 20.1.1 of the Instructions to Bidders.

21.0 APPROVED EQUALS

21.1 Prior to the Bid Closing, the Bidder may request the Owner to approve materials, Products, or equipment ("Approved Equal") to be included in a Bid in substitution for items indicated in the Contract Documents.

21.2 Applications for an Approved Equal shall be in writing, and supported by appropriate supporting information, data, specifications, and documentation.

21.3 If the Owner decides in its sole discretion to accept an Approved Equal, then the Owner shall issue an addendum to all Bidders.

21.4 The Owner is not obligated to review or accept any application for an Approved Equal.

22.0 NON-MANDATORY PRE-TENDER MEETING

22.1 A non-mandatory pre-tender meeting is scheduled as follows:

Meeting Place: 25 Victoria Rd., Nanaimo

Meeting Date: September 9th, 2020

Meeting Start Time: 1:00 PM sharp to approximately 2:00 PM

Completion of a sign in sheet will be required of all Bidders in attendance at the Meeting Start Time.

The site visit will give the opportunity for contractors to view the site, take any measurements, confirm specifications and ask any other questions regarding the work.

No claims will be allowed for any misunderstanding about the terms and conditions of the Contract relating to site conditions. No adjustment to the schedule or to the Contract price will be made for difficulties encountered during the construction due to conditions, features, and peculiarities of the site that were evident at the time of the Submission Deadline.
23.0 Hazardous Material Survey Report

23.1 The bidder is advised that a Hazardous Material Survey Report has been prepared for this project and can be found in Appendix 2.

24.0 Permits

24.1 The bidder is advised that the Development Permit (DP) is in place for this project and the Building Permit (BP) application was submitted on August 18, 2020 and is in process. The costs associated with the DP and BP will be borne by the Owner. The responsibility and costs for all other permits, if any, will be borne by the Successful Contractor (see section 10 of the GC’s). Commencement of construction will be contingent on having an approved BP in place. Bidders shall assume the approved BP will be in place 3 months after the closing date.

25.0 COVID-19 Known Pandemic

25.1 Existing restrictions imposed by authorities that are known at the time of tender closing are to be taken into account in the bid price. The City will work with the successful Contractor to the extent possible through the Contract to address changes that develop from new legislative, regulatory, and other restrictions imposed by authorities, not known at the time of tender.

END OF SECTION
STIPULATED PRICE BID FORM
WE, THE UNDERSIGNED:

1.1. have received and carefully reviewed all of the Bid Documents, including the Instructions to Bidders, 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 Bidders; and
1.4. hereby offer to perform the Work in accordance with the documents, for the Bid Price of:

Bid Price $______________________

Value Added Tax (GST) $______________________

Total Bid Price with Value Added Tax (GST) $______________________
2.0 ACCORDINGLY WE HEREBY AGREE:

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

2.2. to achieve Substantial Performance of the Work on or before; June 30th, 2021 and

3.0 WE CONFIRM:

3.1. that the Bid Deposit as required by Article 8.0 of the Instructions to Bidders is enclosed; and

3.2. this Bid is made without any connection, collusion, knowledge, comparison of figures or arrangement with any person or persons submitting a Bid for this same Contract.

4.0 WE AGREE:

4.1. that this Bid shall be irrevocable and open for acceptance by the Owner for a period of sixty (60) calendar days following the end of the day of the Bid Closing, even if the Bid of another Bidder is accepted by the Owner. If within this period, the Owner delivers a Notice of Award by which the Owner accepts our Bid, we shall:

4.1.1 within fifteen (15) calendar days of receipt of the written Notice of Award, be required to deliver to the Owner the following:

(a) a Construction Schedule, as provided by GC 3.5 of the General Conditions of the Contract;

(b) a letter of account, from the Workers Compensation Board indicating that the Bidder’s account with the Workers’ Compensation Board is in good standing. This letter is to be current and dated within 14 calendar days prior to the Bid Closing;

(c) a copy of the insurance policies as specified in GC 11-INSURANCE of the General Conditions of the Contract indicating that all such insurance coverage is in place;

(d) such bond(s) as set out in Article 9.0 of the Instructions to Bidders; and

(e) such further and other documents as required by the Bid Documents;

4.1.2 within fifteen (15) calendar days of receipt of the written Notice of Award, execute the Contract Documents.

4.1.3 within two (2) calendar days of receipt of written Notice to Proceed, or such longer time as may be otherwise specified in the Notice to Proceed, commence the Work.

4.2. that, if we receive written Notice of Award of this Contract and, contrary to Article 4.1 of this Stipulated Price Bid Form, we:

4.2.1 fail or refuse to deliver the documents as specified by Article 4.1.1 of this Stipulated Price Bid Form; or

4.2.2 fail or refuse to commence the Work as required by the Notice to Proceed,

4.2.3 fail or refuse to execute the Contract Documents as specified by Article 4.1.3 of this Stipulated Price Bid Form, 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. Furthermore, the Owner shall be at liberty to enforce its rights, both as against the Bid Deposit, and as available at law to the fullest extent.

4.3. that, if we receive written Notice of Award of this Contract:

4.3.1. we shall be required to furnish at our expense a Performance Bond and Labour and Materials Payment Bond. For the purposes of this Article, both of these bonds shall be referred to as the "Bonds";

4.3.2. the Performance Bond shall guarantee the faithful performance of the Contract, and in default thereof, shall protect the Owner against any losses or damage arising by reason of our failure to faithfully perform the Contract;

4.3.3. the Bonds are to be issued by a Surety Company licensed in the Province of British Columbia and satisfactory to the Owner – each in the amount of 50% of the Contract Price; and

4.3.4. the Performance Bond shall remain in force as a maintenance Bond for the Warranty Period as defined in the General Conditions to the Contract.

5.0 OUR ADDRESS AND CONTACT INFORMATION is as follows:

Address: ________________________________

Phone: ________________________________

Fax: ________________________________

Email: ________________________________

Attention: ________________________________

This Bid is executed this ________ day of ____________, __________, 20____.

Contractor:

(FULL LEGAL NAME OF CORPORATION, PARTNERSHIP OR INDIVIDUAL)

(AUTHORIZED SIGNATORY)

(AUTHORIZED SIGNATORY)

Corporate Seal Affixed Hereto
Schedule 'A' - LIST OF SUBCONTRACTORS

Contract: 25 Victoria Rd. Partial Building Remediation

From (Bidder):

Company name

We, the above-named Bidder, propose to use for the above-named project/contract, the Subcontractors named below:

<table>
<thead>
<tr>
<th>Item of Work</th>
<th>Name of Subcontractor</th>
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<tbody>
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Schedule 'B' – BIDDER'S QUALIFICATION STATEMENT

Contract: 25 Victoria Rd. Partial Building Remediation

1. This document is intended to provide information on the capacity, competence, and relevant experience of the Contractor. Applicant may supplement information with additional sheets if required.

2. Bidder shall have completed a minimum of 3 Related Contracts of similar scope and nature.

3. Legal Structure of Bidder:
   Joint Venture □ Corporation □, Partnership □, Registered □, Sole Proprietor □, Other:__________
   Year Established: ________________

4. Contractor’s Relevant Experience:

   **Project #1** Title and Location: ___________________________
   Completion Date: ___________________________
   Project Value and approx. size: ___________________________
   Project Supervisor: ___________________________
   Owner Name and Contact: ___________________________
   Consultant Name and Contact: ___________________________

   **Project #1** Title and Location: ___________________________
   Completion Date: ___________________________
   Project Value and approx. size: ___________________________
   Project Supervisor: ___________________________
   Owner Name and Contact: ___________________________
   Consultant Name and Contact: ___________________________

   **Project #1** Title and Location: ___________________________
   Completion Date: ___________________________
   Project Value and approx. size: ___________________________
   Project Supervisor: ___________________________
   Owner Name and Contact: ___________________________
   Consultant Name and Contact: ___________________________
Schedule “C” Bidder’s Questionnaire

Contract: 25 Victoria Rd. Partial Building Remediation

The Bidder, having read and understood all documents relating to this Request for Tender confirm we possess the necessary qualifications as required by the specifications.

The name of the site superintendent proposed and related previous experience:
Name: ________________________________
Qualifications: ________________________________
Years with Company: _______ Years of Experience: _______
Previous Projects: ________________________________

The name of the project manager proposed and related previous experience:
Name: ________________________________
Qualifications: ________________________________
Previous Projects: ________________________________

In addition, we accept the responsibilities as the Prime Contractor for this project as defined in the WorkSafeBC Occupational Health and Safety Regulations, Notice of projects, section 20.2, and Coordination of multiple employer workplaces, section 20.3; and in the Workers Compensation Act, Coordination at multiple-employer workplaces, sections 118, subsections (1) and (2).

We also acknowledge I understand the duties of the Owner as defined in the Workers Compensation Act, General duties of owner, section 119.

__________________________   _______________________
Company name           Bidder’s initials
Schedule “D” Labour Rates

The following tendered rates shall be in accordance with Section 6 of the General Conditions and will form the basis of payment for personnel force account work for this contract. List all occupations to be used on the project.

PERSONNEL

<table>
<thead>
<tr>
<th>LIST OF OCCUPATIONS</th>
<th>HOURLY RATE</th>
<th>O.T. HOURLY RATE</th>
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<td>FOREMAN</td>
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<td>APPRENTICE CARPENTER</td>
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Bidder’s Initial ______________
stipulated price contract

2008

CITY OF NANAIMO
25 Victoria Rd. Partial Building Remediation
Request for Tender 2731

Apply a CCDC 2 copyright seal here. The application of the seal demonstrates the intention of the party proposing the use of this document that it be an accurate and unamended form of CCDC 2 – 2008 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.
AGREEMENT BETWEEN OWNER AND CONTRACTOR
For use when a stipulated price is the basis of payment.

This Agreement made on the __________ day of ________ in the year ______.

by and between the parties
City of Nanaimo

hereinafter called the "Owner"

and

hereinafter called the "Contractor"

The Owner and the Contractor agree as follows:

ARTICLE A-1 THE WORK

The Contractor shall:

1.1 perform the Work required by the Contract Documents for

insert above the name of the Work

located at

insert above the name of the Place of the Work

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

insert above the name of the Consultant

is acting as and is hereinafter called the "Consultant"

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

1.3 commence the Work by the __________ day of ________ in the year ______ and, subject to adjustment in Contract Time as provided for in the Contract Documents, attain Substantial Performance of the Work, by the __________ day of ________ in the year ______.

ARTICLE A-2 AGREEMENTS AND AMENDMENTS

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

2.2 The Contract may be amended only as provided in the Contract Documents.
ARTICLE A-3 CONTRACT DOCUMENTS

3.1 The following are the Contract Documents referred to in Article A-1 of the Agreement - THE WORK:

- Agreement between Owner and Contractor
- Definitions
- The General Conditions of the Stipulated Price Contract

* (Insert here, attaching additional pages if required, a list identifying all other Contract Documents e.g. supplementary conditions; information documents; specifications, giving a list of contents with section numbers and titles, number of pages and date; material finishing schedules; drawings, giving drawing number, title, date, revision date or mark; addenda, giving title, number, date)

Note: This contract is protected by copyright. Use of a CCDC 2 document not containing a CCDC 2 copyright seal constitutes an infringement of copyright. Only sign this contract if the document cover page bears a CCDC 2 copyright seal to demonstrate that it is intended by the parties to be an accurate and unamended version of CCDC 2 – 2008 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.
ARTICLE A-4 CONTRACT PRICE

4.1 The Contract Price, which excludes Value Added Taxes, is: $100,100 dollars

4.2 Value Added Taxes (of 5 %) payable by the Owner to the Contractor are: $ _______ /100 dollars

4.3 Total amount payable by the Owner to the Contractor for the construction of the Work is: $ _______ /100 dollars

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

4.5 All amounts are in Canadian funds.

ARTICLE A-5 PAYMENT

5.1 Subject to the provisions of the Contract Documents, and in accordance with legislation and statutory regulations respecting holdback percentages and, where such legislation or regulations do not exist or apply, subject to a holdback of percent (10 %), the Owner shall:

.1 make progress payments to the Contractor on account of the Contract Price when due in the amount certified by the Consultant together with such Value Added Taxes as may be applicable to such payments, and

.2 upon Substantial Performance of the Work, pay to the Contractor the unpaid balance of the holdback amount when due together with such Value Added Taxes as may be applicable to such payment, and

.3 upon the issuance of the final certificate for payment, pay to the Contractor the unpaid balance of the Contract Price when due together with such Value Added Taxes as may be applicable to such payment.

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

5.3 Interest

.1 Should either party fail to make payments as they become due under the terms of the Contract or in an award by arbitration or court, interest at the following rates on such unpaid amounts shall also become due and payable until payment:

(1) 2% per annum above the prime rate for the first 60 days.
(2) 4% per annum above the prime rate after the first 60 days.

Such interest shall be compounded on a monthly basis. The prime rate shall be the rate of interest quoted by

(Insert name of chartered lending institution whose prime rate is to be used)

for prime business loans as it may change from time to time.

.2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.3.1 of this Article on the settlement amount of any claim in dispute that is resolved either pursuant to Part 8 of the General Conditions – DISPUTE RESOLUTION or otherwise, from the date the amount would have been due and payable under the Contract, had it not been in dispute, until the date it is paid.
ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

6.1 Notices in Writing will be addressed to the recipient at the address set out below. The delivery of a Notice in Writing will be by hand, by courier, by prepaid first class mail, or by facsimile or other form of electronic communication during the transmission of which no indication of failure of receipt is communicated to the sender. A Notice in Writing delivered by one party in accordance with this Contract will be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it shall be deemed to have been received five calendar days after the date on which it was mailed, provided that if either such day is not a Working Day, then the Notice in Writing shall be deemed to have been received on the Working Day next following such day. A Notice in Writing sent by facsimile or other form of electronic communication shall be deemed to have been received on the date of its transmission provided that if such day is not a Working Day or if it is received after the end of normal business hours on the date of its transmission at the place of receipt, then it shall be deemed to have been received at the opening of business at the place of receipt on the first Working Day next following the transmission thereof. An address for a party may be changed by Notice in Writing to the other party setting out the new address in accordance with this Article.

Owner

name of Owner*

address

facsimile number

email address

Contractor

name of Contractor*

address

facsimile number

email address

Consultant

name of Consultant*

address

facsimile number

email address

* If it is intended that the notice must be received by a specific individual, that individual's name shall be indicated.

ARTICLE A-7 LANGUAGE OF THE CONTRACT

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

# Complete this statement by striking out inapplicable term.

7.2 This Agreement is drawn in English at the request of the parties hereto. La présente convention est rédigée en anglais à la demande des parties.
ARTICLE A-8 SUCCESSION

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

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

SIGNED AND DELIVERED
in the presence of:

WITNESS

name of owner

signature

name of person signing

signature

name of person signing

signature

name of person signing

name and title of person signing

CONTRACTOR

name of Contractor

signature

name of person signing

signature

name of person signing

name and title of person signing

name and title of person signing

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

The following Definitions shall apply to all Contract Documents.

1. **Change Directive**
   A Change Directive is a written instruction prepared by the Consultant and signed by the Owner directing the Contractor to proceed with a change in the Work within the general scope of the Contract Documents prior to the Owner and the Contractor agreeing upon adjustments in the Contract Price and the Contract Time.

2. **Change Order**
   A Change Order is a written amendment to the Contract prepared by the Consultant and signed by the Owner and the Contractor stating their agreement upon:
   - a change in the Work;
   - the method of adjustment or the amount of the adjustment in the Contract Price, if any; and
   - the extent of the adjustment in the Contract Time, if any.

3. **Construction Equipment**
   Construction Equipment means all machinery and equipment, either operated or not operated, that is required for preparing, fabricating, conveying, erecting, or otherwise performing the Work but is not incorporated into the Work.

4. **Consultant**
   The Consultant is the person or entity engaged by the Owner and identified as such in the Agreement. The Consultant is the Architect, the Engineer or entity licensed to practise in the province or territory of the Place of the Work. The term Consultant means the Consultant or the Consultant’s authorized representative.

5. **Contract**
   The Contract is the undertaking by the parties to perform their respective duties, responsibilities and obligations as prescribed in the Contract Documents and represents the entire agreement between the parties.

6. **Contract Documents**
   The Contract Documents consist of those documents listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS and amendments agreed upon between the parties.

7. **Contract Price**
   The Contract Price is the amount stipulated in Article A-4 of the Agreement - CONTRACT PRICE.

8. **Contract Time**
   The Contract Time is the time stipulated in paragraph 1.3 of Article A-1 of the Agreement - THE WORK from commencement of the Work to Substantial Performance of the Work.

9. **Contractor**
   The Contractor is the person or entity identified as such in the Agreement. The term Contractor means the Contractor or the Contractor’s authorized representative as designated to the Owner in writing.

10. **Drawings**
    The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, and diagrams.

11. **Notice in Writing**
    A Notice in Writing, where identified in the Contract Documents, is a written communication between the parties or between them and the Consultant that is transmitted in accordance with the provisions of Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

12. **Owner**
    The Owner is the person or entity identified as such in the Agreement. The term Owner means the Owner or the Owner’s authorized agent or representative as designated to the Contractor in writing, but does not include the Consultant.

13. **Place of the Work**
    The Place of the Work is the designated site or location of the Work identified in the Contract Documents.

14. **Product**
    Product or Products means material, machinery, equipment, and fixtures forming the Work, but does not include Construction Equipment.
15. **Project**
The *Project* means the total construction contemplated of which the *Work* may be the whole or a part.

16. **Provide**
*Provide* means to supply and install.

17. **Shop Drawings**
*Shop Drawings* are drawings, diagrams, illustrations, schedules, performance charts, brochures, *Product* data, and other data which the *Contractor* provides to illustrate details of portions of the *Work*.

18. **Specifications**
The *Specifications* are that portion of the *Contract Documents*, wherever located and whenever issued, consisting of the written requirements and standards for *Products*, systems, workmanship, quality, and the services necessary for the performance of the *Work*.

19. **Subcontractor**
A *Subcontractor* is a person or entity having a direct contract with the *Contractor* to perform a part or parts of the *Work* at the *Place of the Work*.

20. **Substantial Performance of the Work**
*Substantial Performance of the Work* is as defined in the lien legislation applicable to the *Place of the Work*. If such legislation is not in force or does not contain such definition, or if the *Work* is governed by the Civil Code of Quebec, *Substantial Performance of the Work* shall have been reached when the *Work* is ready for use or is being used for the purpose intended and is so certified by the *Consultant*.

21. **Supplemental Instruction**
A *Supplemental Instruction* is an instruction, not involving adjustment in the *Contract Price* or *Contract Time*, in the form of *Specifications*, *Drawings*, schedules, samples, models or written instructions, consistent with the intent of the *Contract Documents*. It is to be issued by the *Consultant* to supplement the *Contract Documents* as required for the performance of the *Work*.

22. **Supplier**
A *Supplier* is a person or entity having a direct contract with the *Contractor* to supply *Products*.

23. **Temporary Work**
*Temporary Work* means temporary supports, structures, facilities, services, and other temporary items, excluding *Construction Equipment*, required for the execution of the *Work* but not incorporated into the *Work*.

24. **Value Added Taxes**
*Value Added Taxes* means such sum as shall be levied upon the *Contract Price* by the Federal or any Provincial or Territorial Government and is computed as a percentage of the *Contract Price* and includes the Goods and Services Tax, the Quebec Sales Tax, the Harmonized Sales Tax, and any similar tax, the collection and payment of which have been imposed on the *Contractor* by the tax legislation.

25. **Work**
The *Work* means the total construction and related services required by the *Contract Documents*.

26. **Working Day**
*Working Day* means a day other than a Saturday, Sunday, statutory holiday, or statutory vacation day that is observed by the construction industry in the area of the *Place of the Work*.
PART I GENERAL PROVISIONS

GC 1.1 CONTRACT DOCUMENTS

1.1.1 The intent of the Contract Documents is to include the labour, Products and services necessary for the performance of the Work by the Contractor in accordance with these documents. It is not intended, however, that the Contractor shall supply products or perform work not consistent with, not covered by, or not properly inferable from the Contract Documents.

1.1.2 Nothing contained in the Contract Documents shall create any contractual relationship between:
   .1 the Owner and a Subcontractor, a Supplier, or their agent, employee, or other person performing any portion of the Work.
   .2 the Consultant and the Contractor, a Subcontractor, a Supplier, or their agent, employee, or other person performing any portion of the Work.

1.1.3 The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all.

1.1.4 Words and abbreviations which have well known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

1.1.5 References in the Contract Documents to the singular shall be considered to include the plural as the context requires.

1.1.6 Neither the organization of the Specifications nor the arrangement of Drawings shall control the Contractor in dividing the work among Subcontractors and Suppliers.

1.1.7 If there is a conflict within the Contract Documents:
   .1 the order of priority of documents, from highest to lowest, shall be
     - the Agreement between the Owner and the Contractor,
     - the Definitions,
     - Supplementary Conditions,
     - the General Conditions,
     - Division 1 of the Specifications,
     - technical Specifications,
     - material and finishing schedules,
     - the Drawings.
   .2 Drawings of larger scale shall govern over those of smaller scale of the same date.
   .3 dimensions shown on Drawings shall govern over dimensions scaled from Drawings.
   .4 later dated documents shall govern over earlier documents of the same type.

1.1.8 The Owner shall provide the Contractor, without charge, sufficient copies of the Contract Documents to perform the Work.

1.1.9 Specifications, Drawings, models, and copies thereof furnished by the Consultant are and shall remain the Consultant's property, with the exception of the signed Contract sets, which shall belong to each party to the Contract. All Specifications, Drawings and models furnished by the Consultant are to be used only with respect to the Work and are not to be used on other work. These Specifications, Drawings and models are not to be copied or altered in any manner without the written authorization of the Consultant.

1.1.10 Models furnished by the Contractor at the Owner's expense are the property of the Owner.

GC 1.2 LAW OF THE CONTRACT

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

GC 1.3 RIGHTS AND REMEDIES

1.3.1 Except as expressly provided in the Contract Documents, the duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

1.3.2 No action or failure to act by the Owner, Consultant or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.
GC 1.4 ASSIGNMENT

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

PART 2 ADMINISTRATION OF THE CONTRACT

GC 2.1 AUTHORITY OF THE CONSULTANT

2.1.1 The Consultant will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified by written agreement as provided in paragraph 2.1.2.

2.1.2 The duties, responsibilities and limitations of authority of the Consultant as set forth in the Contract Documents shall be modified or extended only with the written consent of the Owner, the Contractor and the Consultant.

2.1.3 If the Consultant's employment is terminated, the Owner shall immediately appoint or reappoint a Consultant against whom the Contractor makes no reasonable objection and whose status under the Contract Documents shall be that of the former Consultant.

GC 2.2 ROLE OF THE CONSULTANT

2.2.1 The Consultant will provide administration of the Contract as described in the Contract Documents.

2.2.2 The Consultant will visit the Place of the Work at intervals appropriate to the progress of construction to become familiar with the progress and quality of the work and to determine if the Work is proceeding in general conformity with the Contract Documents.

2.2.3 If the Owner and the Consultant agree, the Consultant will provide at the Place of the Work, one or more project representatives to assist in carrying out the Consultant's responsibilities. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in writing to the Contractor.

2.2.4 The Consultant will promptly inform the Owner of the date of receipt of the Contractor's applications for payment as provided in paragraph 5.3.1.1 of GC 5.3 - PROGRESS PAYMENT.

2.2.5 Based on the Consultant's observations and evaluation of the Contractor's applications for payment, the Consultant will determine the amounts owing to the Contractor under the Contract and will issue certificates for payment as provided in Article A-5 of the Agreement - PAYMENT, GC 5.3 - PROGRESS PAYMENT and GC 5.7 - FINAL PAYMENT.

2.2.6 The Consultant will not be responsible for and will not have control, charge or supervision of construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs required in connection with the Work in accordance with the applicable construction safety legislation, other regulations or general construction practice. The Consultant will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Consultant will not have control over, charge of or be responsible for the acts or omissions of the Contractor, Subcontractors, Suppliers, or their agents, employees, or any other persons performing portions of the Work.

2.2.7 Except with respect to GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, the Consultant will be, in the first instance, the interpreter of the requirements of the Contract Documents.

2.2.8 Matters in question relating to the performance of the Work or the interpretation of the Contract Documents shall be initially referred in writing to the Consultant by the party raising the question for interpretations and findings and copied to the other party.

2.2.9 Interpretations and findings of the Consultant shall be consistent with the intent of the Contract Documents. In making such interpretations and findings the Consultant will not show partiality to either the Owner or the Contractor.

2.2.10 The Consultant's interpretations and findings will be given in writing to the parties within a reasonable time.

2.2.11 With respect to claims for a change in Contract Price, the Consultant will make findings as set out in GC 6.6 - CLAIMS FOR A CHANGE IN CONTRACT PRICE.

2.2.12 The Consultant will have authority to reject work which in the Consultant's opinion does not conform to the requirements of the Contract Documents. Whenever the Consultant considers it necessary or advisable, the Consultant will have authority to require inspection or testing of work, whether or not such work is fabricated, installed or completed. However, neither the authority of the Consultant to act nor any decision either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Consultant to the Contractor, Subcontractors, Suppliers, or their agents, employees, or other persons performing any of the Work.
2.2.13 During the progress of the Work the Consultant will furnish Supplemental Instructions to the Contractor with reasonable promptness or in accordance with a schedule for such instructions agreed to by the Consultant and the Contractor.

2.2.14 The Consultant will review and take appropriate action upon Shop Drawings, samples and other Contractor’s submittals, in accordance with the Contract Documents.

2.2.15 The Consultant will prepare Change Orders and Change Directives as provided in GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

2.2.16 The Consultant will conduct reviews of the Work to determine the date of Substantial Performance of the Work as provided in GC 5.4 - SUBSTANTIAL PERFORMANCE OF THE WORK.

2.2.17 All certificates issued by the Consultant will be to the best of the Consultant's knowledge, information and belief. By issuing any certificate, the Consultant does not guarantee the Work is correct or complete.

2.2.18 The Consultant will receive and review written warranties and related documents required by the Contract and provided by the Contractor and will forward such warranties and documents to the Owner for the Owner's acceptance.

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

2.3.1 The Owner and the Consultant shall have access to the Work at all times. The Contractor shall provide sufficient, safe and proper facilities at all times for the review of the Work by the Consultant and the inspection of the Work by authorized agencies. If parts of the Work are in preparation at locations other than the Place of the Work, the Owner and the Consultant shall be given access to such work whenever it is in progress.

2.3.2 If work is designated for tests, inspections or approvals in the Contract Documents, or by the Consultant's instructions, or by the laws or ordinances of the Place of the Work, the Contractor shall give the Consultant reasonable notification of when the work will be ready for review and inspection. The Contractor shall arrange for and shall give the Consultant reasonable notification of the date and time of inspections by other authorities.

2.3.3 The Contractor shall furnish promptly to the Consultant two copies of certificates and inspection reports relating to the Work.

2.3.4 If the Contractor covers, or permits to be covered, work that has been designated for special tests, inspections or approvals before such special tests, inspections or approvals are made, given or completed, the Contractor shall, if so directed, uncover such work, have the inspections or tests satisfactorily completed, and make good covering work at the Contractor's expense.

2.3.5 The Consultant may order any portion or portions of the Work to be examined to confirm that such work is in accordance with the requirements of the Contract Documents. If the work is not in accordance with the requirements of the Contract Documents, the Contractor shall correct the work and pay the cost of examination and correction. If the work is in accordance with the requirements of the Contract Documents, the Owner shall pay the cost of examination and restoration.

2.3.6 The Contractor shall pay the cost of making any test or inspection, including the cost of samples required for such test or inspection, if such test or inspection is designated in the Contract Documents to be performed by the Contractor or is designated by the laws or ordinances applicable to the Place of the Work.

2.3.7 The Contractor shall pay the cost of samples required for any test or inspection to be performed by the Consultant or the Owner if such test or inspection is designated in the Contract Documents.

**GC 2.4 DEFECTIVE WORK**

2.4.1 The Contractor shall promptly correct defective work that has been rejected by the Consultant as failing to conform to the Contract Documents whether or not the defective work has been incorporated in the Work and whether or not the defect is the result of poor workmanship, use of defective products or damage through carelessness or other act or omission of the Contractor.

2.4.2 The Contractor shall make good promptly other contractors' work destroyed or damaged by such corrections at the Contractor's expense.

2.4.3 If in the opinion of the Consultant it is not expedient to correct defective work or work not performed as provided in the Contract Documents, the Owner may deduct from the amount otherwise due to the Contractor the difference in value between the work as performed and that called for by the Contract Documents. If the Owner and the Contractor do not agree on the difference in value, they shall refer the matter to the Consultant for a determination.
PART 3 EXECUTION OF THE WORK

GC 3.1 CONTROL OF THE WORK

3.1.1 The Contractor shall have total control of the Work and shall effectively direct and supervise the Work so as to ensure conformity with the Contract Documents.

3.1.2 The Contractor shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for co-ordinating the various parts of the Work under the Contract.

GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

3.2.1 The Owner reserves the right to award separate contracts in connection with other parts of the Project to other contractors and to perform work with own forces.

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

3.2.3 When separate contracts are awarded for other parts of the Project, or when work is performed by the Owner's own forces, the Contractor shall:
   .1 afford the Owner and other contractors reasonable opportunity to store their products and execute their work;
   .2 cooperate with other contractors and the Owner in reviewing their construction schedules; and
   .3 promptly report to the Consultant in writing any apparent deficiencies in the work of other contractors or of the Owner's own forces, where such work affects the proper execution of any portion of the Work, prior to proceeding with that portion of the Work.

3.2.4 Where the Contract Documents identify work to be performed by other contractors or the Owner's own forces, the Contractor shall co-ordinate and schedule the Work with the work of other contractors and the Owner's own forces as specified in the Contract Documents.

3.2.5 Where a change in the Work is required as a result of the co-ordination and integration of the work of other contractors or Owner's own forces with the Work, the changes shall be authorized and valued as provided in GC 6.1 - OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

3.2.6 Disputes and other matters in question between the Contractor and other contractors shall be dealt with as provided in Part 8 of the General Conditions - DISPUTE RESOLUTION provided the other contractors have reciprocal obligations. The Contractor shall be deemed to have consented to arbitration of any dispute with any other contractor whose contract with the Owner contains a similar agreement to arbitrate.

GC 3.3 TEMPORARY WORK

3.3.1 The Contractor shall have the sole responsibility for the design, erection, operation, maintenance, and removal of Temporary Work.

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

GC 3.4 DOCUMENT REVIEW

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

GC 3.5 CONSTRUCTION SCHEDULE

3.5.1 The Contractor shall:

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

GC 3.6 SUPERVISION

3.6.1 The Contractor shall provide all necessary supervision and appoint a competent representative who shall be in attendance at the Place of the Work while work is being performed. The appointed representative shall not be changed except for valid reason.

3.6.2 The appointed representative shall represent the Contractor at the Place of the Work. Information and instructions provided by the Consultant to the Contractor's appointed representative shall be deemed to have been received by the Contractor, except with respect to Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

GC 3.7 SUBCONTRACTORS AND SUPPLIERS

3.7.1 The Contractor shall preserve and protect the rights of the parties under the Contract with respect to work to be performed under subcontract, and shall:

1. enter into contracts or written agreements with Subcontractors and Suppliers to require them to perform their work as provided in the Contract Documents;
2. incorporate the terms and conditions of the Contract Documents into all contracts or written agreements with Subcontractors and Suppliers; and
3. be as fully responsible to the Owner for acts and omissions of Subcontractors, Suppliers and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the Contractor.

3.7.2 The Contractor shall indicate in writing, if requested by the Owner, those Subcontractors or Suppliers whose bids have been received by the Contractor which the Contractor would be prepared to accept for the performance of a portion of the Work. Should the Owner not object before signing the Contract, the Contractor shall employ those Subcontractors or Suppliers so identified by the Contractor in writing for the performance of that portion of the Work to which their bid applies.

3.7.3 The Owner may, for reasonable cause, at any time before the Owner has signed the Contract, object to the use of a proposed Subcontractor or Supplier and require the Contractor to employ one of the other subcontract bidders.

3.7.4 If the Owner requires the Contractor to change a proposed Subcontractor or Supplier, the Contract Price and Contract Time shall be adjusted by the differences occasioned by such required change.
3.7.5 The Contractor shall not be required to employ as a Subcontractor or Supplier, a person or firm to which the Contractor may reasonably object.

3.7.6 The Owner, through the Consultant, may provide to a Subcontractor or Supplier information as to the percentage of the Subcontractor's or Supplier's work which has been certified for payment.

**GC 3.8 LABOUR AND PRODUCTS**

3.8.1 The Contractor shall provide and pay for labour, Products, tools, Construction Equipment, water, heat, light, power, transportation, and other facilities and services necessary for the performance of the Work in accordance with the Contract.

3.8.2 Unless otherwise specified in the Contract Documents, Products provided shall be new. Products which are not specified shall be of a quality consistent with those specified and their use acceptable to the Consultant.

3.8.3 The Contractor shall maintain good order and discipline among the Contractor's employees engaged on the Work and shall not employ on the Work anyone not skilled in the tasks assigned.

**GC 3.9 DOCUMENTS AT THE SITE**

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

**GC 3.10 SHOP DRAWINGS**

3.10.1 The Contractor shall provide Shop Drawings as required in the Contract Documents.

3.10.2 The Contractor shall provide Shop Drawings to the Consultant to review in orderly sequence and sufficiently in advance so as to cause no delay in the Work or in the work of other contractors.

3.10.3 Upon request of the Contractor or the Consultant, they shall jointly prepare a schedule of the dates for provision, review and return of Shop Drawings.

3.10.4 The Contractor shall provide Shop Drawings in the form specified, or if not specified, as directed by the Consultant.

3.10.5 Shop Drawings provided by the Contractor to the Consultant shall indicate by stamp, date and signature of the person responsible for the review that the Contractor has reviewed each one of them.

3.10.6 The Consultant's review is for conformity to the design concept and for general arrangement only.

3.10.7 Shop Drawings which require approval of any legally constituted authority having jurisdiction shall be provided to such authority by the Contractor for approval.

3.10.8 The Contractor shall review all Shop Drawings before providing them to the Consultant. The Contractor represents by this review that:

1. the Contractor has determined and verified all applicable field measurements, field construction conditions, Product requirements, catalogue numbers and similar data, or will do so, and
2. the Contractor has checked and co-ordinated each Shop Drawing with the requirements of the Work and of the Contract Documents.

3.10.9 At the time of providing Shop Drawings, the Contractor shall expressly advise the Consultant in writing of any deviations in a Shop Drawing from the requirements of the Contract Documents. The Consultant shall indicate the acceptance or rejection of such deviation expressly in writing.

3.10.10 The Consultant's review shall not relieve the Contractor of responsibility for errors or omissions in the Shop Drawings or for meeting all requirements of the Contract Documents.

3.10.11 The Contractor shall provide revised Shop Drawings to correct those which the Consultant rejects as inconsistent with the Contract Documents, unless otherwise directed by the Consultant. The Contractor shall notify the Consultant in writing of any revisions to the Shop Drawings other than those requested by the Consultant.

3.10.12 The Consultant will review and return Shop Drawings in accordance with the schedule agreed upon, or, in the absence of such schedule, with reasonable promptness so as to cause no delay in the performance of the Work.
GC 3.11 USE OF THE WORK

3.11.1 The Contractor shall confine Construction Equipment, Temporary Work, storage of Products, waste products and debris, and operations of employees and Subcontractors to limits indicated by laws, ordinances, permits, or the Contract Documents and shall not unreasonably encumber the Place of the Work.

3.11.2 The Contractor shall not load or permit to be loaded any part of the Work with a weight or force that will endanger the safety of the Work.

GC 3.12 CUTTING AND REMEDIAL WORK

3.12.1 The Contractor shall perform the cutting and remedial work required to make the affected parts of the Work come together properly.

3.12.2 The Contractor shall co-ordinate the Work to ensure that the cutting and remedial work is kept to a minimum.

3.12.3 Should the Owner, the Consultant, other contractors or anyone employed by them be responsible for ill-timed work necessitating cutting or remedial work to be performed, the cost of such cutting or remedial work shall be valued as provided in GC 6.1 – OWNER’S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

3.12.4 Cutting and remedial work shall be performed by specialists familiar with the Products affected and shall be performed in a manner to neither damage nor endanger the Work.

GC 3.13 CLEANUP

3.13.1 The Contractor shall maintain the Work in a safe and tidy condition and free from the accumulation of waste products and debris, other than that caused by the Owner, other contractors or their employees.

3.13.2 Before applying for Substantial Performance of the Work as provided in GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK, the Contractor shall remove waste products and debris, other than that resulting from the work of the Owner, other contractors or their employees, and shall leave the Place of the Work clean and suitable for use or occupancy by the Owner. The Contractor shall remove products, tools, Construction Equipment, and Temporary Work not required for the performance of the remaining work.

3.13.3 Prior to application for the final payment, the Contractor shall remove any remaining products, tools, Construction Equipment, Temporary Work, and waste products and debris, other than those resulting from the work of the Owner, other contractors or their employees.

PART 4 ALLOWANCES

GC 4.1 CASH ALLOWANCES

4.1.1 The Contract Price includes the cash allowances, if any, stated in the Contract Documents. The scope of work or costs included in such cash allowances shall be as described in the Contract Documents.

4.1.2 The Contract Price, and not the cash allowances, includes the Contractor’s overhead and profit in connection with such cash allowances.

