

July 2024

PROJECT MANUAL

City of Salmon Arm – Fire Hall #2

Building Addition

200 – 30th Street SE, Salmon Arm, BC

DESIGN CONSULTANTS

<ul style="list-style-type: none">• ARCHITECTURAL: AVEX Architecture Inc. 416B – 4th St. NE, P.O. Box 2350 Salmon Arm, BC, V1E 4R3 250-515-4801 marc@avexarchitecture.ca	<ul style="list-style-type: none">• STRUCTURAL: Willerton Engineering 4408 – 28th Street Vernon, BC 250-542-5434 admin@willerton.ca
<ul style="list-style-type: none">• MECHANICAL: Falcon Engineering 210 – 1715 Dickenson Avenue Kelowna, BC, V1Y 9G6 250-762-9993 info@falcon.ca	<ul style="list-style-type: none">• ELECTRICAL: BAR Engineering 201-2540 53rd Avenue Vernon, BC, V1T 9W8 250-541-9590 / 780-875-1683 info@bareng.ca
<ul style="list-style-type: none">• GEOTECHNICAL: Interior Testing Ltd. #1 – 1965 Moss Court Kelowna, BC, V1Y 9L3 250-860-6540 info@interiortesting.com	

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No sections included

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No sections included

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Part 1 Invitation

1.1 BID CALL

- .1 Offers signed under seal, executed, and dated will be received by the **Owner** before **3:00PM** local time, as designated by the Owner's timepiece, on the **August 15, 2024**.
- Owner's Address: **City of Salmon Arm: Public Works
100 – 30th Street SE, P.O. Box 40, Salmon Arm, BC, V1E 4N2**
- .2 Amendments to the submitted offer will be permitted if received in writing prior to bid closing and if endorsed by the same party or parties who signed and sealed the offer.
- .3 Offers will be opened in private by the Owner and reviewed with the Consultant. Bid results will be tabulated and distributed to all bidders.

1.2 INTENT

- .1 The intent of this bid call is to obtain an offer to perform work to complete the construction work located at **200 – 30th Street SE (Salmon Arm, BC)** for a Stipulated Price contract, in accordance with the Contract Documents.

CONTRACT DOCUMENTS IDENTIFICATION

- .2 The Contract Documents are identified as '**City of Salmon Arm: Fire Hall #2 Building Addition**' as prepared by the Design Consultants, as listed in the Project Manual cover.

1.3 CONTRACT/BID DOCUMENT DEFINITIONS

- .1 Contract Documents: Defined in CCDC 2 – 2020 Edition, Definitions.
- .2 Bid Documents: Contract Documents supplemented with Instructions to Bidders, Bid Form, and bid securities.
- .3 Bid, Offer, or Bidding: Act of submitting an offer under seal.
- .4 Bid Price: Monetary sum identified by the Bidder in the Bid Form.

1.4 DOCUMENT AVAILABILITY

- .1 Bid Documents may be obtained by download from the **City of Salmon Arm and BC Bid website (files in PDF format)**.

1.5 EXAMINATION

- .1 If required, the City of Salmon Arm will make a hard-copy of all Bid Documents available for viewing at the downtown public building location (500 – 2nd Avenue NE, Salmon Arm).

1.6 QUERIES/ADDENDA

- .1 Immediately notify the Consultant upon finding discrepancies or omissions in the Bid Documents.
- .2 Direct questions to AVEX Architecture Inc. Contact: Marc Lamerton, Architect AIBC (marc@avexarchitecture.ca).
- .3 Addenda may be issued during the bidding period. All addenda become part of the Contract Documents and any associated costs are to be included in the Bid Price.
- .4 Clarifications will be issued in the form of an addendum, a copy of which will be forwarded to known general contract bidders.

1.7 PRODUCT/SYSTEM OPTIONS.

- .1 Where the Bid Documents stipulate a particular product, alternatives will be considered by the Consultant up to 10 days before receipt of bids.
- .2 When a request to substitute a product is made, the Consultant may approve the substitution and will issue an Addendum to known bidders.
- .3 In submission of alternatives to products specified, bidders shall include in their bid, any changes required in the Work to accommodate such alternatives. A later claim by the bidder for an addition to the Contract Price because of changes in work necessitated by use of alternatives, shall not be considered.

1.8 MANDATORY SITE EXAMINATION

- .1 Visit the project site and surrounding area before submitting a bid.
- .2 There will be **mandatory pre-tender site meeting on July 31, 2024 at 10:00AM PST. Attendance by any General Contractors wishing to submit a bid is required.**

1.9 QUALIFICATIONS OF SUBCONTRACTORS

- .1 The Owner (as further described in the General Conditions) reserves the right to reject a proposed subcontractor for reasonable cause.
- .2 Refer to CCDC 2, Article GC 10 of General Conditions.

1.10 BID DEPOSITORY

- .1 The Bid Depository system of bid collection will not be used for this project.

1.11 BID INELIGIBILITY

- .1 Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at the discretion of the Owner, be declared informal.
- .2 Failure to provide security deposit, bonding or insurance requirements may, at the discretion of the Owner, be declared informal.

1.12 BID SUBMISSIONS

- .1 Submit one copy of the executed offer on the Bid Forms provided, signed and corporate sealed together with the required security in a closed opaque envelope, clearly identified with bidder's name, project name and Owner's name on the outside.
- .2 Insert the closed and sealed Bid Form envelope and requested security deposit in a larger opaque envelope.

1.13 ENCLOSURES - SECURITY DEPOSIT

- .1 Bids shall be accompanied by a security deposit as follows:
 - .1 A Bid bond in an amount not less than 10% of the bid price. Use Bid Bond Form CCDC 220 (or equivalent).

OR

 - .2 A certified cheque (or irrevocable letter of credit) in the amount of 10% of the Bid Price.
- .2 Endorse the Bid Bond or certified cheque in the name of the Owner as Obligee, signed and sealed by the Principal (Contractor) and Surety.
- .3 The security deposit will be returned after delivery to the Owner of the required contract security by the accepted bidder.

1.14 BID ENCLOSURE - PERFORMANCE ASSURANCE

- .1 The accepted bidder shall provide contract security in for the form of a Performance and Labour and Materials Payment Bond, each for 50% of the contract amount as described in the Supplementary Conditions, **OR** certified cheque (or irrevocable letter of credit) in favour of the Owner for 10% of the contract amount.

1.15 BID ENCLOSURE - INSURANCE

- .1 Provide a signed "Undertaking of Insurance" on a standard form provided by the insurance company stating their intention to provide insurance to the bidder in accordance with the insurance requirements of the Contract Documents.

1.16 BID FORM REQUIREMENTS

- .1 State in the Bid Form, the Time required to complete the Work. The completion date in the Agreement shall be this completion Time added to the commencement date.
- .2 The Owner requires that under the work of this contract be completed as quickly as possible and consideration will be given to time of completion when reviewing the submitted bids.
- .3 Refer to Bid Form for the inclusion of Taxes.

1.17 FEES FOR CHANGES IN THE WORK

- .1 Include in the Bid Form, the overhead and profit fees applicable for changes in the Work, whether additions to or deductions from the Work on which the Bid Price is based.
- .2 Include in the Bid Form, the fees proposed for subcontract work for changes (both additions and deductions) in the Work. The Contractor shall apply fees as noted, to a Subcontractor's gross (net plus fee) costs on additional work.

1.18 BID SIGNING

- .1 The Bid Form shall be signed under seal by the bidder.
- .2 Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Affix seal.
- .3 Partnership: Signature of all partners in the presence of a witness who will also sign. Affix seal to each signature.
- .4 Limited Company: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal.
- .5 Joint Venture: Each party of the joint venture shall execute the Bid under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

1.19 DURATION OF OFFER

- .1 Bids shall remain open to acceptance and shall be irrevocable for a period of sixty (60) days after the bid closing date.

1.20 ACCEPTANCE OF OFFER

- .1 The Owner reserves the right to accept or reject any or all offers.
- .2 The lowest Tender will not necessarily be accepted. **The City of Salmon Arm** reserves the right in its absolute discretion to accept the Tender which it deems the most advantageous to itself.
- .3 After a bid has been accepted, the bid securities of all rejected bids will be returned to the respective bidders.

END OF DOCUMENT

Part 1 General

1.1 REPORT IDENTIFICATION

- .1 A copy of a detailed soils investigation report with respect to the building site is available as part of the Bid Documents:
 - .1 Project Title: Geotechnical Report – Proposed Addition – Fire Hall #2
 - .2 Project Address: 200 – 30th Street SE, Salmon Arm, BC
 - .3 Dated: March 11, 2024
 - .4 Prepared By: Interior Testing Ltd. (Kelowna, BC)

1.2 REPORT CONTENTS

- .1 If a report is ultimately provided, the following is understood:
 - .1 The soils investigation report records properties of the soils and recommendations for the design of foundations, prepared primarily for the use of the Consultant. The recommendations given shall not be construed as a requirement of this Contract unless those requirements are also contained in the Contract Documents.
 - .2 The report, by its nature, cannot reveal all conditions that exist or can occur on the site. Should subsurface conditions be found to vary substantially from the soils investigation report, changes in the design and construction of foundations will be made, with resulting credits or expenditures to the Contract Price accruing to the Owner.

END OF DOCUMENT

(PLEASE PHOTOCOPY THIS FORM AND SUBMIT AS YOUR BID FORM)

Part 1 General

1.1 INFORMATION

- .1 Date: _____.
- .2 Submitted by: _____.
- .3 Address: _____.
- .4 To: City of Salmon Arm
- .5 Project: Fire Hall #2 Addition

1.2 OFFER CONTENT

- .1 Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by the Consultants for the above-mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the price of, in lawful money of Canada:

\$ _____ (Base Bid Price excluding GST)

\$ _____ (amount of GST)

\$ _____ **(Total Amount of Base Price + GST)**

- .2 We have included herewith, the required bid security as required by the Instruction to Bidders.
- .3 All applicable provincial taxes are included in the Base Bid Price.

1.3 ACCEPTANCE

- .1 This offer shall be open to acceptance and is irrevocable for ninety (90) days from the Bid closing date.
- .2 If this Bid is accepted by the Owner within the time period stated above, we will:

- .1 Execute the 'Agreement' within twenty-one (21) days of receipt of the form of execution.
 - .2 Furnish the required bonds within seven (7) days of receipt of the Agreement (in the form described in the Supplementary Conditions).
 - .3 Commence work within _____ () days after written notification of acceptance of this bid.
 - .4 Complete the Work in _____ () calendar weeks from notification of acceptance of this Bid.
- .3 If this Bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the deposit or the difference between this Bid and the Bid to which the Contract is signed.
 - .4 In the event our Bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions in the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.4 APPENDICES.

- .1 A list of the Contract Documents is appended hereto and identified as 'Appendix A'.
- .2 A list of Subcontractors appended hereto and identified as 'Appendix B'.

1.5 ADDENDA

- .1 The following Addenda have been received. The modifications to the Contract Documents noted therein have been considered and all costs thereto are included in the Bid Price.
 - .1 Addendum # [____], Dated [____].
 - .2 Addendum # [____], Dated [____].
 - .3 Addendum # [____], Dated [____].
 - .4 Addendum # [____], Dated [____].
 - .5 Addendum # [____], Dated [____].

1.6 CHANGES

- .1 When the Consultant establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with CCDC 2 General Conditions, our percentage fee will be:
(____)% overhead and profit on the net cost of our own work;
(____)% on the cost of work done by any subcontractor.
- .2 On work deleted from the Contract, our credit to the Owner shall be the Consultant approved net cost plus (____) of the overhead and profit percentage noted above.

1.7 SEPARATE PRICE ITEMS

- .1 Note: Separate Price Items **are not to be included** in the Base Bid Price amount shown on Page 1 of this form.

No separate price items included

1.8 ALTERNATE PRICE ITEMS

- .1 The Owner is requesting that the project be Tendered with two exterior wall construction options. The intent is to allow Bidders to identify which option works within their strengths and sub-trade relationship in order to put forward the most practical & cost-effective project solution.
- .2 The two options are identified as:
 - .1 Option 'A'- Concrete Masonry Unit structural wall (with exterior insulation)
 - .2 Option 'B' – Pre-Cast Insulated Concrete Panel structural wall
- .3 These 'Issued for Tender' drawings from the Architectural consultant (AVEX Architecture) and the Structural engineering consultant (Willerton Engineering) include two parallel sets of drawings, each labeled with these options. The Bidders are to review each set and decide which option to proceed with and base their Bid Price on. The Mechanical & Electrical drawings will remain the same however, the incorporation of those systems into the selected exterior wall option will be accounted for and included in the Bid Price.
- .4 The Bidder shall indicate below which exterior wall option they have selected as part of their bid price.

Selected exterior wall option (Option 'A' or Option 'B'):

1.9 BID FORM SIGNATURE(S)

.1 The Corporate Seal of _____

(Company Name)

(SEAL)

was hereunto affixed in the presence of (1) _____

(Signatory)

(2) _____

(2nd Signature if Partnership)

(3) _____

(Witness if a single signature above)

.2 If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

BID FORM - APPENDIX A

This is the list of Contract Documents referred to in Article 3 of the Bid Form submitted by Bidder (dated _____ and which is an integral part of the Bid Form).