4.1.3 Expenditures under cash allowances shall be authorized by the Owner through the Consultant.

4.1.4 Where the actual cost of the Work under any cash allowance exceeds the amount of the allowance, the Contractor shall be compensated for the excess incurred and substantiated plus an amount for overhead and profit on the excess as set out in the Contract Documents. Where the actual cost of the Work under any cash allowance is less than the amount of the allowance, the Owner shall be credited for the unexpended portion of the cash allowance, but not for the Contractor’s overhead and profit on such amount. Multiple cash allowances shall not be combined for the purpose of calculating the foregoing.

4.1.5 The Contract Price shall be adjusted by Change Order to provide for any difference between the amount of each cash allowance and the actual cost of the work under that cash allowance.

4.1.6 The value of the work performed under a cash allowance is eligible to be included in progress payments.

4.1.7 The Contractor and the Consultant shall jointly prepare a schedule that shows when the Consultant and Owner must authorize ordering of items called for under cash allowances to avoid delaying the progress of the Work.
GC 4.2 CONTINGENCY ALLOWANCE

4.2.1 The Contract Price includes the contingency allowance, if any, stated in the Contract Documents.

4.2.2 The contingency allowance includes the Contractor's overhead and profit in connection with such contingency allowance.

4.2.3 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 – OWNER’S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

4.2.4 The Contract Price shall be adjusted by Change Order to provide for any difference between the expenditures authorized under paragraph 4.2.3 and the contingency allowance.

PART 5 PAYMENT

GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

5.1.1 The Owner shall, at the request of the Contractor, before signing the Contract, and promptly from time to time thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract.

5.1.2 The Owner shall give the Contractor Notice in Writing of any material change in the Owner's financial arrangements to fulfill the Owner's obligations under the Contract during the performance of the Contract.

GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

5.2.1 Applications for payment on account as provided in Article A-5 of the Agreement - PAYMENT may be made monthly as the Work progresses.

5.2.2 Applications for payment shall be dated the last day of each payment period, which is the last day of the month or an alternative day of the month agreed in writing by the parties.

5.2.3 The amount claimed shall be for the value, proportionate to the amount of the Contract, of Work performed and Products delivered to the Place of the Work as of the last day of the payment period.

5.2.4 The Contractor shall submit to the Consultant, at least 15 calendar days before the first application for payment, a schedule of values for the parts of the Work, aggregating the total amount of the Contract Price, so as to facilitate evaluation of applications for payment.

5.2.5 The schedule of values shall be made out in such form and supported by such evidence as the Consultant may reasonably direct and when accepted by the Consultant, shall be used as the basis for applications for payment, unless it is found to be in error.

5.2.6 The Contractor shall include a statement based on the schedule of values with each application for payment.

5.2.7 Applications for payment for Products delivered to the Place of the Work but not yet incorporated into the Work shall be supported by such evidence as the Consultant may reasonably require to establish the value and delivery of the Products.

GC 5.3 PROGRESS PAYMENT

5.3.1 After receipt by the Consultant of an application for payment submitted by the Contractor in accordance with GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT:

.1 the Consultant will promptly inform the Owner of the date of receipt of the Contractor's application for payment,
.2 the Consultant will issue to the Owner and copy to the Contractor, no later than 10 calendar days after the receipt of the application for payment, a certificate for payment in the amount applied for, or in such other amount as the Consultant determines to be properly due. If the Consultant amends the application, the Consultant will promptly advise the Contractor in writing giving reasons for the amendment,
.3 the Owner shall make payment to the Contractor on account as provided in Article A-5 of the Agreement - PAYMENT on or before 20 calendar days after the later of:
   - receipt by the Consultant of the application for payment, or
   - the last day of the monthly payment period for which the application for payment is made.
GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

5.4.1 When the Contractor considers that the Work is substantially performed, or if permitted by the lien legislation applicable to the Place of the Work a designated portion thereof which the Owner agrees to accept separately is substantially performed, the Contractor shall, within one Working Day, deliver to the Consultant and to the Owner a comprehensive list of items to be completed or corrected, together with a written application for a review by the Consultant to establish Substantial Performance of the Work or substantial performance of the designated portion of the Work. Failure to include an item on the list does not alter the responsibility of the Contractor to complete the Contract.

5.4.2 The Consultant will review the Work to verify the validity of the application and shall promptly, and in any event, no later than 20 calendar days after receipt of the Contractor's list and application:
   .1 advise the Contractor in writing that the Work or the designated portion of the Work is not substantially performed and give reasons why, or
   .2 state the date of Substantial Performance of the Work or a designated portion of the Work in a certificate and issue a copy of that certificate to each of the Owner and the Contractor.

5.4.3 Immediately following the issuance of the certificate of Substantial Performance of the Work, the Contractor, in consultation with the Consultant, shall establish a reasonable date for finishing the Work.

GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

5.5.1 After the issuance of the certificate of Substantial Performance of the Work, the Contractor shall:
   .1 submit an application for payment of the holdback amount,
   .2 submit CCDC 9A 'Statutory Declaration' to state that all accounts for labour, subcontracts, Products, Construction Equipment, and other indebtedness which may have been incurred by the Contractor in the Substantial Performance of the Work and for which the Owner might in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or as an identified amount in dispute.

5.5.2 After the receipt of an application for payment from the Contractor and the statement as provided in paragraph 5.5.1, the Consultant will issue a certificate for payment of the holdback amount.

5.5.3 Where the holdback amount required by the applicable lien legislation has not been placed in a separate holdback account, the Owner shall, 10 calendar days prior to the expiry of the holdback period stipulated in the lien legislation applicable to the Place of the Work, place the holdback amount in a bank account in the joint names of the Owner and the Contractor.

5.5.4 In the common law jurisdictions, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable on the first calendar day following the expiration of the holdback period stipulated in the lien legislation applicable to the Place of the Work. Where lien legislation does not exist or apply, the holdback amount shall be due and payable in accordance with other legislation, industry practice or provisions which may be agreed to between the parties. The Owner may retain out of the holdback amount any sums required by law to satisfy any liens against the Work or, if permitted by the lien legislation applicable to the Place of the Work, other third party monetary claims against the Contractor which are enforceable against the Owner.

5.5.5 In the Province of Quebec, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable 30 calendar days after the issuance of the certificate. The Owner may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the Work or other third party monetary claims against the Contractor which are enforceable against the Owner.

GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK

5.6.1 In the common law jurisdictions, where legislation permits and where, upon application by the Contractor, the Consultant has certified that the work of a Subcontractor or Supplier has been performed prior to Substantial Performance of the Work, the Owner shall pay the Contractor the holdback amount retained for such subcontract work, or the Products supplied by such Supplier, on the first calendar day following the expiration of the holdback period for such work stipulated in the lien legislation applicable to the Place of the Work. The Owner may retain out of the holdback amount any sums required by law to satisfy any liens against the Work or, if permitted by the lien legislation applicable to the Place of the Work, other third party monetary claims against the Contractor which are enforceable against the Owner.
5.6.2 In the Province of Quebec, where, upon application by the Contractor, the Consultant has certified that the work of a Subcontractor or Supplier has been performed prior to Substantial Performance of the Work, the Owner shall pay the Contractor the holdback amount retained for such subcontract work, or the Products supplied by such Supplier, no later than 30 calendar days after such certification by the Consultant. The Owner may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the Work or other third party monetary claims against the Contractor which are enforceable against the Owner.

5.6.3 Notwithstanding the provisions of the preceding paragraphs, and notwithstanding the wording of such certificates, the Contractor shall ensure that such subcontract work or Products are protected pending the issuance of a final certificate for payment and be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when such certificates were issued.

GC 5.7 FINAL PAYMENT

5.7.1 When the Contractor considers that the Work is completed, the Contractor shall submit an application for final payment.

5.7.2 The Consultant will, no later than 10 calendar days after the receipt of an application from the Contractor for final payment, review the Work to verify the validity of the application and advise the Contractor in writing that the application is valid or give reasons why it is not valid.

5.7.3 When the Consultant finds the Contractor's application for final payment valid, the Consultant will promptly issue a final certificate for payment.

5.7.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the Place of the Work, the Owner shall, no later than 5 calendar days after the issuance of a final certificate for payment, pay the Contractor as provided in Article A-5 of the Agreement - PAYMENT.

GC 5.8 WITHHOLDING OF PAYMENT

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

GC 5.9 NON-CONFORMING WORK

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

PART 6 CHANGES IN THE WORK

GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

6.1.1 The Owner, through the Consultant, without invalidating the Contract, may make:
   .1 changes in the Work consisting of additions, deletions or other revisions to the Work by Change Order or Change Directive, and
   .2 changes to the Contract Time for the Work, or any part thereof, by Change Order.

6.1.2 The Contractor shall not perform a change in the Work without a Change Order or a Change Directive.

GC 6.2 CHANGE ORDER

6.2.1 When a change in the Work is proposed or required, the Consultant will provide the Contractor with a written description of the proposed change in the Work. The Contractor shall promptly present, in a form acceptable to the Consultant, a method of adjustment or an amount of adjustment for the Contract Price, if any, and the adjustment in the Contract Time, if any, for the proposed change in the Work.

6.2.2 When the Owner and Contractor agree to the adjustments in the Contract Price and Contract Time or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a Change Order. The value of the work performed as the result of a Change Order shall be included in the application for progress payment.
GC 6.3 CHANGE DIRECTIVE

6.3.1 If the Owner requires the Contractor to proceed with a change in the Work prior to the Owner and the Contractor agreeing upon the corresponding adjustment in Contract Price and Contract Time, the Owner, through the Consultant, shall issue a Change Directive.

6.3.2 A Change Directive shall only be used to direct a change in the Work which is within the general scope of the Contract Documents.

6.3.3 A Change Directive shall not be used to direct a change in the Contract Time only.

6.3.4 Upon receipt of a Change Directive, the Contractor shall proceed promptly with the change in the Work.

6.3.5 For the purpose of valuing Change Directives, changes in the Work that are not substitutions or otherwise related to each other shall not be grouped together in the same Change Directive.

6.3.6 The adjustment in the Contract Price for a change carried out by way of a Change Directive shall be determined on the basis of the cost of the Contractor's actual expenditures and savings attributable to the Change Directive, valued in accordance with paragraph 6.3.7 and as follows:

1. If the change results in a net increase in the Contractor's cost, the Contract Price shall be increased by the amount of the net increase in the Contractor's cost, plus the Contractor's percentage fee on such net increase.

2. If the change results in a net decrease in the Contractor's cost, the Contract Price shall be decreased by the amount of the net decrease in the Contractor's cost, without adjustment for the Contractor's percentage fee.

3. The Contractor's fee shall be as specified in the Contract Documents or as otherwise agreed by the parties.

6.3.7 The cost of performing the work attributable to the Change Directive shall be limited to the actual cost of the following:

1. salaries, wages and benefits paid to personnel in the direct employ of the Contractor under a salary or wage schedule agreed upon by the Owner and the Contractor, or in the absence of such a schedule, actual salaries, wages and benefits paid under applicable bargaining agreement, and in the absence of a salary or wage schedule and bargaining agreement, actual salaries, wages and benefits paid by the Contractor, for personnel
   (1) stationed at the Contractor's field office, in whatever capacity employed;
   (2) engaged in expediting the production or transportation of material or equipment, at shops or on the road;
   (3) engaged in the preparation or review of Shop Drawings, fabrication drawings, and coordination drawings; or
   (4) engaged in the processing of changes in the Work.

2. contributions, assessments or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan, insofar as such cost is based on wages, salaries or other remuneration paid to employees of the Contractor and included in the cost of the Work as provided in paragraph 6.3.7.1;

3. travel and subsistence expenses of the Contractor's personnel described in paragraph 6.3.7.1;

4. all Products including cost of transportation thereof;

5. materials, supplies, Construction Equipment, Temporary Work, and hand tools not owned by the workers, including transportation and maintenance thereof, which are consumed in the performance of the Work; and cost less salvage value on such items used but not consumed, which remain the property of the Contractor;

6. all tools and Construction Equipment, exclusive of hand tools used in the performance of the Work, whether rented from or provided by the Contractor or others, including installation, minor repairs and replacements, dismantling, removal, transportation, and delivery cost thereof;

7. all equipment and services required for the Contractor's field office;

8. deposits lost;

9. the amounts of all subcontracts;

10. quality assurance such as independent inspection and testing services;

11. charges levied by authorities having jurisdiction at the Place of the Work;

12. royalties, patent licence fees and damages for infringement of patents and cost of defending suits therefor subject always to the Contractor's obligations to indemnify the Owner as provided in paragraph 10.3.1 of GC 10.3 - PATENT FEES;

13. any adjustment in premiums for all bonds and insurance which the Contractor is required, by the Contract Documents, to purchase and maintain;

14. any adjustment in taxes, other than Value Added Taxes, and duties for which the Contractor is liable;

15. charges for long distance telephone and facsimile communications, courier services, expressage, and petty cash items incurred in relation to the performance of the Work;

16. removal and disposal of waste products and debris; and

17. safety measures and requirements.
6.3.8 Notwithstanding any other provisions contained in the General Conditions of the Contract, it is the intention of the parties that the cost of any item under any cost element referred to in paragraph 6.3.7 shall cover and include any and all costs or liabilities attributable to the Change Directive other than those which are the result of or occasioned by any failure on the part of the Contractor to exercise reasonable care and diligence in the Contractor's attention to the Work. Any cost due to failure on the part of the Contractor to exercise reasonable care and diligence in the Contractor’s attention to the Work shall be borne by the Contractor.

6.3.9 The Contractor shall keep full and detailed accounts and records necessary for the documentation of the cost of performing the Work attributable to the Change Directive and shall provide the Consultant with copies thereof when requested.

6.3.10 For the purpose of valuing Change Directives, the Owner shall be afforded reasonable access to all of the Contractor's pertinent documents related to the cost of performing the Work attributable to the Change Directive.

6.3.11 Pending determination of the final amount of a Change Directive, the undisputed value of the Work performed as the result of a Change Directive is eligible to be included in progress payments.

6.3.12 If the Owner and the Contractor do not agree on the proposed adjustment in the Contract Time attributable to the change in the Work, or the method of determining it, the adjustment shall be referred to the Consultant for determination.

6.3.13 When the Owner and the Contractor reach agreement on the adjustment to the Contract Price and to the Contract Time, this agreement shall be recorded in a Change Order.

GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

6.4.1 If the Owner or the Contractor discover conditions at the Place of the Work which are:

   .1 subsurface or otherwise concealed physical conditions which existed before the commencement of the Work which differ materially from those indicated in the Contract Documents; or
   .2 physical conditions, other than conditions due to weather, that are of a nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents,

then the observing party shall give Notice in Writing to the other party of such conditions before they are disturbed and in no event later than 5 Working Days after first observance of the conditions.

6.4.2 The Consultant will promptly investigate such conditions and make a finding. If the finding is that the conditions differ materially and this would cause an increase or decrease in the Contractor's cost or time to perform the Work, the Consultant, with the Owner's approval, will issue appropriate instructions for a change in the Work as provided in GC 6.2 - CHANGE ORDER or GC 6.3 - CHANGE DIRECTIVE.

6.4.3 If the Consultant finds that the conditions at the Place of the Work are not materially different or that no change in the Contract Price or the Contract Time is justified, the Consultant will report the reasons for this finding to the Owner and the Contractor in writing.

6.4.4 If such concealed or unknown conditions relate to toxic and hazardous substances and materials, artifacts and fossils, or mould, the parties will be governed by the provisions of GC 9.2 - TOXIC AND HAZARDOUS SUBSTANCES, GC 9.3 - ARTIFACTS AND FOSSILS and GC 9.5 - MOULD.

GC 6.5 DELAYS

6.5.1 If the Contractor is delayed in the performance of the Work by an action or omission of the Owner, Consultant or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the Contract Documents, then the Contract Time shall be extended for such reasonable time as the Consultant may recommend in consultation with the Contractor. The Contractor shall be reimbursed by the Owner for reasonable costs incurred by the Contractor as the result of such delay.

6.5.2 If the Contractor is delayed in the performance of the Work by a stop work order issued by a court or other public authority and providing that such order was not issued as the result of an act or fault of the Contractor or any person employed or engaged by the Contractor directly or indirectly, then the Contract Time shall be extended for such reasonable time as the Consultant may recommend in consultation with the Contractor. The Contractor shall be reimbursed by the Owner for reasonable costs incurred by the Contractor as the result of such delay.
6.5.3 If the Contractor is delayed in the performance of the Work by:
.1 labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized
contractors' association, of which the Contractor is a member or to which the Contractor is otherwise bound),
.2 fire, unusual delay by common carriers or unavoidable casualties,
.3 abnormally adverse weather conditions, or
.4 any cause beyond the Contractor's control other than one resulting from a default or breach of Contract by the
Contractor,
then the Contract Time shall be extended for such reasonable time as the Consultant may recommend in consultation with
the Contractor. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless
the Contractor agrees to a shorter extension. The Contractor shall not be entitled to payment for costs incurred by such
delays unless such delays result from actions by the Owner, Consultant or anyone employed or engaged by them directly or
indirectly.

6.5.4 No extension shall be made for delay unless Notice in Writing of the cause of delay is given to the Consultant not later than
10 Working Days after the commencement of the delay. In the case of a continuing cause of delay only one Notice in
Writing shall be necessary.

6.5.5 If no schedule is made under paragraph 2.2.13 of GC 2.2 - ROLE OF THE CONSULTANT, then no request for extension
shall be made because of failure of the Consultant to furnish instructions until 10 Working Days after demand for such
instructions has been made.

GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

6.6.1 If the Contractor intends to make a claim for an increase to the Contract Price, or if the Owner intends to make a claim
against the Contractor for a credit to the Contract Price, the party that intends to make the claim shall give timely Notice in
Writing of intent to claim to the other party and to the Consultant.

6.6.2 Upon commencement of the event or series of events giving rise to a claim, the party intending to make the claim shall:
.1 take all reasonable measures to mitigate any loss or expense which may be incurred as a result of such event or series of
events, and
.2 keep such records as may be necessary to support the claim.

6.6.3 The party making the claim shall submit within a reasonable time to the Consultant a detailed account of the amount claimed
and the grounds upon which the claim is based.

6.6.4 Where the event or series of events giving rise to the claim has a continuing effect, the detailed account submitted under
paragraph 6.6.3 shall be considered to be an interim account and the party making the claim shall, at such intervals as the
Consultant may reasonably require, submit further interim accounts giving the accumulated amount of the claim and any
further grounds upon which it is based. The party making the claim shall submit a final account after the end of the effects
resulting from the event or series of events.

6.6.5 The Consultant's findings, with respect to a claim made by either party, will be given by Notice in Writing to both parties
within 30 Working Days after receipt of the claim by the Consultant, or within such other time period as may be agreed by
the parties.

6.6.6 If such finding is not acceptable to either party, the claim shall be settled in accordance with Part 8 of the General Conditions
- DISPUTE RESOLUTION.

PART 7 DEFAULT NOTICE

GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE
WITH THE WORK OR TERMINATE THE CONTRACT

7.1.1 If the Contractor is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the
Contractor's insolvency, or if a receiver is appointed because of the Contractor's insolvency, the Owner may, without
prejudice to any other right or remedy the Owner may have, terminate the Contractor's right to continue with the Work, by
giving the Contractor or receiver or trustee in bankruptcy Notice in Writing to that effect.

7.1.2 If the Contractor neglects to prosecute the Work properly or otherwise fails to comply with the requirements of the Contract
to a substantial degree and if the Consultant has given a written statement to the Owner and Contractor that sufficient cause
calls to justify such action, the Owner may, without prejudice to any other right or remedy the Owner may have, give the
Contractor Notice in Writing that the Contractor is in default of the Contractor's contractual obligations and instruct the
Contractor to correct the default in the 5 Working Days immediately following the receipt of such Notice in Writing.

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contract if the document cover page bears a CCDC 2 copyright seal to demonstrate that it is intended by the parties to be an accurate and unamended version of
CCDC 2 - 2008 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.
7.1.3 If the default cannot be corrected in the 5 Working Days specified or in such other time period as may be subsequently agreed in writing by the parties, the Contractor shall be in compliance with the Owner's instructions if the Contractor:

1. commences the correction of the default within the specified time, and
2. provides the Owner with an acceptable schedule for such correction, and
3. corrects the default in accordance with the Contract terms and with such schedule.

7.1.4 If the Contractor fails to correct the default in the time specified or in such other time period as may be subsequently agreed in writing by the parties, without prejudice to any other right or remedy the Owner may have, the Owner may:

1. correct such default and deduct the cost thereof from any payment then or thereafter due the Contractor provided the Consultant has certified such cost to the Owner and the Contractor, or
2. terminate the Contractor's right to continue with the Work in whole or in part or terminate the Contract.

7.1.5 If the Owner terminates the Contractor's right to continue with the Work as provided in paragraphs 7.1.1 and 7.1.4, the Owner shall be entitled to:

1. take possession of the Work and Products at the Place of the Work; subject to the rights of third parties, utilize the Construction Equipment at the Place of the Work; finish the Work by whatever method the Owner may consider expedient, but without undue delay or expense, and
2. withhold further payment to the Contractor until a final certificate for payment is issued, and
3. charge the Contractor the amount by which the full cost of finishing the Work as certified by the Consultant, including compensation to the Consultant for the Consultant's additional services and a reasonable allowance as determined by the Consultant to cover the cost of corrections to work performed by the Contractor that may be required under GC 12.3 - WARRANTY, exceeds the unpaid balance of the Contract Price; however, if such cost of finishing the Work is less than the unpaid balance of the Contract Price, the Owner shall pay the Contractor the difference, and
4. on expiry of the warranty period, charge the Contractor the amount by which the cost of corrections to the Contractor's work under GC 12.3 - WARRANTY exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the Contractor the difference.

7.1.6 The Contractor's obligation under the Contract as to quality, correction and warranty of the work performed by the Contractor up to the time of termination shall continue after such termination of the Contract.

GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT

7.2.1 If the Owner is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the Owner's insolvency, or if a receiver is appointed because of the Owner's insolvency, the Contractor may, without prejudice to any other right or remedy the Contractor may have, terminate the Contract by giving the Owner or receiver or trustee in bankruptcy Notice in Writing to that effect.

7.2.2 If the Work is suspended or otherwise delayed for a period of 20 Working Days or more under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the Contractor or of anyone directly or indirectly employed or engaged by the Contractor, the Contractor may, without prejudice to any other right or remedy the Contractor may have, terminate the Contract by giving the Owner Notice in Writing to that effect.

7.2.3 The Contractor may give Notice in Writing to the Owner, with a copy to the Consultant, that the Owner is in default of the Owner's contractual obligations if:

1. the Owner fails to furnish, when so requested by the Contractor, reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract, or
2. the Consultant fails to issue a certificate as provided in GC 5.3 - PROGRESS PAYMENT, or
3. the Owner fails to pay the Contractor when due the amounts certified by the Consultant or awarded by arbitration or court, or
4. the Owner violates the requirements of the Contract to a substantial degree and the Consultant, except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, confirms by written statement to the Contractor that sufficient cause exists.

7.2.4 The Contractor's Notice in Writing to the Owner provided under paragraph 7.2.3 shall advise that if the default is not corrected within 5 Working Days following the receipt of the Notice in Writing, the Contractor may, without prejudice to any other right or remedy the Contractor may have, suspend the Work or terminate the Contract.

7.2.5 If the Contractor terminates the Contract under the conditions set out above, the Contractor shall be entitled to be paid for all work performed including reasonable profit, for loss sustained upon Products and Construction Equipment, and such other damages as the Contractor may have sustained as a result of the termination of the Contract.
PART 8 DISPUTE RESOLUTION

GC 8.1 AUTHORITY OF THE CONSULTANT

8.1.1 Differences between the parties to the Contract as to the interpretation, application or administration of the Contract or any failure to agree where agreement between the parties is called for, herein collectively called disputes, which are not resolved in the first instance by findings of the Consultant as provided in GC 2.2 - ROLE OF THE CONSULTANT, shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION.

8.1.2 If a dispute arises under the Contract in respect of a matter in which the Consultant has no authority under the Contract to make a finding, the procedures set out in paragraph 8.1.3 and paragraphs 8.2.3 to 8.2.8 of GC 8.2 - NEGOTIATION, MEDIATION AND ARBITRATION, and in GC 8.3 - RETENTION OF RIGHTS apply to that dispute with the necessary changes to detail as may be required.

8.1.3 If a dispute is not resolved promptly, the Consultant will give such instructions as in the Consultant's opinion are necessary for the proper performance of the Work and to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by so doing neither party will jeopardize any claim the party may have. If it is subsequently determined that such instructions were in error or at variance with the Contract Documents, the Owner shall pay the Contractor costs incurred by the Contractor in carrying out such instructions which the Contractor was required to do beyond what the Contract Documents correctly understood and interpreted would have required, including costs resulting from interruption of the Work.

GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

8.2.1 In accordance with the Rules for Mediation of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing, the parties shall appoint a Project Mediator
   .1 within 20 Working Days after the Contract was awarded, or
   .2 if the parties neglected to make an appointment within the 20 Working Days, within 10 Working Days after either party by Notice in Writing requests that the Project Mediator be appointed.

8.2.2 A party shall be conclusively deemed to have accepted a finding of the Consultant under GC 2.2 - ROLE OF THE CONSULTANT and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 Working Days after receipt of that finding, the party sends a Notice in Writing of dispute to the other party and to the Consultant, which contains the particulars of the matter in dispute and the relevant provisions of the Contract Documents. The responding party shall send a Notice in Writing of reply to the dispute within 10 Working Days after receipt of such Notice in Writing setting out particulars of this response and any relevant provisions of the Contract Documents.

8.2.3 The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, frank, candid and timely disclosure of relevant facts, information and documents to facilitate these negotiations.

8.2.4 After a period of 10 Working Days following receipt of a responding party's Notice in Writing of reply under paragraph 8.2.2, the parties shall request the Project Mediator to assist the parties to reach agreement on any unresolved dispute. The mediated negotiations shall be conducted in accordance with the Rules for Mediation of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing.

8.2.5 If the dispute has not been resolved within 10 Working Days after the Project Mediator was requested under paragraph 8.2.4 or within such further period agreed by the parties, the Project Mediator shall terminate the mediated negotiations by giving Notice in Writing to the Owner, the Contractor and the Consultant.

8.2.6 By giving a Notice in Writing to the other party and the Consultant, not later than 10 Working Days after the date of termination of the mediated negotiations under paragraph 8.2.5, either party may refer the dispute to be finally resolved by arbitration under the Rules for Arbitration of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing. The arbitration shall be conducted in the jurisdiction of the Place of the Work.

8.2.7 On expiration of the 10 Working Days, the arbitration agreement under paragraph 8.2.6 is not binding on the parties and, if a Notice in Writing is not given under paragraph 8.2.6 within the required time, the parties may refer the unresolved dispute to the courts or to any other form of dispute resolution, including arbitration, which they have agreed to use.
8.2.8 If neither party, by Notice in Writing, given within 10 Working Days of the date of Notice in Writing requesting arbitration in paragraph 8.2.6, requires that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.2.6 shall be

.1 held in abeyance until
   (1) Substantial Performance of the Work,
   (2) the Contract has been terminated, or
   (3) the Contractor has abandoned the Work, whichever is earlier; and

.2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.2.6.

GC 8.3 RETENTION OF RIGHTS

8.3.1 It is agreed that no act by either party shall be construed as a renunciation or waiver of any rights or recourses, provided the party has given the Notice in Writing required under Part 8 of the General Conditions - DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.3 of GC 8.1 - AUTHORITY OF THE CONSULTANT.

8.3.2 Nothing in Part 8 of the General Conditions - DISPUTE RESOLUTION shall be construed in any way to limit a party from asserting any statutory right to a lien under applicable lien legislation of the jurisdiction of the Place of the Work and the assertion of such right by initiating judicial proceedings is not to be construed as a waiver of any right that party may have under paragraph 8.2.6 of GC 8.2 - NEGOTIATION, MEDIATION AND ARBITRATION to proceed by way of arbitration to adjudicate the merits of the claim upon which such a lien is based.

PART 9 PROTECTION OF PERSONS AND PROPERTY

GC 9.1 PROTECTION OF WORK AND PROPERTY

9.1.1 The Contractor shall protect the Work and the Owner's property and property adjacent to the Place of the Work from damage which may arise as the result of the Contractor's operations under the Contract, and shall be responsible for such damage, except damage which occurs as the result of:

.1 errors in the Contract Documents;
.2 acts or omissions by the Owner, the Consultant, other contractors, their agents and employees.

9.1.2 Before commencing any work, the Contractor shall determine the location of all underground utilities and structures indicated in the Contract Documents or that are reasonably apparent in an inspection of the Place of the Work.

9.1.3 Should the Contractor in the performance of the Contract damage the Work, the Owner's property or property adjacent to the Place of the Work, the Contractor shall be responsible for making good such damage at the Contractor's expense.

9.1.4 Should damage occur to the Work or Owner's property for which the Contractor is not responsible, as provided in paragraph 9.1.1, the Contractor shall make good such damage to the Work and, if the Owner so directs, to the Owner's property. The Contract Price and Contract Time shall be adjusted as provided in GC 6.1 - OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

9.2.1 For the purposes of applicable legislation related to toxic and hazardous substances, the Owner shall be deemed to have control and management of the Place of the Work with respect to existing conditions.

9.2.2 Prior to the Contractor commencing the Work, the Owner shall,

.1 take all reasonable steps to determine whether any toxic or hazardous substances are present at the Place of the Work, and
.2 provide the Consultant and the Contractor with a written list of any such substances that are known to exist and their locations.

9.2.3 The Owner shall take all reasonable steps to ensure that no person's exposure to any toxic or hazardous substances exceeds the time weighted levels prescribed by applicable legislation at the Place of the Work and that no property is damaged or destroyed as a result of exposure to, or the presence of, toxic or hazardous substances which were at the Place of the Work prior to the Contractor commencing the Work.

9.2.4 Unless the Contract expressly provides otherwise, the Owner shall be responsible for taking all necessary steps, in accordance with applicable legislation in force at the Place of the Work, to dispose of, store or otherwise render harmless toxic or hazardous substances which were present at the Place of the Work prior to the Contractor commencing the Work.
9.2.5 If the Contractor
1 encounters toxic or hazardous substances at the Place of the Work, or
2 has reasonable grounds to believe that toxic or hazardous substances are present at the Place of the Work,
which were not brought to the Place of the Work by the Contractor or anyone for whom the Contractor is responsible and
which were not disclosed by the Owner or which were disclosed but have not been dealt with as required under paragraph
9.2.4, the Contractor shall
3 take all reasonable steps, including stopping the Work, to ensure that no person’s exposure to any toxic or hazardous
substances exceeds any applicable time weighted levels prescribed by applicable legislation at the Place of the Work,
and
4 immediately report the circumstances to the Consultant and the Owner in writing.

9.2.6 If the Owner and Contractor do not agree on the existence, significance of, or whether the toxic or hazardous substances were
brought onto the Place of the Work by the Contractor or anyone for whom the Contractor is responsible, the Owner shall retain
and pay for an independent qualified expert to investigate and determine such matters. The expert’s report shall be delivered to
the Owner and the Contractor.

9.2.7 If the Owner and Contractor agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous
substances were not brought onto the place of the Work by the Contractor or anyone for whom the Contractor is responsible, the
Owner shall promptly at the Owner’s own expense:
1 take all steps as required under paragraph 9.2.4;
2 reimburse the Contractor for the costs of all steps taken pursuant to paragraph 9.2.5;
3 extend the Contract time for such reasonable time as the Consultant may recommend in consultation with the Contractor
and the expert referred to in 9.2.6 and reimburse the Contractor for reasonable costs incurred as a result of the delay; and
4 indemnify the Contractor as required by GC 12.1 - INDEMNIFICATION.

9.2.8 If the Owner and Contractor agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous
substances were brought onto the place of the Work by the Contractor or anyone for whom the Contractor is responsible, the
Contractor shall promptly at the Contractor’s own expense:
1 take all necessary steps, in accordance with applicable legislation in force at the Place of the Work, to safely remove and
dispose the toxic or hazardous substances;
2 make good any damage to the Work, the Owner’s property or property adjacent to the place of the Work as provided in
paragraph 9.1.3 of GC 9.1 – PROTECTION OF WORK AND PROPERTY;
3 reimburse the Owner for reasonable costs incurred under paragraph 9.2.6; and
4 indemnify the Owner as required by GC 12.1 - INDEMNIFICATION.

9.2.9 If either party does not accept the expert’s findings under paragraph 9.2.6, the disagreement shall be settled in accordance with
Part 8 of the General Conditions - Dispute Resolution. If such disagreement is not resolved promptly, the parties shall act
immediately in accordance with the expert’s determination and take the steps required by paragraph 9.2.7 or 9.2.8 it being
understood that by so doing, neither party will jeopardize any claim that party may have to be reimbursed as provided by GC 9.2
– TOXIC AND HAZARDOUS SUBSTANCES.

GC 9.3 ARTIFACTS AND FOSSILS

9.3.1 Fossils, coins, articles of value or antiquity, structures and other remains or things of scientific or historic interest discovered
at the Place of Work shall, as between the Owner and the Contractor, be deemed to be the absolute property of the Owner.

9.3.2 The Contractor shall take all reasonable precautions to prevent removal or damage to discoveries as identified in paragraph
9.3.1, and shall advise the Consultant upon discovery of such items.

9.3.3 The Consultant will investigate the impact on the Work of the discoveries identified in paragraph 9.3.1. If conditions are
found that would cause an increase or decrease in the Contractor’s cost or time to perform the Work, the Consultant, with the
Owner’s approval, will issue appropriate instructions for a change in the Work as provided in GC 6.2 - CHANGE ORDER or
GC 6.3 CHANGE DIRECTIVE.

GC 9.4 CONSTRUCTION SAFETY

9.4.1 Subject to paragraph 3.2.2.2 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, the Contractor
shall be solely responsible for construction safety at the Place of the Work and for compliance with the rules, regulations and
practices required by the applicable construction health and safety legislation and shall be responsible for initiating,
maintaining and supervising all safety precautions and programs in connection with the performance of the Work.
GC 9.5 MOULD

9.5.1 If the Contractor or Owner observes or reasonably suspects the presence of mould at the Place of the Work, the remediation of which is not expressly part of the Work,

.1 the observing party shall promptly report the circumstances to the other party in writing, and

.2 the Contractor shall promptly take all reasonable steps, including stopping the Work if necessary, to ensure that no person suffers injury, sickness or death and that no property is damaged as a result of exposure to or the presence of the mould, and

.3 if the Owner and Contractor do not agree on the existence, significance or cause of the mould or as to what steps need be taken to deal with it, the Owner shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert’s report shall be delivered to the Owner and Contractor.

9.5.2 If the Owner and Contractor agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was caused by the Contractor’s operations under the Contract, the Contractor shall promptly, at the Contractor’s own expense:

.1 take all reasonable and necessary steps to safely remediate or dispose of the mould, and

.2 make good any damage to the Work, the Owner’s property or property adjacent to the Place of the Work as provided in paragraph 9.1.3 of GC 9.1 - PROTECTION OF WORK AND PROPERTY, and

.3 reimburse the Owner for reasonable costs incurred under paragraph 9.5.1.3, and

.4 indemnify the Owner as required by GC 12.1 - INDEMNIFICATION.

9.5.3 If the Owner and Contractor agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was not caused by the Contractor’s operations under the Contract, the Owner shall promptly, at the Owner’s own expense:

.1 take all reasonable and necessary steps to safely remediate or dispose of the mould, and

.2 reimburse the Contractor for the cost of taking the steps under paragraph 9.5.1.2 and making good any damage to the Work as provided in paragraph 9.1.4 of GC 9.1 - PROTECTION OF WORK AND PROPERTY, and

.3 extend the Contract Time for such reasonable time as the Consultant may recommend in consultation with the Contractor and the expert referred to in paragraph 9.5.1.3 and reimburse the Contractor for reasonable costs incurred as a result of the delay, and

.4 indemnify the Contractor as required by GC 12.1 - INDEMNIFICATION.

9.5.4 If either party does not accept the expert’s finding under paragraph 9.5.1.3, the disagreement shall be settled in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert’s determination and take the steps required by paragraphs 9.5.2 or 9.5.3, it being understood that by so doing neither party will jeopardize any claim the party may have to be reimbursed as provided by GC 9.5 - MOULD.

PART 10 GOVERNING REGULATIONS

GC 10.1 TAXES AND DUTIES

10.1.1 The Contract Price shall include all taxes and customs duties in effect at the time of the bid closing except for Value Added Taxes payable by the Owner to the Contractor as stipulated in Article A-4 of the Agreement - CONTRACT PRICE.

10.1.2 Any increase or decrease in costs to the Contractor due to changes in such included taxes and duties after the time of the bid closing shall increase or decrease the Contract Price accordingly.

GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

10.2.1 The laws of the Place of the Work shall govern the Work.

10.2.2 The Owner shall obtain and pay for development approvals, building permit, permanent easements, rights of servitude, and all other necessary approvals and permits, except for the permits and fees referred to in paragraph 10.2.3 or for which the Contract Documents specify as the responsibility of the Contractor.

10.2.3 The Contractor shall be responsible for the procurement of permits, licences, inspections, and certificates, which are necessary for the performance of the Work and customarily obtained by contractors in the jurisdiction of the Place of the Work after the issuance of the building permit. The Contract Price includes the cost of these permits, licences, inspections, and certificates, and their procurement.

10.2.4 The Contractor shall give the required notices and comply with the laws, ordinances, rules, regulations, or codes which are or become in force during the performance of the Work and which relate to the Work, to the preservation of the public health, and to construction safety.
10.2.5 The Contractor shall not be responsible for verifying that the Contract Documents are in compliance with the applicable laws, ordinances, rules, regulations, or codes relating to the Work. If the Contract Documents are at variance therewith, or if, subsequent to the time of bid closing, changes are made to the applicable laws, ordinances, rules, regulations, or codes which require modification to the Contract Documents, the Contractor shall advise the Consultant in writing requesting direction immediately upon such variance or change becoming known. The Consultant will make the changes required to the Contract Documents as provided in GC 6.1 - OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

10.2.6 If the Contractor fails to advise the Consultant in writing; and fails to obtain direction as required in paragraph 10.2.5; and performs work knowing it to be contrary to any laws, ordinances, rules, regulations, or codes; the Contractor shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations, or codes.

10.2.7 If, subsequent to the time of bid closing, changes are made to applicable laws, ordinances, rules, regulations, or codes of authorities having jurisdiction which affect the cost of the Work, either party may submit a claim in accordance with the requirements of GC 6.6 - CLAIMS FOR A CHANGE IN CONTRACT PRICE.

GC 10.3 PATENT FEES

10.3.1 The Contractor shall pay the royalties and patent licence fees required for the performance of the Contract. The Contractor shall hold the Owner harmless from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the Contractor's performance of the Contract which are attributable to an infringement or an alleged infringement of a patent of invention by the Contractor or anyone for whose acts the Contractor may be liable.

10.3.2 The Owner shall hold the Contractor harmless against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the Contractor's performance of the Contract which are attributable to an infringement or an alleged infringement of a patent of invention in executing anything for the purpose of the Contract, the model, plan or design of which was supplied to the Contractor as part of the Contract Documents.

GC 10.4 WORKERS' COMPENSATION

10.4.1 Prior to commencing the Work, again with the Contractor's application for payment of the holdback amount following Substantial Performance of the Work and again with the Contractor's application for final payment, the Contractor shall provide evidence of compliance with workers' compensation legislation at the Place of the Work, including payments due thereunder.

10.4.2 At any time during the term of the Contract, when requested by the Owner, the Contractor shall provide such evidence of compliance by the Contractor and Subcontractors.

PART 11 INSURANCE AND CONTRACT SECURITY

GC 11.1 INSURANCE

11.1.1 Without restricting the generality of GC 12.1 - INDEMNIFICATION, the Contractor shall provide, maintain and pay for the following insurance coverages, the minimum requirements of which are specified in CCDC 41 – CCDC Insurance Requirements in effect at the time of bid closing except as hereinafter provided:

.1 General liability insurance in the name of the Contractor and include, or in the case of a single, blanket policy, be endorsed to name, the Owner and the Consultant as insureds but only with respect to liability, other than legal liability arising out of their sole negligence, arising out of the operations of the Contractor with regard to the Work. General liability insurance shall be maintained from the date of commencement of the Work until one year from the date of Substantial Performance of the Work. Liability coverage shall be provided for completed operations hazards from the date of Substantial Performance of the Work, as set out in the certificate of Substantial Performance of the Work, on an ongoing basis for a period of 6 years following Substantial Performance of the Work.

.2 Automobile Liability Insurance from the date of commencement of the Work until one year after the date of Substantial Performance of the Work.

.3 Aircraft or Watercraft Liability Insurance when owned or non-owned aircraft or watercraft are used directly or indirectly in the performance of the Work.

.4 "Broad form" property insurance in the joint names of the Contractor, the Owner and the Consultant. The policy shall include as insureds all Subcontractors. The “Broad form” property insurance shall be provided from the date of commencement of the Work until the earliest of:

(1) 10 calendar days after the date of Substantial Performance of the Work;

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(2) on the commencement of use or occupancy of any part or section of the Work unless such use or occupancy is for construction purposes, habitational, office, banking, convenience store under 465 square metres in area, or parking purposes, or for the installation, testing and commissioning of equipment forming part of the Work;

(3) when left unattended for more than 30 consecutive calendar days or when construction activity has ceased for more than 30 consecutive calendar days.

.5 Boiler and machinery insurance in the joint names of the Contractor, the Owner and the Consultant. The policy shall include as insureds all Subcontractors. The coverage shall be maintained continuously from commencement of use or operation of the boiler and machinery objects insured by the policy and until 10 calendar days after the date of Substantial Performance of the Work.

.6 The “Broad form” property and boiler and machinery policies shall provide that, in the case of a loss or damage, payment shall be made to the Owner and the Contractor as their respective interests may appear. In the event of loss or damage:

(1) the Contractor shall act on behalf of the Owner for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the Contractor shall proceed to restore the Work. Loss or damage shall not affect the rights and obligations of either party under the Contract except that the Contractor shall be entitled to such reasonable extension of Contract Time relative to the extent of the loss or damage as the Consultant may recommend in consultation with the Contractor;

(2) the Contractor shall be entitled to receive from the Owner, in addition to the amount due under the Contract, the amount which the Owner's interest in restoration of the Work has been appraised, such amount to be paid as the restoration of the Work proceeds in accordance with the progress payment provisions. In addition the Contractor shall be entitled to receive from the payments made by the insurer the amount of the Contractor's interest in the restoration of the Work; and

(3) to the Work arising from the work of the Owner, the Owner's own forces or another contractor, the Owner shall, in accordance with the Owner's obligations under the provisions relating to construction by Owner or other contractors, pay the Contractor the cost of restoring the Work as the restoration of the Work proceeds and as in accordance with the progress payment provisions.

.7 Contractors' Equipment Insurance from the date of commencement of the Work until one year after the date of Substantial Performance of the Work.

11.1.2 Prior to commencement of the Work and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the Contractor shall promptly provide the Owner with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements applicable to the Work.

11.1.3 The parties shall pay their share of the deductible amounts in direct proportion to their responsibility in regards to any loss for which the above policies are required to pay, except where such amounts may be excluded by the terms of the Contract.

11.1.4 If the Contractor fails to provide or maintain insurance as required by the Contract Documents, then the Owner shall have the right to provide and maintain such insurance and give evidence to the Contractor and the Consultant. The Contractor shall pay the cost thereof to the Owner on demand or the Owner may deduct the cost from the amount which is due or may become due to the Contractor.

11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the Place of the Work.

11.1.6 If a revised version of CCDC 41 – INSURANCE REQUIREMENTS is published, which specifies reduced insurance requirements, the parties shall address such reduction, prior to the Contractor's insurance policy becoming due for renewal, and record any agreement in a Change Order.

11.1.7 If a revised version of CCDC 41 – INSURANCE REQUIREMENTS is published, which specifies increased insurance requirements, the Owner may request the increased coverage from the Contractor by way of a Change Order.

11.1.8 A Change Directive shall not be used to direct a change in the insurance requirements in response to the revision of CCDC 41 – INSURANCE REQUIREMENTS.

GC 11.2 CONTRACT SECURITY

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

PART 12 INDEMNIFICATION, WAIVER OF CLAIMS AND WARRANTY

GC 12.1 INDEMNIFICATION

12.1.1 Without restricting the parties' obligation to indemnify as described in paragraphs 12.1.4 and 12.1.5, the Owner and the Contractor shall each indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings whether in respect to losses suffered by them or in respect to claims by third parties that arise out of, or are attributable in any respect to their involvement as parties to this Contract, provided such claims are:

.1 caused by:
   (1) the negligent acts or omissions of the party from whom indemnification is sought or anyone for whose acts or omissions that party is liable, or
   (2) a failure of the party to the Contract from whom indemnification is sought to fulfill its terms or conditions; and

.2 made by Notice in Writing within a period of 6 years from the date of Substantial Performance of the Work as set out in the certificate of Substantial Performance of the Work issued pursuant to paragraph 5.4.2.2 of GC 5.4 - SUBSTANTIAL PERFORMANCE OF THE WORK or within such shorter period as may be prescribed by any limitation statute of the province or territory of the Place of the Work.

The parties expressly waive the right to indemnity for claims other than those provided for in this Contract.

12.1.2 The obligation of either party to indemnify as set forth in paragraph 12.1.1 shall be limited as follows:

.1 In respect to losses suffered by the Owner and the Contractor for which insurance is to be provided by either party pursuant to GC 11.1 - INSURANCE, the general liability insurance limit for one occurrence as referred to in CCDC 41 in effect at the time of bid closing.

.2 In respect to losses suffered by the Owner and the Contractor for which insurance is not required to be provided by either party in accordance with GC 11.1 - INSURANCE, the greater of the Contract Price as recorded in Article A-4 - CONTRACT PRICE or $2,000,000, but in no event shall the sum be greater than $20,000,000.

.3 In respect to claims by third parties for direct loss resulting from bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, the obligation to indemnify is without limit. In respect to all other claims for indemnity as a result of claims advanced by third parties, the limits of indemnity set forth in paragraphs 12.1.2.1 and 12.1.2.2 shall apply.

12.1.3 The obligation of either party to indemnify the other as set forth in paragraphs 12.1.1 and 12.1.2 shall be inclusive of interest and all legal costs.

12.1.4 The Owner and the Contractor shall indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of their obligations described in GC 9.2 - TOXIC AND HAZARDOUS SUBSTANCES.

12.1.5 The Owner shall indemnify and hold harmless the Contractor from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings:

.1 as described in paragraph 10.3.2 of GC 10.3 - PATENT FEES, and

.2 arising out of the Contractor's performance of the Contract which are attributable to a lack of or defect in title or an alleged lack of or defect in title at the Place of the Work.

12.1.6 In respect to any claim for indemnity or to be held harmless by the Owner or the Contractor:

.1 Notice in Writing of such claim shall be given within a reasonable time after the facts upon which such claim is based became known;

.2 should any party be required as a result of its obligation to indemnify another to pay or satisfy a final order, judgment or award made against the party entitled by this contract to be indemnified, then the indemnifying party upon assuming all liability for any costs that might result shall have the right to appeal in the name of the party against whom such final order or judgment has been made until such rights of appeal have been exhausted.
GC 12.2 WAIVER OF CLAIMS

12.2.1 Subject to any lien legislation applicable to the Place of the Work, as of the fifth calendar day before the expiry of the lien period provided by the lien legislation applicable at the Place of the Work, the Contractor waives and releases the Owner from all claims which the Contractor has or reasonably ought to have knowledge of that could be advanced by the Contractor against the Owner arising from the Contractor's involvement in the Work, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the date of Substantial Performance of the Work, except as follows:

1. claims arising prior to or on the date of Substantial Performance of the Work for which Notice in Writing of claim has been received by the Owner from the Contractor no later than the sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the Place of the Work;
2. indemnification for claims advanced against the Contractor by third parties for which a right of indemnification may be asserted by the Contractor against the Owner pursuant to the provisions of this Contract;
3. claims for which a right of indemnity could be asserted by the Contractor pursuant to the provisions of paragraphs 12.1.4 or 12.1.5 of GC 12.1 – INDEMNIFICATION; and
4. claims resulting from acts or omissions which occur after the date of Substantial Performance of the Work.

12.2.2 The Contractor waives and releases the Owner from all claims referenced in paragraph 12.2.1.4 except for those referred in paragraphs 12.2.1.2 and 12.2.1.3 and claims for which Notice in Writing of claim has been received by the Owner from the Contractor within 395 calendar days following the date of Substantial Performance of the Work.

12.2.3 Subject to any lien legislation applicable to the Place of the Work, as of the fifth calendar day before the expiry of the lien period provided by the lien legislation applicable at the Place of the Work, the Owner waives and releases the Contractor from all claims which the Owner has or reasonably ought to have knowledge of that could be advanced by the Owner against the Contractor arising from the Owner's involvement in the Work, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the date of Substantial Performance of the Work, except as follows:

1. claims arising prior to or on the date of Substantial Performance of the Work for which Notice in Writing of claim has been received by the Contractor from the Owner no later than the sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the Place of the Work;
2. indemnification for claims advanced against the Owner by third parties for which a right of indemnification may be asserted by the Owner against the Contractor pursuant to the provisions of this Contract;
3. claims for which a right of indemnity could be asserted by the Owner against the Contractor pursuant to the provisions of paragraph 12.1.4 of GC 12.1 – INDEMNIFICATION;
4. damages arising from the Contractor's actions which result in substantial defects or deficiencies in the Work. “Substantial defects or deficiencies” mean those defects or deficiencies in the Work which affect the Work to such an extent or in such a manner that a significant part or the whole of the Work is unfit for the purpose intended by the Contract Documents;
5. claims arising pursuant to GC 12.3 - WARRANTY; and
6. claims arising from acts or omissions which occur after the date of Substantial Performance of the Work.

12.2.4 The Owner waives and releases the Contractor from all claims referred to in paragraph 12.2.3.4 except claims for which Notice in Writing of claim has been received by the Contractor from the Owner within a period of six years from the date of Substantial Performance of the Work should any limitation statute of the Province or Territory of the Place of the Work permit such agreement. If the applicable limitation statute does not permit such agreement, within such shorter period as may be prescribed by:  
1. any limitation statute of the Province or Territory of the Place of the Work; or
2. if the Place of the Work is the Province of Quebec, then Article 2118 of the Civil Code of Quebec.

12.2.5 The Owner waives and releases the Contractor from all claims referenced in paragraph 12.2.3.6 except for those referred in paragraph 12.2.3.2, 12.2.3.3 and those arising under GC 12.3 – WARRANTY and claims for which Notice in Writing has been received by the Contractor from the Owner within 395 calendar days following the date of Substantial Performance of the Work.

12.2.6 “Notice in Writing of claim” as provided for in GC 12.2 – WAIVER OF CLAIMS to preserve a claim or right of action which would otherwise, by the provisions of GC 12.2 – WAIVER OF CLAIMS, be deemed to be waived, must include the following:
1. a clear and unequivocal statement of the intention to claim;
2. a statement as to the nature of the claim and the grounds upon which the claim is based; and
3. a statement of the estimated quantum of the claim.

12.2.7 The party giving “Notice in Writing of claim” as provided for in GC 12.2 – WAIVER OF CLAIMS shall submit within a reasonable time a detailed account of the amount claimed.
12.2.8 Where the event or series of events giving rise to a claim made under paragraphs 12.2.1 or 12.2.3 has a continuing effect, the
detailed account submitted under paragraph 12.2.7 shall be considered to be an interim account and the party making the claim
shall submit further interim accounts, at reasonable intervals, giving the accumulated amount of the claim and any further
grounds upon which it is based. The party making the claim shall submit a final account after the end of the effects resulting
from the event or series of events.

12.2.9 If a Notice in Writing of claim pursuant to paragraph 12.2.1.1 is received on the seventh or sixth calendar day before the expiry
of the lien period provided by the lien legislation applicable at the Place of the Work, the period within which Notice in Writing
of claim shall be received pursuant to paragraph 12.2.3.1 shall be extended to two calendar days before the expiry of the lien
period provided by the lien legislation applicable at the Place of the Work.

12.2.10 If a Notice in Writing of claim pursuant to paragraph 12.2.3.1 is received on the seventh or sixth calendar day before the expiry
of the lien period provided by the lien legislation applicable at the Place of the Work, the period within which Notice in Writing
of claim shall be received pursuant to paragraph 12.2.1.1 shall be extended to two calendar days before the expiry of the lien
period provided by the lien legislation applicable at the Place of the Work.

GC 12.3 WARRANTY

12.3.1 Except for extended warranties as described in paragraph 12.3.6, the warranty period under the Contract is one year from the
date of Substantial Performance of the Work.

12.3.2 The Contractor shall be responsible for the proper performance of the Work to the extent that the design and Contract
Documents permit such performance.

12.3.3 The Owner, through the Consultant, shall promptly give the Contractor Notice in Writing of observed defects and
deficiencies which occur during the one year warranty period.

12.3.4 Subject to paragraph 12.3.2, the Contractor shall correct promptly, at the Contractor's expense, defects or deficiencies in the
Work which appear prior to and during the one year warranty period.

12.3.5 The Contractor shall correct or pay for damage resulting from corrections made under the requirements of paragraph 12.3.4.

12.3.6 Any extended warranties required beyond the one year warranty period as described in paragraph 12.3.1, shall be as
specified in the Contract Documents. Extended warranties shall be issued by the warrantor to the benefit of the Owner. The
Contractor’s responsibility with respect to extended warranties shall be limited to obtaining any such extended warranties
from the warrantor. The obligations under such extended warranties are solely the responsibilities of the warrantor.
CCDC 41
CCDC INSURANCE REQUIREMENTS

PUBLICATION DATE: JANUARY 21, 2008

1. General liability insurance shall be with limits of not less than $5,000,000 per occurrence, an aggregate limit of not less than $5,000,000 within any policy year with respect to completed operations, and a deductible not exceeding $5,000. The insurance coverage shall not be less than the insurance provided by IBC Form 2100 (including an extension for a standard provincial and territorial form of non-owned automobile liability policy) and IBC Form 2320. To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the Contractor, the Owner may agree to increase the deductible amounts.

2. Automobile liability insurance in respect of vehicles that are required by law to be insured under a contract by a Motor Vehicle Liability Policy, shall have limits of not less than $5,000,000 inclusive per occurrence for bodily injury, death and damage to property, covering all vehicles owned or leased by the Contractor. Where the policy has been issued pursuant to a government-operated automobile insurance system, the Contractor shall provide the Owner with confirmation of automobile insurance coverage for all automobiles registered in the name of the Contractor.

3. Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft (if used directly or indirectly in the performance of the Work), including use of additional premises, shall have limits of not less than $5,000,000 inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof and limits of not less than $5,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the Owner.

4. "Broad form" property insurance shall have limits of not less than the sum of 1.1 times Contract Price and the full value, as stated in the Contract, of Products and design services that are specified to be provided by the Contractor for incorporation into the Work, with a deductible not exceeding $5,000. The insurance coverage shall not be less than the insurance provided by IBC Forms 4042 and 4047 (excluding flood and earthquake) or their equivalent replacement. Subject to satisfactory proof of financial capability by the Contractor, the Owner may agree to increase the deductible amounts.

5. Boiler and machinery insurance shall have limits of not less than the replacement value of the permanent or temporary boilers and pressure vessels, and other insurable objects forming part of the Work. The insurance coverage shall not be less than the insurance provided by a comprehensive boiler and machinery policy.

6. "Broad form" contractors' equipment insurance coverage covering Construction Equipment used by the Contractor for the performance of the Work, shall be in a form acceptable to the Owner and shall not allow subrogation claims by the insurer against the Owner. Subject to satisfactory proof of financial capability by the Contractor for self-insurance, the Owner may agree to waive the equipment insurance requirement.

7. Standard Exclusions

7.1 In addition to the broad form property exclusions identified in IBC forms 4042(1995), and 4047(2000), the Contractor is not required to provide the following insurance coverage:
   - Asbestos
   - Cyber Risk
   - Mould
   - Terrorism
DEFINITIONS

Add the following definitions:

27. **Alternate**: has the meanings set out in paragraph 20.1.1 and 20.1.2 of the Instructions to Bidders.

28. **Alternative Price**: The amount to be added to or deducted from the Bid Price for an Alternate.

29. **Approved Equal**: has the meaning set out in paragraph 21.1 of the Instructions to Bidders.

30. **Bid Closing**: is the time and date as specified in Instructions to Bidders, paragraph 2.2.

31. **Bid Deposit**: means the documents set out in Instructions to Bidders 8.1.

32. **Bid Documents**: means the documents set out in Article A-3 of the Agreement between Owner and Contractor.

33. **Bid Price**: is the amount as provided by the Bidder in Item 1.4 of the Stipulated Price Bid Form.

34. **Certificate of Substantial Performance**: means a certificate issued by the Consultant indicating that Substantial Performance of the Work has been achieved.

35. **Contemplated Change Order or Contemplated Change Notice**: a written description of a proposed change in the Work.

36. **Contingency or Contingency Allowance**: means an allowance to cover the costs of possible Work, such as Concealed or Unknown Conditions, or Changes, that is not identified at the Bid Closing but which may, pursuant to provisions of the Contract Documents, become part of the Work.

37. **Labour and Materials Payment Bond**: means a bond to be supplied by the Successful Bidder, which bond will guarantee that all suppliers of labour or materials will be paid for labour and materials furnished to the Contractor, for use on the project.

38. **Non-Bid Information**: means any information, plans, drawings, shop drawings of existing equipment or facilities, geotechnical reports or record drawings, photos, reports or other documents which are not included or are not referred to in the Bid Documents.

39. **Notice of Award**: a written notice delivered by the Owner to the Bidder accepting a Bid.

40. **Notice to Proceed**: a written notice delivered by the Owner instructing the Contractor to commence the Work.

41. **Performance Bond**: means a bond to be supplied by the Successful Bidder, which bond will guarantee the faithful performance of the Contract, and in default thereof, shall protect the Owner against any losses or damage arising by reason of failure of the Successful Bidder to faithfully perform the Contract.

42. **Provisional Work**: means Work which will/may be described in the Stipulated Price Bid Form that will be undertaken and included in the Work at the election of the Owner.
SUPPLEMENTARY DEFINITIONS

43. **Small Tools**: means a small tool or equipment item with a replacement value of no more than $5,000 per tool or item.

44. **Substantial Performance**: means the state of completion of when all Work, as certified by the Consultant, is capable of completion or correction at a cost of more than:

   (1) 3% of the first $500,000 of the Contract Price;
   (2) 2% of the next $500,000 of the Contract Price; and
   (3) 1% of the balance of the Contract Price; and

   the Work, or a substantial part of it, is ready for use or is being used for the purposes intended.

45. **Successful Bidder**: means the Bidder to whom a Notice of Award is sent.

46. **Superintendent**: means the Contractor’s senior representative at the Place of Work.

47. **Total Performance of the Work**: when all Work, including all deficiencies but excluding any correction of completed Work that appears during the warranty period or other on-going warranty or guarantee obligations as provided by the Contract Documents, has been performed as required by the Contract Documents, as certified by the Consultant.

END OF SECTION
SUPPLEMENTARY GENERAL CONDITIONS
PART 1 GENERAL PROVISIONS

GC 1.1 CONTRACT DOCUMENTS

1.1.7.1 Delete and replace with the following:

"If there is a conflict within the Contract Documents:

1. The order of priority of documents, from highest to lowest, shall be:

- the Agreement between the Owner and the Contractor,
- the addenda,
- the Supplementary Definitions,
- the Definitions,
- the Supplementary General Conditions
- the General Conditions,
- the General Requirements
- the technical Specifications,
- material and finishing schedules,
- the drawings,
- the Stipulated Price Bid Form
- the Instructions to Bidders."

PART 2 ADMINISTRATION OF THE CONTRACT

GC 2.3 REVIEW AND INSPECTION OF THE WORK

2.3.2 Add in the first sentence:

the word "review," before the word "tests".

2.3.4 In the first sentence replace the word "special" with the word "review," and add the word "review," before the third instance of the word "inspections".

2.3.8 Add:

"Should the Consultant be required to make more than one inspection of work not in conformance with the Contract Documents, including inspections associated with Substantial Performance of the Work, the Contractor shall compensate the Owner for such additional Consultant services including any expenses incurred. Adjustment for such compensation should be made as outlined under PART 6 - CHANGES IN THE WORK."
SUPPLEMENTARY GENERAL CONDITIONS

PART 3 EXECUTION OF THE WORK

GC 3.1 CONTROL OF THE WORK

3.1.3 Add:

"Prior to commencing the Work, the Contractor shall verify, at the Place of the Work, all relevant measurements and levels necessary for the proper completion of the Work and shall further carefully compare such field measurements and conditions with the requirements of the Contract Documents. Where dimensions are not included or exact locations are not apparent in the Contract Documents, the Contractor shall immediately notify the Consultant in writing and obtain Supplemental Instructions from the Consultant before proceeding with any part of the affected work."

GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

3.2.2.2 Delete this clause in its entirety.

3.2.3.4 Add:

"as it applies to the applicable health and construction safety legislation at the Place of the Work, assume overall responsibility and be designated as the "Prime Contractor."

GC 3.5 CONSTRUCTION SCHEDULE

3.5.1.1 Delete and replace with the following:

"prepare a construction schedule within 15 days of Notice of Award that indicates the timing of the major activities of the Work and provides sufficient detail of the critical events and their inter-relationship to demonstrate the Work will be performed by the Contract Time. The schedule shall be in electronic form and prepared using MS Project or MS Excel software. The Consultant may require the use of Critical Path schedule methodology for complex projects."

3.5.1.4 Add:

"perform the Work in compliance with the Construction Schedule."

3.5.1.5 Add:

"as necessary, update the Construction Schedule so that it also reflects the Contractor's plans to complete the Work. If the Contractor submits a Construction Schedule indicating the Contract Time will not be met, then receipt of such schedule by the Consultant will not relieve the Contractor of the obligation to meet the Contract Time."

3.5.2 Add:

"If the Contractor intends working on a Sunday or statutory holiday, the Contractor shall notify the Consultant, in writing, at least ten (10) days prior to such day stating what Work will be performed."
SUPPLEMENTARY GENERAL CONDITIONS

GC 3.6 SUPERVISION

3.6.1 Add after the last sentence:

"The appointed Contractor representative shall not be changed without consultation with and written acceptance by the Owner. This acceptance shall not be unreasonably withheld."

3.6.3 Add new paragraph 3.6.3:

"The Owner may, at any time during the course of the Work, request the replacement of the appointed representative(s), where the grounds for the request involve conduct which jeopardizes the safety and security of the site or the Owner’s operations. Immediately upon receipt of the request, the Contractor shall make arrangements to appoint an acceptable replacement."

GC 3.7 SUBCONTRACTORS AND SUPPLIERS

3.7.1.4 Add:

"upon written notice from the Owner, forthwith clear title to the Place of the Work, any liens registered by Subcontractors or Suppliers."

3.7.4 Add at the end of the sentence:

"as outlined in GC 6.3 – CHANGE DIRECTIVE."

GC 3.8 LABOUR AND PRODUCTS

3.8.4 Add:

"The Contractor and its Subcontractors shall pay all wages in accordance with applicable labour, income tax, unemployment insurance, Canadian pension plan, holiday pay, W.C.B. legislation and the Collective Agreement between the City of Nanaimo and the Canadian Union of Public Employees, Local 401 Article 31 – Contract or Sub-Contracts, which provides that the minimum rate of pay for Work performed under this Contract or under Sub-Contract shall be as classified in the current Agreement between the City of Nanaimo and Canadian Union of Public Employees, Local 401. In the event the City has concerns that the Contractor or a subcontractor of the Contractor is in violation of Article 31, the City will proceed with the steps outlined in the Collective Agreement. All positions assigned must be paid in accordance with the above and no less than the following:

<table>
<thead>
<tr>
<th>Position</th>
<th>Rate Per Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labourer</td>
<td>$27.56</td>
</tr>
<tr>
<td>Journeyperson Carpenter</td>
<td>$36.71</td>
</tr>
</tbody>
</table>

PART 5 PAYMENT

GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

5.2.3 Delete in its entirety and replace with:

"The amount claimed shall be for the value, proportionate to the amount of the Contract, of Work performed as of the last day of the payment period, less any holdbacks specified within the Contract or by required by law."
SUPPLEMENTARY GENERAL CONDITIONS

5.2.4 Add after the first sentence:

"A second schedule, stating the anticipated monthly progress payments, is to be submitted upon request."

5.2.7 Delete in its entirety and replace with:

"Payment will not be made for Products purchased by the Contractor but not yet incorporated into the Work at the Place of the Work."

5.2.8 Add:

"An application for payment shall be deemed received only if submitted complete with required supporting documentation as determined by the Consultant."

5.2.9 Add:

"The Contractor shall with each and every application for payment subsequent to the first, submit a current CCDC 9A Statutory Declaration of Progress Payment Distribution by the Contractor, which shall be completed and sworn before a Notary Public or a Commissioner for Oaths."

GC 5.3 PROGRESS PAYMENT

5.3.1.2 Add:

"If, after a certificate of payment has been issued to the Owner (and prior to payment by the Owner), the Consultant determines on the basis of new information that the amount certified for payment is inappropriately high or low relative to the value of the work performed, then the Consultant shall issue a revised certificate of payment."

5.3.1.3 Delete in its entirety and replace with:

"The Owner shall make payment to the Contractor, on account, in the amount certified by the Consultant as provided in Article A-5 of the Agreement – PAYMENT, on or before the later of:

(a) forty-five calendar days after receipt by the Consultant of the application for payment, or

(b) twenty-eight calendar days after the last day of the payment period for which the Contractor’s application for payment is made."

5.3.2 Add:

"The Consultant may amend the application for payment by the Contractor to reflect holdbacks for, but not limited to:

1. Builders’ Lien Holdback: The Ownershall:

(a) hold back 10%, or other percentage as required by the Builders’ Lien Act, of any amounts due to the Contractor as a builders lien holdback; and

(b) if the Place of the Work is a highway then not withstanding that a lien cannot be registered against the Place of the Work, hold back the percentage that would have been required as if the Builders’ Lien Act applies, of any amounts due to the Contractor as a builders’ lien holdback, on the same conditions as though such hold back was a requirement of the Builders’
2. Defects and Deficiencies: The Owner may hold back from payments otherwise due to the Contractor a reasonable amount, as determined by the Consultant, on account of deficient or defective Work already paid for. This holdback may be held, without interest, until all deficiencies are remedied. The items of defect or deficiency and the amounts of related holdback shall be listed separately on the Payment Certificate. In the case of a deficiency, the Owner may hold back twice the value of the deficiency, as determined by the Consultant.

3. Incomplete Work: If, after Substantial Performance of the Work is achieved, the Contractor is unable to complete any of the Work because of climatic or other conditions beyond the Contractor's reasonable control then the Owner may hold back from payments otherwise due to the Contractor the amount as estimated by the Consultant in consultation with the Contractor by which the cost to have others complete the Work exceeds the estimated Contract Price for such Work.

4. Filed Builders' Liens: The Owner may, in addition to other holdbacks as provided by the Contract Documents, hold back an amount equal to any lien which has been filed with respect to the Work. The Owner may, at its option, after 5 Days written notice to the Contractor, pay such amount into court to discharge the lien. If the lien is discharged without payment of the holdback into court, then the Owner shall pay such holdback to the Contractor, without interest.

5. Liquidated Damages: If the Contractor fails to meet the date of Substantial Performance of the Work as set in the Stipulated Price Bid Form, and as may be adjusted pursuant to the provisions of the Contract Documents, then the Owner may deduct from any monies owing to the Contractor for the Work:

(a) All direct out-of-pocket costs, such as costs for inspection, safety, security, or equipment rental, reasonably incurred by the Owner as a direct result of such delay.

If the monies owing to the Contractor are less than the total amount owing by the Contractor to the Owner under (a) then any shortfall shall immediately, upon written notice from the Owner, and upon Substantial Performance of the Work, be due and owing by the Contractor to the Owner.

**GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK**

5.4.1 Delete in its entirety and replace with:

"The Consultant shall, no later than 10 Days, after the receipt of a written application from the Contractor for a Certificate of Substantial Performance, make an inspection and assessment of the Work to verify the validity of the application and either shall:

(b) Issue the Certificate of Substantial Performance or

(c) if the Consultant determines that the conditions of Substantial Performance of the Work have not been achieved, consult with the Contractor and advise the Contractor of the deficiencies in the Work that must be corrected or completed in order to achieve Substantial Performance of the Work."

5.4.2 Delete in its entirety and replace with:

"The Contractor may, after performing the required Work noted in GC 5.4.1 (b), re-issue the Certificate
SUPPLEMENTARY GENERAL CONDITIONS

5.4.3 Delete in its entirety and replace with:

"An application for a Certificate of Substantial Performance shall be accompanied by:

(a) a sworn declaration in a form acceptable to the Consultant that all amounts relating to the Work, due and owing to third parties including all Subcontractors and Suppliers, as of the end of the month covered by the previous payment certificate, have been paid; and

(b) documentation satisfactory to the Owner demonstrating compliance with the Workers’ Compensation Act and the Occupational Health and Safety Act requirements."

5.4.4 Add:

"Immediately following the issuance of the Certificate of Substantial Performance, the Contractor, in consultation with the Consultant, will establish a reasonable date for Total Performance of the Work."
SUPPLEMENTARY GENERAL CONDITIONS

GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

5.5.1.3 Add:

"When applying for release of holdback, the Contractor shall submit a current CCDC 9B Statutory Declaration of Progress Payment Distribution by Subcontractor from each of the Subcontractors and documentation satisfactory to the Owner demonstrating compliance with the Workers' Compensation Act and the Occupational Health and Safety Act requirements."

5.5.2 Delete the words, "the statement" and replace with the words "the documents".

5.5.3 Delete this paragraph in its entirety.

GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK

5.6.4 Add:

"An application for progressive release of holdback shall not be considered complete until all related documentation required for the Consultant's review is received, including those requirements in GC 5.2.8, as determined by the Consultant."

GC 5.7 FINAL PAYMENT

5.7.2 Delete the words "calendar days" and replace with the words "Working Days".

5.7.4 Delete the words "no later than 5 calendar days after the issuance of a final certificate for payment,"

5.7.5 Add:

"Partial payment may not be made for the completion or correction of any deficiencies shown on the comprehensive list of items to be completed or corrected prior to the date of the issuance of the final certificate of payment."

PART 6 CHANGES IN THE WORK

GC 6.2 CHANGE ORDER

6.2.1 Delete in its entirety and replace with:

"When a change in the Work is proposed or required, the Consultant will provide the Contractor with a Contemplated Change Order. The Contractor shall promptly present, in a form acceptable to the Consultant, a method of adjustment or an amount of adjustment for the Contract Price, if any, and the adjustment in the Contract Time, if any, for the proposed change in the Work."

6.2.3 Add:

"The following shall determine Contractor mark-up in Change Orders, by percentage:
SUPPLEMENTARY GENERAL CONDITIONS

.1 To the cost of the Work performed and materials supplied by the Contractor or Subcontractors directly, the Contractor may add a maximum of 10% mark-up for overhead and profit combined.

.2 To the cost of the Work performed by Subcontractors for the Contractor, before the Subcontractor's mark-up, the Contractor may add a maximum of 10% mark-up for overhead and profit combined. The services of Superintendents shall be considered overhead, as shall the supply of Small Tools.

.3 On Work deleted from the Contract, not covered by unit prices, the credit to the Owner shall be the cost of the Work as set out in GC 6.3 – CHANGE DIRECTIVE, article 6.3.7.

.4 For a detailed list of what the Contractor may include in the cost of work before adding mark-ups, refer to GC 6.3 – CHANGE DIRECTIVE, article 6.3.7.

GC 6.5 DELAYS

6.5.1 Delete the period at the end of paragraph 6.5.1, and replace with the following words:

"but excluding any consequential, indirect or special damages."

6.5.2 Delete the period at the end of paragraph 6.5.2, and replace with the following words:

"but excluding any consequential, indirect or special damages."

6.5.3 Add:

the word "local" after the word "adverse".

6.5.6 Add:

"The party making the claim shall submit to the Consultant, within 10 Working Days, a detailed account of the Contract Time extension claimed and the grounds upon which the claim is based complete with required supporting documentation as determined by the Consultant."

6.5.7 Add:

"Should the Consultant, in consultation with the Contractor, determine the Contractor is delayed in performance of the Work, or any part thereof, by the Contractor's inaction, or by delay or inaction of anyone employed or engaged by the Contractor directly or indirectly, and the Contract Time is compromised:

.1 Then the Contractor shall accelerate the Work as required to meet the Contract Time.

.2 The Consultant will promptly give Notice in Writing of such determination to the Owner and the Contractor."
SUPPLEMENTARY GENERAL CONDITIONS

.3 The Contractor shall then promptly give the Owner and the Consultant Notice in Writing of specific changed to the construction scheduling and construction processes the Contractor will implement to accelerate the Work.

.4 The Contractor shall not be entitled to payment for costs to accelerate the Work to meet the Contract Time.

GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

6.6.1 Add:

“in no case more than 10 Working Days from the event or series of events giving rise to the claim.”

GC 6.7 PROVISIONAL WORK

6.7.1 Add:

“Provisional Work shall only be excluded from the Work if the Owner so directs by Change Order.”

PART 7 DEFAULT NOTICE

GC 7.1 OWNER’S RIGHT TO PERFORM THE WORK, STOP THE WORK, OR TERMINATE THE CONTRACT

7.1.1 Delete in its entirety and replace with:

“If the Contractor is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the Contractor’s insolvency, or applies to make a plan of compromise or arrangement pursuant to the Companies’ Creditors Arrangement Act, or if a receiver is appointed because of the Contractor's insolvency, the Owner may, without prejudice to any other right or remedy the Owner may have, terminate the Contractor’s right to continue with the Work, by giving the Contractor or receiver or trustee in bankruptcy Notice in Writing to that effect.”

6.1.5 In the first sentence, after the works “paragraph 7.1.1,” delete the word “and” replace with the word “or”.

PART 10 GOVERNING REGULATIONS

GC 10.2 LAWS, NOTICES, PERMITS AND FEES

10.2.8 Add:

“The Contractor shall provide to the Consultant copies of all inspection reports from the various authorities having jurisdiction with two Working Days of their receipt.”

PART 11 INSURANCE AND CONTRACT SECURITY

GC11.1 INSURANCE
GC11.1 is deleted in its entirety and replaced as follows:

**GC11.1 GENERAL INSURANCE REQUIREMENTS**

11.1.1 The Contractor and Subcontractors shall be required to file with the Owner on or prior to the date of this Agreement (or at such later time as they become Subcontractors), "Certificates of Insurance" in the form required by the Owner, and where required by the Owner’s Director of Risk Management, certified copies of all insurance policies and endorsements evidencing the placement and endorsement of insurance in accordance with this GC11.1 and GC11.2.

11.1.2 The Contractor and Subcontractors shall be required to file evidence of renewal of the insurance policies required under this GC11.1 and GC11.2 with the Owner at least fifteen (15) calendar days prior to their expiry.