- Instructions to Bidders
- Bid Form, Addenda # _____, _____, _____,
- _____.
- Form of Agreement with General Conditions (CCDC-2, 2020)
- Geotechnical Investigation (dated March 11, 2024)
- Supplementary General Conditions
- Project Manual, General Conditions, & Architectural Specifications (dated June 2024)
- Consultant Drawings – ‘Issued for Tender’
 - Architectural
 - Option ‘A’ – Masonry Exterior Walls (dated July 11, 2024)
 - Option ‘B’ – Pre-Cast Concrete Exterior Walls (dated July 11, 2024)
 - Structural
 - Option ‘A’ – Masonry Exterior Walls (dated July --, 2024)
 - Option ‘B’ – Pre-Cast Concrete Exterior Walls (dated July --, 2024)
 - Mechanical (dated July 10, 2024)
 - Mechanical Specifications (dated July 10, 2024)
 - Electrical (dated July 5, 2024)

BID FORM - APPENDIX B

This is the list of Subcontractors referred to in Article 3 of the Bid Form submitted by Bidder dated _____ and which is an integral part of the Bid Form.

The following work will be performed (or provided) by Subcontractors and coordinated by us (please provide information for applicable Subcontractors):

Earth Works	
Concrete	
Masonry	
Structural Steel	
Roof Trusses	
Roofing	
Doors & Windows	
Thermal Insulation	
Drywall	
Painting	
Flooring	
HVAC	
Plumbing	
Electrical	
Pre-Cast	

END OF DOCUMENT

Part 1 General

1.1 GENERAL CONDITIONS

- .1 CCDC 2 – 2020 Stipulated Price Contract forms the basis for Agreement, Definitions, and General Conditions between the Owner and Contractor.

- .1 Note: the above referenced Contract form is not included in this document.

1.2 SUPPLEMENTARY CONDITIONS

- .1 Refer to the document (below) CCDC 41, clarifying insurance requirements:

CCDC 41 CCDC INSURANCE REQUIREMENTS

PUBLICATION DATE: December 14, 2020

1. General liability insurance shall be with limits of not less than \$10,000,000 per occurrence, an aggregate limit of not less than \$10,000,000 within any policy year with respect to completed operations, and a deductible not exceeding \$10,000. 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 \$10,000,000 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. Manned 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 \$10,000,000 inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof and limits of not less than \$10,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*.
4. Unmanned aerial vehicle liability insurance with respect to owned or non-owned aircraft (if used directly or indirectly in the performance of the *Work*), shall have limits of not less than \$5,000,000 per occurrence or accident for bodily injury, death and damage to property or such amounts as required by any applicable law or regulation.
5. "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 *Owner* for incorporation into the *Work*, with a deductible not exceeding \$10,000. The insurance coverage shall not be less than the insurance provided by IBC Forms 4042 and 4047 or their equivalent replacement. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
6. 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 including hot testing and commissioning.
7. Contractors' equipment insurance coverage written on an "all risks" basis 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.
8. Contractors' Pollution liability insurance shall have limits of not less than \$5,000,000 per occurrence for bodily injury, death and damage to property.

Association of
Canadian
Engineering
Companies

Canadian
Construction
Association

Construction
Specifications Canada

The Royal Architectural
Institute of Canada

1.2 SUPPLEMENTARY CONDITIONS

- .1 The following are revisions and additions to supersede the above referenced documents as noted below:

MODIFICATIONS TO GENERAL CONDITIONS

GC 12.1 – INDEMNIFICATION, delete GC 12.1.1 and 12.1.2 and replace with the following:

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, and excepting always losses arising out of the independent acts of the party for whom indemnification is sought, 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 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 such periods as prescribed by the Limitation Act of the Province of British Columbia.

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 the owner pursuant to GC 11.1 – INSURANCE, the limit of the GENERAL LIABILITY COVERAGE – GC 11.1.1(a) or the limit of the PROPERTY COVERAGE – GC 11.1.1(b) whichever is pertinent to the loss.

- .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 \$2,000,000.00, but in no event shall the sum be greater than \$20,000,000.00.
- .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.

GC 11.1 – INSURANCE, replace entirely with the following:

11.1.1 Without restricting the generality of GC 12.1 – INDEMNIFICATION, insurance and coverage will be arranged and paid for as under-noted:

a) Commercial General Liability Insurance

- 1) The Contractor shall provide, maintain and pay for Commercial General Liability Insurance with a limit of Five Million Dollars (\$5,000,000.00), inclusive per occurrence, Ten Million Dollars (\$10,000,000.00) general aggregate for bodily injury, death, and damage to property including loss of use thereof, product/completed operations liability with a Five Million Dollars (\$5,000,000.00) annual aggregate.
- 2) The insurance shall cover the Owner, Contractors & Sub-contractors, Architects, Engineers, Consultants and anyone employed by them to perform a part or parts of the Work but excluding suppliers whose only function is to supply and/or transport products to the project site. The insurance does not extend to any activities, works, jobs or undertakings of the insureds other than those directly related to the Work of this Contract.
- 3) The insurance shall preclude subrogation claims by the insurer against anyone insured hereunder.

- 4) The insurance shall include coverage for:
- .01 Premises and Operations Liability;
 - .02 Products and Completed Operations Liability;
 - .03 Blanket Contractual Liability;
 - .04 Cross Liability;
 - .05 Elevator and Hoist Liability;
 - .06 Contingent Employer's Liability;
 - .07 Personal Injury Liability;
 - .08 Shoring, Blasting, Excavating, Underpinning, Demolition, Piledriving and Caisson Work, Work Below Ground Surface, Tunneling and Grading, as applicable;
 - .09 Liability with respect to Non-Owned Licensed Vehicles (\$5,000,000.00);
 - .10 Broad Form Property Damage;
 - .11 Broad Form Completed Operations;
 - .12 Limited Pollution Liability (\$2,000,000.00);
 - .13 Employees as Additional Insureds;
 - .14 Broad Form Tenants Legal Liability (\$1,000,000.00); and
 - .15 Operation of Attached Machinery.
- 5) Any applicable deductibles shall not exceed Ten Thousand Dollars (\$10,000.00) except with respect to loss or damage arising from hot roofing operations which will carry a deductible of Two Million Dollars (\$2,000,000.00).

If the Project requires hot roofing work, the Contractor will provide, maintain and pay for a Commercial General Liability Insurance in the amount of Two Million Dollars (\$2,000,000.00) inclusive per occurrence against bodily injury and property damage and will require the roofing Sub-contractor to maintain a similar insurance policy. The Owner shall be added as an

additional insured. Such insurance shall include, but not be limited to:

- .01 Premises and Operations Liability;
- .02 Products and Completed Operations;
- .03 Owner's and Contractor's Protective Liability;
- .04 Blanket Written Contractual Liability;
- .05 Contingent Employer's Liability;
- .06 Personal Injury Liability;
- .07 Non-Owned Automobile Liability;
- .08 Cross Liability;
- .09 Employees as Additional Insureds; and
- .10 Broad Form Property Damage.

- 6) This insurance shall be maintained continuously from commencement of the Work until the date of final certificate for payment is issued or when the insured project is completed and accepted by or on behalf of the Owner, whichever occurs first, plus with respect to completed operations, cover a further period of twenty-four (24) months.

b) Property Coverage

- 1) The Owner shall provide, maintain and pay for Course of Construction insurance, against "All Risks" of physical loss or damage, and will cover all materials, property, structures and equipment purchased for, entering into, or forming part of the Work whilst located anywhere in Canada and continental United States of America (excluding Alaska) during construction, erection, installation and testing until completed and handed over and accepted by the Owner. Such insurance shall not include coverage for Contractor's equipment of any description. There will be a deductible of Five Thousand Dollars (\$5,000.00) for each and every occurrence except for the perils of flood which shall have a deductible of Ten Thousand Dollars (\$10,000.00) and earthquake which shall have a five percent (5%) (subject to minimum One Hundred Thousand Dollars

(\$100,000.00)) deductible based upon completed values at time of loss.

- 2) The insurance shall include as a protected entity, each Contractor, Subcontractor, Architect or Engineer who is engaged in the Project.
- 3) The insurance will contain a waiver of the Owner's rights of subrogation against all protected entities except where a loss is deemed to have been caused by or resulting from any error in design or any other professional error or omission.
- 4) The Contractor shall, at their own expense, take special precaution to prevent fires occurring in or about the Work and shall observe, and comply with, all laws and regulations in force respecting fires.

c) Automobile Liability Insurance

The Contractor shall provide, maintain and pay for and require all Subcontractors to provide, maintain and pay for Automobile Liability Insurance in respect of all owned or leased vehicles, subject to limits of not less than Two Million Dollars (\$2,000,000.00) inclusive per occurrence. The insurance shall be placed with such company or companies and in such form and deductibles as may be acceptable to Owner.

d) Aircraft and/or Watercraft Liability Insurance

The Contractor shall provide, maintain and pay for liability insurance with respect to owned or non-owned aircraft and watercraft if used directly or indirectly in the performance of the Work, subject to limits of not less than Two Million Dollars (\$2,000,000.00) inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof and including Aircraft Passenger Hazard where applicable. The insurance shall be placed with such company or companies and in such form and deductibles as may be acceptable to Owner.

- 11.1.2 Unless specified otherwise, the duration of each coverage and insurance policy shall be from the date of commencement of the Work until the date of final certificate for payment.
- 11.1.3 The Owner shall, upon request, provide the Contractor with proof of coverage and insurance for those coverages and insurances required to be provided by the Owner prior to commencement of the Work.

- 11.1.4 The Contractor and/or their Subcontractors, as may be applicable, shall be responsible for any deductible amounts under the policies of coverage and insurance except for perils of flood and earthquake.
- 11.1.5 The Contractor shall provide, maintain and pay for any additional insurance which he is required to provide by law or which he considers necessary to cover risks not otherwise covered by coverage/insurance specified in this section.
- 11.1.6 The Contractor shall provide the Owner with proof of insurance for those insurances required to be provided by the Contractor prior to the commencement of the Work in the form of a completed Certificate of Insurance.
- 11.1.7 The Owner shall not be responsible for any injury to the Contractor's employees or for loss or damage to the Contractor's employees' machinery, equipment, tools or supplies which may be temporarily used or stored in, on or about the premises during construction and which may, from time-to-time, or at the termination of the contract, be removed from the premises. The Contractor hereby waives all rights of recourse against the Owner or any other contractor with regard to damage to the Contractor's property.

END OF DOCUMENT

General

1.1 SECTION INCLUDES

- .1 Summary of Work.
- .2 Work restrictions.
- .3 Specifications and documents.
- .4 Allowances.
- .5 Payment procedures.

1.2 RELATED SECTIONS

- .1 Section 01 00 00 – Summary.
- .2 Section 01 30 00 – Administrative Requirements.
- .3 Section 01 50 00 – Temporary Requirements.
- .4 Section 01 60 00 – Product Requirements.
- .5 Section 01 70 00 – Close-Out Requirements.
- .6 This section describes requirements applicable to all sections within Divisions 02 to 49.
- .7 CCDC 2-2020 Agreement, Definitions, General Conditions and Supplementary Conditions.

1.3 COMPLEMENTARY DOCUMENTS

- .1 Drawings, specifications, and schedules are complementary each to the other and what is called for by one to be binding as if called for by all. Should any discrepancy appear between documents which leaves doubt as to the intent or meaning, abide by Precedence of Documents article below or obtain direction from the Consultant.
- .2 Examine all discipline drawings, specifications, and schedules and related documents to ensure that Work can be satisfactorily executed. Conflicts or additional work beyond work described to be brought to attention of the Consultant.

1.4 PRECEDENCE OF DOCUMENTS

- .1 In the event of conflict within and between the Contract Documents, the order of priority within specifications and drawings are - from highest to lowest:
 - .1 Agreement - Between Owner and Contractor,
 - .2 Definitions.
 - .3 Supplementary Conditions (if any),
 - .4 General Conditions of the Contract,

- .5 Sections of Division 01 of the specifications,
- .6 Specifications:
 - .1 Sections of Divisions 02 through 49 of the specifications, and
 - .2 Specifications indicated on drawings.
- .7 Schedules and keynotes:
 - .1 schedules within the specifications, then
 - .2 schedules on drawings.
- .8 Drawings:
 - .1 Drawings of larger scale shall govern over those of smaller scale of the same date, then
 - .2 Dimensions shown on drawings shall govern over dimensions scaled from drawings, then
 - .3 Location of utility outlets indicated on architectural detail drawings takes precedence over positions or mounting heights located on mechanical or electrical drawings.
- .9 Later dated documents shall govern over earlier documents of the same type.
- .2 In the event of conflict between documents, the decision of the Consultant shall be final.

1.5 DESCRIPTION OF THE WORK

- .1 Work of this Contract comprises general construction of wood frame, located at:
 - 200 – 30th Street SE (Salmon Arm, BC); and identified as**
 - ‘City of Salmon Arm Fire Hall # 2 Truck Bay Addition’**
- .2 Division of the Work among subcontractors, suppliers or vendors is solely the Contractor's responsibility. The Owner assumes no responsibility to act as an arbiter to establish subcontract terms between sectors or disciplines of work.

1.6 DOCUMENTS PROVIDED

- .1 Owner will supply the Contractor with:
 - .1 One electronic set of Contract Documents for construction purposes,
- .2 The Contractor will print all sets of Contract Documents at their own cost.
- .3 The Contractor will supply the Owner with 1 (one) set of documents near the end of the Project for purposes of recording design changes during construction.