11.1.3 In addition to the specific requirements set out below, all policies of insurance shall:

1. be endorsed so as to provide for thirty (30) calendar days' prior notice to the Owner of cancellation, lapse or material change;

2. if they are for property insurance (as opposed to liability) insurance, contain a waiver of subrogation in favour of the Owner Insurance Group (as defined below) and all employees and agents of the Owner Insurance Group;

3. specifically name the City of Nanaimo, the Consultant and their officials, officers, employees, agents and consultants engaged on the Project as additional insureds (collectively referred to as the "Owner Insurance Group");

4. be issued by a company or companies authorized to issue insurance policies in British Columbia; and

5. be issued on a policy form acceptable to the Owner.

11.1.4 Unless otherwise specified, insurance shall be continuously maintained from a date not later than the date hereof, through to the date on which both the Certificate of Completion has been issued for the Work and an occupancy permit, if required, has been issued for the Place of the Work.

**GC11.2 CONTRACT SECURITY**

GC11.2 is deleted in its entirety and replaced with the following:

**GC 11.2 SPECIFIC INSURANCE COVERAGE**
SUPPLEMENTARY GENERAL CONDITIONS

11.2.1 Without restricting the generality of GC12.1 – INDEMNIFICATION, and despite the limits of liability set out in GC12.1 – INDEMNIFICATION, the Contractor and Subcontractors, at their expense, shall retain the following types of insurance:

.1 Builder's Risk Course of Construction Insurance:

(a) The Contractor shall at all times during construction and until all conditions of this Contract (except guarantee provisions) have been fully complied with, keep all buildings, structures, works, equipment (other than Contractor's mobile equipment), and supplies, including materials which will form part of such building, works, or structure, which is the subject matter of this contract, insured in the name of the Owner and the Contractor for any amount not less than the Contract price against the following perils: "All risks of direct physical loss or damage from any cause whatsoever, including flood and earthquake.

(b) Such insurance shall be with Insurers and on forms acceptable to the Owner and shall contain the following clause:

"It is agreed that the right to subrogation against the Owner and the Consultant or any of their parent, subsidiary, or affiliated companies or corporations or any employee thereof is hereby waived."

(c) Coverage shall be on an "All Risks" basis, subject to a deductible provision not exceeding $2,500 for any one occurrence. The following exclusions shall be deemed permissible (additional or modified exclusions subject to permission of the Owner).

i. Any loss or use of occupancy howsoever caused;
ii. Penalties for non-completion of or delay in completion of Contract or non-compliance with Contract conditions;
iii. Cost of making good faulty workmanship, construction, or design, but this exclusion shall not apply to damage resulting from such faulty workmanship, construction, or design;
iv. Wear, tear, normal upkeep, and normal making good;
v. Loss, damage, or liability occasioned by, happening through or in consequence of war, invasion, hostilities, acts of foreign enemies, civil war, rebellion, insurrection, military or usurped power or martial law or confiscation by order of any government or public authority;
vi. Any weapon or war employing atomic fission or radioactive force whether in time of peace or war;

vii. Claims or liability arising directly or indirectly from nuclear fission, nuclear fusion, or radioactive contamination;
SUPPLEMENTARY GENERAL CONDITIONS

viii. Loss or damage caused by frost or freezing unless resulting from damage occasioned by fire and/or lighting and/or windstorm and/or hail and/or riot attending a strike and/or civil commotion and/or vehicles and/or smoke;

ix. Loss due to disappearance or revealed by inventory shortage alone;

x. Mechanical breakdown, but this exclusion shall not be deemed to exclude loss or damage arising as a consequence of mechanical breakdown;

xi. Infidelity of the Assured's employees;

xii. Loss or damage to material and/or equipment while in the course of ocean marine shipment, but this exclusion shall not apply to shipments by regular coast-wise vessels, regular ferry lines, or railway car transfer barges;

xiii. Automobiles or Contractor's equipment of every description.

.2 Liability Insurance:

(a) The Contractor shall buy and keep in force until twelve (12) months after the date of acceptance, and with respect to completed operations twenty-four (24) months, Comprehensive General Bodily Injury and Property Damage Liability Insurance. Such insurance shall be in the name of the Contractor, the Engineer and the Owner, and shall include a Cross Liability or Severability of Interest Clause. Such insurance shall be on a form and with an Insurer acceptable to the Owner. Both Personal Injury and Property Damage sections are to provide coverage on an "occurrence basis". Any property damage deductible shall not exceed $2,500 for any one occurrence.

(b) Exclusion pertaining to the following operations are to be deleted, if such operations are to be performed by the Contractor or anyone on his behalf:

i. Blasting or use of explosives;

ii. Pile driving;

iii. Excavation;

iv. Underpinning, shoring or removal or rebuilding of support;

v. Demolition

(c) Such insurance shall indemnify the Contractor for claims arising out of all premises, operations, subcontracted operations, completed operations, products, and for all liability for personal injury or property damage assumed by the Contractor under any contract or agreement (including this Contract).
SUPPLEMENTARY GENERAL CONDITIONS

(d) Such insurance shall be for the following minimum limits:

Bodily Injury and Property Damage - $5,000,000 Inclusive.

.3 Owned and Non-Owned Automobile Insurance:

(a) The Contractor shall maintain, until all conditions of the Contract have been fully complied with, such insurance as required under the Insurance (Motor Vehicle) Act of British Columbia. Such insurance shall be for the following limits:

Bodily Injury and Property Damage $3,000,000 Inclusive.

(b) The Contractor shall provide a Certificate of Insurance, ICBC for No. APV47 for owned or leased vehicles as evidence of third party motor vehicle insurance coverage.

.4 Contractor’s Equipment Insurance:

(a) Notwithstanding anything contained elsewhere herein, it is understood and agreed that the Owner and/or Consultant will not be liable for any loss or damage to Contractor’s equipment including loss of use thereof. Each and every policy ensuring Contractor’s equipment to be used on this project shall contain the following clause:

"It is agreed that the right to subrogation against the Owner and the Consultant or any of their parent, subsidiary or affiliated companies or corporations or any employee thereof is hereby waived."

PART 12 INDEMNIFICATION, WAIVER OF CLAIMS AND WARRANTY

GC 12.3 WARRANTY

12.3.4 Add:

"In effecting a correction of defects or deficiencies, the Contractor shall also bear all costs involved in removing, replacing, repairing, or restoring aspects of the Work that may be affected in the process of making the correction."

12.3.7 Add:

"Where a material, product or installation covered by warranty fails, the stipulated warranty and warranty period shall be renewed for the specific work being replaced or repaired, with the exception of warranties referred to in GC 12.3.6."
SUPPLEMENTARY GENERAL CONDITIONS

Add:
PART 13 – SAFETY

13.1 SAFETY / WORKSAFE BC

The Contractor and any approved Sub-Contractors must be registered in good standing with WorkSafe BC, in which case WorkSafe BC coverage must be maintained for the duration of the Contract. The Contractor agrees and shall:

i. Provide at its own expense the necessary WorkSafe BC compensation coverage for all its employees and partners employed or engaged in the execution of the Work;

ii. Remain current with all assessment reporting and payments due there under and shall comply in every respect with the requirements of the Workers' Compensation Act and Regulations; and

iii. Be solely responsible for ensuring all Sub-Contractors have proper WorkSafe BC coverage.

The Contractor will ensure compliance with and conform to all health and safety laws, by-laws or regulations of the Province of British Columbia, including without limitation the Workers Compensation Act and Regulations pursuant thereto.

The Contractor understands and undertakes to comply with all of the Workers' Compensation Board Occupational Health and Safety Regulations for hazardous materials and substances, and in particular with the "Workplace Hazardous Materials Information System (WHMIS)" Regulations. All "Safety Data Sheets (SDS)" will be shipped along with the Goods and any future SDS updates will be forwarded.

13.2 CONTRACTOR IS PRIME CONTRACTOR

The Contractor to this Contract is designated and assumes the responsibility as the Prime Contractor per WorkSafe BC OH&S Regulations Section 20.2 Notice of Project and 20.3 Coordination of Multiple Employer Workplaces and Workers' Compensation Act, Section 118 Coordination of Multiple-Employer Workplaces subsections (1) and (2). The Bidder must also understand the general duties of the Owner as defined in the Workers' Compensation Act, Section 119 General Duties of Owner. The Bidder must have the necessary qualification and be willing to accept the responsibilities as Prime Contractor for this Contract.

END OF
SECTION
Part 1  General

1.1  WORK COVERED BY CONTRACT DOCUMENTS

.1 Work of this Contract is comprised in general of the demolition and re-construction of north and west facades cladding and windows of the Nanaimo Centre Stage building located at 25 Victoria Road in Nanaimo BC.

.2 The work comprises: in general

.1 Demolition of existing façade cladding consisting of stucco/plaster, wood panel, brick and stone masonry and glass block glazing; demolition of roof overhangs and existing metal roof.

.2 Conservation of existing soft landscaping in the alley way.

.3 Removal of roof fascia, flashings and existing sheathing paper.

.4 Façade remediation consisting of necessary upgrades to substrate wall sheathing and wood wall framing as determined by the building envelope engineer.

.5 Repair or replace deteriorated structure as identified by building envelope engineer and/or structural engineer.

.6 Infill framing of the openings identified.

.7 Modification of the existing parapet and framing of new parapets.

.8 Reposition the existing services adjacent to the new exterior finish including but not limited to cables, gas lines, water pipes to accommodate the new façades.

.9 Installation of new water-resistant and air barrier and exterior rain-screen cladding consisting of brick veneer, cementitious board and panel cladding, c/w all necessary flashings etc.

.10 Modification of roof slopes and replacing drains to new scupper drains together with strainers, catch boxes and down pipes c/w new roof membrane tied into existing roof membrane.

.11 Construction of new timber entrance canopy together with new foundations, framing, soffit, lighting and metal roof. New sidewalk area where new footings are located. Sidewalk requirements as per City of Nanaimo standards.

.12 Removal and reinstall of existing accessories hung over or nested in the exterior wall including door bell and intercom system, mail slot, and poster boxes.

.13 Installation of new lighting and attachment for new signage.

.14 Installation of new aluminum windows and entrance door.

.15 Installation of new security enclosure along top of the retaining wall adjacent to ramp along Victoria Road complete with electrical work for release of locking mechanism at egress door.

.3 Perform work in accordance with British Columbia Building Code 2018 Edition and any other code of provincial or local application, provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

.1 Meet or exceed requirements of contract documents, specified standards, codes and referenced documents.

1.2  CONTRACT METHOD

.1 Construct Work under stipulated price contract.
.2 Relations and responsibilities between Contractor and subcontractors and suppliers and subcontractors assigned by Owner are as defined in Conditions of Contract. Assigned Subcontractors must, in addition:

   .1 Furnish to Contractor, bonds covering faithful performance of subcontracted work and payment of obligations thereunder when Contractor is required to furnish such bonds to Consultant.

   .2 Purchase and maintain liability insurance to protect Contractor from claims for not less than limits of liability which Contractor is required to provide to Consultant.

1.3 CONTRACTOR USE OF PREMISES

   .1 Co-ordinate use of premises under direction of Owner and Consultant.

   .2 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

   .3 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.

   .4 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Consultant.

   .5 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.4 OWNER OCCUPANCY

   .1 Owner/Tenant will occupy premises during entire construction period for execution of normal operations.

   .2 Co-operate with Owner/Tenant in scheduling remediation construction to minimize conflict and to facilitate Owner/Tenant usage.

1.5 EXISTING SERVICES

   .1 Notify Owner, Consultant and utility companies of intended interruption of services and obtain required permission.

   .2 Where Work involves breaking into or connecting to existing services, give Owner 48 hours notice for necessary interruption of mechanical, fire suppression or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to Owner’s operations.

   .3 Provide alternative routes for personnel and vehicular traffic.

   .4 Establish location and extent of service lines in area of work before starting Work. Notify Consultant of findings.

   .5 Submit schedule to and obtain approval from Owner/Consultant for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.

   .6 Provide temporary services when directed by Consultant to maintain critical building and tenant systems.
.7 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.

.8 Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.

.9 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.

.10 Record locations of maintained, re-routed and abandoned service lines.

.11 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.6 DOCUMENTS REQUIRED

.1 Maintain at job site, one copy each document as follows:

.1 Contract Drawings.
.2 Specifications.
.3 Addenda.
.4 Reviewed Shop Drawings.
.5 List of Outstanding Shop Drawings.
.6 Change Orders.
.7 Other Modifications to Contract.
.8 Field Test Reports.
.9 Copy of Approved Work Schedule.
.10 Health and Safety Plan and Other Safety Related Documents.
.11 Other documents as specified.

END OF SECTION
Part 1  General

1.1  ACCESS AND EGRESS
   .1  Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

1.2  USE OF SITE AND FACILITIES
   .1  Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with the Owner and Consultant to facilitate work as stated.
   .2  Maintain existing services to building and provide for personnel access.
   .3  Where security is reduced by work provide temporary means to maintain security.

1.3  ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING
   .1  Execute work with least possible interference or disturbance to building operations, occupants, public and normal use of premises.

1.4  EXISTING SERVICES
   .1  Notify the Owner, Consultant and utility companies of intended interruption of services and obtain required permission.
   .2  Where Work involves breaking into or connecting to existing services, provide Owner and Consultant 48 hours of notice for necessary interruption of mechanical or electrical service throughout course of work. Keep duration of interruptions minimum.
   .3  Maintain pedestrian and vehicular traffic.
   .4  Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.5  SPECIAL REQUIREMENTS
   .1  Carry out noise generating Work Monday to Friday from 07:00 to 17:00 hours.
   .2  Keep within limits of work and avenues of ingress and egress.
   .3  Limit ingress and egress of Contractor vehicles at site.
   .4  Submit a Site plan including parking plan to the Owner and Consultant for approval prior to starting the work.

1.6  SECURITY
   .1  Where security has been reduced by Work of Contract, provide temporary means to maintain security.

1.7  BUILDING SMOKING ENVIRONMENT
   .1  Smoking is not permitted on the property.

END OF SECTION
Part 1  General

1.1  ADMINISTRATIVE

.1 Contractor to attend project meetings every two weeks.
.2 Consultant to schedule and prepare agenda for meetings.
.3 Consultant to record and distribute meeting minutes.
.4 Contractor to provide physical space and make arrangements for meetings.
.5 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.2  PRECONSTRUCTION MEETING

.1 Within 15 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
.2 Owner, Consultant, Contractor, and major Subcontractors will be in attendance.
.3 Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
.4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
.5 Agenda by Consultant to include:
   .1 Appointment of official representative of participants in the Work.
   .2 Schedule of Work: in accordance with Section 3.5 of the General Conditions.
   .3 Schedule of submission of shop drawings, samples, colour chips. Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
   .4 Site security in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
   .5 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
   .6 Record drawings in accordance with Section 01 33 00 - Submittal Procedures.
   .7 Maintenance manuals in accordance with Section 01 78 00 - Closeout Submittals.
   .8 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 - Closeout Submittals.
   .9 Monthly progress claims, administrative procedures, photographs, hold backs.
   .10 Appointment of inspection and testing agencies or firms.
   .11 Insurances, transcript of policies.

1.3  PROGRESS MEETINGS

.1 During course of Work, progress meetings will be scheduled every 2 weeks.
.2 Contractor, major Subcontractors involved in Work, the Owner, and Consultant are to be in attendance.
.3 Consultant to record minutes of meetings and circulate to attending parties and affected parties not in attendance within 1 week after meeting.
.4 Agenda by Consultant to include the following:

.1 Review, approval of minutes of previous meeting.
.2 Review of Work progress since previous meeting.
.3 Progress schedule, during succeeding work period.
.4 Field observations, problems, conflicts.
.5 Problems which impede construction schedule.
.6 Review of off-site fabrication delivery schedules.
.7 Corrective measures and procedures to regain projected schedule.
.8 Revision to construction schedule.
.9 Review submittal schedules: expedite as required.
.10 Maintenance of quality standards.
.11 Review proposed changes for affect on construction schedule and on completion date.
.12 Other business.

END OF SECTION
Part 1 General

1.1 ADMINISTRATIVE

.1 Submit to Consultant submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.2 Do not proceed with Work affected by submittal until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.

.6 Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify field measurements and affected adjacent Work are co-ordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.

.10 Keep one reviewed copy of each submission on site.

1.2 SHOP DRAWINGS AND PRODUCT DATA

.1 Refer to CCDC 2 GC 3.10.

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Adjustments made on shop drawings by the Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Consultant or the Owner prior to proceeding with Work.

.4 Make changes in shop drawings as the Consultant may require, consistent with Contract Documents. When resubmitting, notify the Consultant in writing of revisions other than those requested.

.5 Accompany submissions with transmittal letter, containing:

.1 Date.

.2 Project title and number.

.3 Contractor's name and address.

.4 Identification and quantity of each shop drawing, product data and sample.
.5 Other pertinent data.

.6 Submissions include:

.1 Date and revision dates.
.2 Project title and number.
.3 Name and address of:
   .1 Subcontractor.
   .2 Supplier.
   .3 Manufacturer.
.4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
.5 Details of appropriate portions of Work as applicable:
   .1 Fabrication.
   .2 Layout, showing dimensions, including identified field dimensions, and clearances.
   .3 Setting or erection details.
   .4 Capacities.
   .5 Performance characteristics.
   .6 Standards.
   .7 Operating weight.
   .8 Wiring diagrams.
   .9 Single line and schematic diagrams.
   .10 Relationship to adjacent work.

.7 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as the Consultant or Owner may reasonably request.

.8 Submit electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by the Consultant where shop drawings will not be prepared due to standardized manufacture of product.

.9 Submit electronic copy of test reports for requirements requested in specification Sections and as requested by the Consultant.

   .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
   .2 Testing must have been within 3 years of date of contract award for project.

.10 Submit electronic copy of certificates for requirements requested in specification Sections and as requested by the Consultant.

   .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
   .2 Certificates must be dated after award of project contract complete with project name.

.11 Submit electronic copy of manufacturer's instructions for requirements requested in specification Sections and as requested by the Consultant.

   .1 Pre-printed material describing installation of product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.
.12 Submit electronic copy of manufacturer's field reports for requirements requested in specification Sections and as requested by the Consultant.

.13 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.14 Submit electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by the Consultant.

.15 Delete information not applicable to project.

.16 Supplement standard information to provide details applicable to project.

.17 If upon review by the Consultant, no errors or omissions are discovered or if only minor corrections are made, copy will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.3 SAMPLES

.1 Submit for review samples in as requested in respective specification Sections. Label samples with origin and intended use.

.2 Deliver samples prepaid to site office.

.3 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by the Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Consultant prior to proceeding with Work.

.6 Make changes in samples which the Consultant or Owner may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.4 MOCK-UPS

.1 Erect mock-ups in accordance with 01 45 00 - Quality Control.

1.5 PHOTOGRAPHIC DOCUMENTATION

.1 Submit electronic copies of colour digital photography in jpg format, standard resolution monthly with progress statement and as directed by the Consultant.

.2 Project identification: name of project and date of exposure indicated.

.3 Number of viewpoints: 4 locations.

.4 Frequency of photographic documentation: weekly or as directed by the Consultant.

.5 Upon completion of: demo, framing, and services before concealment of Work, and as directed by the Consultant.

END OF SECTION
Part 1 General

1.1 REFERENCE STANDARDS

.1 Canadian Construction Documents Committee (CCDC)
  .1 CCDC 2-2008, Stipulated Price Contract.

1.2 INSPECTION

.1 Refer to CCDC 2, GC 2.3.

1.3 INDEPENDENT INSPECTION AGENCIES

.1 Independent Inspection/Testing Agencies as required will be engaged by the Consultant for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by the Owner.
  .2 Provide equipment required for executing inspection and testing by appointed agencies.
  .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
  .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by the Consultant at no cost to the Owner. Pay costs for retesting and re-inspection.

1.4 ACCESS TO WORK

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
  .2 Co-operate to provide reasonable facilities for such access.

1.5 PROCEDURES

.1 Notify appropriate agency and Consultant in advance of requirement for tests, in order that attendance arrangements can be made.
  .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
  .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.6 REJECTED WORK

.1 Refer to CCDC, GC 2.4.
  .2 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by the Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
  .3 Make good other Contractor's work damaged by such removals or replacements promptly.
If in opinion of the Consultant it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by the Consultant.

1.7 REPORTS

.1 Submit copies of inspection and test reports to the Consultant.

.2 Provide copies to subcontractor of work being inspected or tested.

1.8 TESTS AND MIX DESIGNS

.1 Furnish test results and mix designs as requested.

.2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by the Consultant and may be authorized as recoverable.

1.9 MOCK-UPS

.1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of Sections required to provide mock-ups.

.2 Construct in locations acceptable to the Consultant.

.3 Prepare mock-ups for the Consultant's review with reasonable promptness and in orderly sequence, to not cause delays in Work.

.4 Failure to prepare mock-ups in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

.5 If requested, the Consultant will assist in preparing schedule fixing dates for preparation.

.6 Remove mock-up at conclusion of Work or when acceptable to the Consultant.

.7 Mock-ups may remain as part of Work.

.8 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

1.10 MILL TESTS

.1 Submit mill test certificates as required of specification Sections.

1.11 EQUIPMENT AND SYSTEMS

.1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.
Part 1 General

1.1 SUBMITTALS
   .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.2 INSTALLATION AND REMOVAL
   .1 Provide temporary utilities controls in order to execute work expeditiously.
   .2 Remove from site all such work after use.

1.3 DEWATERING
   .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.4 WATER SUPPLY
   .1 Owner will provide continuous supply of potable water for construction use.

1.5 TEMPORARY HEATING AND VENTILATION
   .1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.
   .2 Construction heaters used inside building must be vented to outside or be flameless type. Solid fuel salamanders are not permitted.
   .3 Provide temporary heat and ventilation in enclosed areas as required to:
      .1 Facilitate progress of Work.
      .2 Protect Work and products against dampness and cold.
      .3 Prevent moisture condensation on surfaces.
      .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
      .5 Provide adequate ventilation to meet health regulations for safe working environment.
   .4 Maintain temperatures of minimum 10 degrees Celsius in areas where construction is in progress.
   .5 Ventilating:
      .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.
      .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
      .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
      .4 Ventilate storage spaces containing hazardous or volatile materials.
      .5 Ventilate temporary sanitary facilities.
      .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
.6 On completion of Work for which permanent heating system is used, replace filters and clean duct work.

.7 Ensure Date of Substantial Performance and Warranties for heating system do not commence until entire system is in as near original condition as possible and is certified by the Consultant.

.8 Maintain strict supervision of operation of temporary heating and ventilating equipment to:

.1 Conform with applicable codes and standards.
.2 Enforce safe practices.
.3 Prevent abuse of services.
.4 Prevent damage to finishes.
.5 Vent direct-fired combustion units to outside.

.9 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.6 TEMPORARY POWER AND LIGHT

.1 Owner provide temporary power during construction for temporary lighting and operating of power tools.

.2 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of the Contractor.

.3 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 162 lx.

.4 Power supply is available and will be provided for construction use at no cost. Connect to existing power supply in accordance with Canadian Electrical Code.

.5 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of the Consultant provided that guarantees are not affected.

.1 Repair damage to electrical system caused by use under this Contract.
.2 Replace lamps which have been used for more than 3 months.

1.7 TEMPORARY COMMUNICATION FACILITIES

.1 Provide and pay for temporary telephone, fax, data hook up, lines and equipment necessary for own use and use of the Consultant.

1.8 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

.2 Burning rubbish and construction waste materials is not permitted on Site.
Part 1 General

1.1 RELATED REQUIREMENTS
   .1 Section 01 51 00 – Temporary Utilities.

1.2 REFERENCE STANDARDS
   .1 Canadian General Standards Board (CGSB)
     .1 CGSB 1.59-[97], Alkyd Exterior Gloss Enamel.
     .2 CAN/CGSB 1.189-[00], Exterior Alkyd Primer for Wood.
   .2 CSA Group (CSA)

1.3 INSTALLATION AND REMOVAL
   .1 Provide temporary controls in order to execute Work expeditiously.
   .2 Remove from site all such work after use.

1.4 HOARDING
   .1 Erect and maintain pedestrian walkways including roof and side covers, complete with
     signs and electrical lighting as required by law.
   .2 Provide temporary site enclosure using security fence panels 10’ W x 6’ H. Maintain
     fence in good repair.
   .3 Provide barriers around trees and plants designated to remain. Protect from damage by
     equipment and construction procedures.

1.5 GUARD RAILS AND BARRICADES
   .1 Provide secure, rigid guard rails and barricades as required by WorkSafeBC.

1.6 WEATHER ENCLOSURES
   .1 Provide weather tight closures to unfinished door and window openings, tops of shafts
     and other openings in floors and roofs.
   .2 Close off floor areas where walls are not finished; seal off other openings; enclose
     building interior work for temporary heat.
   .3 Design enclosures to withstand wind pressure and snow loading.

1.7 DUST TIGHT SCREENS
   .1 Provide dust tight screens to localize dust generating activities, and for protection of
     workers, finished areas of Work and public.
   .2 Maintain and relocate protection until such work is complete.

1.8 ACCESS TO SITE
   .1 Provide and maintain access roads, sidewalks, ramps and construction runways as may
     be required for access to Work.
1.9  PUBLIC TRAFFIC FLOW
.1  Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

1.10  FIRE ROUTES
.1  Maintain access to property including overhead clearances for use by emergency response vehicles.

1.11  PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY
.1  Protect surrounding private and public property from damage during performance of Work.
.2  Be responsible for damage incurred.

1.12  PROTECTION OF BUILDING FINISHES
.1  Provide protection for finished and partially finished building finishes and equipment during performance of Work.
.2  Provide necessary screens, covers, and hoardings.
.3  Confirm with Consultant locations and installation schedule 3 days prior to installation.
.4  Be responsible for damage incurred due to lack of or improper protection.

1.13  WASTE MANAGEMENT AND DISPOSAL
.1  Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

END OF SECTION
Part 1  General

1.1  REFERENCE STANDARDS

.1 Canadian Construction Documents Committee (CCDC)
   .1 CCDC 2-2008, Stipulated Price Contract.

1.2  PROJECT CLEANLINESS

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.

.2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by the Consultant. Do not burn waste materials on site, unless approved by the Consultant.

.3 Clear snow and ice from access to building, bank/pile snow in designated areas only.

.4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.5 Provide on-site containers for collection of waste materials and debris.

.6 Provide and use marked separate bins for recycling. Refer to Section 01 74 19 - Waste Management and Disposal.

.7 Dispose of waste materials and debris off site or at designated areas on Owner’s property as directed by the Owner.

.8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.

.9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

.11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3  FINAL CLEANING

.1 Refer to CCDC 2, GC 3.13.

.2 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

.3 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.4 Prior to final review remove surplus products, tools, construction machinery and equipment.

.5 Remove waste products and debris [other than] [including] that caused by Owner or other Contractors.
.6 Remove waste materials from site at regularly scheduled times or dispose of as directed by the Consultant or Owner.

.7 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.8 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.

.9 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and floors.

.10 Clean lighting reflectors, lenses, and other lighting surfaces.

.11 Vacuum clean and dust building interiors, behind grilles, louvres and screens.

.12 Wax, seal, or prepare floor finishes, as recommended by manufacturer.

.13 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

.14 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.

.15 Remove dirt and other disfiguration from exterior surfaces.

.16 Clean and sweep roofs, gutters, areaways, and sunken wells.

.17 Sweep and wash clean paved areas.

.18 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.

.19 Clean roofs, downspouts, and drainage systems.

.20 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

.21 Remove snow and ice from access to building.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

END OF SECTION
Part 1  General

1.1  SUMMARY
.1 Implementation of Construction Waste Management Plan.
.2 Disposal of unsalvageable and non-recyclable waste.

1.2  REFERENCES
.1 Canadian Construction Association:

1.3  DEFINITIONS
.1 Construction Waste Management Plan: inclusive of the Waste Audit (WA), Waste Management Workplan (WMW) and the Materials Source Separation Program.

.2 Materials Source Separation Program (MSSP): a series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.

.3 Recyclable: ability of product or material to be recovered at the end of its life cycle and remanufactured into new product.

.4 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being re-remanufacture into a new product.

.5 Source Separation: act of keeping different waste types separate for distribution into appropriate recycling/disposal bins.

.6 Waste Management Coordinator (WMC): contractor representative responsible for supervising waste management activities as well as coordinating submittal and reporting duties.

.7 Waste reduction Workplan (WRW): a report addressing opportunities for reduction, reuse, and recycling of construction wastes. Based on the results of the waste audit.

.8 [Construction Waste Management Plan]: A project related plan for the collection, transportation, and disposal of the waste generated at the construction site; the purpose of the plan is to ultimately reduce the amount of material being landfilled.

1.4  SUBMITTALS
.1 Provide requested information in accordance with Section 01 33 00- Submittals.

.2 Prepare and submit, prior to project start-up, an electronic copy of each:
   .1 Waste Audit
   .2 Waste Reduction Workplan
   .3 Material Source Separation Plan

1.5  WASTE REDUCTION WORKPLAN (WRW)
.1 WRW to include but not be limited to:
   .1 Destination of materials
.2 Security
.3 Protection
.4 Clear labelling of storage areas
.5 Details on material handling and removal

1.2 Structure WRW to follow the hierarchy of the 3Rs: reduce, reuse, recycle.

1.6 MATERIALS SOURCE SEPARATION PROGRAM (MSSP)
.1 Implement MSSP for waste generated on site in compliance with approved methods.
.2 Provide conveniently-located, on-site facilities for collection, handling and storage of anticipated quantities of reusable, recyclable and waste materials.

1.7 STORAGE, HANDLING AND PROTECTION
.1 Store materials for reuse and recycling in locations as directed by Consultant.
.2 Unless otherwise indicated, materials for removal are the property of the Contractor.
.3 Prevent contamination of materials for reuse and recycling by handling in accordance with requirements for acceptance by designated facilities.

1.8 WASTE DISPOSAL
.1 Hazardous materials to be separated from landfill waste and disposed of appropriately.

Part 2 Products

2.1 NOT USED
.1 Not Used.

Part 3 Execution

3.1 DIVERSION OF MATERIALS
.1 Separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by Consultant, and consistent with applicable fire regulations.
.1 Mart containers or stockpile areas.
.2 Provide instruction on disposal practices.
.2 Construction waste recommended diversion percentages:
.1 Recommended diversion 100%:
.1 Cardboard
.2 Metals
.3 Rubble
.4 Steel
.5 Wood
.6 Gypsum Board

3.2 SAMPLE CONSTRUCTION WASTE MANAGEMENT FORMS
.1 Sample waste tracking form below can be used by the Contractor to establish their own forms for recording management of construction waste:

**SAMPLE WASTE MANAGEMENT FORM**

<table>
<thead>
<tr>
<th>Material Stream</th>
<th>Diverted Waste by Report Date</th>
<th>Total</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept</td>
<td>Oct</td>
<td>Nov</td>
</tr>
<tr>
<td>Plastic</td>
<td>1.25</td>
<td>2.5</td>
<td>10</td>
</tr>
<tr>
<td>Carpet</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Paper/Cardboard</td>
<td>5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Clean Wood</td>
<td>0</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Metal</td>
<td>1.25</td>
<td>2.5</td>
<td>5.5</td>
</tr>
<tr>
<td>Gypsum Board</td>
<td>2.5</td>
<td>2.5</td>
<td>4</td>
</tr>
<tr>
<td>Brick/Concrete</td>
<td>10.5</td>
<td>2.5</td>
<td>5.5</td>
</tr>
<tr>
<td>Asphalt Shingles</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Diverted Waste</td>
<td>135</td>
<td>m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material Stream</th>
<th>Diverted Waste by Report Date</th>
<th>Total</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept</td>
<td>Oct</td>
<td>Nov</td>
</tr>
<tr>
<td>Landfill</td>
<td>10.75</td>
<td>7.5</td>
<td>15</td>
</tr>
<tr>
<td>Screen Fines (ADC)</td>
<td>5</td>
<td>1.25</td>
<td>0</td>
</tr>
<tr>
<td>150 mm Minus (ADC)</td>
<td>1.25</td>
<td>1.25</td>
<td>5</td>
</tr>
<tr>
<td>Total Landfill/ADC Waste</td>
<td>65</td>
<td>m³</td>
<td></td>
</tr>
</tbody>
</table>

Total Diverted Waste: 135 m³

Total Waste: 200 m³

Percent Diverted: 67.5 %

END OF SECTION
Part 1 General

1.1 RELATED REQUIREMENTS
   .1 Section 01 78 00 – Close-out Submittals.

1.2 REFERENCE STANDARDS
   .1 Canadian Construction Documents Committee (CCDC)
     .1 CCDC 2-2008, Stipulated Price Contract.

1.3 ADMINISTRATIVE REQUIREMENTS
   .1 Acceptance of Work Procedures:
     .1 Contractor's Inspection: Contractor and Subcontractors: conduct inspection of
       Work, identify deficiencies and defects, and repair as required to conform to
       Contract Documents.
     .1 Notify Consultant in writing of satisfactory completion of Contractor's
       inspection and submit verification that corrections have been made.
     .2 Request Consultant's inspection.
     .2 Consultant's Inspection:
       .1 Consultant and Contractor to inspect Work and identify defects and
         deficiencies.
       .2 Contractor to correct Work as directed.
     .3 Completion Tasks: submit written certificates that tasks have been performed as
       follows:
       .1 Work has been completed and inspected for compliance with Contract
         Documents.
       .2 Defects have been corrected and deficiencies completed.
       .3 Equipment and systems have been tested, adjusted and balanced and
         are fully operational.
       .4 Certificates required by Boiler Inspection Branch, Fire Department, Utility
         companies have been submitted.
       .5 Operation of systems has been demonstrated to Owner's personnel.
       .6 Work is complete and ready for final inspection.
     .4 Final Inspection: when completion tasks are done, request final inspection of
       Work by Owner and Consultant. When Work is incomplete according to Owner
       and Consultant, complete outstanding items and request re-inspection.
     .5 Declaration of Substantial Performance: when the Owner and Consultant
       consider deficiencies and defects corrected and requirements of Contract
       substantially performed, make application for Certificate of Substantial
       Performance. Refer to CCDC 2, General Conditions for specifics to application.
     .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of
       submitted declaration of Substantial Performance to be date for commencement
       for warranty period and commencement of lien period unless required otherwise
       by lien statute of Place of Work.
     .7 Final Payment: When Owner and Consultant consider final deficiencies and
       defects corrected and requirements of Contract met, make application for final
payment. When Work deemed incomplete by Owner and Consultant, complete outstanding items and request re-inspection.

.8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

1.4 FINAL CLEANING

.1 Clean in accordance with Section 01 74 00 - Cleaning.

.1 Remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION
Part 1  General

1.1  RELATED REQUIREMENTS

.1  Section 01 33 00 – Submittal Procedures.

1.2  ACTION AND INFORMATIONAL SUBMITTALS

.1  Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2  Two weeks prior to Substantial Performance of the Work, submit to the Consultant, the final copies of the operating and maintenance manuals in English.

.3  Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.

.4  Provide evidence, if requested, for type, source and quality of products supplied.

.5  Defective products will be rejected, regardless of previous inspections. Replace products at own expense. Pay costs of transportation.

1.3  FORMAT

.1  Organize data as instructional manual.

.2  Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.

.3  When multiple binders are used correlate data into related consistent groupings. Identify contents of each binder on spine.

.4  Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

.5  Arrange content by systems, process flow, under Section numbers and sequence of Table of Contents.

.6  Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

.7  Text: manufacturer's printed data, or typewritten data.

.8  Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.4  CONTENTS - PROJECT RECORD DOCUMENTS

.1  Table of Contents for Each Volume: provide title of project;

.1.1  Date of submission; names.

.2  Addresses, and telephone numbers of Consultant, Owner, Contractor, and Subcontractors with name of responsible parties.

.3  Schedule of products and systems, indexed to content of volume.

.2  For each product or system:

.1  List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3  Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
.4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

1.5 AS -BUILT DOCUMENTS AND SAMPLES

.1 Maintain, in addition to requirements in General Conditions, at site for the Consultant one record copy of:

.1 Contract Drawings.
.2 Specifications.
.3 Addenda.
.4 Change Orders and other modifications to Contract.
.5 Reviewed shop drawings, product data, and samples.
.6 Field test records.
.7 Inspection certificates.
.8 Manufacturer's certificates.

.2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.

.3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.

.4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.

.5 Keep record documents and samples available for inspection by the Consultant.

1.6 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

.1 Record information on set of black line opaque drawings.

.2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.

.3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.

.4 Contract Drawings and shop drawings: mark each item to record actual construction, including:

.1 Measured depths of elements of foundation in relation to finish first floor datum.
.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
.3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
.4 Field changes of dimension and detail.
.5 Changes made by change orders.
.6 Details not on original Contract Drawings.
.7 Referenced Standards to related shop drawings and modifications.

.5 Specifications: mark each item to record actual construction, including:
.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.

.2 Changes made by Addenda and change orders.

.6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

.7 Provide digital photos, if requested, for site records.

1.7 EQUIPMENT AND SYSTEMS

.1 For each item of equipment and each system include description of unit or system, and component parts. Give function, normal operation characteristics and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.

.12 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.13 Include test and balancing reports as specified in Section 01 45 00 - Quality Control.

.14 Additional requirements: as specified in individual specification sections.

1.8 MATERIALS AND FINISHES

.1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and weather-exposed products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Additional requirements: as specified in individual specifications sections.
1.9 MAINTENANCE MATERIALS

.1 Spare Parts:
   .1 Provide spare parts, in quantities specified in individual specification sections.
   .2 Provide items of same manufacture and quality as items in Work.
   .3 Deliver to site; place and store.
   .4 Receive and catalogue items. Submit inventory listing to the Consultant. Include approved listings in Maintenance Manual.
   .5 Obtain receipt for delivered products and submit prior to final payment.