1.7 SPECIFICATION GRAMMAR

- .1 Specifications are written in the imperative mood, in an abbreviated form.
- .2 The imperative language of all technical sections is directed to the Contractor:
 - .1 This form of statement requires the Contractor to perform such action or work or by one of their engaged subcontractors.
 - .2 Perform all requirements whether stated imperatively or otherwise.

1.8 PERFORMANCE OF THE WORK

- .1 Substantial Performance of the Work is required for Owner occupancy on (or near) the agreed date stipulated in the Bid From.

1.9 WORK SEQUENCE

- .1 Contractor to coordinate with Owner with regards to anticipated work that could effect the function of the existing Arena facility in order to avoid possible unanticipated consequences.
- .2 Coordinate Progress Schedule and with Owner use during construction.

1.10 OWNER-SUPPLIED PRODUCTS

- .1 Obtain the necessary shop drawings from the Owner and proceed to coordinate details for installation, expedite, receive, unload, install, connect and test the specified equipment, and be responsible for warranty.
- .2 Receive Owner-supplied Products and equipment FOB and store and process Products and equipment until installation.
- .3 Schedule of Owner-supplied Products.
 - .1 [_____].
 - .2 [_____].
- .4 Owner Responsibilities:
 - .1 Arrange for delivery of shop drawings, product data, samples, manufacturer's instructions, and certificates to Contractor.
 - .2 Deliver supplier's bill of materials to Contractor.
 - .3 Arrange and pay for delivery to the Place of the Work in accordance with Progress Schedule.
 - .4 Inspect deliveries jointly with Contractor.
 - .5 Submit claims for transportation damage.
 - .6 Arrange for replacement of damaged, defective or missing items.
 - .7 Arrange for manufacturer's field services; arrange for and deliver manufacturer's warranties and bonds to Contractor.
- .5 Contractor Responsibilities:
 - .1 Designate submittals and delivery date for each Product in progress schedule.
 - .2 Review shop drawings, product data, samples, and other submittals. Submit to Consultant, notification of any observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
 - .3 Receive and unload Products at site.
 - .4 Inspect deliveries jointly with Owner; record shortages, and damaged or defective items.
 - .5 Handle Products at site, including un-crating and storage.
 - .6 Protect Products from damage, and from exposure to elements.
 - .7 Assemble, install, connect, adjust, and finish Products.

- .8 Arrange for installation inspections required by public authorities.
- .9 Repair or replace items damaged by Contractor or Subcontractor on site (under their control).

1.11 CONTRACTOR USE OF PREMISES.

- .1 Limit use of site and premises to allow:
 - .1 n/a.

1.12 OWNER OCCUPANCY

- .1 n/a

1.13 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, forty-eight (48) hours of notice for necessary interruption of mechanical or electrical service throughout course of work.
 - .1 Keep duration of interruptions minimum.
 - .2 Perform interruptions after normal working hours of occupants, preferably on weekends.
- .3 Provide for personnel and vehicular traffic. Construct barriers in accordance with Section 01 50 00.

1.14 SPECIAL REQUIREMENTS

- .1 n/a

1.15 CASH ALLOWANCES

- .1 Costs Included in Cash Allowances: Cost of Product to Contractor, less applicable trade discounts; delivery to site, and applicable taxes.
- .2 If a Cash Allowance item described in the Allowances Schedule below indicates the inclusion of installation, include in the Cash Allowance amount, provision for Product handling at the site, including unloading, un-crating, storage, protection of Products from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, bonding if applicable, equipment rental, overhead and profit.
- .3 If a Cash Allowance item described in the Allowances Schedule below indicates supply only, include in the Contract Price costs not included in Cash Allowances but included in the Contract Price: Product handling at the site including unloading, un-crating, storage, protection of Products from elements and from damage, labour for installation and finishing, insurance, labour costs, taxes, bonding if applicable, equipment rental, overhead and profit.
- .4 Differences in costs will be adjusted by Change Order.
- .5 Allowances Schedule: **(n/a)**

- .1 Section [_____-_____]: Include the stipulated sum of \$[_____] for purchase and delivery of [_____].
- .2 Section [_____-_____]: Include the stipulated sum of \$[_____] for installation of [_____].
- .3 Section [_____-_____]: Include the stipulated sum of \$[_____] for purchase, delivery, and installation of [_____].
- .4 Section [_____-_____]: Include the unit price of \$[_____] per [_____] for purchase, delivery, and installation of [_____].
- .6 Inspecting and Testing Allowances Schedule:
 - .1 Include the sum of \$ [_____] for testing compacted soils specified in Section [_____].
 - .2 Include the sum of \$ [_____] for testing concrete specified in Section [01 70 00.] [_____].
 - .3 Include the sum of \$ [_____] for testing, adjusting, and balancing [mechanical systems] [_____] equipment specified in Sections [_____] , [_____] , [and] [_____].

1.16 CONTINGENCY ALLOWANCE (n/a)

- .1 Include in the Contract, a stipulated price of \$ [_____] for use upon Owner's written instruction via Change Order.
- .2 Contractor's costs for Products, delivery, installation, labour, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.
- .3 Funds will be drawn from the Contingency Allowance only by Change Order.
- .4 At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.17 APPLICATIONS FOR PROGRESS PAYMENT.

- .1 Make applications for payment on account as provided in Agreement as Work progresses.
- .2 Accompany applications with a CCDC 9A-2018 Statutory Declaration form.
- .3 Date applications for payment last day of agreed payment period and ensure amount claimed is for value, proportionate to amount of Contract, of Work performed and Products delivered to Place of Work as of that date.
- .4 Submit to Consultant for review, minimum fourteen (14) days before first application for payment, schedule of values for parts of Work, aggregating total amount of Contract Price, so as to facilitate evaluation of applications for payment.
- .5 Submit required support documentation with applications for payment, including statutory declarations and workers' compensation clearance certificates.

1.18 PROGRESS PAYMENT

- .1 Consultant will issue to Owner, no later than ten (10) days after receipt of an application for payment, certificate for payment in amount applied for or in such other amount as Consultant determines to be properly due.
- .2 If Consultant amends application, Consultant will give notification in writing giving reasons for amendment.

1.19 PROGRESSIVE RELEASE OF HOLD-BACK

- .1 Where legislation permits, if Consultant has certified that Work has been performed prior to Substantial Performance of the Work, Owner will pay hold-back amount retained for such Work, or products supplied, on day following expiration of hold-back period for such Work stipulated in lien legislation applicable to Place of the Work.
- .2 Notwithstanding provisions of preceding paragraph, and notwithstanding wording of such certificates, ensure that Subcontract Work or Products is protected pending issuance of final certificate for payment and be responsible for correction of defects or Work not performed regardless of whether or not such was apparent when such certificates were issued.

1.20 SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 Submit a schedule of payments and an application letter indicating that Substantial Performance of the Work has been completed.
- .2 Accompany applications with a CCDC 9A-2018 Statutory Declaration form.
- .3 Prepare and submit to the Consultant a comprehensive list of items to be completed or corrected. Failure to include an item on the list does not alter responsibility to complete the Contract.
- .4 Request Consultant review to establish Substantial Performance of the Work.
- .5 Where permitted by local lien legislation, Contractor may apply for substantial performance of a designated portion of the Work, subject to Owner acceptance of that portion of the Work being substantially performed.
- .6 No later than ten (10) days after receipt of list and application, Consultant will review Work to verify validity of application, and no later than seven (7) days after completing review, will notify Contractor if the Work, or the designated portion of the Work, is substantially performed.
- .7 Consultant will state in their certificate the date of Substantial Performance of the Work, or the date of the designated portion of the Work, as applicable.
- .8 Immediately following issuance of certificate of Substantial Performance of the Work, in consultation with the Consultant, establish reasonable date for finishing Work.

1.21 PAYMENT OF HOLD-BACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 After issuance of certificate of Substantial Performance of the Work:

- .1 Submit an application for payment of hold-back amount.
- .2 Submit sworn statement that all accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Performance of the Work and for which Owner might in any way be held responsible have been paid in full, except for amounts properly retained as hold-back or as identified amount in dispute.
- .2 After receipt of application for payment and sworn statement, Consultant will issue certificate for payment of hold-back amount.
- .3 Where hold-back amount has not been placed in a separate hold-back account, Owner will, ten (10) days prior to expiry of hold-back period stipulated in lien legislation applicable to Place of the Work, place hold-back amount in bank account in joint names of Owner and Contractor.
- .4 Amount authorized by certificate for payment of hold-back amount is due and payable on day following expiration of hold-back period stipulated in lien legislation applicable to Place of the Work.
 - .1 Where lien legislation does not exist or apply, hold-back amount is due and payable in accordance with other legislation, industry practice, or provisions which may be agreed to between parties.
 - .2 Owner may retain out of hold-back amount any sums required by law to satisfy any liens against Work or, if permitted by lien legislation applicable to Place of the Work, other third-party monetary claims against [Contractor] [Project Manager] which are enforceable against Owner.

1.22 FINAL PAYMENT

- .1 Consultant will, no later than ten (10) days after receipt of an application for final payment, review Work to verify validity of application. Consultant will give notification that application is valid or give reasons why it is not valid, no later than seven (7) days after reviewing Work.
- .2 Consultant will issue final certificate for payment when application for final payment is found valid.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Project managing and coordination.
- .2 Construction progress documentation.
- .3 Submittal procedures.
- .4 Waste management.
- .5 Regulatory requirements.
- .6 Quality control.

1.2 RELATED SECTIONS

- .1 Section 01 00 00 - Summary.
- .2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 COORDINATION

- .1 Perform coordination of progress schedules, submittals, use of site, temporary utilities, construction facilities, and construction Work, with progress of Work of others.

1.4 PROJECT MEETINGS

- .1 Regular project meetings during construction not required.

1.5 CONSTRUCTION ORGANIZATION AND START-UP

- .1 Within fifteen (15) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Establish time and location of meeting and notify parties concerned minimum five (5) days before meeting.
- .3 Agenda to include following:
 - .1 Appointment of official representative of participants in Work.
 - .2 Schedule of Work and progress scheduling.
 - .3 Schedule of submission of shop drawings, samples, colour chips.
 - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences (see 1.13.1 for security fencing requirements).
 - .5 Delivery schedule of specified equipment.
 - .6 Site safety and security.
 - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, and administrative requirements.

- .8 Owner-furnished Products.
- .9 Record drawings and a process for maintaining them current during the Work.
- .10 Maintenance material and data.
- .11 Take-over procedures, acceptance, and warranties.
- .12 Monthly progress claims, administrative procedures, photographs, and holdbacks.
- .13 Appointment of inspection and testing agencies or firms.
- .14 Insurances and transcript of policies.
- .4 During construction, coordinate use of site and facilities.
- .5 Activate procedures for intra-project communications: Submittals, reports and records, schedules, coordination of drawings, recommendations, and resolution of ambiguities and conflicts.

1.6 PROJECT TIMELINE

- .1 It is expected that the project be completed in a timely fashion, with no unreasonable breaks or pauses in the work.
 - .1 Proponents to indicate estimated start and completion date of project as part of the 'Stipulated Price – Bid Form' (00 41 10; 1.3.2.)

1.7 SCHEDULES

- .1 Formal construction schedule not required.

1.8 CONSTRUCTION PROGRESS MEETINGS

- .1 Not required.

1.9 SUBMITTALS

- .1 Submit shop drawings, product data and samples for review for compliance with Contract Documents; for field dimensions and clearances, for relation to available space, and for relation to Work of other contracts. After review, revise and resubmit for transmittal to the Consultant.
- .2 Submit requests for interpretation of Contract Documents (i.e. Requests for Information), and obtain instructions through Consultant.
- .3 Consultant to review and approve:
 - .1 Requests for payment.
 - .2 Substitutions.
 - .3 Change orders.
 - .4 Closeout submittals.
 - .5 Preliminary inspections.

1.10 CLOSEOUT PROCEDURES

- .1 Notify Consultant when Work is considered ready for Substantial Performance.

- .1 Accompany Consultant on preliminary inspection to determine items listed for completion or correction.
- .2 Comply with Consultant's instructions for correction of items of Work listed in executed certificate of Substantial Performance.
- .3 Notify Consultant of instructions for completion of items of Work determined in Consultant's final inspection.

1.11 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance coverage immediately after award of Contract.

1.12 WASTE MANAGEMENT PLAN

- .1 Owner requires waste to be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

1.13 STORAGE, HANDLING AND PROTECTION

- .1 Contractor to provide continuous security fencing around entire effected project site in order to ensure public does not have access.
- .2 Store, materials to be reused, recycled and salvaged in locations as approved by Owner.
- .3 Protect, stockpile, store salvaged items.
- .4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .5 Protect surface drainage, storm sewers, sanitary sewers, and utility services from damage or blockage.
- .6 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

1.14 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Maintain security measures established by existing facility. Provide temporary security measures directed by Owner.

1.15 DISPOSAL OF WASTE

- .1 Burying rubbish and waste materials is prohibited unless approved by authority having jurisdiction.
- .2 Disposal of waste, volatile materials, mineral spirits, oil, paint thinner, into waterways, storm, sanitary sewers, or on site is prohibited.