.2 Extra Stock Materials:
   .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
   .2 Provide items of same manufacture and quality as items in Work.
   .3 Deliver to site; place and store.
   .4 Receive and catalogue items. Submit inventory listing to the Consultant. Include approved listings in Maintenance Manual.
   .5 Obtain receipt for delivered products and submit prior to final payment.

.3 Special Tools:
   .1 Provide special tools, in quantities specified in individual specification section.
   .2 Provide items with tags identifying their associated function and equipment.
   .3 Deliver to site; place and store.
   .4 Receive and catalogue items. Submit inventory listing to the Consultant. Include approved listings in Maintenance Manual.

1.10 DELIVERY, STORAGE AND HANDLING

.1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
.2 Store in original and undamaged condition with manufacturer’s seal and labels intact.
.3 Store components subject to damage from weather in weatherproof enclosures.
.4 Store paints and freezable materials in a heated and ventilated room.
.5 Remove and replace damaged products at own expense and for review by the Consultant.

1.11 WARRANTIES AND BONDS

.1 Assemble warranties and bonds, including all pertinent information in binder and submit upon acceptance of work. Organize binder as follows:
   .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
   .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
   .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within [ten] days after completion of applicable item of work.
   .4 Verify that documents are in proper form, contain full information, and are notarized.
   .5 Co-execute submittals when required.
.6 Retain warranties and bonds until time specified for submittal.

.2 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.

.3 Respond in timely manner to oral or written notification of required construction warranty repair work.

END OF SECTION
Part 1  General

1.1  SUMMARY

.1 This Section includes requirements for the following:
   .1 Demolition and removal of buildings and structures.
   .2 Demolition and removal of site improvements adjacent to a building or structure being demolished.
   .3 Demolition and removal of concrete foundations and piles.
   .4 Abandoning in place and/or Removing below grade construction.
   .5 Disconnecting, capping or sealing, and/or abandoning in place and/or removing site utilities.

.2 This section does not include for the removal of Hazardous Substances or asbestos abatement, or selective demolition of interior building components and finishes.

.3 Drawings contain details that suggest directions for solving some of the major demolition and removal requirements for this project; contractor representative is required to develop these details further by submitting a demolition plan prepared by a professional engineer.

1.2  REFERENCE STANDARDS

.1 Canada Green Building Council (CaGBC)
   .1 LEED® Reference Guide for Building Design and Construction, Version 4

.2 CSA Group (CSA)

.3 Department of Justice Canada (Jus)
   .1 Canadian Environmental Assessment Act (CEAA), 2012.
   .2 Canadian Environmental Protection Act (CEPA), 2012.
      .1 SOR/2003-2, On-Road Vehicle and Engine Emission Regulations.
      .2 SOR/2006-268, Regulations Amending the On-Road Vehicle and Engine Emission Regulations.
      .3 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.
      .4 Motor Vehicle Safety Act (MVSA), 1995
      .5 Hazardous Substances Information Review Act, 1985

.4 National Fire Protection Association (NFPA)
   .1 NFPA 241-13, Standard for Safeguarding Construction, Alteration, and Demolition Operations

.5 National Research Council Canada (NRC)
1.3 DEFINITIONS

.1 Demolition: rapid destruction of building following removal of Hazardous Substances.

.2 Hazardous Substances: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or wellbeing or environment if handled improperly as defined by the Federal Hazardous Products Act (RSC 1985) including latest amendments.

.3 [Waste Management Co-ordinator (WMC): contractor representative responsible for supervising waste management activities as well as co-ordinating related, required submittal and reporting requirements].

.4 Draft Construction Waste Management Plan (Draft CWM Plan): Detailed inventory of materials in building indicating estimated quantities of reuse, recycling and landfill, prepared in accordance with Section 01 74 19 - Waste Management and Disposal and as follows:

.1 Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project

.5 Construction Waste Management Plan (CWM Plan): Written plan addressing opportunities for reduction, reuse, or recycling of materials prepared in accordance with Section 01 74 19 - Waste Management and Disposal.

.6 Construction Waste Management Report (CWM Report): Written report identifying actual materials that formed CWM Plan for reduction, reuse, or recycling of materials prepared in accordance with Section 01 74 19 - Waste Management and Disposal.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Coordination: Coordinate with owner for the material ownership as follows:
.1 Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain owner’s property, demolished materials shall become Contractor's property and shall be removed from Project site.

.2 Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to the owner that may be encountered during demolition remain the Owner's property:
   .1 Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to the owner.
   .2 Coordinate with the owner’s, who will establish special procedures for removal and salvage operations.

1.5 QUALITY ASSURANCE

.1 Regulatory Requirements: Ensure Work is performed in compliance with [CEPA,] [CEAA,] [TDGA,] [and] [applicable Provincial/Territorial and Municipal regulations].
   .1 Comply with hauling and disposal regulations of Authority Having Jurisdiction.
   .2 Standards: Comply with ANSI A10.6 and NFPA 241

.2 Regulatory Requirements: Perform work of this Section in accordance with the following:
   .1 [Federal Workers' Compensation Service] [Provincial/Territorial Workers' Compensation Boards/Commissions].

1.6 SITE CONDITIONS

.1 Environmental protection:
   .1 Ensure Work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
   .2 Fires and burning of waste or materials is not permitted on site.
   .3 Do not bury rubbish waste materials.
   .4 Do not dispose of waste or volatile materials including but not limited to: mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
   .5 Ensure proper disposal procedures are maintained throughout project.

.2 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with [authorities having jurisdiction] [as directed by [Departmental Representative] [DCC Representative] [Consultant]].

.4 Protect trees, plants and foliage on site and adjacent properties where indicated.

.5 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.
.6 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.

.7 Another owner will occupy another building immediately adjacent to demolition area.

.8 Conduct structure demolition Owner's operations will not be disrupted:

.1 Provide not less than 72 hours' notice to owner’s of activities that will affect operations.

.2 Maintain access to existing walkways, exits, and other adjacent occupied or used facilities:

.1 Do not close or obstruct walkways, exits, or other occupied or used facilities without written permission from the consultant and Authority Having Jurisdiction.

.9 Consultant assumes no responsibility for buildings and structures being demolished:

.1 Conditions existing at time of inspection for bidding purpose will be maintained by the owner as far as practical.

1.7 EXISTING CONDITIONS

.1 Existing Conditions: Condition of materials identified as being salvaged or demolished are based on their observed condition at time of site examination before tendering.

.2 Existing Hazardous Substances: Owner has performed a hazardous substances assessment and identified materials requiring abatement as per the hazardous materials report and as follows:

.1 Hazardous substances are as defined in the Hazardous Products Act.

.2 Hazardous substances will be removed by the Contractor as a part of the Contract before starting Work in accordance with work results described in Related Requirements listed above.

.3 Discovery of Hazardous Substances: Immediately notify Consultant if materials suspected of containing hazardous substances are encountered and perform the following activities:

.1 Hazardous substances will be as defined in the Hazardous Products Act.

.2 Stop work in the area of the suspected hazardous substances.

.3 Take preventative measures to limit users' and workers' exposure, provide barriers and other safety devices and do not disturb.

.4 Hazardous substances will be removed by Owner under a separate contract or as a change to the Work.

.5 Proceed only after written instructions have been received from the owner or consultant.

Part 2 Products

2.1 TEMPORARY SUPPORT STRUCTURES
.1 Design temporary support structures required for demolition work and underpinning and other foundation supports necessary for the project using a qualified professional engineer registered or licensed in Province of the Work.

Part 3 Execution

3.1 EXAMINATION

.1 Survey existing conditions and correlate with requirements indicated to determine extent of structure demolition required.

.2 Review Project Record Documents of existing construction provided by the consultant

.3 Consultant does not guaranty that existing conditions are the same as those indicated in Project Record Documents.

.4 When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element.

.5 Promptly submit a written report to Consultant.

.6 Verify that Hazardous Substances have been remediated before proceeding with construction activity.

3.2 DEMOLITION

.1 Protect demolition work in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

.2 Remove contaminated or dangerous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.

.3 Prior to start of Work remove contaminated or hazardous materials from site and dispose of at designated disposal facilities in safe manner and in accordance with TDGA and other applicable requirements. Refer Existing Conditions in PART 1.

.4 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.

.5 At end of each day's work, leave Work in safe and stable condition.

.6 Protect interiors of parts not to be demolished from exterior elements at all times.

.7 Demolish to minimize dusting. Keep materials wetted.

.8 Contain fibrous materials to minimize release of airborne fibres while being transported within facility.

.8 Remove and dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.

3.3 REPAIRS

.1 General: Promptly repair damage to adjacent construction caused by structure demolition operations.
.2 Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

.3 Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

3.4 CLEANING

.1 Designate appropriate security resources / measures to prevent vandalism, damage and theft.

.2 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

.1 Label stockpiles, indicating material type and quantity.

.3 Transport material designated for alternate disposal using approved haulers.

.4 Dispose of materials not designated for alternate disposal in accordance with applicable local regulations.

END OF SECTION
Part 1 General

1.1 SECTION INCLUDES

.1 Requirements for installation of manufactured brick veneer and application materials.

1.2 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.
.2 Section 01 74 19 - Waste Management and Disposal.
.3 Section 07 19 00 - Building Paper.
.4 Section 07 19 50 - Self-Adhering Membrane.
.5 Section 07 62 00 - Sheet Metal Flashing and Trim.
.6 Section 07 92 00 - Joint Sealing.
.7 Section 09 91 13 - Exterior Painting.

1.3 REFERENCES

.1 American Concrete Institute (ACI).
.2 American Society for Testing and Materials (ASTM).
   .4 ASTM C 192, Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory.
   .5 ASTM C 270, Standard Specifications for Mortar for Unit Masonry.
   .6 ASTM C 482, Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement.
.3 Building Materials Evaluation Commission.
.4 International Code Council (ICC):
   .1 ES Report.
   .2 UBC Standard No. 14-1, Kraft Waterproof Building Paper.
.5 Masonry Standards Joint Committee (MSJC) of The Masonry Society.
.6 Texas Department of Insurance Product Evaluation.

.7 Underwriters Laboratories (UL):
   .1 Classification File Number.


1.4 SUBMITTALS

.1 Product Data:
   .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
   .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's for caulking materials during application and curing.

.2 Samples:
   .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
   .2 Submit duplicate samples of profiles specified.

.3 Manufacturer's Instructions:
   .1 Submit manufacturer's installation instructions.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused materials from landfill to metal recycling facility approved by Consultant.

.5 Divert unused caulking material from landfill to official hazardous material collections site approved by Consultant.

Part 2 Products

2.1 MATERIALS

.1 Cultured Brick Veneer: Acceptable material: Boral Stone Products LLC.
   .1 Thin Brick Veneer: High Desert Used Brick pattern, 63 mm width, 203 mm long, 12.7 mm thick.

.2 Weep screed as required for installation over framed construction.

.3 Hal-Tex Rainboard: 3-ply asphalt building paper: 1.0 meter wide, 1.62 meter long, 3.0 mm thick.
.4 Wood lath: 19 mm x 63 mm pressure treated strapping, installed under siding.

.5 Exterior wall sheathing paper: To CAN2-51.32 asphalt saturated heavy kraft paper. Sheathing paper shall exceed 30 minutes of water pressure when tested in accordance with US Standard UUB-790a.

.1 Acceptable Material: Hal-tec 30 minute building paper by Hal Industries Inc.

.6 Fasteners: nails to CSA B111, hot galvanized steel, sized as required, smooth shank.

.7 Sealants: to Section 07 92 00 – Joint Sealing.

.8 Finishes:

.1 Mortar color: Iron oxide pigments.

Part 3 Execution

3.1 MANUFACTURER’S INSTRUCTIONS

.1 Compliance: comply with manufacturer’s written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

.1 Install Cultured Brick Veneer products in accordance with manufacture’s Cultured Brick installation instructions.

3.2 EXAMINATION

.1 Examine substrates upon which manufactured masonry (brick veneer) will be installed.

.2 Coordinate with responsible entity to correct unsatisfactory conditions.

.3 Commencement of work by qualified, experienced installer is acceptance of substrate conditions.

3.3 PREPARATION

.1 Protection: Prevent work from occurring on the opposite of walls to which manufactured masonry (brick veneer) is applied during and for 48 hours following installation of the manufactured masonry (brick veneer).

.2 Surface Preparation: Follow manufacturer’s instructions designated below for the appropriate type of manufactured masonry (brick veneer) and substrate.

3.4 INSTALLATION

.1 Over building substrate application:

.1 Install two layers of half lap 30 minute double lapped building paper or Tyvek CommercialWrap over exterior building sheathing.

.2 Install 19 x 63 mm pressure treated strapping, 400 mm o/c. for vertical application and 600 mm o/c. for horizontal application. Fasten to stud locations.

.3 Install Hal-Tex Rainboard as per manufacturer’s instructions.

.4 Install one layer 30 minute building paper or slip sheet.
.5 Install 2.5 lb/square yard galvanized expanded diamond mesh metal lath lapped 6: minimum typically and 16" minimum at all corners with Simpson SDS ¼" x 2 ½" HDG wood screws @ 16" o/c horizontally (each stud through rain screen slats) and 6" o/c vertically (minimum 1 ½" penetration into stud) c/w Spaenaur 656-002 steel plate washer each screw. Or equivalent washers are ¾" outside diameter and 1/16" thick HDG.

.6 Apply scratch coat @ 1/2" thick minimum (let cure for 24 hours then moisten surface prior to the placement of the stone veneer.

.2 Cultured Brick Veneer application:

.1 Apply “brick veneer” using MAPEI Keraflex adhesive or polymer modified mortar (approved by engineer) by striking the back of the brick veneer with the mortar with the intent of driving the mortar into the pores of the stone.

.2 Butter the edges of the brick veneer (and center if required) in a manner that ensures a full bed of mortar is achieved when the stone is compressed into position.

.3 Prior to compressing the brick veneer into position, smear/strike the wall area where the brick veneer is to be placed with mortar, again driving the mortar into the pores of the substrate.

.4 Wiggle or tamp the brick veneer as necessary to ensure proper bond while making sure not to move the brick veneer after initial mortar absorption has taken place.

.5 Fill and tool mortar joints as require.

.6 Weep screed as required for installation over framed construction.

3.5 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

.2 Clean manufactured masonry in accordance with manufacturer’s installation instructions.

3.6 PROTECTION

.1 Protect finished work from rain during and for 48 hours following installation.

.2 Protect finished work from damage during remainder of construction period.

END OF SECTION
Part 1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 09 91 23 - Interior Painting.

.3 Section 09 91 13 - Exterior Painting.

1.2 REFERENCES

.1 The Environmental Choice Program

.1 CCD-047a-98, Paints, Surface Coatings.

.2 CCD-048-98, Surface Coatings - Recycled Water-borne.

1.3 SUBMITTALS

.1 Product Data:

.1 Submit manufacturer’s printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's:

.1 For finishes, coatings, primers and paints.

.2 Shop Drawings

.1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

.2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

1.4 QUALITY ASSURANCE

.1 Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

.1 Storage and Protection:

.1 Leave protective covering in place until final cleaning of building. Provide instructions for removal of protective covering.

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 19 - Waste Management and Disposal.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
.3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site containers for recycling in accordance with Waste Management Plan.

.4 Divert unused metal materials from landfill to metal recycling facility approved by Owner.

Part 2  Products

2.1 MATERIALS
.1 Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 300W.
.2 Steel pipe: to ASTM A53/A53M standard weight, galvanized finish.
.3 Welding materials: to CSA W59.
.4 Welding electrodes: to CSA W48 Series.
.5 Bolts and anchor bolts: to ASTM A307.
.6 Grout: non-shrink, non-metallic, flowable, 15 MPa at 24 hours.

2.2 FABRICATION
.1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
.2 Use self-tapping shake-proof countersunk flat headed screws on items requiring assembly by screws or as indicated.
.3 Where possible, fit and shop assemble work, ready for erection.
.4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

2.3 FINISHES
.1 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m² to CAN/CSA-G164.
.2 Shop coat primer: to CAN/CGSB-1.40.
.3 Zinc primer: zinc rich, ready mix to CAN/CGSB-1.181.

2.4 ISOLATION COATING
.1 Isolate aluminum from following components, by means of bituminous paint:
   .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
   .2 Concrete, mortar and masonry.
   .3 Wood.

2.5 SHOP PAINTING
.1 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.
.2 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 degrees C.

.3 Clean surfaces to be field welded; do not paint.

2.6 PIPE RAILINGS

.1 Steel Pipe: formed to shapes and sizes as indicated

.2 Galvanize pipe railings after fabrication

Part 3 Execution

3.1 ERECTION

.1 Do welding work in accordance with CSA W59 unless specified otherwise.

.2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

.3 Provide suitable means of anchorage acceptable to Consultant such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.

.4 Exposed fastening devices to match finish and be compatible with material through which they pass.

.5 Provide components for building by other sections in accordance with shop drawings and schedule.

.6 Make field connections with bolts to CAN/CSA-S16.1, or weld.

.7 Hand items over for casting into concrete or building into masonry to appropriate trades together with setting templates.

.8 Touch-up rivets, field welds, bolts and burnt or scratched surfaces after completion of erection with primer.

.9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

SPEC NOTE: Coordinate 3.2 with Section 05 51 29 - Metal Stairs and Ladders.

3.2 PIPE RAILINGS

.1 Install pipe railings to details and locations indicated

3.2 CLEANING

.1 Perform cleaning after installation to remove construction and accumulated environmental dirt.

.2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION
Part 1  General

1.1 RELATED SECTIONS
   .1 Section 05 55 00 – Metal Fabrications
   .2 Section 06 20 00 – Finish Carpentry
   .3 Section 07 52 00 – Modified Bituminous Roofing

1.2 REFERENCES
   .1 National Lumber Grades Authority (NLGA)
     .1 Standard Grading Rules for Canadian Lumber 2005.

1.3 SUBMITTALS
   .1 Submit Submittal submissions: in accordance with Section 01 33 00 - Submittal Procedures.

1.4 QUALITY ASSURANCE
   .1 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
   .2 Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.

1.5 DELIVERY, STORAGE, AND HANDLING
   .1 Waste Management and Disposal:
     .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2  Products

2.1 FRAMING AND STRUCTURAL MATERIALS
   .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% (S-dry) or less in accordance with following standards:
     .1 CSA O141.
     .2 NLGA Standard Grading Rules for Canadian Lumber.
   .1 All composite wood products must be free of added urea-formaldehyde.
   .2 Glued end-jointed (finger-jointed) lumber is not acceptable.
   .3 Structural Composite Lumber (SCL) in accordance with ASTM D5456.
   .4 Framing and board lumber: in accordance with BCBC 2012 Edition.
.5 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:

.1 Use S4S material, dimensions to suit conditions or as detailed.
.2 Board sizes: "Standard" or better grade.
.3 Dimension sizes: "Standard" light framing or better grade.
.4 Post and timbers sizes: "Standard" or better grade.
.5 Forest Stewardship Council (FSC) certified.

2.2 PANEL MATERIALS

.1 All composite wood products must be free of added urea-formaldehyde.
.2 Plywood, OSB and wood based composite panels: to CAN/CSA-O325.0.
.3 Douglas fir plywood (DFP): to CSA O121, standard construction.
.4 Canadian softwood plywood (CSP): to CSA O151, standard construction.

2.3 MANUFACTURED LUMBER AND FRAMING CONNECTORS

.1 Refer to specifications and details noted on structural drawings.

2.4 ACCESSORIES

.1 Exterior wall sheathing paper: as per Section 07 19 00 – Building Paper and Section 07 19 50 – Self Adhering Membrane.
.2 Polyethylene film: to CAN/CGSB-51.34, Type 1, 0.15 mm thick.
.3 Air seal: closed cell polyurethane or polyethylene.
.4 Sealants: in accordance with Section 07 92 10 - Joint Sealing.
.5 Subflooring adhesive: to CGSB-71.26, cartridge loaded.
.6 General purpose adhesive: to CSA O112 Series.
.7 Nails, spikes and staples: to CSA B111.
.8 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
.9 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices recommended for purpose by manufacturer.
.10 Joist hangers: minimum 1.52 mm thick sheet steel, galvanized ZF001 coating designation.
.11 Nailing discs: flat caps, minimum 25 mm diameter, minimum 0.4 mm thick, sheet metal, formed to prevent dishing. Bell or cup shapes not acceptable.
.12 Roof sheathing H-Clips: formed "H" shape, thickness to suit panel material, extruded 6063-T6 aluminum alloy type approved by Consultant.
2.5 FASTENER FINISHES

.1 Galvanizing: to CAN/CSA-G164, use galvanized fasteners for exterior work.

Part 3 Execution

3.1 INSTALLATION

.1 Comply with requirements of BCBC 2018 supplemented by these specifications and architectural and structural drawings.

.2 Install members true to line, levels and elevations, square and plumb.

.3 Construct continuous members from pieces of longest practical length.

.4 Install spanning members with "crown-edge" up.

.5 Select exposed framing for appearance. Install lumber and panel materials so that grade-marks and other defacing marks are concealed or are removed by sanding where materials are left exposed.

.6 Install wall sheathing in accordance with manufacturer's printed instructions.

.7 Install roof sheathing in accordance with requirements of BCBC 2012.

.8 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, siding, electrical equipment mounting boards and other work as required.

.9 Install exterior wall sheathing paper to manufacturer's written instructions and recommendations.

.10 Install furring to support siding applied horizontally or vertically.

.11 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

.12 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized fasteners.

.13 Use dust collectors and high quality respirator masks when cutting or sanding wood panels.

3.2 ERECTION

.1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

.2 Countersink bolts where necessary to provide clearance for other work.

.3 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

3.3 SCHEDULES

.1 Roof sheathing:
.1 Plywood, DFP sheathing exterior grade standard plywood sheathing, square edge, 15.5 mm thick.

.2 Exterior wall sheathing:

.1 Plywood, DFP sheathing, exterior grade, square edge, 12.5 mm thick.

.3 Exposed Columns and Beams:

.1 DF to sizes indicated on drawings

.4 Window and Edge Trim, Fascia Boards and Corner Trim:

.1 Spruce, comb faced, to sizes indicated on drawings

.5 Electrical equipment mounting boards:

.1 Plywood, DFP sheathing grade, square edge 19mm thick.

END OF SECTION
Part 1  General

1.1  RELATED SECTIONS
.1  Section 06 10 00 – Rough Carpentry.
.2  Section 09 91 13 – Exterior Painting
.3  Section 09 91 23 – Interior Painting

1.2  REFERENCES
.1  Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
.2  Canadian General Standards Board (CGSB)
   .1  CAN/CGSB-11.3-M87, Hardboard.
.3  Canadian Plywood Association (CanPly)
.4  Canadian Standards Association (CSA International)
   .1  CSA B111-74(R2003), Wire Nails, Spikes and Staples.
   .2  CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
   .3  CSA O121-M89(R2003), Douglas Fir Plywood.
   .4  CAN/CSA O141-91(R1999), Softwood Lumber.
   .5  CSA O151-04, Canadian Softwood Plywood.
   .6  CSA Z760-94, Life Cycle Assessment.

1.3  SUBMITTALS
.1  Submit Submittal submissions: in accordance with Section 01 33 00 - Submittal Procedures.
.2  Shop Drawings Submittals: in accordance with Section 01 33 00 - Submittal Procedures,
   .1  Indicate details of construction, profiles, jointing, fastening and other related details.
   .2  Indicate materials, thicknesses, finishes and hardware.

1.4  QUALITY ASSURANCE
.1  Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
.2  Plywood, particleboard, OSB and wood based composite panels in accordance with CSA and ANSI standards.
1.5 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, handle, store and protect materials as noted below:

.1 Protect materials against dampness during and after delivery.

.2 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

.2 Waste Management and Disposal:

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2 Products

2.1 LUMBER MATERIAL

.1 Softwood lumber: unless specified otherwise, S4S, moisture content 19% or less in accordance with following standards:

.1 CAN/CSA-O141.

.2 NLGA Standard Grading Rules for Canadian Lumber.

.3 AWMAC premium grade, moisture content as specified.

.2 Machine stress-rated lumber is acceptable.

.3 Hardwood lumber: moisture content 10% or less in accordance with following standards:

.1 National Hardwood Lumber Association (NHLA).

.2 AWMAC premium grade, moisture content as specified.

2.2 PANEL MATERIAL

.1 Douglas fir plywood (DFP): to CSA O121, standard construction.

.1 Urea-formaldehyde free.

.2 Canadian softwood plywood (CSP): to CSA O151, standard construction.

.1 Urea-formaldehyde free.

2.3 ACCESSORIES

.1 Nails and staples: to CSA B111; galvanized to CAN/CSA-G164 for exterior work, interior humid areas and for treated lumber; plain finish elsewhere.

.2 Wood screws: plain, brass or stainless steel, type and size to suit application.

.3 Adhesive: recommended by manufacturer.

Part 3 Execution

3.1 INSTALLATION

.1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.
.2 Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects.

.3 Form joints to conceal shrinkage.

3.2 CONSTRUCTION

.1 Fastening:

.1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.

.2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.

.3 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round smooth cut hole and plug with wood plug to match material being secured.

.4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.

.2 Standing and running trim:

.1 Butt and cope internal joints of baseboards to make snug, tight, joint. Cut right angle joints of casing and base with mitred joints.

.2 Fit backs of baseboards and casing snugly to wall surfaces to eliminate cracks at junction of base and casing with walls.

.3 Make joints in baseboard, where necessary using a 45 degrees scarf type joint.

.4 Install door and window trim in single lengths without splicing.

3.3 SCHEDULES

.1 Standing and running trim:

.1 Exterior:

.1 Grade: Custom

.2 Solid stock: DF species.

.2 Interior:

.1 Grade: Custom

.2 Solid stock: DF species.

END OF SECTION
Part 1  General

1.1  SECTION INCLUDES
   .1 Furnishing and installing all selected High Density Urethane Foam Manufactured Trim and Ornament Products, including but not limited to:
      .1 Standing and Running Trim
      .2 Entrance Units
      .3 Louvers
      .4 Gable Vents
      .5 Ceiling and Wall Ornamental Trim

1.2  RELATED SECTIONS
   .1 Section 01 33 00 - Submittal Procedures.
   .2 Section 01 74 19 - Waste Management and Disposal.
   .3 Section 04 70 00 - Manufactured Masonry
   .4 Section 06 10 00 - Rough Carpentry.
   .5 Section 06 20 00 - Finish Carpentry.
   .6 Section 07 62 00 - Sheet Metal Flashing and Trim.
   .7 Section 07 92 00 - Joint Sealing.
   .8 Section 09 91 13 - Exterior Painting.

1.3  REFERENCES
   .2 Design / Performance Requirements
   .3 Finished surfaces shall be free from cracks, pits, chips, voids, depressions, bumps, ridges, waves, scratches, discoloration or other defacements.
   .4 Products in this section shall comply with all requirements stipulated in the 2009 IBC and 2009 IRC.
   .5 Products in this section shall be designed, engineered, fabricated and installed to conform to all state and local codes.

1.4  SUBMITTALS
   .1 Product Data:
      .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
.2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's for caulking materials during application and curing.

.2 Samples:
   .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
   .2 Submit duplicate samples of profiles specified.

.3 Manufacturer's Instructions:
   .1 Submit manufacturer's installation instructions.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused materials from landfill to metal recycling facility approved by Consultant.

.5 Divert unused caulking material from landfill to official hazardous material collections site approved by Consultant.

Part 2 Products

2.1 MANUFACTURER

.1 Acceptable Manufacturer:
   .1 Fypon, LLC, www.fypon.com, 800 446-3040 (U.S or Canada).

.2 Substitutions:
   .1 Requests for substitutions will be considered upon submission of documentation of qualified products equal to specified item.

2.2 MATERIALS

.1 Manufactured polyurethane trim and ornaments:
   .1 Mouldings and Accessories:
      .1 Dentil Moulding, model # MLD362-16, prime coated.

2.3 ACCESSORIES

.1 Sealant: Use a manufacturer’s approved urethane-based adhesive.

.2 Fasteners: Use corrosive-resistant fasteners.

.3 Filler: Use a manufacturer’s approved filler putty.
2.4 FINISHES
   .1 Manufacturer supplied protective barrier coat primer, resistant to UV degradation, providing interim UV protection of products which is suitable for field application of oil base or latex finish paints on all urethane foam products.

Part 3 Execution

3.1 EXAMINATION
   .1 Site verification of conditions:
       .1 Prior to the start of installation, inspect all preceding work to ensure that there are no conditions which will cause an unsatisfactory installation of work involving polyurethane foam products.
       .2 Notify Architect in writing of any unacceptable conditions that would adversely affect installation or subsequent performance of this product.
       .3 Do not install any work involving polyurethane foam products until unsatisfactory conditions are corrected and acceptable for proper installation of work.
       .4 Contractor shall be responsible for correcting or replacing all unacceptable work involving urethane products, which were installed over unsatisfactory conditions at no cost to Owner.

3.2 PREPARATION
   .1 Protect surrounding and adjacent work as required preventing damage to preceding work during execution of this work.
   .2 Perform all preparation necessary for a successful installation of products as specified in manufacturer’s installation instructions.

3.3 INSTALLATION
   .1 Obtain manufacturer’s instructions for successful installation of work to be performed and become knowledgeable with all material handling and installation recommendations.
   .2 Ensure full compliance with manufacturer’s instructions in all aspects of tasks required by this work. Install products in accordance with manufacturers’ instructions at locations indicted on the drawings.
   .3 Coordinate all work with other project trades to assure proper installation and provide proper accommodations for following work by other trades.

3.4 PROTECTION
   .1 Install temporary protective materials necessary to prevent damage to materials installed in this work until final acceptance of the project.

3.5 CLEANING
   .1 Remove all protection materials.
   .2 Clean all surfaces following manufacturer’s recommendations prior to final project completion. Do not use harsh cleaning materials or methods that would damage finish.
.3 Dispose properly of all debris generated by this work, protection materials and cleaning materials.

END OF SECTION
1.1 REFERENCES
   .1 CAN2-51.32, Sheathing, Membrane, Breather type.

1.2 MOCK-UPS
   .1 Construct portion of typical exterior wall, incorporating window, through-wall flashing, building corner condition and wall penetration illustrating materials and interface of seals.
   .2 Mock-ups may remain part of finished installations.

2.0 PRODUCTS
2.1 SHEATHING PAPER
   .1 To CAN2-51.32 asphalt saturated heavy kraft paper. Sheathing paper shall exceed 30 minutes of water pressure when tested in accordance with US Standard UUB-790a.
   .1 Hal-tec 30 minute building paper by Hal Industries Inc.
   .2 TYVEK Commercial Wrap as manufactured by Dupont

2.2 ACCESSORIES
   .1 Staples: Corrosion-resistant alloy or plated, lengths required to penetrate plywood sheathing for secure attachment of sheathing paper.
   .2 Caulking: Polybitume 570-05 Polymer Modified Sealing Compound by Henry Bakor.

3.0 EXECUTION
3.1 INSTALLATION
   .1 Install sheathing paper to produce continuous water shedding barrier over applicable substrate with two layers of 30-minute sheathing paper, unless noted otherwise on drawings.
   .2 Install sheathing paper horizontally, starting from bottom of wall with each subsequent course half-lapped over previous course to shed moisture down sheathing paper surface.
   .3 Vertical laps shall be made where required and have a minimum of 300mm (12”) overlap. All fasteners shall penetrate the sheet in a neat fashion so as to minimize entry points for moisture. Do not locate vertical laps within 300mm (12”) from exterior and interior corners.
   .4 All vertical end laps are to be sealed with bituminous caulking.
   .5 Shingle lap sheathing paper over flashings fixed to wall sheathing to shed moisture down sheathing paper surface and over flashing.
   .6 Cut and tailor fit building/sheathing paper neatly around openings and projections.
   .7 Attach sheathing paper to sheathing using sufficient quantities of staples to hold sheathing paper in place until covered by subsequent construction. Staples are to be
1.1 REFERENCES

.1 All Reference Standards are latest editions.

1.2 QUALITY ASSURANCE

.1 If requested, provide for a technical representative from the membrane manufacturer to be on the job site to assure compliance with the manufacturer’s directions.

1.3 SEQUENCING

.1 Sequence work to permit installation of materials in conjunction with related materials and seals.

1.4 COORDINATION

.1 Coordinate the work of this section with all sections referencing this section.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Store all materials in their original packaging in undamaged condition. Sealed with labels intact, having manufacturer’s name and other references visible.

.2 Provide all plant and equipment necessary for off-loading of materials to complete the work of this section. Protect materials from damage, weather and store in a dry place.

.3 Handle materials and equipment in strict accordance with the manufacturer’s recommendations. Damaged or deteriorated materials shall be replaced.

2.0 PRODUCTS

2.1 WALL FLASHINGS

.1 Consisting of a self-adhering SBS rubberized asphalt compound integrally laminated to polyethylene or polypropylene film.

.1 Jiffyseal 140/60 by ProtectoWrap Company
.2 Blueskin SA Air Barrier Membrane by Monsey Bakor
.3 Sopraseal Stick 1100 Air Barrier Membrane by Soprema.

2.2 UNDER ROOF METAL CAP FLASHINGS

.1 Consisting of a self-adhering SBS rubberized asphalt compound integrally laminated to polyethylene or polypropylene film.

.1 Blueskin PE200 HT by Henry Bakor
.2 Lastobond Shield HT by Soprema.
.3 Jiffyseal 140/60 by ProtectoWrap Company

2.3 ACCESSORIES
.1 Associated Materials: Primers, mastics, sealants, liquid membrane, control joint materials, etc. required for complete membrane system installation shall be to membrane manufacturer’s standards.

3.0 EXECUTION

3.1 PREPARATION

.1 Preparation of all surfaces to receive membrane, including substrate, joints, cracks, coves, etc. all shall be carried out in accordance with the manufacturer’s instructions.

.2 Ensure that all substrate surfaces are smooth, dry and firm. Remove foreign matter which could prevent adhesion of the membrane to the substrate.

.3 Ensure that concrete surfaces are free from surface pitting and honeycombing. Remove projections and other irregularities which could puncture the membrane. Fill voids, surface pitting and honeycombing. Repair pour joints and provide a surface satisfactory for application of membrane.

3.2 PRIMING

.1 Clean and prime substrate surfaces to receive membrane in accordance with manufacturer’s instructions.

.2 All surfaces to receive self-adhering membrane shall be primed as per manufacturer instructions. Primer shall be uniformly applied and curing time in accordance with manufacturers instructions.

3.3 MEMBRANE APPLICATION

.1 Application of membrane shall be carried out in accordance with membrane manufacturer’s written directions.

.2 Cut and seal membrane to form tight seal. Roller apply membrane in accordance with manufacturers instructions.

.3 Apply trowelled bead of mastic to all terminations at end of each day’s work.

.4 Inspect membrane thoroughly before being covered and make any corrections immediately. Misaligned or inadequately capped seams, punctures, or other damage shall be repaired by patching and sealing with membrane manufacturer’s directions.

.5 At all detail areas, take extra care to ensure continuity of the membrane.

.6 Apply membrane in a “shingle”, to direct water in a downwards fashion with joints lapped a minimum 150mm (6”).

.7 Reinforce all corners with second ply of membrane.
.8 All membrane patches shall extend a minimum 150mm (6") from repair location or penetration. Seal all around patches with tooled mastic.

.9 Seal all side laps and all top laps with mastic.

.10 Fill all joints or gaps wider than 6mm (¼") with galvanized steel sheet, wood or other suitable backing and apply 300mm (12") piece of membrane over joints prior to application of the field membrane.

.11 Coordinate installation of membrane with other related work to minimize exposure of membrane.

3.4 PROTECTION AND CLEANING

.1 Repair, remove and clean all smears on exposed finished surfaces or surfaces to be subsequently finished. Clean off immediately as directed by and to the satisfaction of the Consultant.

.2 Protect all adjacent surfaces from damage due to membrane operations.

.3 As work proceeds and on completion, clean up and remove from the premises all rubbish and surplus materials resulting from this work.

.4 Ensure that any membrane that is installed in a high traffic area is protected from damage.

END OF SECTION
covered by a subsequent layer of sheathing paper or seal staples penetrations with bituminous caulking.

.8 Wherever the paper is torn or damaged by fasteners, the holes shall be sealed with bituminous caulking. Repair large holes using patches of sheathing paper, shingle lapped into the horizontal course above, stapled in place with all vertical edges sealed with caulking.

.9 Provide inclement weather protection.

END OF SECTION
Part 1 General

1.1 RELATED SECTIONS
   1 Section 07 26 00 – Vapour Retarders.
   2 Section 08 11 00 – Metal Doors and Frames

1.2 QUALITY ASSURANCE
   1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.3 WASTE MANAGEMENT AND DISPOSAL
   1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
   2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
   3 Collect and separate for disposal packaging material in appropriate on-site containers for recycling in accordance with Waste Management Plan.

Part 2 Products

2.1 INSULATION
   1 Batt and blanket mineral fibre: to CAN/ULC S702.
      1 Type: 1.
      2 Thickness and R-value as indicated.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS
   1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 INSULATION INSTALLATION
   1 Install insulation to maintain continuity of thermal protection to building elements and spaces.
   2 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.
   3 Do not compress insulation to fit into spaces.
.4 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures, and minimum 50 mm from sidewalls of CAN/ULC-S604 Type A chimneys and CAN/CGA-B149.1 and CAN/CGA-B149.2 Type B and L vents.

.5 Do not enclose insulation until it has been inspected and approved by Consultant.