1.16 CLEANING

- .1 Remove tools and waste materials on completion of work, and leave work area and site in clean and orderly condition.
- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

1.17 LAWS, NOTICES, PERMITS AND FEES

- .1 The Owner shall obtain and pay for the Building Permit, permanent easements and rights of servitude.
- .2 The Contractor shall be responsible for permits, licenses or certificates necessary for the performance of the Work which were legally in force at the date of executing the Agreement.
- .3 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.
- .4 To knowingly perform or allow work to be performed, that is contrary to laws, ordinances, rules, regulations or codes, the Contractor shall be responsible for and shall correct the violations, and shall bear the costs, expenses and damages attributable to the failure to do so.
- .5 Pay construction damage deposits levied in connection with the issuance of a building permit.

1.18 PERSONNEL SMOKING

- .1 Comply with regulatory and Owner imposed tobacco & cannabis smoking restrictions during execution of the Work.

1.19 INSPECTION BY AUTHORITY

- .1 Allow Authorities Having Jurisdiction access to Work.
- .2 Give timely notice requesting inspection, whenever portions of the Work are designated for tests, inspections or approvals, when described in the Contract Documents or when required by law at the Place of the Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

1.20 REVIEW BY CONSULTANT

- .1 Consultant may order any part of the Work to be reviewed, if Work is suspected to be not in accordance with Contract Documents.
 - .1 If, upon review such work is found not in accordance with Contract Documents, correct such Work and pay cost of additional review and correction.

- .2 If such Work is found in accordance with Contract Documents, Owner will pay cost of review and replacement.

1.21 INDEPENDENT INSPECTION AGENCIES

- .1 Independent inspection and testing agencies may be engaged by Owner or Consultant for purpose of inspecting and testing portions of Work. Cost of such services will be borne by Owner.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection and 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 testing to ascertain full degree of defect. Correct defect and irregularities as advised by the Consultant at no cost to Owner. Pay costs for retesting and reinspection.

1.22 ACCESS TO WORK

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

1.23 REJECTED WORK

- .1 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.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of the Consultant, it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price, the difference in value between Work performed and that required by the Contract Documents, amount of which shall be determined by [Consultant.] [Owner.]
- .4 Submit four (4) copies of inspection and test reports to the Consultant and others affected.

1.24 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as may be requested.
- .2 The cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by the Consultant and may be authorized as recoverable.

1.25 EQUIPMENT AND SYSTEMS

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

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Shop drawings and product data.
- .2 Samples.
- .3 Certificates and transcripts.

1.2 RELATED SECTIONS

- .1 Section 01 60 00 – Product Requirements.
- .2 Section 01 78 15 – Closeout Documentation.
- .3 Other sections requesting submittals.
- .4 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 ADMINISTRATIVE

- .1 Submit to Consultant submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric or Imperial inch-pound units.
- .4 Review submittals prior to submission to the 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.
- .5 Submittals not stamped, signed, dated, identified as to specific project, and attesting to their being reviewed will be returned without being examined and shall be 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 coordinated.
- .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 the Consultant review.

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

1.4 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .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 coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .3 Allow ten (10) days for Consultant's review of each submission.
- .4 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 prior to proceeding with Work.
- .5 Make changes in shop drawings as the Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of any revisions other than those requested.
- .6 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.
- .7 Submissions to 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 other parts of the Work.
- .8 After Consultant's review, distribute copies.
- .9 Submit **electronic copy of shop drawings** for each requirement requested in specification Sections and as consultant may reasonably request.
- .10 Submit electronic copies 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.
- .11 Delete information not applicable to project.
- .12 Supplement standard information to provide details applicable to project.
- .13 If upon review by the Consultant, no errors or omissions are discovered or if only minor corrections are made, the electronic files will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and re-submission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.5 SAMPLES

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Consultant's business address.
- .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 Consultant 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.

1.6 MOCK-UP

- .1 Erect mock-ups in accordance with Section 01 33 10.

1.7 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Product requirements.
- .2 References and standards.
- .3 Execution.
- .4 Cutting and Patching.

1.2 RELATED SECTIONS

- .1 Section 01 00 00 - Summary.
- .2 This section describes requirements applicable to all products & materials described in the Drawings and any sections listed within Divisions 02 to 49.

1.3 PRODUCT QUALITY

- .1 New: Produced from new materials.
- .2 Renewed: Produced or rejuvenated from an existing material to like-new condition to serve a new or existing service.
- .3 Should any dispute arise as to quality or fitness of Products, decision rests strictly with the Consultant.
- .4 Review Product delivery requirements and anticipate foreseeable supply delays for any items.
- .5 Store and protect Products in accordance with manufacturers' instructions. Store with seals and labels intact and legible.
- .6 Transport and handle Products in accordance with manufacturer's instructions. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.

1.4 REFERENCES AND STANDARDS

- .1 For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- .2 Conform to reference standard by date specified in the individual specification sections except where a specific date is established or required by code.
- .3 Obtain copies of standards where required by product specification sections.

- .4 The contractual relationships, duties, nor responsibilities of the parties in Contract nor those of the Consultant shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.5 PRODUCT CHANGES

- .1 Substitutions Before Bid Submission:
 - .1 Where the Bid Documents stipulate a particular product or assembly, substitutions will be considered by the Consultant up to ten (10) days before receipt of bids.
 - .2 When a request to substitute a product is made during a bid process, the Consultant may approve the substitution, and will issue an Addendum to known bidders. If a substitution is rejected, a response to the party submitting will be rendered.

1.6 EXISTING UTILITIES

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and building occupants.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

1.7 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect Products in accordance with manufacturer's instructions. Obtain written instructions directly from manufacturers.
- .2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions.

1.8 QUALITY OF WORK

- .1 Ensure Quality of Work is of the highest, locally acceptable standard, executed by workers experienced and skilled in respective duties for which they are employed.
- .2 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with the Consultant, whose decision is final.
- .3 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision. Be responsible for coordination and placement of openings, sleeves and accessories.
- .4 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .5 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.

1.9 LOCATION OF FIXTURES

- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
- .2 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .3 Prevent electrolytic action between dissimilar metals and materials.
- .4 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in affected specification section.

1.10 SUBMITTALS - ATTACHING TO EXISTING WORK

- .1 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of any element of Project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of any operational element.
 - .4 Visual qualities of sight-exposed elements.

1.11 EXECUTION

- .1 Execute cutting, fitting, and patching to complete the Work. Fit several parts together, to integrate with other Work. Remove and replace defective or non-conforming Work.
- .2 Provide openings in non-structural elements of Work for penetrations of mechanical, electrical, and associated Work. Limit opening dimensions to minimal sizes required, and performed in a neat and clean fashion.
- .3 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- .4 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry or concrete work without prior approval.
- .5 Fit Work reasonably close to opening size to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .6 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with fire-stopping material, for full thickness of the constructed element.
- .7 Re-finish surfaces to match adjacent finishes: For continuous surfaces re-finish to nearest intersection; for an assembly, re-finish entire unit.
- .8 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Start-up procedures.
- .2 Testing, adjusting, and balancing.
- .3 Close-out submittals.
- .4 Maintenance requirements.

1.2 RELATED SECTIONS

- .1 Section 01 00 00 - Summary.
- .2 This section describes requirements applicable to all Sections within Divisions 02 to 49.

1.3 STARTING COMPONENTS

- .1 Coordinate schedule for start-up of various equipment and systems.
- .2 Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- .3 Verify tests, metre readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer. Verify that wiring and support components for equipment are complete and tested.
- .4 Execute start-up under supervision of applicable Contractors' personnel in accordance with manufacturers' instructions.
- .5 Submit a written report in accordance with Section 01 30 00 that equipment or system has been properly installed and is functioning correctly.

1.4 START-UP REPORT

- .1 Develop and provide report forms for all control points, software and hardware. Submit completed reports for review and acceptance.
- .2 Include manufacturer's equipment start-up reports and test certificates as an appendix to the maintenance manual.
 - .1 Maintain this manual current.
 - .2 Maintain a schedule for work with the commissioning schedule.
- .3 Complete, submit, and verify maintenance manual to the Owner with all data entered and sign-offs, prior to Substantial Completion of the Work.

1.5 CONTRACTOR START UP

- .1 Contractor to perform the following during start-up:

- .1 Start equipment and systems.
- .2 Test, adjust and balance equipment.
- .3 Demonstrate equipment in operation.
- .2 Complete and submit start-up reports including:
 - .1 Contractor's system and equipment start up reports.
 - .2 Manufacturers' equipment start up reports.
- .3 Correct Contract deficiencies and defects identified.
- .4 The following will be performed to an on-going cycle of:
 - .1 Owner's inspections.
 - .2 Documentation of results.
 - .3 Diagnosis of problems.
 - .4 Correction of Contract Deficiencies and execution of Change Orders as required.
 - .5 Verification of results.
- .5 When partial utilization of the Work is required, the applicable requirements specified in this section apply to the part(s) of the Work to be utilized.

1.6 SEASONAL CONSTRAINTS

- .1 Notwithstanding requirements in this section, additional separate cycles of Contractor start-up, performance testing and fine tuning may be necessitated at a later time on equipment and systems whose full operation is dependent on seasonal conditions.

1.7 TESTING, ADJUSTING, AND BALANCING

- .1 Prepare each system and item of equipment before testing, adjusting and balancing.
- .2 Verify that each system and equipment installation is complete and in functional operation. Verify appropriate ambient conditions.
- .3 Perform testing, adjusting and balancing of operating equipment.
- .4 Prior to start of balancing, ensure equipment is:
 - .1 piped, ducted, wired and wireless services, including associated components and equipment,
 - .2 manually and mechanically operated, including components and equipment,
 - .3 test, adjust and balance equipment,
 - .4 operated at designated times, under conditions required for testing, adjusting, and balancing,
- .5 Report any deficiencies or defects which may affect the balancing or noted during testing, adjusting and balancing, which cannot be promptly corrected.
- .6 Adjust operating Products and equipment to ensure smooth and unhindered operation.
- .7 Commencement of Warranty Periods: the date of Substantial Performance of the Work shall be the date for commencement of the warranty period.

1.8 CLOSEOUT SUBMITTALS

- .1 No more than two weeks after Substantial Performance of the Work, submit two (2) final copies of printed operating and maintenance manuals.
- .2 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective.
- .3 Organize data in the form of an instructional manual. Binders: Vinyl, hard covered, 3 'D' ring, loose leaf.

1.9 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of drawings.
- .2 Record information concurrently with construction progress. Do not conceal Work of the Project until required information is accurately recorded.
- .3 Contract drawings and shop drawings - legibly mark each item to record actual construction, including:
 - .1 Measured depths 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 References to related shop drawings and modifications.
- .4 Specifications: Legibly 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.

1.10 WARRANTIES AND BONDS

- .1 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten (10) days after completion of the applicable item of work. Designate name on warranty document in the name of the Owner.
- .2 Upon completion of all *Works and Services*, the Contractor shall be responsible for and shall make good all defects, imperfections, or deficiencies which become apparent during the one-year period following the date of issuance by the Consultant of a Certificate of Substantial Completion in respect of the *Works and Services* (the 'Maintenance Period').
 - .1 As referred to in CCDC-2, GC 12.3.

1.11 MATERIALS AND FINISHES

- .1 Moisture-protection and Weather-exposed Products: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental

1.12 SPARE PARTS

- .1 Provide spare parts, in quantities specified in individual specification sections.
- .2 Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.
- .3 Provide maintenance and extra materials, in quantities specified in individual specification sections.
- .4 Provide special tools, in quantities specified in individual specification section.
- .5 Provide items with tags identifying their associated function and equipment.

1.13 STORAGE, HANDLING AND PROTECTION

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration. Store in original and undamaged condition with manufacturer's seal and labels intact.
- .2 Store paints and freezable materials in a heated and ventilated room.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Finishing slabs-on-grade.
- .2 Surface treatment with concrete sealer.

1.2 RELATED SECTIONS

- .1 Section 03 05 00 - Cast-in-Place Concrete: Prepared concrete slabs ready to receive finish.

1.3 SUBMITTALS

- .1 Product Data: Provide data on finishing compounds, product characteristics, compatibility and limitations.

1.4 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 Applicator: Company specializing in performing the work of this section with minimum three (3) years experience.

Part 2 Products

2.1 ACCEPTABLE FLOOR FINISHERS

- .1 Concrete Sealers, PS103 Lithium Silicate Densifier WB Penetrating Sealer.
- .2 Other Acceptable Manufacturers:
 - .1 Sherman Williams.
 - .2 Sika.
- .3 Substitutions: Refer to Section 01 60 00.

2.2 COMPOUNDS - HARDENERS AND SEALERS

- .1 Sealer: Clear; water based; densifier & hardener

Part 3 Execution

3.1 FLOOR FINISHING

- .1 Prepare concrete floor surfaces in accordance with CAN/CSA-A23.1/A23.2 and Section 03 05 00.
- .2 Steel trowel surfaces which are scheduled to be exposed.

3.2 FLOOR SURFACE TREATMENT

- .1 Apply slip resistant finish in accordance with manufacturer's instructions on floor surfaces.
- .2 Apply sealer in accordance with manufacturer's instructions on floor surfaces.

END OF SECTION

1.1 SECTION INCLUDES

- .1 Shop fabricated ferrous metal items, prime painted.

1.2 SUBMITTALS

- .1 Section 01 33 10: Submission procedures.
- .2 Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.

1.3 QUALITY ASSURANCE

- .1 Fabricator: Company specializing in welded structural building components with 5 years experience and approved under CSA-W47 and CSA-W55.3.