3.3 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION
Part 1  General

1.1  RELATED SECTIONS

.1  Section 06 10 00 – Rough Carpentry

.2  Section 07 92 00 – Joint Sealing

1.2  QUALITY ASSURANCE

.1  Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.3  DELIVERY, STORAGE AND HANDLING

.1  Waste Management and Disposal:

.1  Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2  Products

2.1  SHEET VAPOUR BARRIER

.1  Polyethylene film: to CAN/CGSB-51.34, 0.15 mm thick.

2.2  ACCESSORIES

.1  Joint sealing tape: air resistant pressure sensitive adhesive tape, type recommended by vapour barrier manufacturer, 50 mm wide for lap joints and perimeter seals, 25 mm wide elsewhere.

.2  Sealant: compatible with vapour retarder materials, recommended by vapour retarder manufacturer. To Section 07 92 00 - Joint Sealing.

.3  Staples: minimum 6 mm leg.

.4  Moulded box vapour barrier: factory-moulded polyethylene box for use with recessed electric switch and outlet device boxes.

Part 3  Execution

3.1  INSTALLATION

.1  Ensure services are installed and inspected prior to installation of retarder.

.2  Install sheet vapour retarder on warm side of exterior wall and ceiling assemblies prior to installation of gypsum board to form continuous retarder.

.3  Use sheets of largest practical size to minimize joints.

.4  Inspect for continuity. Repair punctures and tears with sealing tape before work is concealed.
3.2 EXTERIOR SURFACE OPENINGS

.1 Cut sheet vapour retarder to form openings and ensure material is lapped and sealed to frame.

3.3 PERIMETER SEALS

.1 Seal perimeter of sheet vapour barrier as follows:
   .1 Apply continuous bead of sealant to substrate at perimeter of sheets.
   .2 Lap sheet over sealant and press into sealant bead.
   .3 Install staples through lapped sheets at sealant bead into wood substrate.
   .4 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.4 LAP JOINT SEALS

.1 Seal lap joints of sheet vapour barrier as follows:
   .1 Attach first sheet to substrate.
   .2 Apply continuous bead of sealant over solid backing at joint.
   .3 Lap adjoining sheet minimum 150 mm and press into sealant bead.
   .4 Install staples through lapped sheets at sealant bead into wood substrate.
   .5 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.5 ELECTRICAL BOXES

.1 Seal electrical switch and outlet device boxes that penetrate vapour barrier as follows:
   .1 Install moulded box vapour barrier.
   .2 Apply sealant to seal edges of flange to main vapour barrier and seal wiring penetrations through box cover.

3.6 CLEANING

.1 Proceed in accordance with Section 01 74 00 – Cleaning.

.2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION
Part 1  General

1.1  SECTION INCLUDES

.1  Requirements for installation of cementitious board and panel siding.

1.2  RELATED SECTIONS

.1  Section 01 33 00 - Submittal Procedures.

.2  Section 01 74 19 - Waste Management and Disposal.

.3  Section 07 62 00 - Sheet Metal Flashing and Trim.

.4  Section 07 92 00 - Joint Sealing.

.5  Section 09 91 13 - Exterior Painting.

1.3  SUBMITTALS

.1  Product Data:

.1  Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.

.2  Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's for caulking materials during application and curing.

.2  Samples:

.1  Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.2  Submit duplicate samples of profiles specified.

.3  Manufacturer's Instructions:

.1  Submit manufacturer's installation instructions.

1.4  WASTE MANAGEMENT AND DISPOSAL

.1  Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

.2  Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3  Collect and separate for disposal packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4  Divert unused materials from landfill to metal recycling facility approved by Consultant.

.5  Divert unused caulking material from landfill to official hazardous material collections site approved by Consultant.
Part 2 Products

2.1 MATERIALS

.1 Cementitious board and panel siding: Acceptable material: James Hardie HZ5.

.1 Bevel siding: select cedarmill pattern, 190 mm width, 8 mm thick, iron gray (colour plus).

.2 Panel siding: smooth pattern, 8 mm thick, iron gray (colour plus).

.3 Trim boards: Spruce, comb face, 140 mm width, 19 mm thick – see Section 06 10 00 Rough Carpentry.

.4 Metal Trim: Acceptable suppliers are Easytrim and Fry Reglet Inc.

.2 Wood lath: 19 mm x 63 mm pressure treated strapping, installed under siding.

.3 Exterior wall sheathing paper: Asphalt saturated heavy kraft paper. Sheathing paper shall exceed 30 minutes of water pressure when tested in accordance with U.S. Standard UUB-790a.

.1 Acceptable Material:

.1 Hal-tec 30 minute building paper by HAL Industries Inc.

.2 TYVEK Commercial Wrap as manufactured by Dupont

.4 Fasteners: nails to CSA B111, hot galvanized steel, sized as required, smooth shank.

.5 Sealants: to Section 07 92 00 – Joint Sealing.

.6 Finishes:

.1 Factory Primer: provide factory applied universal primer.

.2 Primer: Factory applied sealer/ primer by James Hardie.

.3 Topcoat: Refer to Section 09 91 13 Exterior Painting and Exterior Finish Schedule.

Part 3 Execution

3.1 MANUFACTURER’S INSTRUCTIONS

.1 Compliance: comply with manufacturer’s written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 INSTALLATION

.1 Install air barrier as per Section 07 46 24 Sheathing Paper.

.2 Install sill flashings, starter strips, inside corner flashings, edgings and flashings over openings.

.3 Install 19 x 63 mm pressure treated strapping, 400 mm o.c. for vertical application and 600 mm o.c. for horizontal application. Fasten to stud locations.
4. Fasten siding in straight, aligned lengths to furring and sheathing at 600 mm on centre maximum using nails at each fixing location. Use full length boards to suit location; no butt joints. Apply trim as indicated on drawings.

3.3 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION
Part 1 General

1.1 RELATED REQUIREMENTS
   .1 Section 06 10 00 – Rough Carpentry.
   .2 Section 07 62 00 – Sheet Metal Flashing and Trim
   .3 Section 07 92 00 – Joint Sealing

1.2 REFERENCES
   .1 Roofing Contractors Association of British Columbia (RCABC)
   .2 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
      .1 Material Safety Data Sheets (MSDS).

1.3 ACTION AND INFORMATIONAL SUBMITTALS
   .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
   .2 Product Data:
      .1 Provide two copies of WHMIS MSDS in accordance with Section 01 35 29.06 -
         Health and Safety Requirements, and indicate VOC content for:
         .1 Primers.
         .2 Asphalt.
         .3 Sealers.

1.4 QUALITY ASSURANCE
   .1 Installer qualifications: company or person specializing in application of modified
      bituminous roofing systems with 5 years documented experience approved by RCABC
      and manufacturer.
   .2 Sustainability Standards Certification:
      .1 Recycled Content: provide listing of recycled content products used, including
         details of required percentages or recycled content materials and products,
         showing their costs and percentages of post-consumer and post-industrial
         content, and total cost of materials for project.
      .2 Regional Materials: provide evidence that project incorporates required
         percentage 20 % of regional materials/products, showing their cost, distance from
         project to furthest site of extraction or manufacture, and total cost of materials for
         project.

1.5 FIRE PROTECTION
   .1 Fire Extinguishers:
      .1 Maintain one stored pressure rechargeable type with hose and shut-off nozzle,
      .2 ULC labelled for A, B and C class protection.
      .3 Size 9 kg on roof per torch applicator, within 10 m of torch applicator.
   .2 Maintain fire watch for 1 hour after each day’s roofing operations cease.
1.6 DELIVERY, STORAGE, AND HANDLING

.1 Storage and Handling Requirements:

.1 Safety: comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of asphalt, sealing compounds, primers and caulking materials.

.2 Provide and maintain dry, off-ground weatherproof storage.

.3 Store rolls of felt and membrane in upright position. Store membrane rolls with salvage edge up.

.4 Remove only in quantities required for same day use.

.5 Place plywood runways over completed Work to enable movement of material and other traffic.

.6 Store sealants at +5 degrees C minimum.

.7 Store insulation protected from daylight and weather and deleterious materials.

.2 Packaging Waste Management: remove for reuse and return of pallets, crates and packaging materials in accordance with Section 01 74 19 - Waste Management and Disposal.

.1 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

.2 Fold up metal banding, flatten and place in designated area for recycling.

1.7 FIELD CONDITIONS

.1 v

.1 Do not install roofing when temperature remains below -18 degrees C for torch application.

.2 Minimum temperature for solvent-based adhesive is -5 degrees C.

.2 Install roofing on dry deck, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into roofing system.

1.8 WARRANTY

.1 Follow the application guidelines of RCABC Roofstar standards and provide (5) five year labour and material warranty.

Part 2 Products

2.1 PERFORMANCE CRITERIA

.1 Compatibility between components of roofing system is essential. Provide written declaration to Consultant stating that materials and components, as assembled in system, meet this requirement.

.2 Roofing System: to CSA A123.21 for wind uplift resistance.

2.2 VAPOUR RETARDER

.1 Base sheet vapour retarder: to CGSB 37-GP-56M, Styrene-Butadiene-Styrene (SBS) elastomeric polymer, prefabricated sheet, polyester reinforcement, weighing 100 g/m².

.1 Acceptable material: Soprema Sopraglass 100 or equal.
2.3 MEMBRANE

.1 Base sheet: to CGSB 37-GP-56M polyester fibres to ASTM D6164.

.1 Styrene-Butadiene-Styrene (SBS) elastomeric polymer prefabricated sheet, polyester reinforcement, having nominal weight of 180 g/m².

.2 Type 1, fully adhered.

.3 Class C - plain surfaced.

.4 Grade 2 heavy duty service.

.5 Top and bottom surfaces:

.1 sanded/polyethylene.

.6 Acceptable Material: Soprema Elastoplene 180 PS or equal.

.2 Cap sheet membrane: to CGSB 37-GP-56M polyester fibres to ASTM D6164.

.1 Styrene-Butadiene-Styrene(SBS) elastomeric polymer, prefabricated sheet, polyester reinforcement, having nominal weight of 250 g/m².

.2 Type 1, fully adhered.

.3 Class A-granule surfaced for walkways and C-plain surfaced under “green roof” planter areas.

.1 Colour for granular surface: gray.

.4 Grade 2 heavy duty service.

.5 Bottom surface polyethylene.

.6 Acceptable Material: Soprema Sopralene Flam 250 and 250GR or equal.

2.4 ADHESIVE

.1 Adhesive for securing overlay board and insulation: asphalt extended vulcanized adhesive, two component unit, consisting of two liquids mixed on site to produce pourable adhesive.

2.5 OVERLAY BOARD

.1 Overlay Board: 12.7 mm asphalt impregnated fiberboard.

.1 Install over insulation to provide torch safe surface.

2.6 BITUMEN

.1 Asphalt: to CAN/CSA A123.4, Type 3.

2.7 POLYISOCYANURATE INSULATION

.1 To CAN/ULC-S704, Type 2 Class 1, flame spread classification: less than 500, thickness as indicated.

2.8 SEALERS

.1 Plastic cement: asphalt.

.2 Sealing compound: rubber asphalt type.

.3 Sealants: Caulking - see Section 07 92 00 - Joint Sealants.
2.9 FASTENERS

.1 Insulation to deck: coated insulation fasteners and galvanized plates must meet FM Approval for wind uplift and corrosion resistance, as recommended by insulation manufacturer.

Part 3 Execution

3.1 QUALITY OF WORK


.2 Do priming in accordance with manufacturers written recommendations.

.3 The interface of the walls and roof assemblies will be fitted with durable rigid material plywood providing connection point for continuity of air barrier.

.4 Assembly, component and material connections will be made in consideration of appropriate design loads.

3.2 EXAMINATION OF ROOF DECKS

.1 Verification of Conditions:

.1 Inspect with Consultant deck conditions including parapets, construction joints, roof drains, plumbing vents and ventilation outlets to determine readiness to proceed.

.2 Evaluation and Assessment:

.1 Prior to beginning of work ensure:

.1 Decks are firm, straight, smooth, dry, free of snow, ice or frost, and swept clean of dust and debris. Do not use calcium or salt for ice or snow removal.

.2 Curbs have been built.

.3 Roof drains have been installed at proper elevations relative to finished roof surface.

.4 Plywood and lumber nailer plates have been installed to deck, walls and parapets as indicated.

.3 Do not install roofing materials during rain or snowfall.

3.3 PROTECTION OF IN-PLACE CONDITIONS

.1 Cover walls, walks and adjacent work where materials hoisted or used.

.2 Use warning signs and barriers. Maintain in good order until completion of Work.

.3 Clean off drips and smears of bituminous material immediately.

.4 Dispose of rain water off roof and away from face of building until roof drains or hoppers installed and connected.
.5 Protect roof from traffic and damage. Comply with precautions deemed necessary by Consultant.

.6 At end of each day's work or when stoppage occurs due to inclement weather, provide protection for completed Work and materials out of storage.

.7 Metal connectors and decking will be treated with rust proofing or galvanization.

3.4 VAPOUR RETARDER PLYWOOD DECK

.1 Modified bituminous vapour retarder sheet.

3.5 (EXPOSED) CONVENTIONAL MEMBRANE ROOFING (CMR) APPLICATION

.1 Insulation: mechanically fastened application:

.1 Mechanically fasten insulation using screws and pressure distribution plates.

.2 Fasten insulation as per manufacturer's written recommendations.

.3 Number and pattern of screws per board to meet Factory Mutual requirements.

.4 Place boards in parallel rows with ends staggered, and in firm contact with one another.

.5 Cut end boards to suit.

.2 Tapered insulation application:

.1 Install tapered insulation as first insulation layer, in accordance with shop drawings.

.3 Overlay Board: adhesive application:

.1 Adhere overlay board to insulation with vulcanized adhesive at the rate of one litre per m².

.2 Place boards in parallel rows with end joints staggered. Cap joints approximately 25 mm.

.3 Cut ends to suit and apply adhesive in continuous ribbons at 300 mm on centre.

.4 Base sheet application:

.1 Starting at low point of roof, perpendicular to slope, unroll base sheet, align and reroll from both ends.

.2 Unroll and embed base sheet in uniform coating of asphalt applied at rate of 1.2 kg/m², at 230 degrees C.

.3 Lap sheets 75 mm minimum for side and 150 mm minimum for end laps.

.4 Application to be free of blisters, wrinkles and fishmouths.

.5 Cap sheet application:

.1 Starting at low point on roof, perpendicular to slope, unroll cap sheet, align and reroll from both ends.

.2 Unroll and torch cap sheet onto base sheet taking care not to burn membrane or its reinforcement.

.3 Lap sheets 75 mm minimum for side laps and 150 mm minimum for end laps. Offset joints in cap sheet 300 mm minimum from those in base sheet.

.4 Application to be free of blisters, fishmouths and wrinkles.

.5 Do membrane application in accordance with manufacturer's recommendations.

.6 Flashings:
.1 Complete installation of flashing base sheet stripping prior to installing membrane cap sheet.

.2 Mop or base and cap sheet onto substrate in 1 metre wide strips.

.3 Lap flashing base sheet to membrane base sheet minimum 150 mm and seal by mopping or torch welding.

.4 Lap flashing cap sheet to membrane cap sheet 250 mm minimum and torched.

.5 Provide 75 mm minimum side lap and seal.

.6 Properly secure flashings to their support, without sags, blisters, fishmouths or wrinkles.

.7 Do work in accordance with manufacturer's recommendations.

.7 Roof penetrations:

.1 Install roof drain pans, vent stack covers and other roof penetration flashings and seal to membrane in accordance with manufacturer's recommendations and details.

3.6 FIELD QUALITY CONTROL

.1 Inspections:

.1 Inspection and testing of roofing application will be carried out by testing laboratory designated by Consultant.

.2 Owner will pay for tests as specified in Section 01 45 00 - Quality Control.

3.7 CLEANING

.1 Remove bituminous markings from finished surfaces.

.2 In areas where finished surfaces are soiled caused by work of this section, consult manufacturer of surfaces for cleaning advice and complying with their [documented] instructions.

.3 Repair or replace defaced or disfigured finishes caused by work of this section.

.4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

.1 Place materials defined as hazardous or toxic in designated containers.

.2 Clearly label location of salvaged material's storage areas and provide barriers and security devices.

.3 Ensure emptied containers are sealed and stored safely.

.4 Unused adhesive, sealant and asphalt materials must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

.5 Dispose of unused adhesive material at official hazardous material collections site approved by Consultant.

.6 Dispose of unused sealant material at official hazardous material collections site approved by Consultant.

.7 Dispose of unused asphalt material at official hazardous material collections site approved by Consultant.

END OF SECTION
Part 1  General

1.1  RELATED SECTIONS

   .1  Section 07 46 24 – Board and Panel Siding.

   .2  Section 07 52 00 – Modified Bituminous Roofing

1.2  REFERENCES

   .1  Roofing Contractors Association of British Columbia (RCABC)

       .1  Roofing Practises Manual

1.3  SUBMITTALS

   .1  Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.4  DELIVERY, STORAGE AND HANDLING

   .1  Waste Management and Disposal:

       .1  Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

       .2  Materials and Resources Credit MRc2.1 Construction Waste Management: Divert 50% From Landfill and MRc2.2 Construction Waste Management: Divert 75% From Landfill: prepare Construction Waste Management plan in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2  Products

2.1  SHEET METAL MATERIALS

   .1  Zinc coated steel sheet: 0.61 mm thickness, commercial quality to ASTM A653/A653M, with Z275 designation zinc coating.

   .2  Aluminum sheet: proprietary utility sheet plain, 0.6 mm minimum thickness.

2.2  PREFINISHED ALUMINUM SHEET

   .1  Finish: factory applied coating to CAN/CGSB-93.1 supplemented and amended as follows:

       .1  Type 1.

       .2  Class F2S.

       .3  Colour selected by Consultant from manufacturer's standard range.

       .4  Coating thickness: not less than 20 micrometres.

   .2  Thickness specified for prefinished aluminum sheet applies to base metal.

2.3  ACCESSORIES

   .1  Isolation coating: alkali resistant bituminous paint.
.2 Plastic cement: to CAN/CGSB 37.5.
   .1 Maximum VOC limit 50 g/L to SCAQMD Rule 1168.

.3 Underlay for metal flashing: No. 15 perforated asphalt felt to CSA A123.3.

.4 Sealants: to Section 07 92 00 – Joint Sealing.
   .1 Maximum VOC limit 50 g/L to SCAQMD Rule 1168.

.5 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide. Thickness same as sheet metal being secured.

.6 Fasteners: of same material as sheet metal, to CSA B111, flat head roofing nails of length and thickness suitable for metal flashing application.

.7 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

.8 Touch-up paint: as recommended by prefinished material manufacturer.
   .1 Maximum VOC limit 50 g/L to Standard GS-11.

2.4 FABRICATION
   .1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series details.
   
   .2 Fabricate aluminum flashings and other sheet aluminum work in accordance with AAI-Aluminum Sheet Metal Work in Building Construction.
   
   .3 Form pieces in 3000 mm maximum lengths. Make allowance for expansion at joints.
   
   .4 Hem exposed edges on underside 12 mm. Mitre and seal corners with sealant.
   
   .5 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
   
   .6 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

2.5 METAL FLASHINGS
   .1 Form flashings and trim to profiles indicated of 0.6mm thick prefinished aluminum.

2.6 EAVES TROUGHS AND DOWNPIPES
   .1 Form eaves troughs and downpipes from prefinished aluminum sheet metal.
   
   .2 Sizes and profiles as indicated.
   
   .3 Provide goosenecks, outlets, strainer baskets and necessary fastenings.

2.7 SCUPPERS
   .1 Form scuppers from prefinished aluminum/copper sheet metal,
   
   .2 Sizes and profiles as indicated.
   
   .3 Provide necessary fastenings.
3.1 INSTALLATION

.1 Install sheet metal work in accordance with RCABC details.

.2 Use concealed fastenings except where approved before installation.

.3 Provide underlay under sheet metal. Secure in place and lap joints 100 mm.

.4 Lock end joints and caulk with sealant.

3.2 EAVES TROUGHS AND DOWNPIPES

.1 Install eaves troughs and secure to building at 750 mm on centre with eaves trough spikes through spacer ferrules.

.1 Slope eaves troughs to downpipes as indicated. Seal joints watertight.

.2 Install downpipes and provide goosenecks back to wall.

.1 Secure downpipes to wall with straps at 1800 mm on centre; minimum two straps per downpipe.

.2 Connect downpipes to rain water harvesting system or drainage system and seal joint with plastic cement.

3.3 SCUPPERS

.1 Install scuppers as indicated.

3.4 CLEANING

.1 Proceed in accordance with Section 01 74 00 – Cleaning.

.2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

.3 Leave work areas clean, free from grease, finger marks and stains.

END OF SECTION
Part 1  General

1.1  RELATED SECTIONS
1.1 Section 07 92 00 – Joint Sealing.

1.2  REFERENCES
1.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
   .1 Material Safety Data Sheets (MSDS).
1.2 Underwriter's Laboratories of Canada (ULC)

1.3  DEFINITIONS
1.3 Fire Stop Material: device intended to close off opening or penetration during fire or
      materials that fill openings in wall or floor assembly where penetration is by cables, cable
      trays, conduits, ducts and pipes and poke-through termination devices, including electrical
      outlet boxes along with their means of support through wall or floor openings.
1.3 Single Component Fire Stop System: fire stop material that has Listed Systems Design
      and is used individually without use of high temperature insulation or other materials to
      create fire stop system.
1.3 Multiple Component Fire Stop System: exact group of fire stop materials that are
      identified within Listed Systems Design to create on site fire stop system.
1.4  Tightly Fitted; (ref: NBC Part 3.1.9.1.1 and 9.10.9.6.1): penetrating items that are cast in
      place in buildings of non-combustible construction or have "0" annular space in buildings
      of combustible construction.
1.4 Words "tightly fitted" should ensure that integrity of fire separation is such that it
      prevents passage of smoke and hot gases to unexposed side of fire separation.

1.4  SUBMITTALS
1.4 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
1.4 Product Data:
   .1 Submit manufacturer's printed product literature, specifications and datasheet
      and include product characteristics, performance criteria, physical size, finish and
      limitations.

1.5  QUALITY ASSURANCE
1.5 Qualifications:
1.5 Installer: person specializing in fire stopping installations with 5 years experience.

1.6  DELIVERY, STORAGE AND HANDLING
1.6 Packing, shipping, handling and unloading:
1.6 Deliver, store and handle materials in accordance with manufacturer's written
      instructions.
2 Deliver materials to the site in undamaged condition and in original unopened containers, marked to indicate brand name, manufacturer, ULC markings.

.2 Storage and Protection:

.1 Store materials indoors in dry location and in accordance with manufacturer’s recommendations in clean, dry, well-ventilated area.

.2 Replace defective or damaged materials with new.

.3 Waste Management and Disposal:

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

Part 2 Products

2.1 MATERIALS

.1 Fire stopping and smoke seal systems: in accordance with CAN-ULC-S115.

.1 Asbestos free materials and systems capable of maintaining effective barrier against flame, smoke and gases in compliance with requirements of CAN-ULC-S115 and not to exceed opening sizes for which they are intended.

.2 Fire stop system rating: to suit required fire resistance rating of wall and ceiling/roof assembly as noted on drawings.

.2 Service penetration assemblies: systems tested to CAN-ULC-S115.

.3 Service penetration fire stop components: certified by test laboratory to CAN-ULC-S115.

.4 Fire resistance rating of installed fire stopping assembly in accordance with BCBC 2012.

.5 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal.

.6 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal.

.7 Primers: to manufacturer’s recommendation for specific material, substrate, and end use.

.8 Water (if applicable): potable, clean and free from injurious amounts of deleterious substances.

.9 Damming and backup materials, supports and anchoring devices: to manufacturer’s recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.

.10 Sealants for vertical joints: non-sagging.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer’s written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.
3.2 PREPARATION

.1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials.

.1 Ensure that substrates and surfaces are clean, dry and frost free.

.2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer’s instructions.

.3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.

.4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

3.3 INSTALLATION

.1 Install fire stopping and smoke seal material and components in accordance with manufacturer’s certified tested system listing.

.2 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.

.3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.

.4 Tool or trowel exposed surfaces to neat finish.

.5 Remove excess compound promptly as work progresses and upon completion.

3.4 SEQUENCES OF OPERATION

.1 Proceed with installation only when submittals have been reviewed by Consultant.

.2 Mechanical pipe insulation: certified fire stop system component.

.1 Ensure pipe insulation installation precedes fire stopping.

3.5 FIELD QUALITY CONTROL

.1 Inspections: notify Consultant when ready for inspection and prior to concealing or enclosing fire stopping materials and service penetration assemblies.

3.6 CLEANING

.1 Proceed in accordance with Section 01 74 00 – Cleaning.

.2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

.3 Remove temporary dams after initial set of fire stopping and smoke seal materials.

3.7 SCHEDULE

.1 Fire stop and smoke seal at:

.1 Penetrations through fire resistance rated gypsum board partitions and walls.
.2 Top of fire resistance rated gypsum board partitions.
.3 Penetrations through fire resistance rated ceilings and roofs.
.4 Openings and sleeves installed for future use through fire separations.
.5 Around mechanical and electrical assemblies penetrating fire separations.
.6 Rigid ducts: greater than 129 cm²: fire stopping to consist of bead of fire stopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.

END OF SECTION
Part 1 General

1.1 REFERENCES

All Referenced Standards are latest editions, unless noted otherwise

.1 CAN/CGSB-19.2, Glazing Compound, Non-hardening, Modified Oil Type.
.2 CGSB 19-GP-5M, Sealing Compound, One Component, Acrylic Base, Solvent Curing.
.3 CAN/CGSB-19.6, Caulking Compound, Oil Base.
.4 CAN/CGSB-19.13, Sealing Compound, One Component, Elastomeric, Chemical Curing.
.5 CGSB 19-GP-14M, Sealing Compound, One Component, Butyl-polyisobutylene Polymer Base, Solvent Curing.
.6 CAN/CGSB-19.17, One-Component Acrylic Emulsion Base Sealing Compound.
.7 CAN/CGSB-19.18, Sealing Compound, One Component, Silicone Base, Solvent Curing.
.8 CAN/CGSB-19.21, Sealing and Bedding Compound Acoustical.
.9 CAN/CGSB-19.24, Multi-component, Chemical Curing Sealing Compound.
.10 CAN/CGSB 37.5, Cutback Asphalt Plastic Cement

1.2 SUBMITTALS

Submit all documentation and samples for review by Consultants at one time, prior to fabricating curtain wall(s).

.1 Product data for silicone sealant, primer, joint backing, and other accessories. Include material safety data sheets (MSDSs) and certifications showing compliance with specified standards.
.2 Manufacturer’s instructions for installation and field quality control testing.
.3 Copy of warranties for product installer and manufacturer for review by Architect.
.4 The Contractor is responsible for certifying that all areas and surfaces are inspected and found satisfactory to receive materials, as per the system manufacturer’s requirements. Installation of sealant shall imply acceptance of surfaces. Any existing conditions not specified which may affect the bonding or performance of the caulking shall be brought to the attention of the Consultant, in writing, for resolution prior to installation of materials.
1.3 QUALITY ASSURANCE

.1 Submit all documentation specified to show that all products meet or exceed the requirements of this specification.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Deliver products in manufacturer’s original containers clearly labeled with product identification, date of manufacture, and shelf life.

.2 Store materials in clean, dry area at temperatures below 30 degrees C. Protect from freezing, moisture, water and contact with ground or floor.

.3 Do not use sealants and primers after manufacturer’s stated shelf life.

.4 Maintain containers and labels in undamaged condition.

1.5 ENVIRONMENTAL AND SAFETY CONDITIONS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada.

.2 Conform to manufacturer’s recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

.3 Do not install silicone sealants during inclement weather, strong winds, or when such conditions are expected. Allow wet surfaces must be dry and frost free.

.4 Do not install any sealant until all nearby welding, grinding, sandblasting, waterproofing, mortar work and acid etching are complete.

.5 Report to the Consultant in writing any defects in existing work, or unsatisfactory site conditions. Start no work until conditions are satisfactory. Starting work shall imply acceptance of existing conditions and surfaces.

.6 Sealant and substrate materials to be minimum 5°C. Optimum sealant application temperature: Between 10 and 32 degrees C.

.7 Do not install sealants when temperature is:

.1 3 degrees C below dew point.
.2 Above 50 degrees C.
.3 Should it become necessary to apply sealants below 5°C, consult with the sealant manufacturer and follow their recommendations

.8 Ventilate area of work as directed by Consultant by use of approved portable supply and exhaust fans.

1.6 MOCK-UP

.1 Construct mock-up to show location, size, shape and depth of joint [s] complete with back-up material, primer, caulking and sealant.
2.0 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

.1 The system shall satisfy the following requirements for the duration of the warranty.

.1 The installed sealant shall be totally waterproof, flexible and thermally compatible with the substrate under applicable service conditions.
.2 The installed sealant shall provide a weathertight seal and shall not allow moisture penetration.
.3 The system shall withstand active cyclical movements of 50% of the joint width and remain bonded and watertight.
.4 The system shall not debond, crack or craze.
.5 The sealed joints shall not leak.

.2 Installed structural silicone glazing shall withstand movement and deflection of structural support framing without breakage, loss, failure of seals, product deterioration, and other defects.

.3 Provide and install exterior sealants and other glazing accessories to resist water and air penetration.

2.2 MATERIALS

.1 Joint Cleaner: Xylol, methylethylketone, alcohol, or non-corrosive type recommended by sealant manufacturer and compatible with joint forming materials.

.2 Primers: Types recommended by sealant manufacturer.

.3 Joint Back-Up: Round closed cell foam, extruded polyolefin, Shore A hardness of 20, tensile strength 140 to 200 kPa, oversized 30-50%, compatible with sealant and primer, non-adhering to sealant, and non-gassing.

.4 Bond Breaker: Pressure-sensitive plastic tape that will not bond to sealants.

.5 Vent/Weeping tubes: non-metallic, 6mm inside diameter minimum.

.6 Sealants:

.1 Type 1 - CAN/CGSB 19.13, one (1) component Polyurethane.
   .1 Sikaflex – LM15 SL Grade by Sika Corporation
   .2 Dymonic FC by Tremco Ltd.

.2 Type 2 - CAN/CGSB 19.17, acrylic latex polymer.
   .1 Tremflex 834 by Tremco Ltd.

.3 Type 3 - CAN/CGSB 19.21, single component synthetic rubber.
.1 Acoustical Sealant by Tremco Ltd.
.4 Type 4 – CAN/CGSB 19.24, multi-component polyurethane.
.1 Dymeric 511 240 by Tremco Ltd.
.2 NP2 by Sonneborn Inc.
.5 Type 5 – CAN/CGSB 37.5, polybitume.
.1 Polybitume 570-05 by Henry Company Canada

.7 Colour of Sealants: Selected by the Owner and Consultant to match adjacent finishes. Contractor to provide colour samples to facilitate selection.

3.0 EXECUTION

3.1 INSPECTION

.1 Inspect rough openings and the work of other trades on which the work of this trade depends. Do not proceed until deficiencies in surrounding work, if any, have been corrected. Start of installation indicates acceptance of preceding work.

3.2 PREPARATION

.1 Ensure environmental and site conditions, as recommended by the manufacturer, are suitable for installation of work of this section.

.2 Ensure all existing caulking and extruded tapes are removed and surfaces prepared and primed in accordance with the manufacturer's recommendations.

.3 Preparation of surfaces is to be in strict accordance with the manufacturer's recommendations, including preparation and smoothing of rough surfaces, and detailing of cracks, joints and voids as required.

.4 Joint surfaces are to be sound and free of all moisture, dust, oils and other materials that may adversely affect sealant bond. Minimum standard of cleaning shall be wire brush or equivalent for concrete surfaces to remove all traces of existing sealant and to expose clean concrete. Metal flashings and mullions to be cleaned so as not to damage surface finishes. After cleaning, joints must be thoroughly dry, dust free and frost free before applying sealant.

.5 No primer or first coat shall be applied until the surface preparations has been inspected and accepted in writing by a representative of the sealant manufacturer if requested by the Consultant.

.6 Apply primer to joint interface immediately after cleaning to prevent frost or condensation from developing on cleaned surface.

.7 Examine joint sizes and correct to achieve depth ratio one-half (1/2) of joint width with minimum width and depth of 6.0 mm, maximum width 25 mm.

.8 Install joint back-up to achieve correct joint depth. Install backer material immediately after cleaning and/or priming. Never clean or apply primer over a joint where backer material has been installed.

.9 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

.10 Apply bond breaker tape where required to manufacturer's instructions.
Prime sides of joints to manufacturer's directions immediately prior to caulking.

Interior splines are to be installed prior to caulking of exterior glass bead.

3.3 APPLICATION

Apply sealants to manufacturer's instructions. Apply using gun with proper size nozzle. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.

Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities. Tool surface neatly to produce slight concave joint.

Application procedures that result in toxic fumes or flammable solvents collecting or endangering workers or building occupants are not permitted.

Type 1: apply sealant to following exterior locations.

- Joints between window or door frames to adjacent exterior building components.
- Around perimeter of exterior wall penetrations (window framing to cladding).
- At junctions of dissimilar material (i.e., frame construction to concrete construction).
- Where detailed.

Type 2: apply sealant to following interior locations:

- Joints between window or door frames to adjacent interior building components.
- Around perimeter of wall and penetrations for exposed acoustical applications.
- At junctions of dissimilar material (i.e., gypsum board casing bead-to-other construction).
- Where detailed.

Type 3: apply sealant to the following locations:

- Around perimeter of wall and penetrations for "concealed" acoustical and air/vapour barrier applications.

Type 4: apply sealant to the following locations:

- Building control and expansion joints except where preformed joint inserts are used.

Type 5: apply sealant to the following locations:

- At all locations where wood is in direct contact with the exterior plane of moisture resistance (i.e. building paper). Locate and size bead, using appropriate shaped applicator tip to ensure the surface of the wood is fully separated from the surface of the building paper and fasteners through the wood penetrate the bead of sealant.

Tooling: Before skinning or curing begins, tool sealant with metal spatula.

- Provide concave, smooth, uniform, sealant finish. Eliminate air pockets and ensure complete contact on both sides of joint opening.
- Tool joints with one continuous stroke.
- Do not use water, soap, detergents, or alcohol to facilitate tooling.

Cure sealants in accordance with sealant manufacturer's instructions. Caulked joints shall be protected by the Contractor until sufficiently cured.
.11 Clean adjacent surfaces immediately and leave work neat and clean. Remove excess sealant and droppings, using recommended cleaners as work progresses. Remove masking tape after tooling of joints.

3.4 REVIEW AND TESTING

.1 Periodic review of the various phases of the work is to be performed by the Consultant. Contractor is to provide safe access.

.2 Contractor shall inform Consultant and any testing agency (as designated by the Consultant) 24 hours in advance of work to be performed under this section.

.3 Contractor to repair at test locations.

.4 Additional tests may be performed at the discretion of the Consultant to confirm in-situ material thickness.

END OF SECTION
Part 1  General

1.1  RELATED SECTIONS
   .1  Section 07 92 00 - Joint Sealing.

1.2  SHOP DRAWINGS
   .1  Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
   .2  Indicate materials and details in full size scale for head, jamb and sill, profiles of components, elevations of unit, anchorage details description of related components, fasteners, and caulking.

1.3  CLOSEOUT SUBMITTALS
   .1  Provide operation and maintenance data for windows for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4  WASTE MANAGEMENT AND DISPOSAL
   .1  Separate and recycle waste materials in accordance with Section 01 74 19 - Waste Management and Disposal.
   .2  Collect and separate for disposal packaging material in appropriate on-site for recycling in accordance with Waste Management Plan.
   .3  Unused or damaged glazing materials are not recyclable and must not be diverted to municipal recycling programs.
   .4  Divert unused metal materials from landfill to metal recycling facility approved by Consultant.
   .5  Divert unused caulking material from landfill to official hazardous material collections site approved by Consultant.
   .6  Plastic caulking tubes are not recyclable and must not be diverted for recycling with other plastic materials.

Part 2  Products

2.1  MATERIALS
   .1  Materials: to CSA-A440/A440-05 supplemented as follows:
   .2  All windows by same manufacturer.
   .3  Sash: aluminum thermally broken.
   .4  Main frame: aluminum thermally broken.
   .5  Glazing Beads: square extruded aluminum.
.6 Glass: Insulating glass units to Can2-12.8M, with outer pane of 5 mm glass and inner pane of 5 mm glass with 12 mm air space.

.7 Screens: to CAN/CGSB-79.1.

1. Type: 1
2. Class: A
3. Style: 2
4. Insect screening mesh: count 18 x 16.
5. Fasteners: tamper proof.
6. Screen frames: aluminum, colour to match window frames.
7. Mount screen frames for interior replacement. Provide hinged section for access to sash operator.

.8 Exterior head and sills flashings: extruded aluminum or brake formed aluminum sheet metal of type and size as detailed; minimum 2 mm thick. Colour to match adjacent windows.

.9 Isolation coating: alkali resistant bituminous paint.

2.2 WINDOW TYPE AND CLASSIFICATION

.1 Types:
1. Projected: bottom projected with removable double insulating glass.
2. Casement: with removable double insulating glass
3. Fixed: with removable double insulating glass.
4. Screens: on ventilating portion of windows.

.2 Classification rating: to AAMA/WDMA/CSA101/I.S.2/A440-08 NAFS-North American Fenestration Standard

1. Air tightness: A3 (operable vents), Fixed (fixed vents).
3. Wind load resistance: ±1680Pa

2.3 FABRICATION

.1 Fabricate in accordance with NAFS-08 supplemented as follows:

.2 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.

.3 Face dimensions detailed are maximum permissible sizes.

.4 Brace frames to maintain squareness and rigidity during shipment and installation.