Part 2 Products

2.1 MATERIALS

- .1 Steel Sections and Plates: CAN/CSA-G40.20/G40.21, Grade 300W or 350W.
- .2 Steel Pipe: ASTM A53/A53M, Grade B Schedule 40, standard weight, black finish.
- .3 Steel Tubing: ASTM A500/A500M, Grade B or ASTM A510M.
- .4 Bolts, Nuts, and Washers: ASTM A307.
- .5 Welding Materials: CSA-W59; type required for materials being welded.
- .6 Shop and Touch-Up Primer: CAN/CGSB-1.40.
- .7 Touch-Up Primer for Galvanized Surfaces: CAN/CGSB-1.181 zinc rich, or SPCC-Paint 20 Type I Inorganic zinc rich, or SPCC-Paint 20 Type II Organic zinc rich.

2.2 FABRICATION

- .1 Fit and shop assemble in largest practical sections, for delivery to site.
- .2 Grind exposed welds flush and smooth with adjacent finish surface.
- .3 Make exposed joints butt tight, flush, and hairline.
- .4 Supply components required for anchorage of metal fabrications.

2.3 FINISHES

- .1 Do not prime surfaces in direct contact bond with concrete or where field welding is required.
- .2 Prime paint items with two (2) coats.

- .3 Galvanized items after fabrication to ASTM A123/A123M. Provide minimum 380 g/sq m (1.25 oz/sq ft) galvanized coating.

Part 3 Execution

3.1 PREPARATION

- .1 Make provisions for erection loads with temporary bracing.
- .2 Clean and strip primed steel items to bare metal where site welding is required.
- .3 Supply steel items required to be cast into concrete with setting templates to appropriate sections.

3.2 INSTALLATION

- .1 Install items plumb and level, accurately fitted, free from distortion or defects.
- .2 Perform field welding to CSA requirements.
- .3 After installation, touch-up field welds scratched or damaged surfaces with primer.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Structural floor, wall, and roof framing.
- .2 Wall and roof sheathing.
- .3 Subfloor sheathing (and overlay).
- .4 Curbs, cants, and blocking.

1.2 RELATED SECTIONS

- .1 n/a

1.3 SUBMITTALS

- .1 Section 01 33 10: Submission procedures.
- .2 Manufacturer's Certificate: Certify that specified products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- .1 Perform Work in accordance with the following agencies:
 - .1 Lumber Grading Agency: Certified by NLGA.
 - .2 Plywood Grading Agency: Certified by CANPLY.
- .2 Wood Treatment: CAN/CSA-O80 Series.

Part 2 Products

2.1 LUMBER MATERIALS

- .1 As per Structural drawings (and industry standards).

2.2 PLYWOOD MATERIALS

- .1 As per Structural drawings (and industry standards).

2.3 PARTICLE BOARD MATERIALS

- .1 n/a

2.4 HARDBOARD MATERIALS

- .1 n/a

2.5 INSULATING SHEATHING

- .1 n/a

2.6 ACCESSORIES

- .1 Fasteners: Hot dipped galvanized steel for exterior, high humidity and treated wood locations, plain finish elsewhere.
- .2 Joist Hangers: Galvanized steel, sized to suit joists and framing conditions.
- .3 Anchors: Toggle bolt type for anchorage to hollow masonry, expansion shield and lag bolt type for anchorage to solid masonry or concrete, bolts or ballistic fasteners for anchorages to steel.
- .4 Sill gasket: 6 mm (1/4 inch) thick plate, width to suit framing, closed cell polyethylene foam from continuous rolls.
- .5 Sill flashing: 0.15 mm (6 mil) thick, clear, polyethylene sheet.
- .6 Subfloor Glue: Waterproof, air cure type, cartridge dispensed.
- .7 Drywall Screws: Bugle head, steel, power driven type, length [3] times thickness of sheathing.
- .8 Building Paper: No. 15 asphalt felt, Tyvek 'Commercial Wrap', or equivalent.

2.7 FRAMING

- .1 Erect wood framing members level and plumb. Place horizontal members laid flat, crown side up. Construct framing members full length without splices.
 - .1 Blocking, spacing, etc. as per Structural.
- .2 Place full width continuous sill flashings under framed walls on cementitious foundations. Lap flashing joint 100 mm (4 inches).
- .3 Place sill gasket directly on sill flashing. Puncture gasket clean and fit tight to protruding foundation anchor bolts.

2.8 SHEATHING

- .1 Secure roof sheathing perpendicular to framing members with ends staggered. Secure sheet edges over firm bearing.
 - .1 Use sheathing clips between sheets between roof framing members.
 - .2 Provide solid edge blocking between sheets.
 - .3 As per BC Building Code – Part 9 – and industry standards.
- .2 Place building paper over wall sheathing, weather lap joints.

2.9 BLOCKING, CURBS, AND CANTS

- .1 Construct curb [and cants] members of single pieces per location.

- .2 Curb all roof openings except where prefabricated curbs are provided. Form corners by lapping side members alternately.
- .3 Coordinate work with installation of decking and support of decking at openings.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Shop fabricated wood trusses and engineered wood joists for roof and floor framing.
- .2 Bridging, bracing, and anchorage.

1.2 RELATED SECTIONS

- .1 Section 06 11 10 - Wood Framing: Framing and sheathing.

1.3 PERFORMANCE REQUIREMENTS

- .1 As per industry standards and all standards referenced in the 2024 BC Building Code.

1.4 SUBMITTALS

- .1 Section 01 33 10: Submission procedures.
- .2 Product Data: Provide truss configurations, bearing and anchor details, bridging and bracing.
- .3 Shop Drawings: Indicate sizes and spacing of trusses and associated components, web and chord sizes, plate sizes, fastener descriptions and spacing, loads and truss cambers, framed openings. Submit design calculations.

1.5 QUALITY ASSURANCE

- .1 Truss Design, Fabrication, and Installation: In accordance with Truss Plate Institute HIB-91 (Commentary and Recommendations for Handling, Installing, and Bracing Metal Plate Connected Wood Trusses) and ANSI/TPI-1 (National Design for Metal Plate Connected Wood Truss Construction).
- .2 Design trusses under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed at the place where the Project is located.
- .3 Wood Treatment: CAN/CSA-O80 Series.

1.6 REGULATORY REQUIREMENTS

- .1 Conform to BC Building Code (2024) for loads, seismic zoning, other governing load criteria.
- .2 Further specification as per Structural drawings.

Part 2 Products

2.1 MATERIALS

- .1 Lumber Grading Rules: NLGA.

.2 -

2.2 ACCESSORIES

.1 Wood Blocking:

- .1 In accordance with Section 06 11 10.
- .2 Softwood lumber, S/P/F species, construction grade, moisture content 19 percent maximum and 7 percent minimum.

.2 Fasteners and Anchors:

- .1 Fasteners: Hot dipped galvanized steel.
- .2 Anchors: Expansion shield and lag bolt type for anchorage to solid masonry or concrete.

.3 Bearing Plates: Hot dip galvanized.

2.3 FABRICATION

- .1 Fabricate trusses to achieve structural requirements specified.
- .2 Brace wood trusses for support in accordance with TPI HIB-91.
- .3 Fabricate to achieve minimum end bearing as required by STRUCTURAL

Part 3 Execution

3.1 INSTALLATION

- .1 Verify that supports and openings are ready to receive trusses.
- .2 Coordinate placement of bearing and support items.
- .3 Install trusses to manufacturer's instructions and TPI HIB-91.
- .4 Set members level and plumb, in correct position.
- .5 Make provisions for erection loads, and for sufficient temporary bracing to maintain structure plumb, and in true alignment until completion of erection and installation of permanent bracing.
- .6 Do not field cut or alter structural members without approval of Consultant.
- .7 Frame openings between trusses with lumber in accordance with Section 06 11 10.

3.2 ERECTION TOLERANCES

- .1 Framing Members: 12 mm (1/2 inch) maximum, from true position.

END OF SECTION

1 General

1.1 SUMMARY

- .1 Section Includes: Provide thermal clips including but not limited to following:
 - .1 sub-framing thermal spacers.
 - .2 spacer fasteners.
 - .3 cladding support sub-framing.
- .2 Related Sections: Following description of work is included for reference only and shall not be presumed complete:
 - .1 Coordination with cast-in-concrete: Section 03 30 00, Cast-In-Place Concrete.
 - .2 Coordination with masonry construction: Section 04 20 00, Unit Masonry.
 - .3 Coordination with structural steel framing: Section 05 12 00, Structural Steel.
 - .4 Coordination with structural steel studs framing: Section 05 41 00, Structural Metal Stud Framing System.
 - .5 Coordination with wood stud framing: Section 06 10 00, Rough Carpentry.
 - .6 Coordination with building insulation: Section 07 21 00, Building Insulation.
 - .7 Coordination with aluminum modular plate system: Section 07 42 43, Aluminum Modular Plate System.
 - .8 Coordination with aluminum siding system: Section 07 46 16, Aluminum Siding System.
 - .9 Coordination with metal siding system: Section 07 46 19, Metal Siding System.
 - .10 Coordination with aluminum framed curtain wall system: Section 08 44 13, Glazed Aluminum Curtain Wall.

1.2 REFERENCES

- .1 Definitions:
 - .1 Rain Screen Principle: A theory governing the design of a building enclosure in such a way as to prevent water penetration due to rain; in other words, a scientific approach to eliminating water leakage.
 - .2 Reference Standards:
-

- .1 ASTM B117-19 - Standard Practice for Operating Salt Spray (Fog) Apparatus
- .2 ASTM D570-98(18) - Standard Test Method for Water Absorption of Plastics
- .3 ASTM D638-14 - Standard Test Method for Tensile Properties of Plastics
- .4 ASTM D695-15 - Standard Test Method for Compressive Properties of Rigid Plastics
- .5 ASTM D790-17 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- .6 ASTM D792-20 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- .7 ASTM G155-13 - Standard Practice for Operating Xenon Arch Light Apparatus for Exposure of Non-Metallic Materials

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Preinstallation Meetings: n/a

1.4 SUBMITTALS

- .1 Shop Drawings:
 - .1 Submit Shop Drawings for work of this Section in accordance with Section 01 33 10. Ensure to include size, spacing and location of thermal clips.
 - .2 Ensure a licensed engineer specified herein is responsible for:
 - .1 production and review of Shop Drawings.
 - .2 sealing and signing each Shop Drawing and any associated calculations performed.
- .2 Submit thermal clip manufacturer's written certification that Products, systems and assemblies have been installed in accordance with manufacturer's requirements.

1.5 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 Installers: Provide work of this Section executed by competent installers with minimum 5 years experience in the application of Products, systems and assemblies specified and with approval and training of the Product manufacturers.
-

- .2 Licensed Professionals: Employ a licensed engineer carrying professional liability insurance and is registered in the Province of British Columbia
- .2 Mock-Ups: n/a
- 2 Products
 - 2.1 MANUFACTURERS
 - .1 Manufacturer List: Products of following manufacturers are permitted subject to conformance to requirements of Drawings, Schedules and Specifications:
 - .1 Cascadia Windows Ltd., Cascadia Clip®
 - 2.2 COMPONENTS
 - .1 Performance/Design Criteria:
 - .1 Provide thermal spacers that meet or exceed following physical properties when tested in accordance with standards specified herein:
 - .1 Tensile Strength and Modulus: Minimum 411 MPa (59,600 psi) tensile and 169 MPa (24,500 ksi) modulus when tested to ASTM D638.
 - .2 Flexural Strength and Modulus:
 - .1 Lengthwise Control: Minimum 441 MPa (64,000 psi) flexural and 13 MPa (1,900 ksi) modulus when tested to ASTM D790.
 - .2 Crosswise Control: Minimum 127 MPa (18,400 psi) flexural and 8 MPa (1,200 ksi) modulus when tested to ASTM D790.
 - .3 Compressive Strength:
 - .1 Lengthwise: Minimum 205 MPa (29,800 psi) when tested to ASTM D695.
 - .2 Crosswise: Minimum 83 MPa (12,000 psi) when tested to ASTM D695.
 - .4 Water Absorption: Maximum 0.09% when tested to ASTM D570.
 - .5 Density and Specific Gravity: Maximum 0.067 lbs/cu in density and 1.854 sp.gr 23/23° specific gravity when tested to ASTM D792.
 - .6 Accelerated Weathering: No cracking, checking, crazing, erosion or other characteristics that might affect performance after 2000 hours of accelerated weathering when tested to ASTM G155.

- .7 Salt Spray: No cracking, checking, crazing, erosion or other characteristics that might affect performance after 3000 hours of salt spray exposure when tested to ASTM B117.
 - .2 Structural Design: Employ a licensed engineer specified herein to:
 - .1 design components for work of this Section requiring structural performance.
 - .2 be responsible for determining sizes, yield strengths, gauge thicknesses and joint spacing to allow thermal movement and loading of components in accordance with applicable codes and regulations.
 - .2 Sub-Framing Thermal Spacer: 100% Pultruded glass fibre and thermoset polyester resin insulation clip.
 - .1 Thermal Spacer thickness for top, base and web: 4.8 mm (3/16") nominal.
 - .2 Thermal Spacer Depth: 127 mm (5")
 - .1 Depth Tolerance: +/-0.127 mm (+/-0.005").
 - .3 Basis of Design: "Cascadia Clip[®]" by Cascadia Windows Ltd.
 - .3 Spacer Fasteners: High hex head washer head with sharp twin threaded design of heat-treated corrosion resistant coated steel.
 - .1 Fastener for Steel Framing (n/a): 178 mm (7").
 - .1 Ensure fasteners are supplied by Cascadia Windows Ltd., minimum 38 mm (1-1/2") longer than clip depth to allow for sheathing and penetration on steel stud.
 - .2 Permitted Product: "Master Driller[™] No. 2 Mini Drill Point with NZF3000 coating" by Leland Industries Inc.
 - .2 Fastener for Wood Framing (n/a): 1/4 - 14 x 203 mm (8"). Ensure fasteners are supplied by Cascadia Windows Ltd., minimum 38 mm (1-1/2") longer than clip depth to allow for sheathing and penetration on wood stud.
 - .1 Permitted Product: "Master Gripper[™] with DT2000 or NZF3000 coating" by Leland Industries Inc.
 - .3 Fastener for Cast-In-Place Concrete and Concrete Masonry Units: 1/4 - 14 concrete screw with hex head. Fasteners to be supplied by Cascadia, minimum 38 mm (1-1/2") longer than Clip depth to allow for sheathing and penetration into concrete or concrete masonry unit.
 - .1 Permitted Product: "Concrete Screw with DT2000 or NZF3000 coating" by Leland Industries Inc.
-

- .2 Embedment Depth: 38 mm (1-1/2”), except when into hollow concrete masonry unit, not less than 25 mm (1”).

.4 Cladding Support Sub-Framing:

- .1 Material Basis-of-Design: Minimum 1.214 mm (18 ga), 33 ksi, factory-punched sheet steel with fastener holes to match fibreglass thermal spacers.
- .2 Corrosion Resistant Coating on Sub-Framing: Galvalume AZM 150 (AZ 50)
- .3 Sub-Framing Profiles: As shown on design drawings. Typically, Z-profile for vertically oriented sub-framing and hat-profile for horizontally oriented sub-framing, and additionally as required by cladding manufacturer or cladding structural engineer.
 - .1 Typical Sub-Framing Depth: 25 mm (1”).

3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: Verify actual site dimensions and location of adjacent materials prior to commencing work. Notify Consultant in writing of any conditions which would be detrimental to the installation.
- .2 Evaluation and Assessment: Commencement of work implies acceptance of previously completed work.

3.2 PREPARATION

- .1 Pre-drill concrete or concrete masonry unit substrate to 13 mm (1/2”) deeper than anticipated embedment depth of fastener into substrate.
- .2 Use drill diameter approximately 1.6 mm (1/16”) less than screw diameter in accordance with fastener manufacturer’s written recommendations.
- .3 Sub-Framing: Ensure thermal spacer type is selected to accommodate orientation of vertical and horizontal sub-framing.

3.3 INSTALLATION

- .1 Sub-framing Thermal Spacer Installation: Install thermal spacers in accordance with spacer manufacturer’s written recommendations.
 - .2 Thermal Spacer Installation:
 - .1 Clip thermal spacer to Z-girt and hat track at centres determined using Cascadia Clip Calculator <http://www.cascadiawindows.com/tools/cascadia-clip-calculator> or as directed by Cladding Engineer / Consultant.
-

.2 Installation sequence for spacers, sub-framing and insulation: See <https://www.cascadiawindows.com/products/cascadia-clip#installation> for sequencing

.1 Pre-punch holes or pre-drill holes in Z-girts and tracks to accommodate fasteners.

3.4 SITE QUALITY CONTROL

.1 Site Tests and Inspections:

.1 Structural Inspection: Ensure a licensed engineer specified herein inspects work of this Section during erection/installation and submits sealed and signed Field Review Report within 5 Days of site visit.

.2 Non-Conforming Work: Replace damaged work which cannot be satisfactorily repaired, restored or cleaned, to satisfaction of Consultant at no cost to Owner.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Batt insulation and vapour retarder friction fit in exterior wall and roof construction.

1.2 RELATED SECTIONS

- .1 -

1.3 SYSTEM DESCRIPTION

- .1 Materials of this section to provide a thermal at building enclosure elements in conjunction with air barrier materials in Sections 07 27 10.

1.4 SUBMITTALS

- .1 Section 01 33 10: Submission procedures.
- .2 Product Data: Provide product data on insulation materials.

Part 2 Products

2.1 MANUFACTURERS

- .1 For masonry exterior insulation: Roxul 'CavityRock' or Thermafibre 'RainBarrier45'
- .2 Other Acceptable Manufacturers (for roof insulation):
 - .1 Johns Manville.
 - .2 Owens Corning.
- .3 Substitutions: Refer to Section 01 60 00.

2.2 MATERIALS

- .1 Batt Insulation: CAN/ULC-S702, preformed glass or mineral fibre batt; friction fit with vapour barrier membrane.
 - .1 Provide insulation with a value of:
 - .1 For Exterior Walls – minimum R-20
 - .2 For Roof Assembly – minimum R-40.
- .2 Vapour Retarder: CAN/CGSB-51.34, translucent polyethylene film, 6 mil thick.
- .3 Nails or Staples: Steel wire; electroplated or galvanized.
- .4 Sealant: Acoustical Sealant.
 - .1 Provide solid backing for all vapour barrier joints.

Part 3 Execution

3.1 INSTALLATION

- .1 Install insulation, vapour retarder in exterior walls and roof between ceiling framing spaces without gaps or voids.
- .2 Fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within the plane of insulation. Leave no gaps or voids.
- .3 Install with factory applied membrane facing warm side of building spaces.
 - .1 Lap ends and side flanges of membrane over framing members.
 - .2 Tape seal butt ends, lapped flanges, and tears or cuts in membrane.
- .4 Place vapour retarder membrane facing on the warm side of the insulation.
- .5 Extend vapour retarder [and air barrier] tight to full perimeter of adjacent window and door frames and other items interrupting the plane of membrane.
 - .1 Tape seal in place.
 - .2 Coordinate vapour retarder and air seal sections.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Loose laid membrane with adhesive sealed joints.
- .2 Radon gas collector, vent piping above plane of roof.

1.2 RELATED SECTIONS

- .1 n/a

1.3 PERFORMANCE REQUIREMENTS

- .1 Sealed sheet membrane capable of preventing migration of radon gas and moisture into building interior.
- .2 Sealed sheet membrane and vent stack assembly of containing and venting radon gas to exterior via collector and sealed pipe stack above roof.

1.4 MATERIALS

- .1 Gas and Moisture Barrier Membrane:
 - .1 6 mil UV polyethylene vapour barrier
- .2 Joint and Lap Seal: Non-hardening, permanently flexible, high-performance sealant with vapour barrier properties (Acoustical Sealant).
- .3 Surface Cleaner: As recommended by membrane manufacturer, compatible with sheet membrane.
- .4 Piping: PVC pipe and fittings, 4" diameter, maximum lengths to minimize jointing, adhesive sealed male/female joints.
- .5 Accessories:
 - .1 PVC "Top Hat" pipe collars to seal penetrations through surrounding floor and roof construction.
 - .2 PVC Vent pipe cap.
 - .3 Tape Seal: Self adhesive, 32 mm (1-1/4 inch) wide.
 - .4 Circular Clamps: Stainless steel band, threaded adjustable clamp.
- .6 Adhesives, Thinner and Cleaner: As recommended by membrane manufacturer, compatible with sheet membrane.
- .7 Sealant: Acoustical Sealant.
- .8 Counter Flashings: If required, as specified in Section 07 62 10.

Part 2 Execution

2.1 PREPARATION

- .1 Protect adjacent surfaces not designated to receive protection.
- .2 Clean and prepare surfaces to receive membrane in accordance with manufacturer's instructions.
- .3 Do not apply membrane or related components to surfaces unacceptable to manufacturer.

2.2 INSTALLATION - VENT STACK

- .1 Install vent stack, and accessories to manufacturer's instructions. See drawing A1.2 for additional notes and location.
- .2 Place stack piping:
 - .1 seal joints and penetrations through building construction air tight;
 - .2 place top-hat and other accessories at floor and roof construction;
 - .3 seal spaces between pipe and surrounding construction; and
 - .4 extend vent stack to 1 m (3 feet) above plane of roof.
- .3 Place sump where indicated:
 - .1 place vent stack fitting in one port;
 - .2 connect to stack piping;
 - .3 seal three other ports.

2.3 INSTALLATION - MEMBRANE

- .1 Install membrane and accessories to manufacturer's instructions.
- .2 Roll out membrane. Minimize wrinkles and bubbles.
- .3 Overlap edges, ends, and joints minimum 4 inches and seal by contact sealant tape.
- .4 Seal or weld joints and protrusions, permanently air tight and waterproof.
- .5 Reinforce membrane with multiple thicknesses of membrane material over static or moving joints.
- .6 Weather lap joints on sloped substrate in direction of drainage. Seal joints and seams.
- .7 Install flexible flashings and accessories.
 - .1 Seal watertight to membrane.
 - .2 Seal to adjoining surfaces.
- .8 Extend membrane over intersecting surfaces at membrane perimeter minimum inches.
- .9 Seal items:
 - .1 protruding or penetrating through membrane,
 - .2 install counter flashing membrane material.

2.4 PROTECTION

- .1 Do not permit traffic over unprotected or uncovered membrane.
- .2 Protect membrane from damage by adhering protection boards. Scribe and cut boards around projections and interruptions.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Preformed and prefinished steel siding for walls and soffits.

1.2 RELATED SECTIONS

- .1 Section 06 11 10 - Wood Framing: Sheathing paper.

1.3 SUBMITTALS

- .1 Section 01 33 10: Submission procedures.
- .2 Samples: Submit one (1) sample 12x12inch in size illustrating siding colour, finish, and profile.

Part 2 Products

2.1 MANUFACTURERS

- .1 West Form Metals.
- .2 Other Acceptable Manufacturers:
 - .1 Cascadia Metals.
 - .2 Viewest.
- .3 Substitutions: Refer to Section 01 60 00.

2.2 MATERIALS

- .1 Siding: Preformed and prefinished galvanized steel of minimum 24 ga thick sheet stock; profile to match existing; colour and finish as per Elevations.
- .2 Soffits: Preformed and prefinished metal; min. 24" inch wide sheets; vented type; ribbed for added strength and rigidly and to eliminate waves; colour: black.

2.3 ACCESSORIES

- .1 Accessory Components: Facias, starter strips, trim, inside corners. outside corners, and drip caps of same material and finish as siding; ribbed for strength and rigidity.
- .2 Nails and Staples: Manufacturer's standard corrosion resistant type.

Part 3 Execution

3.1 INSTALLATION

- .1 Install components to manufacturer's instructions.

- .2 Install one layer of underlayment horizontally on surfaces to receive preformed siding. Weather lap edges and ends.
- .3 Install siding and soffits to manufacturer's instructions. Securely fasten in place, properly aligned, levelled, and plumb.
- .4 Use concealed fasteners except where approved by Consultant.
- .5 Place sealant or gaskets to arrest weather penetration.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Prefabricated membrane roofing, base flashings, roof insulation.

1.2 RELATED SECTIONS

- .1 Section 06 11 10 - Wood Framing: Wood nailers and cants.
- .2 Section 07 62 10 - Sheet Metal Flashings: Weather protection to base flashings.

1.3 SYSTEM DESCRIPTION

- .1 Conventional Modified Bitumen Roofing Assembly: Two ply membranes with granulated surface.
 - .1 Base sheet: self-adhered.
 - .2 Cap sheet: heat-welded.

1.4 QUALITY ASSURANCE

- .1 Perform Work to roofing materials manufacturer's instructions.
- .2 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years experience.

1.5 REGULATORY REQUIREMENTS

- .1 CAN/ULC S107: Class A Fire Hazard Classification.

1.6 WARRANTY

- .1 Total Warranty Period: Five (5) years.
- .2 Extended Warranty Provider: as per Contractor.
- .3 Warranty: Cover damage to building resulting from failure to prevent penetration of water.

Part 2 Products

2.1 MANUFACTURERS - MEMBRANE MATERIALS

- .1 Manufacturer: Soprema – Sopralene.
- .2 Other Acceptable Manufacturers:
 - .1 Firestone.
 - .2 IKO Industries.
- .3 Substitutions: Refer to Section 01 60 00, permitted.

2.2 MEMBRANE MATERIALS

- .1 Sheet Membrane: CAN/CGSB-37-GP-56M, reinforced asphalt and polymer modifiers of styrene-butadiene-styrene (SBS) prefabricated sheet:
 - .1 Bitumen
 - .1 Asphalt conforming to CAN/CSA A123.4-04 (2013) Type 2 asphalt shall be used for built-up roofing on slopes up to 1 in 8 and Type 3 asphalt on slopes equal to or greater than 1 in 8.
 - .2 Asphalt primer as recommended by manufacturer.
 - .2 Protection Underlay Board: not required.
 - .3 Base membrane: SBS modified bitumen 2.2mm thickness with torchable top side and sanded underside surface, with minimum reinforcement of 95g/sm glass mat conforming to section 9.1 of the RCABC Roofing Practices Manual.
 - .4 Cap sheet membrane: SBS modified bitumen 4mm thickness, torchable bottom side and mineral surfaced top side, with minimum polyester/glass scrim or reinforcement of 180 g/sm polyester conforming to section 9.1 of the RCABC Roofing Practices Manual.
 - .5 Flashing membrane: SBS modified bitumen, 3mm thickness, torchable surfaces both sides, woven fibreglass reinforcement or 180 g/sm polyester conforming to section 9.1 of the RCABC Roofing Practices Manual.