.5 Finish steel clips and reinforcement with [shop coat primer to CAN/CGSB-1.40] [380] g/m² zinc coating to CAN/CSA-G164.
2.4 ALUMINUM FINISHES
   .1 Finish exposed surfaces of aluminum components in accordance with Aluminum Association Designation System for Aluminum Finishes.
   .1 Clear anodic finish.

2.5 ISOLATION COATING
   .1 Isolate aluminum from following components, by means of isolation coating:
      .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
      .2 Concrete.
      .3 Wood.

2.6 GLAZING
   .1 Glaze windows in accordance with NAFS-08

2.7 HARDWARE
   .1 Hinges: One pair Anderberg stainless steel hinges per vent opening or equal as provided by approved window manufacturer.

   .2 Cam Handles: white bronze cam handles with stainless steel back-up nuts, mounted to window frames; provide 2 per vent for vents over 750 mm wide; shall not necessitate screen removal to open vent window.

2.8 SEALANTS
   .1 Sealants to Section 07 92 00- Joint Sealing

Part 3 Execution

3.1 WINDOW INSTALLATION
   .1 Install in accordance with CSA-A440/A440.1.

   .2 Install insect screens on inside of each vent opening.

   .3 Install head and sill flashings, lap and tape to air barrier.

   .4 Coordinate with electrical trade for connections of operating mechanism and push button controls to window motors.

3.2 CAULKING
   .1 Seal joints between windows and window sills with sealant. Bed sill expansion joint cover plates and drip deflectors in bedding compound. Caulk between sill upstand and window-frame. Caulk butt joints in continuous sills.

   .2 Apply sealant in accordance with Section 07 92 00 - Joint Sealing.

END OF SECTION
Part 1  General

1.1  SUMMARY

.1 Section Includes:
   .1 Safety/Security film and solar film placed on inside face of glass surfaces for increased security protection and solar heat gain reduction

.2 Related Sections:
   .1 Section 08 50 00 – Windows.

1.2  DEFINITIONS

.1 Safety: reduction of risk of injury, loss or death of persons due to accidental, natural or unintentional causes.

.2 Security: reduction of risk of injury, loss or death of persons due to intentional actions of others.

.3 Security and Safety Film Types:

   .1 Type 1 Safety/Security: areas of concern related to common residential or light commercial accidents and smash and grab break and entry.

   .2 Type 2 Safety / Security / Seismic: areas of concern related to seismographic upgrade, low end smash and grab break and entry and over pressure due to violent weather. This type may also incorporate reduced solar heat gain qualities.

   .3 Type 3 Safety / Seismic / Solar: areas of concern related to seismographic upgrade and reduced solar heat gain

1.3  SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures.

.3 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

   .1 Submit one 300 x 300 mm sample of each type of film specified, installed on 6 mm thick clear plate glass.

.4 Submit test reports in accordance with Section 01 33 00 - Submittal Procedures.

   .1 Submit test reports from approved independent testing laboratory, certifying film's compliance with specified requirements.

.5 Submit Closeout Submittals in accordance with Section 01 78 00 - Closeout Submittals.

   .1 Provide operation and maintenance data for window film for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

   .2 Follow manufacturers written instructions for care and maintenance of security and safety film.

   .3 Use only cleaning solution recommended by manufacturer for regularly scheduled cleaning of security film.
1.4 DELIVERY, STORAGE AND HANDLING

.1 Provide and maintain dry, off-ground weatherproof storage.

.2 Store rolls of film flat on cross supports. Do not stand rolls of film on end.

.3 Remove from storage, in quantities required for same day use.

.4 Store materials in accordance with manufacturers written instructions.

.5 Waste Management and Disposal:

.1 Separate and recycle waste materials in accordance with Section 01 74 19 - Waste Management and Disposal and with Waste Reduction Workplan.

1.5 WARRANTY

.1 Contractor hereby warrants that Security and Safety Film will stay in place without delaminating, peeling or blistering in accordance with CCDC 2 GC24, but for 10 years.

.2 Ensure warranty includes items as follows:

.1 Maintaining adhesion properties without blistering, bubbling or delaminating from glass surface.

.2 Maintaining appearance without discolouration.

.3 Removing, replace and reapply defective materials.

.4 In event of product failure under warranty terms, remove and re-apply film without glass replacement at no cost to Owner.

1.6 MAINTENANCE DATA

.1 Provide operation and maintenance data for window film for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

Part 2 Products

2.1 MATERIALS

.1 Security Film - General: optically clear polyester film, abrasion resistant coating and release liner.

.1 Type 3 combination Safety/Seismic/Solar Film:

.1 Acceptable material: Sun Guard S15, 4 mil thickness (earthquake proof).

.3 Approved supplier/contractors: Island Solar Films, Nanaimo, (250) 756-2454 or equal other pre-approved supplier/contractors

2.2 FABRICATION

.1 Shop installation of security film to glass panels:

.1 Ensure dust, grease, and chemical residue are removed from surface of glass before installation of film.

.2 Examine glass under natural daylight and identify cracks, blisters, bubbles, discolouration, edge defects or other anomalies that may cause film to delaminate, or cause vision transparency or distortion problems.

.3 Proceed with Work only after approval from Consultant.

.1 Install security/solar film to glass panels ensuring no blisters, bubbles, scratches, edge defects or distortions.
Part 3 Execution

3.1 PREPARATION

.1 Clean glass before beginning installation using neutral cleaning solution.

.2 Ensure no deleterious material adheres to glass by scraping surface of glass using industrial razors.

.3 Ensure dust, grease, and chemical residue are removed from surface of glass before installation of film.

.4 Examine glass under natural daylight and identify cracks, blisters, bubbles, discolouration, edge defects or other anomalies that may cause film to delaminate or cause vision transparency or distortion problems.

.5 Before beginning Work, place absorbent material on window sill or at sash frame to absorb moisture accumulation generated by film application.

3.2 INSTALLATION

.1 Field Installation of Security / Solar Film to Glass Windows:

.1 Install film in the same manner as tested.

.2 Remove any window stops and window sealing device.

.3 Ensure no deleterious material adheres to glass by scraping surface of glass using industrial razors.

.4 Ensure dust, grease, and chemical residue are removed from surface of glass before installation of film.

.5 Examine glass under natural daylight and identify cracks, blisters, bubbles, discolouration, edge defects or other anomalies that may cause film to delaminate, or cause vision transparency or distortion problems.

.6 Install security and solar film to glass windows ensuring no blisters, bubbles, scratches or distortions.

.2 Cut film edges straight and square.

.3 Ensure film is installed behind window stops.

.4 Cut edges 3 mm maximum from edge of glass sealing device in accordance with manufacturer’s written instructions.

.5 Apply and attach film to glass in accordance with manufacturer's written instructions.

.6 Splicing:

.1 Splice film only when glass is greater in width than film.

.2 Splice film only after receipt of written approval from Consultant.

.3 Use butt or overlapped factory edges only.

.4 Ensure maximum overlap of 3 mm.

.7 Use only water and film slip solution on glass to facilitate positioning of film.
.8 Ensure removal of excess water from between film and glass.

.9 Remove left over material from work area and return work area to original condition.

### 3.3 SCHEDULE

.1 Install Type 3 Seismic/solar film to all windows in Operations Building and Scale House Building above height of 2135 mm (7'-0") a.f.f.

### 3.4 INSTALLER'S INSPECTION

.1 Visual Inspection: in accordance with IWFA - Visual Quality Standard for Applied Window Film.

.2 Remove and replace film that continues to show blisters, bubbles, tears, scratches, edge defects or vision distortion when viewed under natural daylight from 2.0 m minimum after 30 day period.

### 3.5 FINAL CLEANING

.1 Wash interior and exterior of each glass panel and film using cleaning solution recommended by film manufacturer.

END OF SECTION
1.1 REFERENCES

.1 ASTM C475, Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.


.4 ASTM C1280, Standard Specification for Application of Gypsum Sheathing.

.5 ASTM C1396/C1396M, Specification for Gypsum Board.


1.2 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer’s written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer’s name and address.

2.0 PRODUCTS

2.1 GYPSUM BOARD

.1 Interior Gypsum Board: ASTM C36, Type X, thickness as indicated by widths to suit framing centers by maximum practical lengths, wrapped tapered edges, square cut ends, fire-rated ULC labelled.

2.2 FASTENERS AND ADHESIVES

.1 Screws: To ASTM C954, for metal or wood framing, wafer head, rust-resistant, Type S-12 drill or Hi-Lo, minimum 31.75mm (1 ¼") length. Or Type W rust-resistant, bugle head, course thread, sharp point for wood.

.2 Adhesive for bonding gypsum board or panels to wood framing: to ASTM C557-99, waterproof, organic type, gun applied.

.3 Adhesive for laminating gypsum board or panel to gypsum board or panel: as recommended by gypsum board or panel manufacturer, as applicable.

.4 Laminating Compound: Asbestos-Free.

2.3 ACCESSORIES

.1 Accessories shall meet or exceed requirements of ASTM C1047 unless otherwise required for conformance to fire-rated assemblies.

.2 Casing Beads: Fill type, galvanized metal and vinyl extrusion types, perforated flanges, full length pieces to ASTM C1047.
.3 Corner Beads: 0.5 mm metal thickness, commercial grade sheet steel with Z275 designation zinc finish, fill type, expanded wing style, full length pieces ASTM C1047.

.4 Jointing Compounds and Tape: To ASTM C475.

.5 Acoustical/Air Barrier Sealants:

.1 Concealed: Sealing and bedding compound to CAN/CGSB 19.21, in accordance with Section 07900 – Sealants.

.2 Exposed: To CAN/CGSB 19.17, in accordance with Section 07900 - Sealants.

3.0 **EXECUTION**

3.1 **EXAMINATION**

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for gypsum board assemblies installation in accordance with manufacturer’s written instructions.

3.2 **APPLICATION**

.1 Install gypsum board in accordance ASTM C1280 and manufacturer’s written instructions.

.2 Examine and obtain all necessary measurements of previously executed work that may affect the work to this Division.

.3 Exercise care in unpacking, moving, storing, handling and placing panels to prevent damage likely to impair the adequacy or appearance of the material in the finished structure.

.4 Do not install gypsum board until bucks, anchors, blocking, electrical and mechanical work has been reviewed.

.5 Apply board to furring and framing using screw fasteners.

.1 Walls: Install screws 200 mm o.c. along board edges, 300 mm o.c. throughout board fields.

.2 Ceilings: Install screws 200 mm o.c. along board edges and throughout board fields.

.6 Where interior partitions intersect with exterior walls, run gypsum board through intersection on exterior wall prior to applying gypsum board to partition.

.7 Accessories:

.1 Erect accessories straight, plumb or level rigid and at proper plane. Use full-length pieces where practical. Make joints tight, aligned accurately and secured rigidly. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm o.c. using screw fastening.

.8 Taping and Filling:

.1 Finish gypsum board face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to the manufacturer’s directions and feathered out onto panel faces.
.2 Finish corner beads, control joints and trim as required with two (2) coats of joint compound and one (1) coat of taping compound, feathered out onto panel faces.

.3 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board to be invisible after finishing completed.

.4 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

.5 Completed installations to be smooth, level, plumb, free from waves, steps and other defects and ready for surface finish.

.6 Tape and fill surface which will be concealed by cabinets, white/tack boards, wall coverings, other finishes and construction.

3.3 PROTECTION

.1 Do not permit work to be damaged prior to covering. Protect from harmful weather exposures and physical abuse.

.2 Remove and replace damaged sheathing at the discretion of the Consultant.

3.4 ADJUST AND CLEAN

.1 Remove waste and excess material off site at completion of work of this section; repair and make good any defects to this application or any defects to any other work affected by this application.

END OF SECTION
Part 1  General

1.1  RELATED SECTIONS

.1  Section 01 45 00 – Quality Control
.2  Section 01 74 19 – Waste Management and Disposal
.3  Section 01 78 00 – Close-out Submittals
.4  Section 07 6 24 – Board and Panel Siding

1.2  REFERENCES

.1  The Master Painters Institute (MPI)

   .2  Standard GPS-1-05, MPI Green Performance Standard for Painting and Coatings.

1.3  QUALITY ASSURANCE

.1  Qualifications:

   .1  Contractor: to have a minimum of five years proven satisfactory experience.
   .2  Qualified journeypersons as defined by local jurisdiction to be engaged in painting work
   .3  Apprentices: may be employed provided they work under direct supervision of qualified journeyperson in accordance with trade regulations.
   .4  Conform to latest MPI requirements for exterior painting work including preparation and priming.
   .5  Materials: in accordance with MPI Painting Specification Manual "Approved Product" listing and from a single manufacturer for each system used.
   .6  Paint materials such as linseed oil, shellac, and turpentine to be highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and to be compatible with other coating materials as required.
   .7  Retain purchase orders, invoices and documents to prove conformance with noted MPI requirements when requested by Consultant.
   .8  Standard of Acceptance:

      .1  Walls: No defects visible from a distance of 1000 mm at 90 degrees to surface.
      .2  Soffits: No defects visible from floor at 45 degrees to surface when viewed using final lighting source.
      .3  Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

1.4  PERFORMANCE REQUIREMENTS

.1  Environmental Performance Requirements:

   .1  Provide paint products meeting MPI "Environmentally Friendly" E2 and E3 ratings based on VOC (EPA Method 24) content levels.
   .2  Green Performance in accordance with MPI Standard GPS-1.
1.5 **SUBMITTALS**

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures

.2 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Upon completion, submit records of products used. List products in relation to finish system and include the following:

.1 Product name, type and use.

.2 Manufacturer's product number.

.3 Colour number[s].

.4 MPI Environmentally Friendly classification system rating.

.5 Manufacturer's Material Safety Data Sheets (MSDS).

1.6 **QUALITY CONTROL**

.1 Provide mock-up in accordance with Section 01 45 00 - Quality Control.

.2 When requested by Consultant or Paint Inspection Agency, prepare and paint designated surface, area, room or item to requirements specified herein, with specified paint or coating showing selected colours, number of coats, gloss/sheen, textures and workmanship to MPI Painting Specification Manual standards for review and approval. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on-site work.

1.7 **MAINTENANCE**

.1 Extra Materials:

.1 Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.

.2 Submit one four litre can of each type and colour of stain and finish coating. Identify colour and paint type in relation to established colour schedule and finish system.

1.8 **DELIVERY, STORAGE AND HANDLING**

.1 Deliver, store and handle materials as follows:

.1 Deliver and store materials in original containers, sealed, with labels intact.

.2 Provide and maintain dry, temperature controlled, secure storage.

.3 Observe manufacturer's recommendations for storage and handling.

.4 Store temperature sensitive products above minimum temperature as recommended by manufacturer.

.5 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.

.6 Fire Safety Requirements:

.1 Provide one 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.

.2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
.3 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

.2 Waste Management and Disposal:

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Paint, stain and wood preservative finishes and related materials (thinner, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.

.3 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

.4 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.

.5 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:

.1 Retain cleaning water for water based materials to allow sediments to be filtered out.

.2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.

.3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.

.4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.

.5 Empty paint cans are to be dry prior to disposal or recycling (where available).

.6 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

.7 Set aside and protect surplus and uncontaminated finish materials: Deliver to or arrange for collection by verifiable re-use or re-manufacturing facility.

.8 Close and seal tightly partly used sealant and adhesive containers and store protected in well ventilated fire safe area at moderate temperature.

1.9 AMBIENT CONDITIONS

.1 Heating, Ventilation and Lighting:

.1 Do not perform painting work unless adequate and continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 10 degrees C for 24 hours before, during and after paint application until paint has cured sufficiently.

.2 Where required, provide continuous ventilation for seven days after completion of application of paint.

.3 Provide temporary ventilating and heating equipment to meet minimum requirements.

.4 Perform no painting work unless a minimum lighting level of 323 Lux is provided on surfaces to be painted. Adequate lighting facilities to be provided by General Contractor.

.2 Temperature, Humidity and Substrate Moisture Content Levels:

.1 Unless specifically pre-approved by specifying body, Paint Inspection Agency and, applied product manufacturer, perform no painting work when:
.1 Ambient air and substrate temperatures are below 10 degrees C.
.2 Substrate temperature is over 32 degrees C unless paint is specifically formulated for application at high temperatures.
.3 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's prescribed limits.
.4 Relative humidity is above 85 % or when dew point is less than 3 degrees C variance between air/surface temperatures.
.5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.

.2 Perform no painting work when maximum moisture content of substrate exceeds:
   .1 15 for wood.
   .2 12 for plaster and gypsum board.

.3 Conduct moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple "cover patch test".
.4 Test concrete, masonry and plaster surfaces for alkalinity as required.

.3 Surface and Environmental Conditions:
   .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
   .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits noted herein.
   .3 Apply paint when previous coat of paint is dry or adequately cured.
   .4 Apply paint finishes when conditions forecast for entire period of application fall within manufacturer's recommendations.
   .5 Do not apply paint when:
      .1 Temperature is expected to drop below 10 degrees C before paint has thoroughly cured.
      .2 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's limits.
      .3 Surface to be painted is wet, damp or frosted.
   .6 Provide and maintain cover when paint must be applied in damp or cold weather. Heat substrates and surrounding air to comply with temperature and humidity conditions specified by manufacturer. Protect until paint is dry or until weather conditions are suitable.
   .7 Schedule painting operations such that surfaces exposed to direct, intense sunlight are scheduled for completion during early morning.
   .8 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.

Part 2 Products

2.1 MATERIALS
   .1 Paint materials listed in latest edition of MPI Approved Products List (APL) are acceptable for use on this project.
   .2 Paint materials for paint systems: to be products of single manufacturer.
   .3 Only qualified products with E2 and E3 "Environmentally Friendly" ratings are acceptable for use on this project.
.4 Use only MPI listed L rated materials.

.5 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids, to be as follows:

.1 Be water based, water soluble, water clean-up.
.2 Be non-flammable, biodegradable.
.3 Be manufactured without compounds which contribute to ozone depletion in upper atmosphere.
.4 Be manufactured without compounds which contribute to smog in the lower atmosphere.
.5 Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.

.6 Water-borne surface coatings must be manufactured and transported in a manner that steps of processes, including disposal of waste products arising therefrom, will meet requirements of applicable governmental acts, by-laws and regulations including, for facilities located in Canada, Fisheries Act and Canadian Environmental Protection Act (CEPA).

.7 Water-borne surface coatings must not be formulated or manufactured with aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavelant chromium or their compounds.

.8 Water-borne surface coatings must have flash point of 61.0 degrees C or greater.

.9 Water-borne surface coatings must be made by a process that does not release:

.1 Matter in undiluted production plant effluent generating a 'Biochemical Oxygen Demand' (BOD) in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment.
.2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment.

.10 Water-borne paints and stains and water borne varnishes must meet a minimum "Environmentally Friendly" E2 rating.

2.2 COLOURS

.1 Indicated on the design drawings or to be provided after Contract award.

.2 Selection of colours will be from manufacturer’s full range of colours.

.3 Where specific products are available in restricted range of colours, selection will be based on limited range.

.4 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

2.3 MIXING AND TINTING

.1 Perform colour tinting operations prior to delivery of paint to site. On-site tinting of painting materials is allowed only with Consultant's written permission.

.2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
.3 Add thinner to paint manufacturer's recommendations. Do not use kerosene or organic solvents to thin water based paints.

.4 Thin paint for spraying according in accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Consultant.

.5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.4 GLOSS/SHEEN RATINGS

.1 Paint gloss: defined as sheen rating of applied paint, in accordance with following values:

<table>
<thead>
<tr>
<th>Gloss Level Category/</th>
<th>Units @ 60 Degrees/</th>
<th>Units @ 85 Degrees/</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1 - matte finish</td>
<td>0 to 5</td>
<td>max. 10</td>
</tr>
<tr>
<td>G2 - velvet finish</td>
<td>0 to 10</td>
<td>10 to 35</td>
</tr>
<tr>
<td>G3 - eggshell finish</td>
<td>10 to 25</td>
<td>10 to 35</td>
</tr>
<tr>
<td>G4 - satin finish</td>
<td>20 to 35</td>
<td>min. 35</td>
</tr>
<tr>
<td>G5 - semi-gloss finish</td>
<td>35 to 70</td>
<td></td>
</tr>
<tr>
<td>G6 - gloss finish</td>
<td>70 to 85</td>
<td></td>
</tr>
<tr>
<td>G7 - high gloss finish</td>
<td>&gt; 85</td>
<td></td>
</tr>
</tbody>
</table>

.2 Gloss level ratings of painted surfaces as specified.

2.5 EXTERIOR PAINTING SYSTEMS

.1 Cementitious Composition Board Surfaces: (vertical surfaces, horizontal soffits)

.1 EXT 3.3B - Alkyd G4 finish.

.2 Structural Steel and Metal Fabrications:

.1 EXT 5.1A - Quick dry enamel G4 finish.
.2 EXT 5.1D - Alkyd G4 finish.

.3 Galvanized Metal: not chromate passivated

.1 EXT 5.3B - Alkyd G4 finish.

.4 Dimension Lumber: columns, beams, exposed joists, underside of decking, siding, fencing, etc.

.1 EXT 6.2E - Varnish semi-gloss finish (over semi-transparent stain).

.5 Dressed Lumber: doors, door and window frames, casings, battens, smooth facias, etc.

.1 EXT 6.3B - Alkyd G4 finish.

2.6 SPECIAL FINISHES

.1 Section Not Used.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.
3.2 EXAMINATION

.1 Exterior surfaces requiring repainting: inspected by painting contractor who will notify Consultant in writing of defects or problems, prior to commencing repainting work, or after surface preparation if unseen substrate damage is discovered.

.2 Where assessed degree of surface degradation of DSD-1 to DSD-3 before preparation of surfaces for repainting is revealed to be DSD-4 after preparation, repair or replacement of such unforeseen defects discovered are to be corrected, as mutually agreed, before repainting is started.

.3 Where "special" repainting or recoating system applications (i.e. elastomeric coatings) or non-MPI listed products or systems are to be used, paint or coating manufacturer to provide as part of work, certification of surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to Consultant.

3.3 PREPARATION

.1 Perform preparation and operations for exterior painting in accordance with MPI Maintenance Repainting Manual except where specified otherwise.

.2 Apply paint materials in accordance with paint manufacturer's written application instructions.

.3 Clean and prepare exterior surfaces to be repainted in accordance with MPI Maintenance Repainting Manual requirements. Refer to the MPI Manual in regard to specific requirements and as follows:

.1 Remove dust, dirt, and surface debris by vacuuming, wiping with dry, clean cloths.

.2 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.

.3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.

.4 Allow surfaces to dry thoroughly. Allow sufficient drying time and test surfaces using electronic moisture meter before commencing work.

.5 Use water-based cleaners in place of organic solvents where surfaces will be repainted using water based paints.

.6 Many water-based paints cannot be removed with water once dried. Minimize use of kerosene or such organic solvents to clean up water-based paints.

.4 Clean metal surfaces to be repainted by removing rust, dirt, oil, grease and foreign substances in accordance with MPI requirements. Remove such contaminates from surfaces, pockets and corners to be repainted by brushing with clean brushes, blowing with clean dry compressed air, or brushing/vacuum cleaning as required.

.5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before priming and between applications of remaining coats. Touch-up, spot prime, and apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.

.6 Do not apply paint until prepared surfaces have been accepted by Consultant.

.7 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
3.4 EXISTING CONDITIONS

.1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Consultant damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.

.2 Conduct moisture testing of surfaces to be painted using a properly calibrated electronic moisture meter, except test concrete floors for moisture using a simple "cover patch test" and report findings to Consultant. Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.

.3 Maximum moisture content as follows:

   .1 Wood: 15%

3.5 PROTECTION

.1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore such surfaces as directed by Consultant.

.2 Protect items that are permanently attached such as Fire Labels on doors and frames.

.3 Protect factory finished products and equipment.

.4 Remove light fixtures, surface hardware on doors, and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Store items and re-install after painting is completed.

.5 Move and cover exterior furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.

.6 As painting operations progress, place "WET PAINT" signs in pedestrian and vehicle traffic areas to approval of Consultant.

3.6 APPLICATION

.1 Apply paint by brush, roller, air sprayer, airless sprayer as recommended by manufacturer's application instructions unless specified otherwise.

.2 Brush and Roller Application:

   .1 Apply paint in a uniform layer using brush and/or roller of types suitable for application.

   .2 Work paint into cracks, crevices and corners.

   .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.

   .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces shall be free of roller tracking and heavy stipple.

   .5 Remove runs, sags and brush marks from finished work and repaint.

.3 Spray Application:

   .1 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
.2 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.

.3 Apply paint in a uniform layer, with overlapping at edges of spray pattern.

.4 Brush out immediately runs and sags.

.5 Use brushes to work paint into cracks, crevices and places which are not adequately painted by spray.

.4 Apply coats of paint as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.

.5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

.6 Sand and dust between coats to remove visible defects.

.7 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as projecting ledges.

.8 Finish top, bottom, edges and cut-outs of doors after fitting as specified for door surfaces.

3.7 MECHANICAL/ELECTRICAL EQUIPMENT

.1 Unless otherwise specified, paint exterior exposed conduits, piping, hangers, duct work and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as noted otherwise.

.2 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.

.3 Do not paint over nameplates.

.4 Paint steel electrical light standards. Do not paint outdoor transformers and substation equipment.

3.8 FIELD QUALITY CONTROL

.1 Manufacturer’s Field Services:

.1 Provide manufacturer’s field services consisting of product use recommendations and “as required” site visits for inspection of product installation in accordance with manufacturer’s instructions.

3.9 CLEANING

.1 Proceed in accordance with Section 01 74 00 – Cleaning.

.1 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.

3.10 RESTORATION

.1 Clean and re-install hardware items removed before undertaken painting operations.

.2 Remove protective coverings and warning signs as soon as practical after operations cease.
.3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.

.4 Protect freshly completed surfaces from paint droppings and dust to approval of Consultant. Avoid scuffing newly applied paint.

.5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Consultant.

END OF SECTION
1.1 SUMMARY

1.1.1 Section Includes:

- Material and installation of site applied paint finishes to new interior surfaces, including site painting of shop primed surfaces.

1.2 Related Sections:

- Section 01 45 00 - Quality Control.
- Section 01 74 19 - Waste Management and Disposal.
- Section 01 78 00 - Closeout Submittals.
- Section 06 20 00 – Finish Carpentry.
- Section 09 21 16 – Gypsum Board Assemblies

1.2 REFERENCES

- Health Canada / Workplace Hazardous Materials Information System (WHMIS)
- Material Safety Data Sheets (MSDS).
- Master Painters Institute (MPI)
- Standard GPS-1-05, MPI Green Performance Standard for Painting and Coatings.
- South Coast Air Quality Management District (SCAQMD), California State
- SCAQMD Rule 1113 (July 2007) - Paints and Coatings
- Green Seal Environmental Standards
- Standard GC-03-93, Anti-Corrosive Paints

1.3 QUALITY ASSURANCE

1.3.1 Qualifications:

- Contractor: minimum of five years proven satisfactory experience.
- Journeymen: qualified journeymen who have "Tradesman Qualification Certificate of Proficiency" engaged in painting work.
- Apprentices: working under direct supervision of qualified trades person in accordance with trade regulations.

1.4 PERFORMANCE REQUIREMENTS

1.4.1 Environmental Performance Requirements:

- Provide paint products meeting MPI "Environmentally Friendly" E2 and E3 ratings based on VOC (EPA Method 24) content levels.
- Green Performance in accordance with MPI Standard GPS-1.
1.5 SUBMITTALS

.1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Submit product data and instructions for each paint and coating product to be used.

.2 Submit product data for the use and application of paint thinner.

.3 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures.

1.6 MAINTENANCE

.1 Extra Materials:

.1 Deliver to extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Section 01 78 00 - Closeout Submittals.

.2 Quantity: provide one four litre can of each type and colour of stain and finish coating. Identify colour and paint type in relation to established colour schedule and finish system.

.3 Delivery, storage and protection: comply with Consultant requirements for delivery and storage of extra materials.

1.7 DELIVERY, STORAGE AND HANDLING

.1 Packing, Shipping, Handling and Unloading:

.1 Pack, ship, handle and unload materials in accordance with manufacturer's written instructions.

.2 Acceptance at Site:

.1 Identify products and materials with labels indicating:

.1 Manufacturer's name and address.

.2 Type of paint or coating.

.3 Compliance with applicable standard.

.4 Colour number in accordance with established colour schedule.

.3 Remove damaged, opened and rejected materials from site.

.4 Storage and Protection:

.1 Provide and maintain dry, temperature controlled, secure storage.

.2 Store materials and supplies away from heat generating devices.

.3 Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.

.5 Store temperature sensitive products above minimum temperature as recommended by manufacturer.

.6 Keep areas used for storage, cleaning and preparation clean and orderly. After completion of operations, return areas to clean condition.

.7 Remove paint materials from storage only in quantities required for same day use.
.8 Fire Safety Requirements:

.1 Provide one 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.

.2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.

.3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.

.9 Waste Management and Disposal:

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Collect and separate for disposal packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan (WMP).

.3 Separate for reuse and recycling and place in designated containers Steel, Metal, Plastic waste in accordance with Waste Management Plan (WMP).

.4 Place materials defined as hazardous or toxic in designated containers.

.5 Handle and dispose of hazardous materials in accordance with CEPA, Regional and Municipal regulations.

.6 Ensure emptied containers are sealed and stored safely.

.7 Unused paint and coating materials must be disposed of at official hazardous material collections site.

.8 Paint, stain and wood preservative finishes and related materials (thinners, and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.

.9 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

.10 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.

.11 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground follow these procedures:

.1 Retain cleaning water for water-based materials to allow sediments to be filtered out.

.2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.

.3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.

.4 Dispose of contaminants in approved legal manner in accordance with hazardous waste regulations.

.5 Empty paint cans are to be dry prior to disposal or recycling (where available).

.12 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

.13 Set aside and protect surplus and uncontaminated finish materials: Deliver to or arrange collection by verifiable re-use or re-manufacturing facility.
1.8 SITE CONDITIONS

.1 Heating, Ventilation and Lighting:
   .1 Ventilate enclosed spaces.
   .2 Provide heating facilities to maintain ambient air and substrate temperatures above 10 degrees C for 24 hours before, during and after paint application until paint has cured sufficiently.
   .3 Provide continuous ventilation for seven days after completion of application of paint.
   .4 Coordinate use of existing ventilation system with Consultant and ensure its operation during and after application of paint as required.
   .5 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
   .6 Provide minimum lighting level of 323 Lux on surfaces to be painted.

.2 Temperature, Humidity and Substrate Moisture Content Levels:
   .1 Unless pre-approved written approval by Paint Inspection Agency Authority and product manufacturer, perform no painting when:
      .1 Substrate temperature is above 32 degrees C unless paint is specifically formulated for application at high temperatures.
      .2 Substrate and ambient air temperatures are not expected to fall within MPI or paint manufacturer's prescribed limits.
      .4 The relative humidity is under 85 % or when the dew point is more than 3 degrees C variance between the air/surface temperatures. Paint should not be applied if the dew point is less than 3 degrees C below the ambient or surface temperature. Use sling psychrometer to establish the relative humidity before beginning paint work.
   .5 Ensure that conditions are within specified limits during drying or curing process, until newly applied coating can itself withstand 'normal' adverse environmental factors.
   .2 Perform painting work when maximum moisture content of the substrate is below:
      .1 15 % for wood.
      .2 12 % for gypsum board.
   .3 Test for moisture using calibrated electronic Moisture Meter.

.3 Surface and Environmental Conditions:
   .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
   .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
   .3 Apply paint when previous coat of paint is dry or adequately cured.

.4 Additional interior application requirements:
   .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.
Part 2 Products

2.1 MATERIALS

.1 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.

.2 Provide paint materials for paint systems from single manufacturer.

.3 Only qualified products with E2 and E3 "Environmentally Friendly" rating are acceptable for use on this project.

.4 Conform to latest MPI requirements for interior painting work including preparation and priming.

.5 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI Architectural Painting Specification Manual "Approved Product" listing.

.6 Linseed oil, shellac, and turpentine: highest quality product from approved manufacturer listed in MPI Architectural Painting Specification Manual, compatible with other coating materials as required.

.7 Use MPI listed materials having minimum E2 and E3 rating where indoor air quality (odour) requirements exist.

.8 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids:

.1 Water-based, Water soluble, Water clean-up.

.2 Non-flammable, biodegradable.

.3 Manufactured without compounds which contribute to ozone depletion in the upper atmosphere.

.4 Manufactured without compounds which contribute to smog in the lower atmosphere.

.5 Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.

.9 Formulate and manufacture water-borne surface coatings with no aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds. Paint materials shall contain none of the prohibited substances listed under Section 01 35 21- LEED Requirements.

.10 Flash point: 61.0 degrees C or greater for water-borne surface coatings.

.11 Ensure manufacture and process of water-borne surface coatings does not release:

.1 Matter in undiluted production plant effluent generating 'Biochemical Oxygen Demand' (BOD) in excess of 15 mg/L to natural watercourse or sewage treatment facility lacking secondary treatment.

.2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to natural watercourse or a sewage treatment facility lacking secondary treatment.

.12 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes to meet minimum "Environmentally Friendly" E2 rating.
2.2 COLOURS

.1 Consultant will provide Colour Schedule after Contract award.

.2 Selection of colours from manufacturer’s full range of colours.

.3 Where specific products are available in restricted range of colours, selection based on limited range.

.4 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

2.3 MIXING AND TINTING

.1 Perform colour tinting operations prior to delivery of paint to site.

.2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer’s written instructions.

.3 Use and add thinner in accordance with paint manufacturer’s recommendations. Do not use kerosene or similar organic solvents to thin water-based paints.

.4 Thin paint for spraying in accordance with paint manufacturer’s instructions.

.5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.4 GLOSS/SHEEN RATINGS

.1 Paint gloss is defined as sheen rating of applied paint, in accordance with following values:

<table>
<thead>
<tr>
<th>Gloss Level</th>
<th>Sheen Rating</th>
<th>Gloss Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Matte Finish (flat)</td>
<td>Max. 5</td>
</tr>
<tr>
<td>2</td>
<td>Velvet-Like Finish</td>
<td>Max. 10</td>
</tr>
<tr>
<td>3</td>
<td>Eggshell Finish</td>
<td>10 to 25</td>
</tr>
<tr>
<td>4</td>
<td>Satin-Like Finish</td>
<td>20 to 35</td>
</tr>
<tr>
<td>5</td>
<td>Traditional Semi-Gloss Finish</td>
<td>35 to 70</td>
</tr>
<tr>
<td>6</td>
<td>Traditional Gloss</td>
<td>70 to 85</td>
</tr>
<tr>
<td>7</td>
<td>High Gloss Finish</td>
<td>More than 85</td>
</tr>
</tbody>
</table>

.2 Gloss level ratings of painted surfaces as indicated and as noted on Finish Schedule.

2.5 INTERIOR PAINTING SYSTEMS

.1 INT 5.3A - Latex G4 finish.

.2 Dressed lumber: including doors, door and window frames, casings, mouldings:

.1 INT 6.3A - High performance architectural latex G4 finish.

.2 INT 6.3B - Alkyd G4 finish in washrooms and change rooms.

.3 INT 6.3F - Lacquer G4 finish (over stain).

.3 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock type material", and textured finishes:

.1 INT 9.2A - Latex insert gloss level G4 finish (over latex sealer).

.2 INT 9.2C - Alkyd G4 finish (over latex sealer) in washrooms and change rooms.
2.6 SOURCE QUALITY CONTROL

.1 Perform following tests on each batch of consolidated post-consumer material before surface coating is reformulated and canned. Testing by laboratory or facility which has been accredited by Standards Council of Canada.

.1 Lead, cadmium and chromium are to be determined using ICP-AES (Inductively Coupled Plasma - Atomic Emission Spectroscopy) technique no. 6010 as defined in EPA SW-846.

.2 Mercury is to be determined by Cold Vapour Atomic Absorption Spectroscopy using Technique no. 7471 as defined in EPA SW-846.

.3 Organochlorines and PCBs are to be determined by Gas Chromatography using Technique no. 8081 as defined in EPA SW-846.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.

3.2 GENERAL

.1 Perform preparation and operations for interior painting in accordance with MPI Architectural Painting Specifications Manual except where specified otherwise.

.2 Apply paint materials in accordance with paint manufacturer's written application instructions.

3.3 EXAMINATION

.1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Consultant damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.

.2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.

.3 Maximum moisture content as follows:

.1 Gypsum board: 12 %

.2 Wood: 15 %

3.4 PREPARATION

.1 Protection:

.1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Consultant.

.2 Protect items that are permanently attached such as Fire Labels on doors and frames.

.3 Protect factory finished products and equipment.
Surface Preparation:

.1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.

.2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.

.3 Place "WET PAINT" signs in occupied areas as painting operations progress.

.3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:

.1 Remove dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.

.2 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.

.3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.

.4 Allow surfaces to drain completely and allow to dry thoroughly.

.5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.

.6 Use trigger operated spray nozzles for water hoses.

.7 Many water-based paints cannot be removed with water once dried. Minimize use of mineral spirits or organic solvents to clean up water-based paints.

.4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.

.5 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.

.1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.

.2 Apply wood filler to nail holes and cracks.

.3 Tint filler to match stains for stained woodwork.

.6 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.

.7 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements. Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes, blowing with clean dry compressed air or vacuum cleaning.

.8 Touch up of shop primers with primer as specified.

.9 Do not apply paint until prepared surfaces have been accepted by Consultant.

3.5 Application

.1 Apply paint by brush, roller, air sprayer, airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.
.2 Brush and Roller Application:

.1 Apply paint in uniform layer using brush and/or roller type suitable for application.
.2 Work paint into cracks, crevices and corners.
.3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
.4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple.
.5 Remove runs, sags and brush marks from finished work and repaint.