2.3 ACCESSORIES

- .1 Cant Strips (if shown in details):
 - .1 Pressure-treated wood, dry and true, 6 inches in width with 45 degree angle.
 - .2 or Fibre Cant and Tapered Edge Strips: Asphalt impregnated wood fibreboard.
- .2 Roof Drains and Scuppers:
 - .1 Located on Architectural Roof Plan
 - .2 Specified as per Mechanical.
- .3 Fasteners:
 - .1 Roofing Nails: Spiral, galvanized or non-ferrous type.
- .4 Bituminous Flashings:
 - .1 SBS Modified Bituminous membrane cap and base by Soprema or approved equal.

Part 3 Execution

3.1 PREPARATION - WOOD DECK

- .1 Verify flatness and tight joints of wood decking.
- .2 Seal joints of plywood with tape.

- .3 Fill knot holes with latex filler.

3.2 FLASHINGS AND ACCESSORIES

- .1 Install membrane base flashing prior to installing membrane cap sheet.
- .2 Apply membrane base flashings to seal membrane to vertical elements. Secure to nailing strips at 4 inches O.C. and reglets.
- .3 Seal flashings and flanges of items penetrating membrane.
- .4 Install metal base flashing and cap flashing to Section 07 62 10.

3.3 MEMBRANE APPLICATION

- .1 Install roofing membranes and membrane flashings to manufacturer's written installation instructions for selected system.
- .2 Apply membrane; lap and seal edges and ends permanently waterproof.
- .3 Torch sufficiently and continuously to avoid wrinkles, air pockets or fish-mouths. In cold weather, adjust welding time to obtain homogenous seam.
- .4 Avoid overheating membrane and excessive bitumen bleed-out at joints.
- .5 Extend membrane up cant strips and minimum of 200 mm (8 inches) onto vertical surfaces.
- .6 Extend membrane over vapour and air barrier of wall construction and seal.
- .7 Mop and seal membrane around roof protrusions and penetrations.
- .8 Provide waterproof cut-off to membrane at end of day's operation. Remove cut-off before resuming roofing.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Roof flashings.
- .2 Counter flashings at roof mounted mechanical equipment, vent stacks, and roof hatches.

1.2 RELATED SECTIONS

- .1 Section 06 11 10 - Wood Framing: Wood blocking, nailers, and grounds.
- .2 Section 07 46 10 - Metal and Plastic Siding.
- .3 Section 07 52 11 - Roofing.
- .4 Section 07 92 10 - Joint Sealing.

1.3 QUALITY ASSURANCE

- .1 Perform Work to AA (Aluminum Association), CCBDA (Canadian Copper & Brass Development Association), or SMACNA (Sheet Metal and Air Conditioning Contractors' National Association) standards.
- .2 Perform sheet metal work in accordance with RCABC (Roofing Contractors Association of British Columbia) standards.

Part 2 Products

2.1 MATERIALS

- .1 Aluminum Sheet: Min. 24 gauge shop pre-finished, colour to match existing (or as per Elevations).
- .2 Or Pre-finished Steel, min. 26 ga.

2.2 ACCESSORIES

- .1 Fastener: Of same material as sheet metal (finish exposed fasteners same as flashing metal), to CSA B111.
- .2 Sealants: in accordance with Section 07 92 10.
- .3 Plastic Cement: CAN/CGSB-37.5, cutback asphalt type.

2.3 FABRICATION

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable RCABC details, SMACNA details, and as indicated.

- .2 Form pieces in 8'-0" maximum lengths. Hem exposed edges on underside 1/2 inch; mitre and seam corners.
- .3 Form material with flat lock cover plate seam.
- .4 Fabricate corners from one piece with minimum 18 inches long legs; seam for rigidity, seal with sealant.
- .5 Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- .6 Fabricate flashings to allow toe to extend 2 inches over roofing. Return and brake edges.
- .7 Form sheet metal pans 6 inches nominal size, with 3 inches upstand, and 4 inches flanges. Fill pans watertight with plastic cement.

2.4 FINISHES

- .1 Shop prepare and prime exposed ferrous metal surfaces.
- .2 Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 0.015 inch.

Part 3 Execution

3.1 PREPARATION

- .1 Install starter and edge strips, and cleats before starting installation.
- .2 Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.

3.2 INSTALLATION

- .1 Conform to Architectural drawing details and relevant details included in the SMACNA manual.
- .2 Insert flashings into reglets to form tight fit. Secure in place with lead or plastic wedges.
- .3 Secure flashings in place using concealed fasteners.
- .4 Seal flashings into reglets with sealant.
- .5 Apply plastic cement compound between metal flashings and felt flashings.
- .6 Seal metal joints watertight.

3.3 SCHEDULES

- .1 Flashings visible on Building Elevations; colour: black.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Preparing sealant substrate surfaces.
- .2 Sealant and backing.

1.2 QUALITY ASSURANCE

- .1 Perform work to sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

1.3 WARRANTY

- .1 Warranty Period: Three (3) years.
- .2 Warranty: Include coverage of installed sealants and accessories which fail to achieve air tight and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

Part 2 Products

2.1 SEALANT MATERIALS

- .1 Do not use caulking that emits strong odours, contains toxic chemicals, or is not certified as mould resistant in air handling units.
- .2 Urethanes One Part.
 - .1 CAN/CGSB-19.13.
 - .2 Applicable: Exterior locations at joints between dissimilar construction.
- .3 Silicones One Part.
 - .1 CAN/CGSB-19.13.
 - .2 Applicable: Exterior locations for metal-to-metal contact.
- .4 Mildew resistant.
 - .1 Applicable: Interior areas, including junction of washroom fixtures.
- .5 Neoprene or Butyl Rubber.
 - .1 Round solid rod, Shore A, hardness 70.
- .6 High Density Foam.
 - .1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m³ density, or neoprene foam backer, size as recommended by manufacturer.

2.2 ACCESSORIES

- .1 Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- .2 Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- .3 Joint Backing: ASTM C1330; round foam backer rod; oversized 30 percent larger than joint width.
- .4 Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

Part 3 Execution

3.1 PREPARATION

- .1 Clean and prime joints in accordance with manufacturer's instructions.
- .2 Remove loose materials and foreign matter which might impair adhesion of sealant.

3.2 INSTALLATION

- .1 Install sealant to manufacturer's instructions.
- .2 Measure joint dimensions and size materials to achieve required width/depth ratios.
- .3 Install joint backing to achieve a neck dimension no greater than 1/3 the joint width.
- .4 Install bond breaker where joint backing is not used.
- .5 Tool joints concave shaped.

3.3 CLEANING AND REPAIRING

- .1 Clean adjacent soiled surfaces.
- .2 Repair or replace defaced or disfigured finishes caused by work of this Section.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Non-rated and fire rated and thermally broken hollow metal frames.
- .2 Non-rated and fire rated and thermally insulated pressed steel doors.
- .3 Exterior and interior glazed light frames.
- .4 Louvres.
- .5 Glass and glazing.

1.2 RELATED SECTIONS

- .1 Section 08 71 10 - Door Hardware – General (see hardware notes on drawings).
- .2 Section 09 91 15 - Painting: Field painting of frames (new exterior swing door painted to match existing).

1.3 SUBMITTALS

- .1 Section 01 33 10: Submission procedures.
- .2 Product Data: Provide product data on standard door construction.
- .3 Shop Drawings: Indicate door and frame elevations, internal reinforcement, anchor types and spacing, closure methods, finishes location of cut-outs for hardware, and cut outs for glazing or louvres.
- .4 Installation Data: Manufacturer's special installation requirements.

1.4 QUALITY ASSURANCE

- .1 Perform Work to requirements of CSDMA (Canadian Steel Door Manufacturers Association) standards.
- .2 Regulatory Requirements: Conform to NFPA 80 for fire rated classes indicated in schedules.

Part 2 Products

2.1 MATERIALS

- .1 Sheet Steel: Galvanized steel to ASTM A653/A653M, with WCZ coating.
 - .1 Coating designation ZF120 (A60) for exterior door assemblies.
 - .2 Coating designation ZF001 (A01) for interior doors assemblies.
- .2 Reinforcement: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75 (A25).

2.2 DOORS

- .1 Exterior Doors:
 - .1 Steel sheet faces 1.22 mm thick, flush design. Commercial grade steel to ASTM A1008-13, Class 1 finished to ASTM A526M-85, (wiped) zinc finish.
 - .2 Polystyrene core.
- .2 Interior Doors:
 - .1 Steel sheet faces 1.22 mm, flush design.
 - .2 Honeycomb core.

2.3 FRAMES

- .1 Exterior Frames: 1.6 mm (16 gauge) thick base metal thickness, welded type construction.
- .2 Interior Frames: 1.6 mm (16 gauge) thick base metal thickness, welded type construction.

2.4 ACCESSORIES

- .1 Door Silencers: Single stud rubber/neoprene.
- .2 Exterior Top Caps: Flush steel top caps or rigid polyvinylchloride extrusion.
- .3 Frame Thermal Breaks: ~~Rigid polyvinylchloride extrusion~~ (not required).
- .4 Glazing Stops: Formed galvanized steel channel, minimum 16 mm high, mitred corners; prepared for countersink style screws.
- .5 Bituminous Coating: Fibred asphalt emulsion.
- .6 Louvres: Roll formed steel material, slat blade.
- .7 Glass: In accordance with Section 08 80 55.

2.5 FABRICATION - DOORS

- .1 Exterior Doors: Fabricate doors and frames as detailed: in accordance with Canadian Steel Door and Frame Manufacturer's Association (CSDFMA) for hollow steel construction. Lockseam edges acceptable.
- .2 Interior Doors: Fabricate doors and frames as detailed: in accordance with Canadian Steel Door and Frame Manufacturer's Association (CSDFMA) for hollow steel construction. Lockseam edges acceptable.
- .3 Top and Bottom Channels: Inverted, recessed, welded steel channels.
- .4 Exterior Door: Flush steel or PVC top caps.
- .5 Fabricate doors with hardware reinforcement plates welded in place.

2.6 FABRICATION - FRAMES

- .1 Mullions for Double Doors: Removable type. (Not applicable).
- .2 Astragals: Weld-on flat bar astragals for double doors. (Not applicable)
- .3 Fabricate frames with hardware reinforcement plates welded in place.
- .4 Reinforce frames wider than 1200 mm (48 inches) with roll formed steel channels fitted tightly into frame head, flush with top.
- .5 Provide three single silencers for single doors (and mullions of double doors) on strike side, and two single silencers on frame head at double doors without mullions.

2.7 FINISHES

- .1 Factory Finish: Primer (to CGSB 1-GP-181M, zinc rich).

Part 3 Execution

3.1 INSTALLATION

- .1 Install components to manufacturer's written instructions.
- .2 Install doors and frames to CSDMA standards and in accordance with NFPA 80, and local authority having jurisdiction.
- .3 Coordinate with wood frame wall construction for anchor placement.
- .4 Set frames plumb, square, level and at correct elevation.
- .5 Adjust operable parts for correct clearances and function.
- .6 Install louvers, glazing and door silencers.
- .7 Finish paint in accordance with Section 09 91 15 (or to MPI standards).

3.2 SCHEDULES

- .1 General door, frame, and hardware specifications as per Architectural drawings (Door Schedule).

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Hardware for wood and flush metal doors.

1.2 RELATED SECTIONS

- .1 Section 08 11 00: Metal doors and frames.

1.3 SUBMITTALS

- .1 Section 01 33 10: Submission procedures.
- .2 Product Data: Provide product data on specified hardware.
- .3 Shop Drawings: Indicate on shop drawings, locations and mounting heights of each type of hardware.
- .4 Templates: Supply templates to door & frame manufacturers to enable accurate sizes, locations of cut outs, and reinforcement for hardware.

1.4 MAINTENANCE SUBMITTALS

- .1 Maintenance Tools and Materials:
 - .1 Provide five (5) extra key lock cylinders for each master keyed group.
 - .2 Provide special wrenches and tools applicable to each different or special hardware component.
 - .3 Provide maintenance tools and accessories supplied by hardware component manufacturer.
 - .4 **Keying to match existing building locks (Owner to provide).**

1.5 QUALITY ASSURANCE

- .1 Regulatory Requirements: Conform to ULC requirements for fire rated doors, frames, and hardware.

Part 2 Products

2.1 MANUFACTURERS

- .1 Hinges: Stanley, Hager, Monthard.
- .2 Latch Sets: Sargent 10-Line (or equivalent).
- .3 Lock Cylinders: Schlage.
- .4 Exit Devices: Von Duprin.
- .5 Closers: LCN.

- .6 Overhead Holders: Glynn Johnson, Rixson Checkmate.
- .7 Bolts: Hager, Ives, Glynn Johnson.
- .8 Weatherstripping: Draftseal, Pemko, KN Crowder.

2.2 COMPONENTS

- .1 Locking Devices shall be by Schlage lock.
 - .1 All locks shall be of cylindrical construction unless otherwise noted.
 - .2 Functions shall be listed on hardware sets or in hardware schedule.
 - .3 Special condition locksets as detailed on hardware schedule.
 - .4 All locks shall be 2 ¾" backset.
 - .5 All locks to be Schlage ND series with Rhodes levers (or equivalent).
- .2 Flush Bolts
 - .1 Hardware supplier to ensure proper length of rod to be supplied.
 - .2 Manual and automatic bolts shall be Hager HA 1250 C26D, Ives, Ferrum #402, and Glynn Johnson FB6.
- .3 Screws and Fasteners
 - .1 All screws used to attach devices to door or frame to be Phillips head. Other screws conform to manufacturer's recommendations.
 - .2 All door closers and exit device to be c/w thru-bolts.
 - .3 All hinge screws shall be self-clearing.
 - .4 Combination screws will not be acceptable.
 - .5 Screw length shall be based on door thickness, and not require jobsite modification.
 - .6 Sufficient screws shall be supplied to ensure all devices are installed with full complement of screws.
- .4 Exit Devices
 - .1 All devices shall be mounted with thru-bolts.
 - .2 All devices shall be c/w stainless steel touch pad and shall be constructed in such a manner as to avoid undue noise caused by touch pad retractions.
 - .3 All devices shall have concealed mounting screws.
 - .4 All devices shall have covers that will cover stock 86 or 161 cut-outs and fit door stiles as narrow as 100mm.
 - .5 All devices shall be UL (or ULC) listed for accident hazard or fire exit hardware or UL listed for A, B, C, D, or E fire labelled.
 - .6 Devices may be rim or mortise as function demands. A Von Duprin 99 or 98 series or 99-F function.
 - .7 All panic devices to be Von Duprin (not applicable).
- .5 Door Closers
 - .1 All closers shall be of universal type (with adjustable duty arm), parallel mounted, or top jamb mounted.

- .2 Contractor to adjust each closer to suit individual opening requirements.
 - .3 All closers to be thru-bolt mounted.
 - .4 All closers shall be installed to allow largest degree of opening that door swing allow.
 - .5 Parallel mounting shall be used whenever possible.
 - .6 Closers shall be listed for use on labelled doors.
 - .7 Special function and types as noted on schedule.
- .6 Push Plates
- .1 Push plates shall be of stainless steel.
 - .2 Finish shall match pulls and protection plates.
 - .3 Size to 100 x 400 mm.
 - .4 Gauge shall be 0.050.
 - .5 Confirm door stile size and adjust push plate width if necessary.
 - .6 All plates to be bevelled 4 sides. Gallery #81, Hager HA9500.
- .7 Door Pulls
- .1 All door pulls shall have back plate the same as specified under push plates but drilled for necessary mounting holes.
 - .2 All pulls shall be 180 mm centre to centre and 25 mm diameter.
 - .3 Where called for pulls shall be mounted back-to-back.
 - .4 Pulls to manufactured from stainless steel finish to match push plates. Gallery 4009-2, Hager HA7412 x 25mm Diameter.
- .8 Door stops and Holders
- .1 Where possible, wall mounted stops shall be used (with suitable backing provided).
 - .2 Where overhead holders are used, degree of opening shall match that of the door closer if used.
 - .3 All stops to come complete with concealed screws and fasteners suitable for wall, floor, or frame conditions.
 - .4 Stops (Floor/Wall): Hager HA 1118X, HA 1119X, HA 1200X, HA 1202X; Gallery 200, 230, 288; Overhead Holders: Glynn Johnson GJ90MS
- .9 Silencers
- .1 Shall be applied to all frames except where gasketed or lead-lined doors occur.
 - .2 Glynn Johnson GJ64.
- .10 Thresholds and Weather-strip
- .1 Use UL approved materials where labeled openings are specified.
 - .2 Do not use thresholds that will prevent the smooth passage of any wheeled carts or chairs.
 - .3 Width of thresholds to match door rough opening.
 - .4 Material for thresholds shall be aluminum
 - .5 Draftseal, Pemko
- .11 Kickplates

- .1 Kick plates shall be stainless steel (1.55 thick).
- .2 Finish shall match pulls and protection plates.
- .3 Size: 250mm high x door width, less 25mm.
- .4 All edges shall be bevelled.

2.3 FINISHES

- .1 Hinges: C15
- .2 Locks, Levers, and Trim: 626 base forged brass
- .3 Panic Bodies 628, Crossbar 628
- .4 Closers: paint finish to match door
- .5 Push/Pulls: stainless steel 630 base brass
- .6 Thresholds: aluminum
- .7 Weatherstrip: white or black base polyvinyl or neoprene.

2.4 KEYING

- .1 Door Locks: **Keyed as per Owner requirements.**
- .2 Supply 2 keys for each lock. Supply 2 master keys for each keyed group.

Part 3 Execution

3.1 PREPARATION

- .1 Coordinate work of this section with other directly affected sections involving manufacturer of and internal reinforcement for door hardware.
- .2 Ensure that door and frame components are ready to receive work and dimensions are as instructed by the manufacturer.
- .3 Beginning of installation means acceptance of site conditions.

3.2 INSTALLATION

- .1 Install hardware to manufacturer's written instructions and requirements of Canadian Steel Door and Frame Manufacturers Association.
- .2 Use the templates provided by hardware item manufacturer.

3.3 SCHEDULE

- ~~.1 General hardware descriptions found on architectural drawings. Hardware schedule not provided.~~

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Surface preparation.
- .2 Surface finish schedule at end of section.

1.2 RELATED SECTIONS

- .1 Shop primed items.

1.3 SUBMITTALS

- .1 Section 01 33 10: Submission procedures.
- .2 Samples: Submit two (2) samples 12 x 12 inch in size illustrating colour, finish, and textures. (Samples not required).

1.4 QUALITY ASSURANCE

- .1 Perform Work to MPI (Master Painters Institute) - Architectural Painting Specification Manual.

Part 2 Products

2.1 MANUFACTURERS

- .1 Benjamin Moore.
- .2 General Paint.
- .3 CIL
- .4 Behr.
- .5 Substitutions: Refer to Section 01 60 00.

2.2 MATERIALS

- .1 Paints: Ready mixed except field catalyzed coatings; good flow and brushing properties; capable of drying or curing free of streaks or sags.
- .2 Paint Accessory Materials: Linseed oil, shellac, turpentine, and other materials, of commercial quality.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that surfaces and substrate conditions are ready to receive work as instructed by the product manufacturer.
- .2 Minimum Application Temperatures for Latex Paints: Interiors - 7 degrees C. Exterior - 10 degrees C .
- .3 Minimum Application Temperature for Varnish Finishes: 18 degrees C.
- .4 Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the recommended maximum.
- .5 Beginning of installation means acceptance of site conditions.

3.2 PREPARATION

- .1 Correct minor defects and deficiencies in surfaces which affect work of this section.
- .2 Prepare surfaces to paint manufacturer's written instructions and MPI manual. Rinse with clean water.

3.3 APPLICATION

- .1 Apply products to manufacturer's written instructions.
- .2 Paint all exposed to view surfaces.
- .3 Sand lightly between coats to achieve required finish.
- .4 Do not apply finishes to surfaces that are not dry.
- .5 Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- .6 Back prime exterior wood work with exterior primer paint.
- .7 Back prime interior wood work with enamel undercoat paint.

3.4 MECHANICAL AND ELECTRICAL EQUIPMENT

- .1 Remove finished louvres, grilles, covers, and access panels on mechanical and electrical components from location and paint separately. Finish paint primed equipment to colour to match adjacent work.
- .2 Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, to match adjacent work except where items are prefinished.
- .3 Paint interior surfaces of air ducts, convactor and baseboard heating cabinets that are visible through grilles and louvres with one coat of flat black paint, to limit of sight line.

Paint dampers exposed behind louvres, grilles, convector and baseboard cabinets to match face panels.

- .4 Paint exposed conduit and electrical equipment occurring in finished areas. Colour and texture to match adjacent surfaces.
- .5 Paint both sides and edges of plywood backboards for electrical equipment before installing equipment.

3.5 PROTECTION

- .1 Protect other surfaces from paint or damage. Repair damage.

3.6 CLEANING

- .1 As work proceeds, promptly remove paint where spilled, splashed, or spattered.

3.7 SCHEDULE - EXTERIOR SURFACES

- .1 Concrete (Vertical Surface)
 - .1 One coat, primer sealer latex alkyd.
 - .2 EXT 3.1A latex finish (level 2 sheen).
- .2 Steel Galvanized:
 - .1 **Paint colour to match existing exterior doors (red).**
 - .2 One coat, zinc chromate primer.
 - .3 EXT 3.5G WB light industrial coating (level 5 sheen)

3.8 SCHEDULE - INTERIOR SURFACES

- .1 Wood - Painted:
 - .1 INT 6.3A high performance architectural latex (level 5 sheen)
- .2 Concrete (Vertical Surface)
 - .1 INT 3.1G Epoxy-modified latex finish (for smooth concrete).
- .3 Steel - Primed:
 - .1 INT 5.1Q Latex (level 3 sheen).
- .4 Concrete Floors:
 - .1 INT 3.2G Concrete floor sealer, water based finish.
 - .2 Lithi-Tek 9500 or equivalent.
- .5 Plaster, Gypsum Board:
 - .1 Other interior surfaces: INT 9.2A Latex finish (ceiling – level 3 sheen; ceiling – level 1 sheen)

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Gypsum board and joint treatment.
- .2 Gypsum interior sheathing.

1.2 RELATED SECTIONS

- .1 Section 06 11 10 - Wood Framing: Building wood framing system.
- .2 Section 07 21 15 - Blanket Insulation: Thermal insulation.

1.3 QUALITY ASSURANCE

- .1 Perform Work in accordance with ASTM C840.
- .2 Regulatory Requirements: Conform to applicable code for fire rated assemblies as follows (**no Fire-Resistance Ratings required, as per Architectural drawing A2.1 for any assemblies with gypsum board**):
 - .1 Fire Rated Partitions: 1 Hour Fire Resistance Rating ULC W301
 - .2 Fire Rated Ceiling: 2 Hour Fire Resistance Rating ULC L511

Part 2 Products

2.1 MANUFACTURERS

- .1 CGC.
- .2 Other Acceptable Manufacturers:
 - .1 CertainTeed.
 - .2 Georgia Pacific.
- .3 Substitutions: Refer to Section 01 60 00.

2.2 MATERIALS

- .1 Gypsum Board:
 - .1 ASTM C1396/C1396M, paper-faced.
 - .2 Regular Core: 12.7 mm (1/2 inch) thick.
 - .3 Type X: 15.9 mm (5/8 inch) thick.
 - .4 Width: 1220 mm (48 inches).
 - .5 Length: Maximum available length in place, ends square cut.
- .2 Gypsum Ceiling Board:
 - .1 ASTM C1396/C1396M, paper-faced.
 - .2 Regular Core: 12.7 mm (1/2 inch) thick.

- .3 Width: 1220 mm (48 inches) wide.
- .4 Length: Maximum available length in place; tapered edges, ends square cut.
- .3 Flexible Gypsum Board:
 - .1 ASTM C1396/C1396M, paper-faced.
 - .2 Regular Core: 6 mm (1/4 inch) thick.
 - .3 Width: 1220 mm (48 inches).
 - .4 Length: Maximum available in place; ends square cut edges.
- .4 Moisture Resistant Gypsum Board:
 - .1 ASTM C1396/C1396M, paper-faced.
 - .2 Regular Core: 12.7 mm (1/2 inch) thick.
 - .3 Type X Core: 15.9 mm (5/8 inch) thick.
 - .4 Length: Maximum available length in place; tapered edges, ends square cut.
- .5 Water Resistant Gypsum Board:
 - .1 ASTM C1278/C1278M, glass fibre-reinforced, paperless face.
 - .2 Regular Core: 12.7 mm (1/2 inch) thick.
 - .3 Type X Core: 15.9 mm (5/8 inch) thick.
 - .4 Length: Maximum available length in place, square edges, ends square cut.
- .6 Abuse-Resistant Gypsum Board:
 - .1 ASTM C1396/C1396M, paper-faced, impact resistant.
 - .2 Regular Core: 12.7 mm (1/2 inch) thick.
 - .3 Type X Core: 15.9 mm (5/8 inch) thick.
 - .4 Length: Maximum available length in place; tapered edges, ends square cut.

2.3 FURRING MATERIALS

- .1 Furring, Framing, and Accessories: ASTM C645.

2.4 ACCESSORIES

- .1 Adhesive: ASTM C557.
- .2 Acoustic Insulation (where scheduled): CAN/ULC-S702; preformed glass fibre, friction fit type, unfaced, thickness to suit framing.
- .3 Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.
- .4 Corner Beads: ASTM C1047, Metal corner bead.
- .5 Edge Trim: ASTM C1047; Type U casing bead.
- .6 Joint Materials: ASTM C475, reinforcing tape, joint compound, adhesive, and water.
- .7 Gypsum Board and Sheathing Fasteners: Screws, ASTM C1002, Type S.

Part 3 Execution

3.1 CEILING FRAMING INSTALLATION

- .1 Install in accordance with manufacturer's written instructions.
- .2 Install ceiling framing independent of walls, columns, and above ceiling work.

3.2 ACOUSTIC ACCESSORIES INSTALLATION

- .1 Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.

3.3 GYPSUM BOARD INSTALLATION

- .1 Install gypsum board in accordance with ASTM C840 and manufacturer's written instructions.
- .2 Erect single layer standard gypsum board in most economical direction - horizontal or vertical, with ends and edges occurring over firm bearing.
- .3 Erect single layer fire rated gypsum board vertically, with edges and ends occurring over firm bearing.
- .4 Use screws when fastening gypsum board to metal furring or framing.
- .5 Treat cut edges and holes in moisture resistant gypsum board with sealant.
- .6 Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
- .7 Install backing board over studs in accordance with manufacturer's written instructions.

3.4 JOINT TREATMENT

- .1 Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
- .2 Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile.

END OF SECTION