.3 Spray application:

.1 Provide and maintain equipment that is suitable for intended purpose, capable of atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
.2 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
.3 Apply paint in uniform layer, with overlapping at edges of spray pattern. Back roll first coat application.
.4 Brush out immediately all runs and sags.
.5 Use brushes and rollers to work paint into cracks, crevices and places which are not adequately painted by spray.

.4 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.

.5 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.

.6 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

.7 Sand and dust between coats to remove visible defects.

.8 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.

.9 Finish inside of cupboards and cabinets as specified for outside surfaces.

.10 Finish closets and alcoves as specified for adjoining rooms.

.11 Finish top, bottom, edges and cut-outs of doors after fitting as specified for door surfaces.

3.6 MECHANICAL/ELECTRICAL EQUIPMENT

.1 Paint finished area exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as indicated.

.2 Boiler room, mechanical and electrical rooms: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment.

.3 Other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
.4 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.

.5 Do not paint over nameplates.

.6 Keep sprinkler heads free of paint.

.7 Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.

.8 Paint disconnect switches for fire alarm system and exit light systems in red enamel.

.9 Paint natural gas piping yellow.

.10 Paint both sides and edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

.11 Do not paint interior transformers and substation equipment.

3.7 SITE TOLERANCES

.1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.

.2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.

.3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

3.8 FIELD QUALITY CONTROL

.1 Where "special" painting, coating or decorating system applications (i.e. elastomeric coatings) or non-MPI listed products or systems are to be used, paint or coating manufacturer shall provide as part of this work, certification of surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to Consultant.

.2 Standard of Acceptance:

.1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.

.2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.

.3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

.3 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Consultant.

3.9 RESTORATION

.1 Clean and re-install hardware items removed before undertaken painting operations.

.2 Remove protective coverings and warning signs as soon as practical after operations cease.
.3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.

.4 Protect freshly completed surfaces from paint droppings and dust to approval of Consultant. Avoid scuffing newly applied paint.

.5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Consultant.

END OF SECTION
APPENDIX 1

Receipt Confirmation
APPENDIX 1

RECEIPT CONFIRMATION FORM

Invitation to Tender 2731-2020

25 VICTORIA RD. PARTIAL BUILDING REMEDIATION
Closing date and time: 3:00 PM, Pacific Time, day, September 23, 2020

As receipt of this document and to receive any addendums for this Tender, please return form to:

CONSTRUCTION DEPARTMENT
City of Nanaimo
2020 Labieux Road
Nanaimo, BC, V2T 4M7
Fax: 250.756.5336
Email: constructioninfo@nanaimo.ca

COMPANY NAME: _________________________________________

STREET ADDRESS: _________________________________________

CITY/PROVINCE: __________________________________________

POSTAL CODE: ___________________________________________

PHONE NUMBER: __________________________________________

FAX NUMBER: ___________________________________________

CONTACT PERSON: _________________________________________

EMAIL ADDRESS: _________________________________________

SIGNATURE: _____________________________________________

TENDER HOLDER LIST POSTED HERE: HTTPS://WWW.NANAIMO.CA/BID-OPPORTUNITIES/
HAZARDOUS MATERIALS SURVEY REPORT
25 Victoria Road, Nanaimo, BC (PO#537376)

Prepared for:
City of Nanaimo

May 2020
Project No. F1444-1243
1.0 Introduction

This report presents the results of the renovation hazardous materials survey conducted on the property located at 25 Victoria Road in Nanaimo, BC, by LEA Environmental Health & Safety. The field work was conducted by Paul Johnston, D. Tech, RIHT (EPA-AHERA #13-0406), and Johanne Picard B.Sc., RPIH (EPA-AHERA #13-0407). The purpose of this investigation is to identify and quantify hazardous building materials as described in Section 6.0 of this report, and to assess related occupational health and environmental hazards potentially presented during renovation, demolition or relocation of the structure. All work was conducted in accordance with the requirements of BC OHS Regulation Section 20.112 & related Guidelines.

1.1 Summary of Findings: Hazardous materials present on the site are summarized in the following table:

Table 1.1.1 – Summary of Hazardous Materials

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Location(s)</th>
<th>Report Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos</td>
<td>None</td>
<td>6.1</td>
</tr>
<tr>
<td>Lead</td>
<td>Exterior Paint</td>
<td>6.2</td>
</tr>
<tr>
<td>Arsenic</td>
<td>None</td>
<td>6.3</td>
</tr>
<tr>
<td>Mercury</td>
<td>None</td>
<td>6.4</td>
</tr>
<tr>
<td>PCBs</td>
<td>None</td>
<td>6.5</td>
</tr>
<tr>
<td>Petroleum</td>
<td>None</td>
<td>6.6</td>
</tr>
<tr>
<td>Hazardous Products</td>
<td>None</td>
<td>6.6</td>
</tr>
<tr>
<td>UFFI</td>
<td>None</td>
<td>6.7</td>
</tr>
<tr>
<td>Ozone-Depleting</td>
<td>None</td>
<td>6.8</td>
</tr>
<tr>
<td>Silica</td>
<td>Concrete, Stucco and Drywall</td>
<td>6.9</td>
</tr>
<tr>
<td>Radioactive</td>
<td>None</td>
<td>6.10</td>
</tr>
<tr>
<td>Bio-Hazard</td>
<td>None</td>
<td>6.11</td>
</tr>
</tbody>
</table>

All of these materials must be removed or contained prior to general demolition or commencement of construction work. General Risk Assessments and recommendations for handling and disposal are discussed in Section 7.0 of this report.

2.0 Scope of Report

An assessment was conducted on one structure located on the site. The scope of research for this report was limited to:

- a review of available information respecting the history and uses of the building;
- a visual reconnaissance of the site and inspection of the building;
- collection of ten samples for Asbestos analysis;
- screening of seven paint samples for Lead content via XRF.

We note that the scope of our investigation was limited to the areas and materials affected by the proposed renovation work, and therefore included only the north and west interior and exterior walls. The remainder of the building was not investigated.
3.0 Site Description
The structure is a three-storey, wood-frame constructed commercial building dating from ca. 1901. Interior walls are finished with drywall. The exterior finish is stucco. Soffits and exterior detail are stucco construction. Windows are metal frame.
The building is connected to municipal sewer, water, hydro and natural gas.

4.0 Potential Contaminants and Physical Hazards

4.1 Asbestos-Containing Materials: Asbestos containing building materials (ACBM or ACM) — defined by WorkSafe BC as containing at least 0.5% Asbestos, and >0% in vermiculite insulation) may potentially be present in structural and mechanical components of the structure.
The common use of potential friable ACM in construction decreased dramatically in the mid-1980’s due to public pressure, although ACM is occasionally found in building materials and equipment installed as late as 1990.
Also, the sale and use of products containing Asbestos (except the crocidolite form) remains legal in Canada. Typical suspect building products include floor and ceiling tiles, plaster or drywall mud, and Transite board. Typical mechanical products include pipe insulation, duct mastic, gaskets in cast iron bell and spigot pipe joints, and Transite cement pipe.
These materials do not typically pose any great hazard except during removal, demolition or work that requires disturbance of the material.

4.2 Lead-Containing Materials: Prior to 1976, Lead content in consumer coatings was unregulated. After that date, Lead content in interior paint was limited to <5000 ppm (0.5%) by weight under the federal Hazardous Products Act (HPA).
Exterior paint however was not regulated until 2005, when the HPA was amended to limit Lead in all paint to <600 ppm (0.06%) by weight.
In late 2011 the HPA was again amended to limit Lead content in all consumer coatings to <90 ppm (0.009%).
Other potential Lead-containing building materials include plumbing solder, old pipes, tile glazing and roof and window flashing. The National Plumbing Code of Canada allowed the use of Lead solder in pipes until 1986. Brass fittings may also contain Lead.
Lead is an ALARA substance and is listed as a 2A and 2B carcinogen (probably and possibly, respectively, carcinogenic to humans) by the International Agency for Research on Cancer (IARC). ALARA means ‘as low as reasonably achievable’. The ALARA principle applies to Lead, which means that although the BC Occupational Health & Safety Regulation specifies exposure limits for Lead, worker exposures to Lead in paints and coatings must be kept as low as reasonably achievable.

1 Source: BC Assessment
4.3 Arsenic-Containing Materials: Arsenic has a long history of use as a pesticide due to its toxic properties. Arsenical pesticides including Chromated Copper Arsenate (CCA), when applied with high pressure to wood, serve to extend the structural life of the material by making it resistant to mould, rot and insect infestation. These materials have the potential to leach arsenic into the soil. Arsenic may also be found in paints.

Workers should be protected when handling treated wood containing arsenic to minimize the potential for exposure through direct skin contact or inhalation of dusts and fumes. Arsenic-containing materials must be disposed of in accordance with the BC Ministry of Environment Regulations.

4.4 Mercury-Containing Products: Mercury may be present in electrical apparatus including Mercury switches in thermostats, high-output fluorescent lighting, and compact fluorescent light bulbs. These devices present a low risk of exposure to workers, assuming that the component is undamaged.

4.5 Polychlorinated Biphenyl Products: Polychlorinated biphenyls (PCBs) are a family of 209 compounds, called congeners, produced commercially as Aroclors by chlorination of biphenyl. The Aroclor mixtures were marketed for use in electrical transformers, capacitors, heat transfer systems, and hydraulic systems. Lower quantities were used in voltage regulators, adhesives, caulking compounds, inks, lubricants, paints, sealants, carbonless copy paper, coatings, electrical switches, plasticizers, circuit breakers, dust control agents, and older fluorescent lighting fixtures. Aroclors were used in paint formulations as drying oils (resins) and plasticizer or softening agents (liquids).

The federal Environmental Contaminants Act, 1976, prohibited the use of PCBs in heat transfer and electrical apparatus installed after September 1, 1977, and in transformers and capacitors installed after July 1, 1980.

In addition, storage and disposal of PCB waste materials is regulated. The current Canadian Environmental Protection Act limits permissible levels of PCB releases to 2 mg/kg (2 ppm) for a liquid containing PCB’s, and 50 mg/kg (50 ppm) for a solid containing PCB’s.

For paints and coatings, "a person may manufacture, export, import, offer for sale, sell, process and use a colouring pigment containing PCBs produced incidentally if the concentration of the PCBs is less than 50 mg/kg."  

4.6 Bulk Petroleum and Hazardous Products: Above-ground and under-ground storage tanks (ASTs & USTs respectively) containing petroleum product, may introduce contamination into soil and groundwater through leaks or spills. These tanks must be observed and checked over time to ensure that these events do not occur. Evidence of leaks must be investigated and any potential contamination remediated. Aside from the environmental impacts, petroleum vapours emanating from contaminated soils and/or groundwater may percolate through soils beneath building slabs and foundations, entering the building and exposing occupants to airborne hydrocarbon contaminants.

The Canadian Council of Ministers of the Environment (CCME) publishes a Code of Practice for the safe management of ASTs and USTs.

Products and substances defined as ‘hazardous’ under the Hazardous Products Act and Hazardous Products Regulations (HPR) are regulated under federal and provincial WHMIS 2015 Regulations.

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3 SOR/2008-273 Section 11 (1)
4.7 Urea Formaldehyde Foam Insulation (UFFI): UFFI is a type of insulation that was widely used in the 1970's for insulating and retrofitting industrial, commercial and residential buildings. UFFI is a low-density foam that has the appearance and consistency of shaving cream, and becomes stiff and self-supporting when it dries or cures (hardens).

The insulation is typically made on-site where the urea formaldehyde-based resin is mixed with a catalyst and water and foamed in place in walls or used for block fill. The foam can be forced through small openings and delivered to the entire area of any cavity before it cures.

The use of urea formaldehyde-based resin in the manufacture of UFFI can lead to the release of formaldehyde gas during the curing process and afterwards. Formaldehyde emissions do however, decrease over time.

UFFI may also deteriorate when wet, can release increased amounts of formaldehyde if installed incorrectly. As well, there is a related concern that the moist foam could support mould growth, which could in turn adversely affect the health of the occupants.

Urea Formaldehyde Foam Insulation has been prohibited from installation, and sale or importation into Canada under the Hazardous Products Act since December 1980. The prohibition includes all urea formaldehyde-based thermal insulation, and also melamine urea and other urea formaldehyde resins.

4.8 Ozone-Depleting Substances: Ozone-depleting substances (ODS) are commonly found as refrigerants, aerosol propellants, cleaning solvents, and in some polyurethane building products. The federal Ozone-Depleting Substances Regulations (1998) amended controls on production and consumption of chlorofluorocarbons, halons, carbon tetrachloride and methyl chloroform. In 2016, these regulations were replaced by the Ozone-Depleting Substances and Halocarbon Alternatives Regulations (ODSHAR). Ozone-depleting substances are also regulated provincially under the Ozone Depleting Substances and Other Halocarbons Regulation.

4.9 Silica Products: Silica is the basic component of sand and rock. The best known and most abundant type of crystalline silica is quartz.

Prolonged breathing of crystalline silica dust may lead to pulmonary disease including Silicosis, a scarring and hardening of lung tissue caused when particles of crystalline silica are inhaled and become embedded in the lung. Initially, workers with silicosis may have no symptoms. However, as the disease progresses a worker may experience shortness of breath, severe cough, or weakness. These symptoms can worsen over time and lead to progressive debilitating and death.

Crystalline silica is found in a wide variety of products, however the activities where exposure to airborne respirable silica dust are of most concern include:

- Mining, drilling, blasting, crushing, excavation or disruption of rock, sand, dirt or soil;
- Cutting, grinding, sanding, jackhammering, chipping, demolition or blasting of silica-containing construction materials such as concrete, cement, asphalt, mortar, grout, plaster & drywall, masonry, tiles, brick, and refractory brick;
- Abrasive blasting with silica-containing materials.

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4 Source: ARHCA Code of Practice for Respirable Crystalline Silica
Hazardous Materials Report  
25 Victoria Road, Nanaimo, BC  
Project: F1444-1243

Silica is an ALARA substance and is listed as an ACGIH A2, and International Agency for Research on Cancer (IARC) Notation 1 carcinogen (respectively ‘confirmed’ and ‘carcinogenic to humans’).

The ALARA principle applies to Silica, which means that although the B. C. Occupational Health & Safety Regulation specifies an eight-hour Exposure Limit (EL) of 0.025 mg/m³ for Silica, worker exposures must be kept as low as reasonably achievable.

4.10 Radioactive Materials: Smoke alarms commonly contain small sealed radioactive sources in the form of Americium (Am²⁴¹). These materials are sealed into a metal case within the smoke detector and must not be damaged or tampered with. The Canadian Nuclear Safety Commission (CNSC) and the Canadian Nuclear Safety Act regulate radioactive materials. Smoke detectors intended for disposal must be handled in accordance with CNSC regulations, and are considered to pose a hazard if disposed of as, or with, common rubbish.

4.11 Bio-Hazardous Substances and Materials: Bio-hazards can include any organism or their byproducts that may present a health hazard to workers who come in contact with them.

One such hazard is the presence of pathogenic fungus (‘mould’) on wet building fabrics and materials, within voids and/or in areas with above normal Relative Humidity. One pathogenic genera, *Histoplasma capsulatum* occurs in bird roosts and areas inhabited by bats.

The related disease, Histoplasmosis primarily affects the lungs. Occasionally, other organs are affected (disseminated histoplasmosis), which can be fatal if untreated.

Hantavirus may be present in rodent-infected areas. Hantavirus pulmonary syndrome (HPS) is a deadly disease which can be contracted by persons in contact with infected rodents or their urine and droppings.

*B. procyonis* is an intestinal roundworm commonly found in raccoon feces, with wide distribution across North America. A recent study in southwestern BC indicated that the number of raccoons infected with *B. procyonis* was 61%. The parasite can cause severe human neurological disease or even death if ingested.

Adult raccoons infected with *B. procyonis* shed eggs that mature into infective larvae; these larvae remain viable for years, and can withstand harsh weather and decontamination. After ingestion, larvae migrate through the host to the brain in particular, but also the eyes and viscera. The most common vehicles for ingestion include soil, wood, leaves, bark, sand and stones, in addition to direct ingestion of raccoon feces.

Finally, substances and paraphernalia associated with the manufacture or use of contraband narcotics can present a health risk to workers. Potential hazards may include exposure to sharps (e.g. needles and syringes), as well as infectious exposure to blood borne diseases (e.g. HIV and Hepatitis), and contact with acutely or chronically toxic chemical substances.

5.0 Site Survey

We attended the site on May 12th, 2020. The purpose of this visit was to:

- conduct a visual reconnaissance of structures on the property;
- obtain samples of suspect materials for laboratory analysis;
- obtain photo documentation.
The building interior and exterior were visually inspected. At the time of our inspection the building was in good condition, with walls, ceilings and floors intact. As such, our inspection can be characterized as ‘semi-intrusive’ in nature.

We note that the areas listed in the following table could not be accessed for sampling:

Table 5.1 – Summary of Inaccessible Areas

<table>
<thead>
<tr>
<th>Location</th>
<th>Materials</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roofing</td>
<td>Roofing and Mastics</td>
<td>Sampling would compromise the integrity of the roofing system and also inaccessible due to height</td>
</tr>
</tbody>
</table>

Suspect materials must be further investigated prior to demolition.

6.0 Survey Results

6.1 Asbestos-Containing Materials (ACM): Suspect or typically Asbestos-containing materials (ACM) were bulk sampled as described in the appended Certificate of Analysis.

Asbestos-containing materials were not identified in the samples analyzed.

Asbestos containing cement pipes may be present underground in older buildings and have not been investigated.

6.2 Lead-Containing Materials: Based on the age of the building, it is possible that coatings containing Lead in excess of 90 ppm are present. Analysis for Lead content in paints was therefore undertaken.

Sample examination was conducted in accordance with analytical methods adapted from EPA Method 6200 and ASTM F2853-10 using an X-ray Fluorescence (XRF) analyzer, in-situ, or ex-situ as indicated on the appended Certificate of Analysis.

Lead-based materials are summarized in the following table:

Table 6.2.1 – Summary of Lead-Containing Materials

<table>
<thead>
<tr>
<th>Test No.</th>
<th>Sample Description</th>
<th>Location</th>
<th>Lead Content</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>#8</td>
<td>White Paint on Concrete</td>
<td>Exterior North Wall</td>
<td>Positive</td>
<td>90 – 600 ppm</td>
</tr>
</tbody>
</table>

Samples determined as non-detect (ND) by XRF examination may be subject to confirmatory laboratory analysis.

Also note that the local landfill authority may require additional Toxicity Characteristic Leaching Procedure (TCLP) data before accepting material as ‘Non-Hazardous Waste’ as defined by the BC Hazardous Waste Regulations. TCLP analysis is not an automatic component of the HMS report, and it is the responsibility of the building owner or the owner’s agent to arrange for this additional testing with LEA.

Other suspected Lead-containing products were not identified on site.

Due to the age of the building other suspect Lead-containing products, such as plumbing components may be present.

6.3 Arsenic-Containing Materials: Arsenic-containing or CCA treated lumber were not observed on the site.
6.4 Mercury-Containing Products: Mercury-containing thermostats and fluorescent lights/bulbs were not observed in the subject building.

6.5 Polychlorinated Biphenyl Products (PCBs): Transformers, light ballasts and electrical apparatus containing PCBs were not observed.

6.6 Bulk Petroleum and Hazardous Products: Bulk Petroleum and Hazardous Products were not present on the site.

6.7 Urea Formaldehyde Foam Insulation (UFFI): Based on visual (non-invasive) inspection of the structure, UFFI is not expected to be present.

6.8 Ozone-Depleting Substances: Potential sources of ozone-depleting substances (ODS) were not observed on the site.

6.9 Silica Products: Silica-containing materials on the site that will or potentially will be affected by the site works include: concrete, stucco and drywall.

6.10 Radioactive Materials: Smoke alarms containing a radioactive source were not observed in the building.

6.11 Bio-Hazardous Substances and Materials: Fungal contamination was not evident in the building. Contamination may however be present on hidden building fabric and components, or occur in exposed areas where chronic water incursions occur.

Other Bio-hazardous materials were not seen in or around the building.

7.0 Risk Assessment and Hazard Management

Note: The Risk Assessment provided here is general in nature. Further risk assessment based on the specific material(s), area(s) and proposed method(s) of remediation must be obtained before proceeding with remediation.

7.1 Lead-Containing Materials: Although Lead content may be reported as <90 ppm, any level of Lead in these materials may present a significant exposure risk to workers, depending on the type and condition of the material(s) & upon the method(s) of removal and handling. If work disturbing Lead-containing materials is undertaken, a Risk Assessment, Exposure Control Plan and related Safe Work Procedures will be required to ensure exposure is kept to levels 'As Low as Reasonably Achievable'. (Occupational safety hazard assuming no dry stripping – Low to Moderate)

Respecting Lead, Arsenic, Mercury and other heavy metals, please note that the local landfill authority may require additional Toxicity Characteristic Leaching Procedure (TCLP) data before accepting material as 'Non-Hazardous Waste' as defined by the BC Hazardous Waste Regulations.

TCLP analysis is not an automatic component of the HMS report, and it is the responsibility of the building owner or the owner’s agent to arrange for this additional testing with LEA.

Lead contaminated material must be separated from common waste, but may be land-filled as non-hazardous waste assuming that leachable Lead (as determined by the TCLP analysis) is <5 mg/l.

7.2 Silica-Containing Products: A respirable crystalline Silica Exposure Control Plan (ECP) must be developed & implemented for the site. The ECP should contain procedures for Housekeeping, Decontamination, Ventilation in buildings and machines, and Hygiene & Dust Control (Occupational safety hazard - Moderate to High)
7.3 Additional Regulatory Requirements (as required):

7.3.1 Notice of Project: As required by Section 20.2 of the Occupational Health and Safety (OHS) Regulation (B.C. Reg. 296/97), a Notice of Project must be filed with WorkSafe BC at least 48 hours prior to commencement of work.

This can be completed online at: https://online.worksafebc.com/anonymous/NOP/default.asp

Supporting documentation for the NOP must include: (1) this Hazardous Materials Survey Report (2) site-specific Risk Assessments; (3) Safe Work Procedures (SWP’s) for the proposed work as described in Part 6 of the Regulation; (4) a site Asbestos Exposure Control Plan (AECP); (5) a site Lead Exposure Control Plan (LECP); (6) a Mould ECP; and (7) a site Silica Exposure Control Plan (SECP).

7.3.2 Confirmation Letter: As required by Section 20.112 (8) of the BC OHS Regulations, a Confirmation Letter completed by a ‘Qualified Person’ may be required to certify proper removal or containment and final disposition of hazardous waste.

The foregoing must be completed before commencement of general demolition & may be required by the governing municipal authority before issuance of a Demolition Permit.

**WARNING**

Should work expose new suspect or confirmed ACM or other hazardous materials or conditions, work must stop subject to additional investigation and confirmatory sampling.

8.0 Report Use and Limitations

In preparing this report LEA Environmental Health & Safety reviewed historical records, conducted interviews with certain private and public officials, and conducted an on-site visual inspection of the property. We examined and relied upon documents referenced in the report and have relied on oral statements made by certain individuals but we have not conducted an independent examination of the facts contained in referenced materials and statements.

LEA Environmental Health & Safety assumes the genuineness of the documents and that the information provided in documents or statements is true and accurate.

LEA Environmental Health & Safety has prepared this report in a professional manner, using that level of skill and care normally exercised for similar projects under similar conditions by reputable and competent consultants and in accordance with our normal terms and conditions.

LEA Environmental Health & Safety shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared.

We also note that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth here are applicable only to the facts and conditions as described at the time of this report.

The methods employed for collection and analysis of samples are those of the American Conference of Governmental Industrial Hygienists (ACGIH), the National Institute for Occupational Safety and Health (NIOSH), provincial WCB, and/or other accepted scientific practices.
The data and commentary presented herein reflects these standards, however no other warranty is offered or implied respecting the acceptance of this report by any Regulatory authority.

Conclusions and recommendations were made within the operative constraints of the scope, budget, and schedule for this project. We believe the conclusions stated herein to be factual, but no guarantee is made or implied.

Lewkowich Engineering Associates Ltd., or LEA Environmental Health & Safety (LEA) shall not be named as the ‘Consulting Firm’ on any WSBC Notice of Project (NOP) and/or Risk Assessment(s) and/or Safe Work Procedure(s) unless we are actually engaged as the Project Consultant prior to commencement of work.

If LEA is engaged solely as the air monitoring agency, this distinction must be clearly indicated in the project documentation.

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. NO OTHER PARTY MAY USE OR RELY UPON THE REPORT OR ANY PORTION THEREOF WITHOUT OUR WRITTEN CONSENT AND SUCH USE SHALL BE ON SUCH TERMS AND CONDITIONS AS WE MAY EXPRESSLY APPROVE. The contents of the Report remain our copyright property. Any use which a third party makes of the Report, are the sole responsibility of such third parties.

We accept no responsibility for independent conclusions, interpretations, interpolations and/or decisions of the Client, or others who may come into possession of the Report, or any part thereof, which may be based on information contained in the Report, or for damages suffered by any third party resulting from use of the Report without our express written permission.

Preparation of this HMS Report is a limited undertaking, and does not constitute our automatic acceptance of responsibility for any project work beyond the provision of this report. LEA accepts no responsibility or liability for actions, interpretations, or abatement, demolition, disposal or construction activities by the Client or any other party, whether based on this report or not, unless we are specifically engaged at the outset of work as Project Consultant.

8.1 Professional Statement

Lewkowich Engineering Associates Ltd. (LEA Environmental Health & Safety) certifies that the persons signing this statement have demonstrable relevant experience, are ‘qualified persons’ as defined under BC OHSR Section 6.1, and are familiar with the work carried out on the site.
9.0 Closure

We thank you for the opportunity to be of service. Should you have any questions, or require further information, please contact the undersigned at (250) 756-0355.

Yours truly,

LEA ENVIRONMENTAL HEALTH & SAFETY

Prepared by: Kamiko Tomiyama, B.Sc.N
EPA-AHERA Building Inspector #3508-19-C26-30358
E-mail: ktomiyama@lewkowich.com

Reviewed by: Johanne Picard, B.Sc., RPIH
EPA-AHERA Building Inspector #13-0407
EPA Certified Lead Risk Assessor #CLR13-0009
E-mail: jpicard@lewkowich.com
### Bulk Asbestos Certificate of Analysis

Project #: F1444-1243  
Client: City of Nanaimo  
Site Address: 25 Victoria Road, Nanaimo, BC  
Sampled By: LEA (PJUP)  

Analyzed in accordance with NIOSH 9802 Asbestos (Bulk) by PLM

<table>
<thead>
<tr>
<th>Sample #</th>
<th>Location</th>
<th>Phase Description</th>
<th>Phase %</th>
<th>Asbestos Type</th>
<th>Asbestos %</th>
<th>Other Material Type</th>
<th>Analyst</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1444-1243-1</td>
<td>Stucco</td>
<td>Paint - White Cementitious - Grey</td>
<td>10</td>
<td>ND</td>
<td>ND</td>
<td>Non-Fibrous</td>
<td>Jp</td>
</tr>
<tr>
<td>F1444-1243-2</td>
<td>Stucco</td>
<td>Paint - White Cementitious - Grey</td>
<td>05</td>
<td>ND</td>
<td>ND</td>
<td>Non-Fibrous</td>
<td>Jp</td>
</tr>
<tr>
<td>F1444-1243-3</td>
<td>Stucco</td>
<td>Paint - White Cementitious - Grey</td>
<td>10</td>
<td>ND</td>
<td>ND</td>
<td>Non-Fibrous</td>
<td>Jp</td>
</tr>
<tr>
<td>F1444-1243-4</td>
<td>Window/Neaks</td>
<td>Office/Left</td>
<td>100</td>
<td>ND</td>
<td>ND</td>
<td>Fibrous/Celulose/Non-Fibrous (10%90)</td>
<td>Jp</td>
</tr>
<tr>
<td>F1444-1243-5</td>
<td>Window/Neaks</td>
<td>Office/Right</td>
<td>100</td>
<td>ND</td>
<td>ND</td>
<td>Fibrous/Celulose/Non-Fibrous (10%90)</td>
<td>Jp</td>
</tr>
<tr>
<td>F1444-1243-6</td>
<td>Drywall Joint Compound</td>
<td>Office/Right</td>
<td>100</td>
<td>ND</td>
<td>ND</td>
<td>Fibrous/Celulose/Non-Fibrous (10%90)</td>
<td>Jp</td>
</tr>
<tr>
<td>F1444-1243-7</td>
<td>Drywall Joint Compound</td>
<td>Office/Storage</td>
<td>100</td>
<td>ND</td>
<td>ND</td>
<td>Fibrous/Celulose/Non-Fibrous (10%90)</td>
<td>Jp</td>
</tr>
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<td>F1444-1243-8</td>
<td>Drywall Joint Compound</td>
<td>Office/Right</td>
<td>100</td>
<td>ND</td>
<td>ND</td>
<td>Fibrous/Celulose/Non-Fibrous (10%90)</td>
<td>Jp</td>
</tr>
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<td>Drywall Joint Compound</td>
<td>Office/Right</td>
<td>100</td>
<td>ND</td>
<td>ND</td>
<td>Fibrous/Celulose/Non-Fibrous (10%90)</td>
<td>Jp</td>
</tr>
<tr>
<td>F1444-1243-10</td>
<td>Drywall Joint Compound</td>
<td>Office/Right</td>
<td>100</td>
<td>ND</td>
<td>ND</td>
<td>Fibrous/Celulose/Non-Fibrous (10%90)</td>
<td>Jp</td>
</tr>
</tbody>
</table>

**Legend:**
- **ND:** Not Detected
- **Fibrous:** Fibrous (10%90)
- **Non-Fibrous:** Non-Fibrous

**Other Material:**
- **Paint - White:** Paint - White
- **Cementitious - Grey:** Cementitious - Grey
- **Paint - Green:** Paint - Green
- **Joint Compound:** Joint Compound
- **Paper - Cream:** Paper - Cream
- **Alumina Brick:** Alumina Brick

**Lab:** BAPAT Laboratory No.: 200065

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1900 Boxwood Road, Nanaimo, BC  
V9S 5Y2  
(250) 756-0355

LEA health, safety & environmental

ASHA accredited lab
## Field Portable XRF Certificate of Analysis

**Project #:** F144-1243  **Client:** City of Nanaimo  **Site Address:** 25 Victoria Road, Nanaimo, BC (PO#537376)  **In-situ **  **Ex-situ **

Analyzed in accordance with analytical methods adopted from EPA Method 6200 and ASTM F2853-10

*Note: XRF analysis lead based paint (LBP) as coating exceeding 60 ppm (600ppm) lead content is verge*

<table>
<thead>
<tr>
<th>Test #</th>
<th>Sample Description</th>
<th>Location</th>
<th>Date</th>
<th>Time</th>
<th>Analyzer Mode</th>
<th>Element</th>
<th>Lead Content</th>
<th>Remarks</th>
<th>Analyst</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Calibration</td>
<td></td>
<td>May-12-20</td>
<td>8:08:01</td>
<td>Be1, 2, 40 KeV</td>
<td>PASS</td>
<td></td>
<td></td>
<td>JP</td>
</tr>
<tr>
<td>2</td>
<td>Brown Paint on Wood</td>
<td>Interior Upper Floor Window Sill</td>
<td>May-12-20</td>
<td>9:04:58</td>
<td>Be1, 2, 40 KeV</td>
<td>Lead</td>
<td>ND</td>
<td>Non Detect</td>
<td>JP</td>
</tr>
<tr>
<td>3</td>
<td>Black Paint on Wood</td>
<td>Interior Upper Floor Office Window Sill</td>
<td>May-12-20</td>
<td>9:07:53</td>
<td>Be1, 2, 40 KeV</td>
<td>Lead</td>
<td>ND</td>
<td>Non Detect</td>
<td>JP</td>
</tr>
<tr>
<td>4</td>
<td>White Paint on Wood</td>
<td>Interior Upper Floor Storage Window Sill</td>
<td>May-12-20</td>
<td>9:09:00</td>
<td>Be1, 2, 40 KeV</td>
<td>Lead</td>
<td>ND</td>
<td>Non Detect</td>
<td>JP</td>
</tr>
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<td>5</td>
<td>Taupe Paint on Wood</td>
<td>Lower Warehouse Window Sill</td>
<td>May-12-20</td>
<td>9:13:22</td>
<td>Be1, 2, 40 KeV</td>
<td>Lead</td>
<td>ND</td>
<td>Non Detect</td>
<td>JP</td>
</tr>
<tr>
<td>6</td>
<td>Gray Paint on Wood</td>
<td>Exterior Front Siding</td>
<td>May-12-20</td>
<td>9:15:54</td>
<td>Be1, 2, 40 KeV</td>
<td>Lead</td>
<td>ND</td>
<td>Non Detect</td>
<td>JP</td>
</tr>
<tr>
<td>7</td>
<td>Black Paint on Wood</td>
<td>Exterior Tile (Front) West</td>
<td>May-12-20</td>
<td>9:17:15</td>
<td>Be1, 2, 40 KeV</td>
<td>Lead</td>
<td>ND</td>
<td>Non Detect</td>
<td>JP</td>
</tr>
<tr>
<td>8</td>
<td>White Paint on Concrete</td>
<td>Exterior North</td>
<td>May-12-20</td>
<td>9:38:17</td>
<td>Be1, 2, 40 KeV</td>
<td>Lead</td>
<td>POSITIVE</td>
<td>90 - 600 ppm</td>
<td>JP</td>
</tr>
</tbody>
</table>

**Legend:**
- **POSITIVE:** Lead content (> LOD for XRF)
- **ND:** Non Detect (< LOD for XRF)
- **FAI:** Further Analysis Indicated

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**1900 Boxwood Road, Nanaimo, BC V9S 5Y2 (250) 756-0355**

**Natural Resources Canada**

**NDF Certification No.:** 16518
APPENDIX 3

Approved Permit DP1175

April 29, 2020
Dear Mr. Koster:

RE: DEVELOPMENT PERMIT NO. DP001175 - 25 VICTORIA ROAD - APPROVED DEVELOPMENT PERMIT

Attached is a copy of the development permit approved by the General Manager, Development Services for the above-noted property. Please note the following:

- Prior to occupancy, the designer must confirm compliance with the development permit approved drawings. Any changes to the approved design must be submitted to the City for review and re-evaluation. An amendment to the approved development permit may be required if the changes are deemed significant.

As noted above, the City reserves the right to review any change to the site, building, or landscape designs. Please note that an amendment to the approved development permit, if deemed necessary, will require an application fee of $750, review by the Design Advisory Panel and Director approval.

Please note that the development permit is valid for a two year period. In the event that the works, as described within the permit, are not acted upon within this time frame, the permit will lapse.

For your information, the development permit will be registered at the Victoria Land Titles Office and will appear on your property title as a legal notation indefinitely. If, however, the permit lapses and the works, as described within the approved permit, were not undertaken, please inform the City so the necessary documentation can be prepared to remove the legal notation from your title.
If you have any questions with respect to the development permit, please do not hesitate to contact me at (250) 755-4460, Ext 4332.

Yours truly,

Lisa Brinkman, Planner
Current Planning Section
Development Approvals

LB/In

ATT (1)

ec: HEROLD ENGINEERING, K. Riley, E. kriley@heroldengineering.com
CITY OF NANAIMO, Real Estate Division, N. Skeels, Agent
CITY OF NANAIMO, Building Inspections Section, D. Fox, Manager
CITY OF NANAIMO, Building Inspections, S. Ruthven, Supervisor
BC Assessment Authority, via email: centralvanisl@bcassessment.ca
DEVELOPMENT PERMIT NO. DP001175

CITY OF NANAIMO
Name of Owner(s) of Land (Permittee)

25 VICTORIA ROAD
Civic Address

1. This development permit is issued subject to compliance with all of the bylaws of the municipality applicable thereto, except as specifically varied or supplemented by this permit.

2. This development permit applies to and only to those lands within the municipality described below, and any and all building structures and other developments thereon:

Legal Description:

LOT 4, BLOCK AA, SECTION 1, NANAIMO DISTRICT, PLAN 584, EXCEPT PARCEL A (DD 9405N) & PARCEL B (DD 11647N) OF SAID LOT

PID No. 001-677-501

3. The land described herein shall be developed strictly in accordance with the following terms and conditions and provisions of this permit and any plans and specifications hereto which shall form a part thereof.

Schedule A Location Plan
Schedule B Site and Floor Plan
Schedule C Building Elevations

a) If the applicant does not substantially commence the development permitted by this permit within two years of the date of this permit, the permit shall lapse.

4. This permit is not a building permit nor does it constitute approval of any signage. Separate applications must be made for a building permit and sign permit.
CONDITIONS OF PERMIT

1. The subject property is developed in accordance with the Site and Floor Plan prepared by Herold Engineering Ltd., received 2020-JAN-09, as shown on Schedule B.

2. The subject property is developed in substantial compliance with the Building Elevations prepared by Herold Engineering Ltd., dated 2019-DEC-20, as shown on Schedule C.

REVIEWED AND APPROVED ON

[Signature]
D. Lindsay  General Manager of Development Services
Community Development
Pursuant to Section 154 (1)(b) of the Community Charter

LBAIn
Prospero attachment: DP001175
DEVELOPMENT PERMIT NO. DP001175

LOCATION PLAN

Civic: 25 VICTORIA ROAD
Legal: LOT 4, BLOCK AA, SECTION 1, NANAIMO DISTRICT, PLAN 584
EXCEPT PARCELS A (DD 94054) & PARCEL B (DD 11647N)

SUBJECT PROPERTY